

Colusa Basin Mitigation Bank Project

Colusa County

SCH # 2013012062



Final Initial Study and Mitigated Negative Declaration

March 21, 2013

Prepared for: County of Colusa

Prepared by: Eco-Analysts
1469 Humboldt Rd, Suite 100
Chico, CA 95928



Table of Contents

	Page
Summary of Findings	1
1.1 Location	2
1.2 Project Background and Proposed Improvements	2
1.3 Permits and Approvals	9
2.0 Environmental Setting	15
3.0 Evaluation of Potential Environmental Effects.....	16
3.1 Aesthetics	16
3.2 Agricultural Resources	17
3.3 Air Quality	20
3.4 Biological Resources	22
3.4.1 Regulatory Framework	23
3.4.2 Special-Status Species and Habitats.....	24
3.5 Cultural Resources	30
3.6 Geology and Soils.....	32
3.7 Greenhouse Gas Emissions.....	33
3.8 Hazards and Hazardous Materials	34
3.9 Hydrology and Water Quality.....	37
3.11 Mineral Resources	43
3.12 Noise	43
3.13 Population and Housing.....	45
3.14 Public Services	45
3.15 Recreation.....	46
3.16 Transportation/Traffic.....	47
3.17 Utilities and Service Systems	48
4.0 Mandatory Findings of Significance	50
5.0 Mitigation Measures	51
6.0 Mitigation Monitoring Plan.....	53
7.0 References	55
8.0 Report Preparation Personnel and Persons Contacted	57
8.1 Report Preparation Personnel.....	57
8.2 Persons and Organizations Contacted.....	57

List of Figures

Figure 1. Project Vicinity Map.....	11
Figure 2. Project Location Map.....	12
Figure 3. Aerial Photograph Showing the Approximate Project Area.....	13
Figure 4. Site Plan for Colusa Basin Mitigation Bank (Westervelt ES).....	14
Figure 5. Wetland Delineation Map (Westervelt ES).....	39

List of Tables

Table 1. Environmental Effects Checklist for Aesthetics.....	16
Table 2. Environmental Effects Checklist for Agricultural Resources.....	17
Table 3. Environmental Effects Checklist for Air Quality.....	20
Table 4. Environmental Effects Checklist for Biological Resources.....	22
Table 5. Environmental Effects Checklist for Cultural Resources.....	30
Table 6. Environmental Effects Checklist for Geology and Soils.....	32
Table 7. Environmental Effects Checklist for Greenhouse Gas Emissions.....	33
Table 8. Environmental Effects Checklist for Hazards and Hazardous Materials.....	34
Table 9. Environmental Effects Checklist for Hydrology and Water Quality.....	37
Table 10. Environmental Effects Checklist for Land Use and Planning.....	41
Table 11. Environmental Effects Checklist for Mineral Resources.....	43
Table 12. Environmental Effects Checklist for Noise.....	43
Table 13. Environmental Effects Checklist for Population and Housing.....	45
Table 14. Environmental Effects Checklist for Public Services.....	45
Table 15. Environmental Effects Checklist for Recreation.....	46
Table 16. Environmental Effects Checklist for Transportation/Traffic.....	47
Table 17. Environmental Effects Checklist for Utilities and Service Systems.....	48
Table 18. Environmental Effects Checklist for Mandatory Findings of Significance.....	50

Appendices

Appendix A. Biological Assessment Report
Appendix B. Cultural Resources Survey Report
Appendix C. Pre-Jurisdictional Waters Delineation Report
Appendix D. Mitigation Monitoring Plan and Forms
Appendix E. Comments Received and Responses
Appendix F. Errata to the Public Draft Initial Study

**PUBLIC DRAFT INITIAL STUDY
AND
MITIGATED NEGATIVE DECLARATION**

Lead Agency: County of Colusa

Project: The proposed Project entails conversion of a property used for rice production to a mitigation bank for Giant Garter Snakes.

Location: The area of potential effect involves approximately 215 acres of land located 9 miles south of the City of Colusa, in rural Colusa County, California. The assessment area is located in Section 13 of Township 15 North, Range 1 West and Section 6 of Township 14 North, Range 1 West, M.D.M., as depicted on the “Arbuckle, CA” USGS 7.5’ topographic quadrangle map.

Project Name: Colusa Basin Mitigation Bank Project and General Plan Amendment

Date: January 23, 2013

Summary of Findings

The results of the Initial Study indicate that Project operation may adversely impact aspects of agriculture, air quality, and biological resources. Design features incorporated into the Project avoid or reduce certain potential environmental impacts. Remaining impacts can be reduced to levels that are less than significant with implementation of the mitigation measures presented in the Initial Study.

1.0 Project Description

1.1 Location

The assessment area encompasses approximately 215+ acres of land 5 miles south of the City of Colusa, in rural Colusa County, California (Figures 1- 3). The assessment area is located in Section 13, Township 15 North, and Range 1 West and Section 6, Township 14 North and Range 1 West of the “Arbuckle, CA” USGS 7.5’ topographic quadrangle map.

1.2 Project Background and Proposed Improvements

The Applicant, Westervelt Ecological Services (WES), proposes to restore wetlands in an actively farmed rice field and enhance habitat to provide compensation for giant garter snakes (*Thamnophis gigas*; GGS) and aquatic habitats impacted by infrastructure or development projects requiring federal and State permits while maintaining commercial agricultural use of the property. Specifically, the goal relating to GGS includes providing all of the necessary habitat requirements for GGS including: (1) adequate water during the GGS's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattail (*Typha latifolia*) and tule (*Schoenoplectus acutus*) for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking sites; and (4) higher elevation uplands for cover and refuge from flood waters during the GGS's dormant season in the winter. These components will address the full suite of habitat features necessary to support the entirety of the GGS life cycle. Approximately 118 acres of the property will be developed as GGS credits and 33.5 acres of the property will be developed as dedicated GGS habitat mitigation for the Maxwell Public Utility District Treated Effluent Re-Use Project.

Additional wetland goals consist of creating seasonally flooded wetlands that will meet the three-parameter wetland requirements (i.e., plant, soil and hydrology) as outlined in the US Army Corps of Engineers’ *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (“404 wetlands”). The site soil, Willows silty clay, is classified as a “hydric” soil that, when not effectively drained as it is now, will actively pond. The extended hydrology will be derived from both seasonal rainfall and floodwaters. The adjacent uplands will provide sufficient local runoff to facilitate natural saturation & inundation, and the proximity to the Colusa Drain will allow the surface water to flood the site during significant regional rainfall events. These 404 wetlands will receive no supplemental water from pumps or irrigation ditches. As the 404 wetlands will be dependent on seasonal precipitation, the plants growing there will be dominated by low-growing herbaceous species, such as smartweed (*Polygonum* spp.), sedge (*Carex* spp.) and bulrush. Approximately 42 acres of the property will be developed as 404 wetland credits.

The Mitigation Bank will be developed in two phases beginning in 2013. In the summer of 2013, a 33.5-acre portion of the Mitigation Bank will be taken out of rice production and converted to managed-marsh and upland GGS habitat to satisfy the mitigation needs of the Maxwell Treated Effluent Re-Use Project. The balance of the property will remain in rice production until 2015 when the remaining area will be converted to managed marsh and upland habitat for GGS and 404 wetlands to serve as a mitigation bank for Colusa and surrounding counties. All associated documents, including restoration plans, conservation easements, management plans and endowments will be fully approved by the appropriate federal, state, and local agencies including the US Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), US

Army Corps of Engineers (USACE), US Environmental Protection Agency (USEPA), Regional Water Quality Control Board (RWQCB), the Central Valley Flood Protection Board, and the County of Colusa.

To create the proposed habitat features, portions of the existing rice field will be recontoured to create the GGS managed-marsh complex and the 404 wetlands. Channels in the managed-marsh will be cut and the fill will be used to create berms. Berms are planned to be no greater than 3-feet above existing field elevations (Figure 4). Upland refugia mounds will be up to 6 feet high and located outside of the floodway, with the mound oriented to parallel the water flow. Existing and new water control structures will be used to adjust the water level in the managed marsh GGS habitat. No water control structures are needed for the 404 wetlands. Commercial livestock grazing will be utilized within the entire site after the GGS and 404 wetland features have been established, and recreational hunting will be allowed on the property.

1.2.1 Elements Incorporated into the Project to Avoid and Minimize Potential Impacts

The Project incorporates the following specific elements to avoid or minimize potential impacts to the species and resources on site:

Geology and Soils Measures

Unless otherwise authorized by the Regional Water Quality Control Board, no grading will occur between May 1st and October 15th in order to minimize impacts to soils and possible erosion/sediment discharges. Erosion control seeding will be done after October 15th and planting will occur just prior to flood-up to ensure survival. Details on the best management practices to preserve soils on the site will be described in the Storm Water Pollution Prevention Plan (SWPPP) that will be prepared for the Project.

Drainage, Hydrology, and Water Quality Measures

The Project will utilize the existing water supply system to provide water for the GGS wetlands. The amount of water used and drainage will conform to existing patterns of use and drainage for rice cultivation. The 404 wetlands will depend on rainfall and overflow from the 2047 canal for water. Water will not need to be provided to these wetlands through the existing irrigation system. No changes to surrounding drainage/water supply canals will be made as part of the Project. Permits from USACE (CWA Sec. 404 NWP 14 & 27), CDFG (1600), and the Central Valley Regional Water Quality Control Board (CWS Sec. 401 & 402) will be obtained before construction commences. A SWPPP will be prepared for the Project and will describe the best management practices to be used during construction and through site re-vegetation.

Vegetation and Wildlife Measures

General Vegetation and Wildlife Measures

1. *Biological Monitoring:* For the duration of Project work activities, a biological monitor will be present within the active work area(s). The monitor will ensure that the appropriate avoidance and minimization measures to reduce the effects of work activities on listed species and migratory birds, as discussed below, are correctly followed and implemented. The biological monitor will be given the authority to stop any work that may result in the take of federally or State-listed species or migratory birds. The monitor will be the contact for any employee or contractor

who might inadvertently kill or injure a listed species, or anyone who finds a dead or injured individual of these species.

- a. The biological monitor will provide oversight for the establishment of any buffers, access roads, or wildlife fencing within the Project area. Any access into these defined habitat buffers or other sensitive areas will be restricted by the biological monitor to the maximum extent practicable.
 - b. At all times, the biological monitor will retain a copy of all approved conservation measures on the Project site while earth-moving and/or construction activities are being conducted. The name and telephone number of the biological monitor will be provided to the appropriate resource agencies prior to groundbreaking for the proposed Project.
2. *Worker Education:* Prior to the start of groundbreaking activities, all construction personnel will receive training on listed species and their habitats by the monitoring biologist. The importance of these species and their habitats will be described to all employees as well as the conservation measures that are to be implemented as part of the Project. An educational brochure containing color photographs of all listed species in the work area(s) will be distributed to all employees working within the Project site. A list of employees who attend the training sessions will be maintained by the applicant and be made available for review by the USFWS,USACE, and CDFG upon request.
3. *Water Quality and Habitat Protection:* All vehicles entering the work area(s) will be confined to the staging area or approved access routes and restoration area (areas within which work is taking place). Speed limits within the work area(s) will be limited to 15 miles per hour. No equipment will be allowed to remain parked within 100 feet of aquatic areas.
- a. When not in use, all vehicles will be parked in the existing staging area. Any re-fueling or vehicle maintenance required during the course of Project activities will be limited to this area. Additionally, any equipment storage such as fence rolls, t-posts, or tools will be retained in this area until ready for installation or use.
 - b. Prior to the start of construction, a SWPPP will be prepared by the Applicant. Included in this plan will be instructions on how to manage hazardous materials to minimize the likelihood of a hazardous materials spill within the Project area. Additionally, the SWPPP will include measures to prevent the discharge of contaminated runoff into on-site wetlands and adjacent offsite wetland habitats.
4. *Rubbish Removal:* To avoid impacts to GGS and minimize the attraction of predators to the site, trash dumping and littering will be prohibited at all times within the Project area. All debris and trash will be contained or removed from the site at the end of each work day.
- a. Any residual or unused equipment or materials related to Project activities will be removed from the site upon completion of restoration activities. All excess materials will be disposed of at an appropriate off-site location.

5. *Erosion Control:* Upon completion of ground disturbing activities, all restoration planting will be implemented within one (1) growing season. This will minimize degradation to onsite aquatic resources through sedimentation and runoff and aid in the re-establishment and enhancement GGS and wetland habitat within the Project site.
 - a. Unless authorized by the Regional Water Quality Control Board, all ground disturbing activities will occur during the dry season (June 1 through October 15) to minimize erosion and degradation of on-site hydrologic flows. All re-vegetation will occur between October 1 and January 31 to ensure sufficient water for native vegetation establishment and minimization of future run-off or erosion.

Species Avoidance Measures

General

1. In order to clearly identify all sensitive habitats and minimize take of listed species, all ground disturbing activities will occur between 6AM and 6PM daily.
2. Prior to vehicles or equipment entering the Project area each work day, the monitoring biologist will inspect areas within 300 feet of aquatic areas to identify any GGS that may be within the Project area. If GGS are identified, construction activities in these locations will cease until the individuals have been allowed to leave the area.
3. If it is determined that wildlife exclusion fencing is necessary during the implementation of the conservation measures below, this fencing will be checked once per week by the monitoring biologist to identify weaknesses or gaps. All compromised portions of the fencing will be immediately repaired and/or replaced. Wildlife exclusion fencing and any associated materials will be entirely removed from the area upon completion of restoration activities to avoid the future entrapment of wildlife.

GGS Precautions during Construction and Maintenance

WES will take the following precautions to avoid impacts to GGS during the initial construction of habitat:

1. Excavation activities will only be conducted between May 1 and October 1 during the snake's active period; if excavation is needed outside of this window, the US Fish and Wildlife Service must be consulted.
2. "Wetted areas" will be dried out for a minimum of two weeks prior to construction activities, and dewatered areas will be inspected for ponded areas that may concentrate GGS prey and become a GGS attractant. Prey salvage may be necessary to reduce the risk of attracting GGS and other wildlife.
3. A "workers awareness program" will be implemented, and workers will be provided instruction about GGS, their habitat, and the protection provided by the Endangered Species Act.

4. A GGS survey will be conducted 24 hours prior to start of construction; and a biological monitor will be present during the first week of construction to remove any GGS found during that period; if Project construction lapses for more than two consecutive weeks, the Project area will be resurveyed for GGS.

In addition, the following precautions will be implemented on all *maintenance* activities to avoid future impacts to GGS and its habitat:

Channel (open water) cleaning will not be conducted unless absolutely necessary.

5. When channel cleaning is necessary, vegetation will be maintained on both sides of the greatest extent practicable, or if not possible to maintain vegetation on both sides of the channel, vegetation must always be maintained on one bank.
6. Movement of heavy equipment will be restricted to the perimeter berm with the dirt road to the greatest extent possible to minimize habitat disturbance.
7. Annual maintenance activities along channels, such as mowing and disking, will maintain buffer strips of standing vegetation along the ditch.
8. Mowing herbaceous vegetation growing along berms from the top of the bank down to the water line will be avoided to greatest extent practicable except when necessary for the management of noxious weeds.
9. If mowing is used beyond the top of the channel banks, the height of the vegetation after mowing will be at least 4 inches (note: additional precautions for ground-nesting birds are included under the maintenance elements of this plan).
10. Use of aquatic herbicides to control aquatic vegetation shall only be done with prior approval of the USFWS and use shall be consistent with registered label requirements and all applicable laws and regulations.
11. If burning is used to control vegetation; burning will be conducted between November 1 and March 15 and conducted in accordance with applicable rules and regulations of the Colusa Air Pollution Control District.
12. Driving over or in close proximity to snakes that are observed on site will be avoided at all times.

Swainson's Hawk

1. *Biological Monitoring:* Nest surveys will be conducted by the biological monitor within one month of the start of ground disturbing activities during the nesting season (March 1–September 15). Surveys will be conducted according to the Swainson's Hawk Technical Advisory Committee's methodology (CDFG 2000) to determine if Swainson's hawks are nesting within the Project site.
2. *Avoidance of Occupied Habitat:* If nests are observed on-site and are determined to be occupied the following measures will be implemented to prevent nest abandonment and/or harm/harassment of individuals within nesting trees:
 - a. During the nesting season (March 1–September 15), Project activities will be prohibited within 1,000 feet of occupied nests to prevent nest abandonment. If site-specific conditions or the nature of the covered activity indicate that a

smaller buffer could be used, the WES will coordinate with CDFG to determine the appropriate buffer size.

- b. If the biological monitor observes fledging from on-site nests prior to September 15, the Project may proceed normally.
3. *Minimization of Habitat Degradation:* No nesting trees are known to occur within the Project Site. However, several large trees do exist along its boundaries. None of these trees will be removed as part of Project activities.

Tricolored blackbird

1. *Biological Monitoring:* Surveys will be conducted by the biological monitor within 30 days prior to implementation of Project activities for any construction implemented during the breeding season (March 15 – July 31). During this survey, the biological monitor will establish presence or absence of nesting tricolored blackbirds.
2. *Avoidance Measures:* If nesting tricolored blackbird colonies are identified during biological monitoring initial biological monitoring, CDFG will be contacted to determine appropriate avoidance and minimization measures. These measures may include:
 - a. Elimination of construction activities during the breeding season within a minimum 250 foot buffer from the outer edge of all hydric vegetation associated with the tricolored blackbird colony. If the colony is nesting in non-wetland vegetation (e.g., Himalayan blackberry), the no-activity buffer zone will be at least 250-foot from the edge of the colony substrate. The buffer zone will be clearly marked to prevent Project activities from occurring within the buffer zone.
 - b. Observation by the biological monitor to confirm that construction activity is not disrupting the colony, and if it is, an increase of the buffer area. If it appears that buffer size needs to be increased or reduced, the biological monitor will coordinate exact amounts with the USFWS and CDFG.

Migratory Birds

The following guidelines are adapted from the *Suggested Priority of Migratory Bird Conservation Actions for Projects* (USFWS 2010).

1. *Biological Monitoring:* Surveys for migratory bird nests will be performed by a biological monitor familiar with migratory birds and their breeding habits within 48 hrs. prior to the start of construction activities. If no nests are identified within the Project site, the Project may proceed as planned. If migratory bird nests are identified in locations that will be impacted by construction activities, the USFWS Migratory Bird Office will be contacted for further guidance.
2. *Avoidance of Nests/Discouragement of Nesting:* To avoid active nests and discourage the development of migratory bird nests within the site, practices will be implemented to discourage nesting activities. This may include but is not limited to: (1) parking construction equipment in the graveled staging areas away from trees or other cover to avoid potential for unintended nest disturbance; (2) reducing upland grass cover on the Project site via grazing or mowing prior to the start of the breeding season (mid-April) and after a nest survey and continuing these activities through the end of

the breeding season (August 31); and (3) implementing construction activities 6 days every week to discourage nests from forming within the Project area.

Fire Protection Measures

The Project site, including the staging area, will be “watered” down before and during construction to minimize the chance fire starting during the site grading. Modern equipment with spark arresters will be required on all machinery used on the site, including, but not limited to backhoes, scrapers, graders, etc. All vehicles and construction equipment will carry fire extinguishers. The staging area will be watered periodically during construction.

Noise Measures

While the Project is in a rural part of the County, noise control measures will be implemented as part of the Project. Specifically, the Project hours of operation will be done during regular agricultural business hours from 6 AM to 6 PM, Monday through Friday and, if needed, from 7 AM to 5 PM on Saturdays. No work will occur on Sundays or on federal holidays.

Air Quality Measures

The Project will comply with Colusa County Air Pollution Control District Rules for construction and grading dust control requirements and agricultural burning. Dust control measures will be described in the SWPPP that will be prepared for the Project. Water conveyed through the site by Sycamore Mutual Water Company will be used for dust control.

Aesthetics Measures

The site will have a long-term management plan that will include site maintenance activities, such as weed control, water management and trash pick-up.

Archaeology/History Measures

If cultural artifacts are unexpectedly discovered during Project implementation, then work will halt in the subject area and an assessment will be made by a qualified archaeologist. Cultural artifacts include archaeological (pre-history) and historical objects. Objects may include, but are not limited to pottery shards, rock implements or flakes, Projectile points (e.g., arrow heads), mortar and pestles, adobe foundations/walls, pioneer metal work (e.g., square nails). Additional features indicating archaeological significance include dark friable soils containing shells, animal bones and other refuse deposits.

If human remains are discovered, work will halt in the subject area and the Colusa County Coroner will be notified immediately. An archaeologist will also be brought in for an assessment. If the Coroner determines that the human remains are of Native American origin, then the Coroner will notify the California Native American Heritage Commission at (916) 653-4082, within 24 hours from the initial determination.

Hazardous Materials Measures

Hazardous material storage and handling measures will follow best management practices described in the SWPPP that will be prepared for the Project. The SWPPP includes a list of possible hazardous material that will be used on the site (e.g., diesel and grease), requiring spill prevention kits in equipment, creation of containment areas if material are stored on site, and procedures to follow in case a spill occurs.

Transportation/Circulation Measures

Ingress and egress will occur from the existing access to the property (Abel Rd.) and is anticipated to have the highest frequency in the morning and evening when workers arrive and leave the site during construction. All excavated material will be balanced on the site and water for dust control will be obtained from the adjacent canals and drains so that no truck traffic on public roads will be generated by these activities.

1.2.2 Management and Legal Protection

Management of the Mitigation Bank will be governed by Interim and Long-Term Management Plans. The Interim Management Plan details the activities that are scheduled to take place on the Mitigation Bank between the end of construction and the completion of the establishment of GGS and wetland habitats, typically lasting five years. The Long-Term Management Plan details the activities that are scheduled to take place after achievement of the performance standards and completion of monitoring during the Interim Management Period. Interim Management activities include all of the annually-occurring activities scheduled in the Long Term Management Plan, plus additional intensive monitoring activities will be conducted to document the achievement of performance standards.

The Long Term Management Plan details the periodic activities and requirements needed to sustain and monitor the Mitigation Bank in perpetuity. Those tasks and requirements are represented in the Endowment Fund Analysis and Schedule as costs, recurring on an annual, semi-annual, or long-term periodic basis. Scheduled tasks include regular maintenance of the water control system, grazing management, noxious weed control, patrol for trash and trespass, coordination with local mosquito abatement district, monitoring, and replacing signage and gates. These recurring costs are translated into an endowment amount that will be required to generate enough interest on an annual basis to cover the management costs.

Legal protection for the site will be provided through a recorded conservation easement. The conservation easement will be recorded in favor of a non-profit organization approved by the US Fish and Wildlife Service and will detail the responsibilities of the grantor (WES) and the grantee, as well as all compatible uses, including agricultural activities, that are allowed on the property.

1.3 Permits and Approvals

Prior to Project implementation, the following discretionary permits and approvals may be required from regulatory agencies.

- Zoning Amendment and General Plan Amendment (Land Use Designation) from the Colusa County Board of Supervisors
- General Plan Amendment - Designation Change from Agriculture to Resource Conservation
- County of Colusa Land Grading Permit
- County of Colusa Flood Development Zone Permit
- County of Colusa Public Works Encroachment Permit, if road improvements are needed
- Clean Water Act 404 Permit for Wetland Impacts
- Clean Water Certification – Regional Water Quality Control Board

- U.S. Endangered Species Act Incidental Take Permit
- Interagency Review Team Approval of Mitigation Bank Enabling Instrument
- Glenn-Colusa Irrigation District and Central Valley Flood Protection Board Encroachment Permit

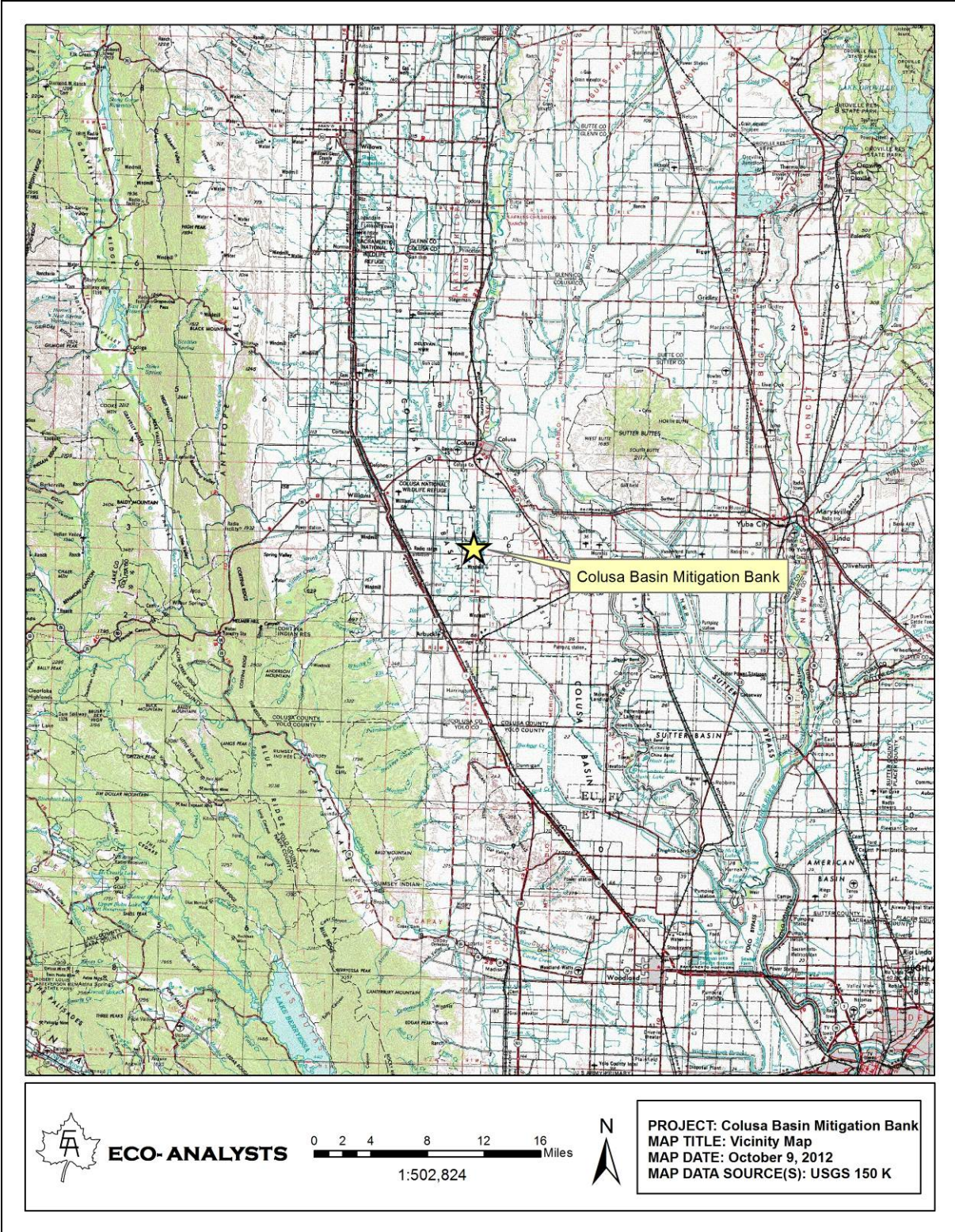


Figure 1. Project Vicinity Map.

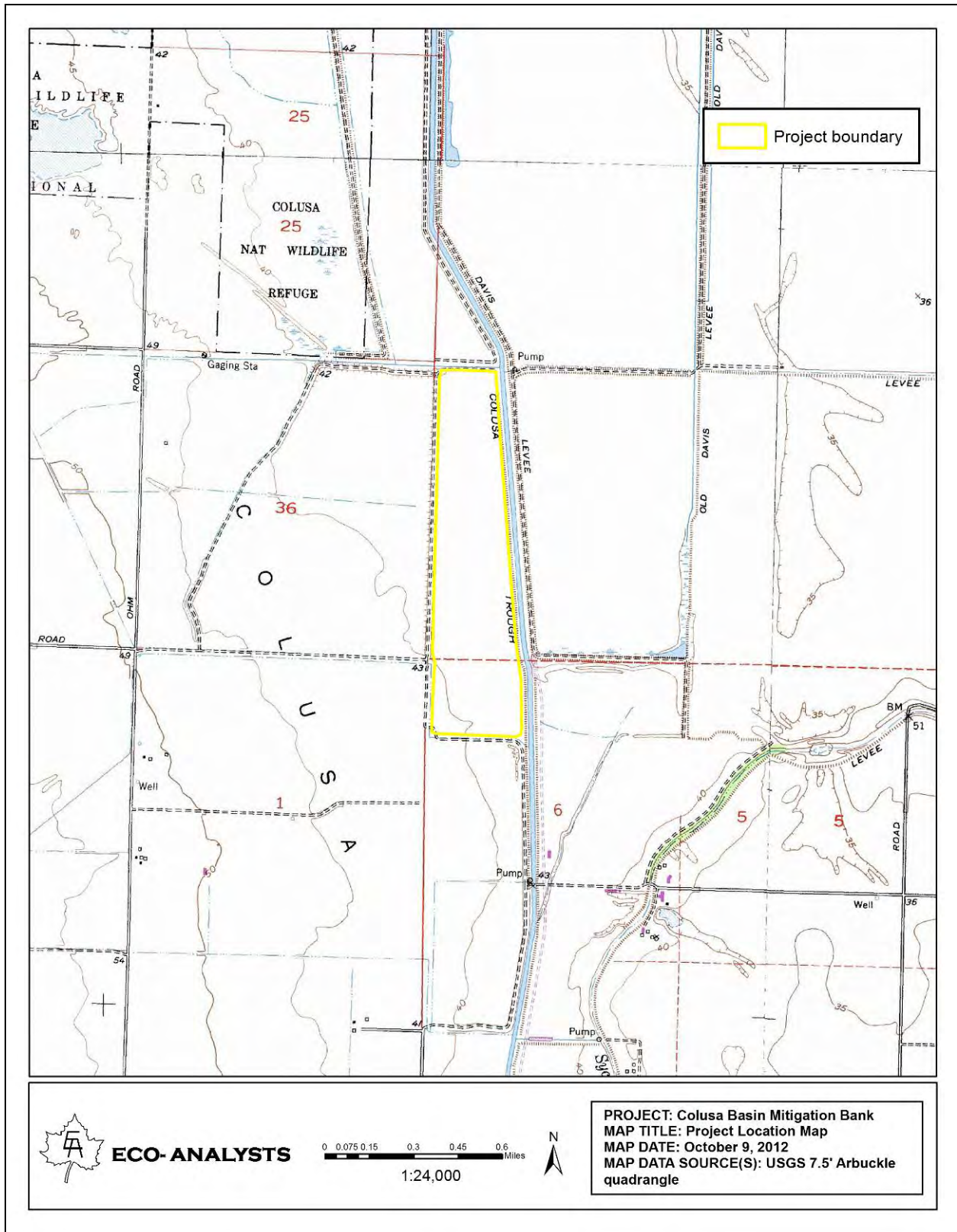
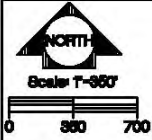


Figure 2. Project Location Map.



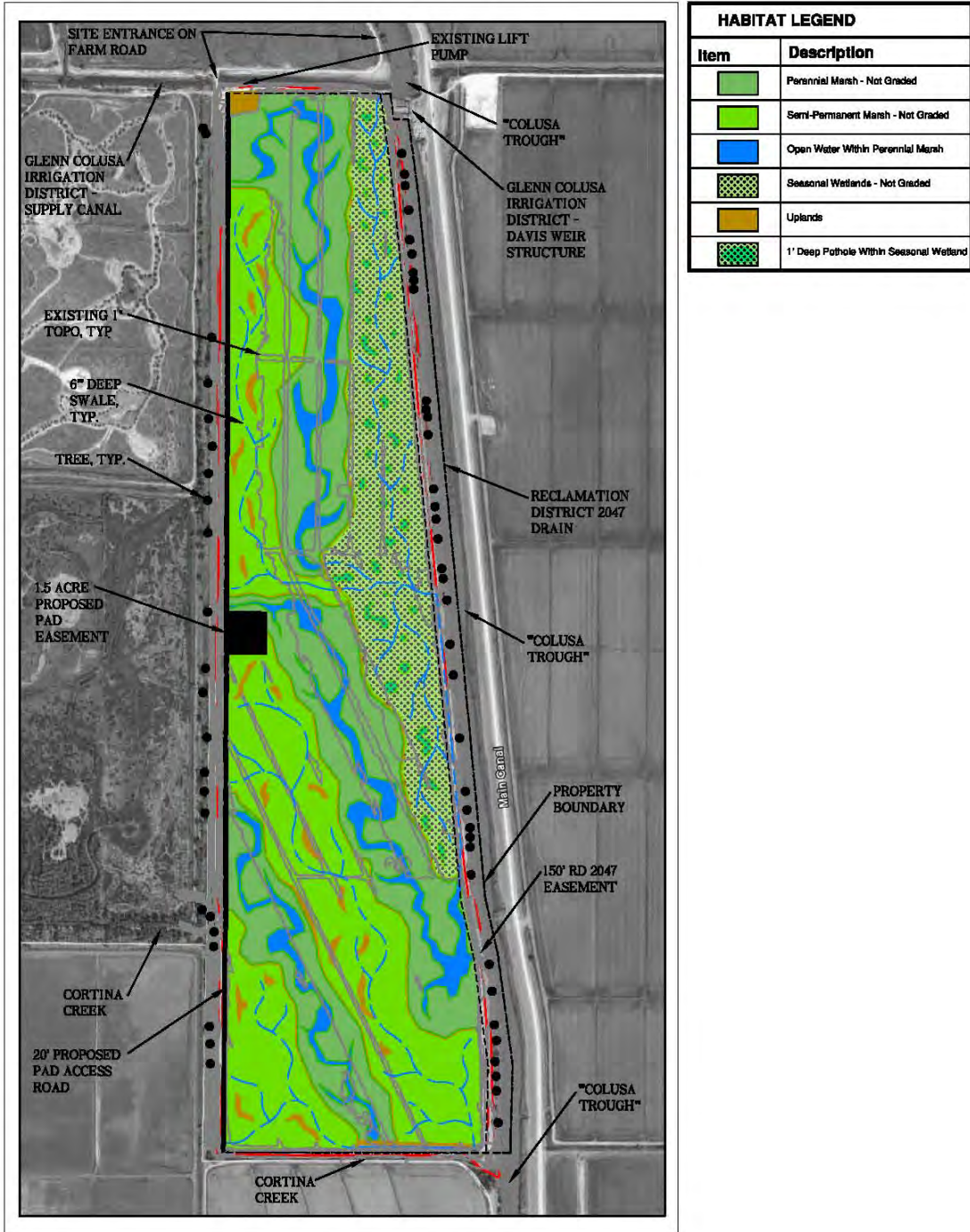
Figure 3. Aerial Photograph Showing the Approximate Project Area.



Colusa Basin Mitigation Bank

GIANT GARTER SNAKE HABITAT / WETLAND RESTORATION

COLUSA COUNTY, CALIFORNIA



HABITAT LEGEND	
Item	Description
	Perennial Marsh - Not Graded
	Semi-Permanent Marsh - Not Graded
	Open Water Within Perennial Marsh
	Seasonal Wetlands - Not Graded
	Uplands
	1' Deep Pathole Within Seasonal Wetland

FIGURE 5 **SITE PLAN**

Figure 4. Site Plan for Colusa Basin Mitigation Bank (Westervelt ES).

2.0 Environmental Setting

The assessment area is located approximately 9 miles south of Colusa, California (see Figures 1 - 3) in an unincorporated portion of Colusa County and is approximately 215 acres in size. The surrounding area is characterized by flat agricultural lands and the channel of the Sacramento River. The Sutter Buttes Mountain Range is located approximately 9 miles to the northeast. The site is immediately southeast of the Colusa National Wildlife Refuge.

The area experiences a Mediterranean climate with hot dry summers and cool wet winters. Annual rainfall ranges between 10 and 20 inches (15.76" on average). There are typically 266 or more days in the growing season.

The property is composed of rice fields, bordered by dirt roads on the north, west and south and a road and the 2047 Drain on the east. There are scattered cottonwood and black willow trees and stands of Giant Reed (*Arundo donax*) bordering the roads, as well as cattails along ditch edges.

Surrounding land use is almost exclusively agricultural and composed of large tracts of flood-irrigated crops such as rice as well as some managed wetlands. Orchards and irrigated agriculture dominate the surrounding landscape.

The site is currently zoned Exclusive Agriculture (E-A).

3.0 Evaluation of Potential Environmental Effects

Following is the environmental effects checklist that is based on criteria suggested by the State of California Office of Planning and Research and presented in Appendix G of the current California Environmental Quality Act (CEQA) Guidelines. A discussion of reasons for the conclusions in the checklist is presented for each section along with references to supporting data. As required by CEQA, measures to mitigate the potentially significant adverse impacts of the Project follow in Section 4.

3.1 Aesthetics

Table 1. Environmental Effects Checklist for Aesthetics

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
AESTHETICS -- Would the Project:					
a) Have a substantial adverse effect on a scenic vista?				X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?				X	

Source: Project Description

a, b, c, d) The site is not situated on a designated scenic vista, nor will it provide a new source of light or glare in the area. The Project, however, will result in minor alteration of the existing topography and vegetation. The currently leveled rice field will be modified to have curving depressions and upland areas. The current cropland vegetation will be supplanted with wetland vegetation, including tules, cattails, sedges, rushes, and willows. The site will have a more varied and naturalistic appearance. The changes will not constitute a substantial alteration of the scenic qualities in the area. The site will have a long-term management plan that will include site maintenance activities, such as weed control, water management and trash pick-up. **No Impact**

3.2 Agricultural Resources

Table 2. Environmental Effects Checklist for Agricultural Resources

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
AGRICULTURE RESOURCES -- Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X		
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?		X			
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?			X		

Source: Project Description. County General Plan, Colusa County Important Farmlands Dataset

a) The California Division of Land Resource Protection identifies important agricultural lands through the Farmland Mapping and Monitoring Program. Colusa County has approximately 555,000 acres identified as Prime Farmlands (including Farmlands of Statewide Importance, Unique Farmland, and Farmland of Local Importance), or 74% of the total land within the County.

This program has identified the entire project area as Unique Farmland in the 2010 Colusa County Important Farmlands Dataset. Unique farmland consists of lesser quality soils used for the production of the State’s leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climactic zones. The project site is utilized for rice production, which is one of the State’s leading agricultural crops.

The project proposes conversion of currently producing rice land to resource conservation use as a mitigation bank. The bank will, however, continued to be used for agriculture including commercial livestock grazing and recreational hunting. The project does not include substantial paving over of the soil or building construction that would render soils on the site unsuitable for agriculture.

Impacts to agriculture are considered less than significant in light of the large area of Prime Farmland (about 550,000 acres in Colusa County in 2010) in the surrounding area. No mitigations for loss of Prime Farmland are warranted. **Less Than Significant Impact**

b) The project site is currently under a Williamson Act contract. Utilization of the site for mitigation purposes does not conflict with the contract considering the continued use of the site for agricultural purposes, including livestock grazing and recreational hunting. There are no plans to remove the Williamson Act contract.

The project site is zoned Exclusive Agricultural (E-A). Mitigation Banking and/or active habitat restoration is not an allowable use in the E-A according section 4.02 of the zoning, which sets forth zone land use regulations in the E-A zone . These activities are more appropriately located in the Open Space (O-S) zone. According to the 2030 Colusa County General Plan, Table LU1, mitigation banking and/or active habitat restoration is not an allowable use in A-G land use designation. The project will require a rezone from its current E-A zoning to Open Space (O-S) to comply with these General Plan requirements. The following adopted policies apply to lands proposed for changes in designation from an agricultural designation:

Policy AG 1-2: Lands designated for agricultural uses shall remain designated for agriculture and not be rezoned or re-designated to an urban use unless all of the following criteria are met:

- a. The lot(s) for which conversion is requested is adjacent to agriculture or agricultural support uses (e.g. receiving plants, hulling plants, warehousing, trucking, distribution, and other related activities.) on no more than two sides of the lot(s) or less than 50 percent of the perimeter of the lot(s) proposed for conversion.
- b. The conversion will not be detrimental to existing agricultural operations.
- c. The conversion land is within 500 feet of existing urban infrastructure (e.g., water supply lines and sewer lines) and conversion will constitute a logical contiguous extension of a designated urban area.
- d. The lot(s) proposed for conversion include a buffer at the agricultural/urban transition zone to protect future users of the conversion lands from nuisances associated with typical agricultural practices.
- e. No feasible alternative location (e.g., non---agricultural lands or less productive agricultural lands) exists.
- f. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding agricultural lands.

Policy AG 1-2 consistency: Although the lands are proposed for rezone and redesignation, they are not being proposed for urban uses. The project is consistent with AG 1-2.

Policy AG 1-14: Resource conservation activities such as habitat creation and active habitat or species management on lands designated for agricultural uses shall require a General Plan Amendment to Resource Conservation unless all of the following conditions are met:

- a. The resource conservation activities involve active and on-going agricultural activities on the majority of the site.
- b. The resource conservation activities are compatible with agricultural activities on the site and existing or potential agricultural activities in the vicinity.
- c. There would not be a concentration of resource conservation lands in the immediate area.

Policy AG 1-14 consistency: The activities (a) involve ongoing agricultural activities and (b) are compatible with those agricultural operations. Surrounding land uses are predominantly agricultural, with rice production immediately adjacent to the north, east, and south. There (c) are a number of

resource conservation lands in the immediate area, including the Delevan National Wildlife Preserve to the northwest, and other state and private managed wetlands immediately west. Both are managed as flooded habitats in the winter for waterfowl hunting.

In consideration of Policy AG 1-14(c) there is not considered to be a concentration of conservation lands in this area, which is dominated by rice production and will remain so regardless of project implementation. Although the project is consistent with Policy AG 1-14, a General Plan Amendment to Resource Conservation is required (Mitigation Measure AG-1), based on Table LU1, Allowable Uses (2030 Colusa County General Plan pg. 8-7).

Policy AG 2-3: Low-intensity recreational uses may be permitted on agricultural lands as long as they do not interfere with the principal use of the land for agricultural purposes. Examples include hunting, fishing, target shooting, horseback riding, hiking and exhibitions of working farms or ranches.

Policy AG 2-3 consistency: The proposed recreational use of hunting is consistent with Policy AG 2-3. Additionally, the proposed Zoning Amendment to Open Space will provide for continued agricultural uses as well as meet the objectives of the project and Colusa County Planning.

Policy AG 2-14: Preserve water resources for agriculture, both in quantity and quality, from competition with development, non-agricultural uses, mitigation banks, and/or interests from outside of the County.

Policy AG 2-14 consistency: The proposed conversion from rice land to a less water intensive use is consistent with the preservation of water resources for agricultural uses and is consistent with AG 2-14.

The project proposes a rezone from its current Exclusive Agriculture (E-A) zoning to Open Space (O-S). Water will not need to be provided to these wetlands through the irrigation system and no changes to surrounding drainage/water supply canals will be made as part of the Project. Water use under the new land use regime is accordingly expected to decrease, preserving water resources for other users. Additionally, utilization of the land for wetland conservation will increase the quality of stormwater runoff from the site as compared to rice production, which will marginally increase water quality for other users. **Less Than Significant with Mitigation Incorporated**

Project Impact: Use of these lands for habitat and species mitigation will require a rezone to Open Space and a redesignation to Resource Conservation to remain consistent with the Colusa County 2030 General Plan.

MITIGATION MEASURE AR-1: GENERAL PLAN AMENDMENT – LAND DESIGNATION AND ZONING AMENDMENT

Prior to the applicant commencing active habitat restoration activities, such as grading, the Board of Supervisors shall approve the proposed General Plan land use designation change from Agriculture General (A-G) to Resource Conservation (R-C) and Zoning Amendment change from Exclusive Agriculture (E-A) to Open Space (O-S).

c) The project will not involve any other changes to the existing environment (besides the change in zoning/designation and use as open space/resource conservation) that could result in conversion of other Farmland to non-agricultural use. Although some minor topographic variation will be involved in the habitat modification, the land will remain physically viable for agricultural uses and will not involve the creation of new impervious surfaces or other uses that compromise soil. The conditions imposed by the conservation easement will, however, preclude any future agricultural uses for the lifetime of the easement. **Less Than Significant Impact**

3.3 Air Quality

Table 3. Environmental Effects Checklist for Air Quality

Effect	Potentially Significant Impact	Less Than Significant with Mitigations Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
AIR QUALITY -- Would the Project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?				X	
b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation?		X			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?		X			
d) Expose sensitive receptors to substantial pollutant concentrations?			X		
e) Create objectionable odors affecting a substantial number of people?			X		

Source: Project Description. Colusa County General Plan, California Air Resources Board, Colusa County Air Pollution Control District

The Project area is located in the Northern Sacramento Valley Air Basin. The California Air Resources Board lists Colusa County as in attainment of 2011 State Air Quality Attainment Standards for PM_{2.5} (particulate matter below 2.5 microns in diameter), nitrogen dioxide, sulfur dioxide, lead and visibility reducing particles and “unclassified” (i.e., no data collected) for carbon monoxide. The County is currently listed as non-attainment-transitional of State standards for ozone, moderate non-attainment for the 1-hr ozone standard, and non-attainment for PM₁₀ (particles

less than 10 microns in diameter) emissions. Colusa County is listed as unclassified/attainment for the 2011 Federal Air Quality Attainment Standards for PM_{2.5}, PM₁₀, ozone 8-hr standard, carbon monoxide, nitrogen dioxide, sulfur dioxide and lead.

a, b, c, d) The most significant probable existing sources of air pollutants within the local area are temporary releases from agricultural plowing, grading, and burning. Occasionally, wildfires in the region or crop residue burning may release large volumes of particulate matter into the atmosphere. As the Project will convert a site currently used for rice agriculture into a managed wetland under more natural conditions, the primary air quality impacts will be related to the construction phases of the Project, which will entail earth-moving activities that generate dust as well as pollutant emissions from construction equipment. However, any impacts on air quality from Project construction will be short-term and less than significant with standard air quality mitigations incorporated. Construction and implementation of the Project will not conflict with or obstruct implementation of the applicable air quality plan, expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people. Long-term impacts on air quality are expected to decrease with the cessation of annual rice agriculture activities on the property.

Potential Impact: The Project has potential to generate short-term increases in fugitive dust and air pollutants.

The Project incorporates the following impact minimization measure:

Air Quality Measures

The Project will comply with Colusa County Air Pollution Control District Rules for construction and grading dust control requirements and agricultural burning. Dust control measures will be described in the SWPPP that will be prepared for the Project. Water conveyed through the site by Sycamore Mutual Water Company will be used for dust control.

To ensure that Project construction activities do not significantly impact air quality, all work undertaken will be in accordance with the following mitigation measure throughout construction and implementation of the Project.

MITIGATION MEASURE AIR-1: FUGITIVE DUST & AIR POLLUTANTS

Fugitive dust and air pollutant emissions shall be minimized during construction. Construction contracts shall require the primary construction contractor to implement the following practices during all construction activities:

- Construction equipment shall use aqueous diesel fuel and shall be equipped with particulate traps and catalytic converters.
- All disturbed areas, including soil piles, areas that have been graded, and unpaved roads shall be watered twice daily and, when feasible, covered and enclosed.
- When materials are transported off site, loads shall be wetted and covered securely; at least two feet of freeboard shall be maintained.

- Limit traffic speeds on unpaved roads to 15 mph and install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.
- Turn off equipment not in use for more than ten minutes.
- Curtail construction activities when the County’s Air Quality Index exceeds 150 (= unhealthy for sensitive groups) for ozone, PM_{2.5}, or PM₁₀.

3.4 Biological Resources

A biological assessment report (Appendix A) was prepared by Westervelt Ecological Services in August 2012. The report includes lists of the listed plants and wildlife species having potential to occur on the site from those listed within 5 miles of the site in USFWS and CDFG’s CNDDDB databases. The report also includes results of a protocol Giant Garter Snake field survey and a copy of the USFWS Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (*Thamnophis gigas*) Habitat, which are incorporated into the Project as elements to minimize impacts to GGS.

Table 4. Environmental Effects Checklist for Biological Resources

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
BIOLOGICAL RESOURCES -- Would the Project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US. Fish and Wildlife Service?		X			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?			X		

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X		
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?		X			

Source: Eco-Analysts Reconnaissance Survey, Westervelt Ecological Services Biological Assessment Report, Colusa County General Plan, USFWS, CDFG

3.4.1 Regulatory Framework

The California Environmental Quality Act provides protection not only for state-listed species but also for any species that can be shown to meet the criteria for State listing (CEQA Guidelines § 15380). For this assessment, potential impacts to all special-status species including all federally and state-listed species as well as species of special concern were considered.

The US Endangered Species Act of 1973 (7 USC § 136, 16 USC § 1531 et seq.) requires federal agencies to ensure actions they carry out, fund or authorize do not jeopardize species listed by the federal government as threatened or endangered or adversely modify habitat critical to their survival. Section 9 of the Endangered Species Act also makes it unlawful for any person or private or public entity to “take” any individual of a species that is listed under the law as endangered or threatened. According to the Act, to “take” means to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The word “harm” has been further defined in federal regulations as any act that “actually kills or injures fish or wildlife.” Such an act may include “significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including breeding, spawning, rearing, migrating, feeding or sheltering” (50 CFR 222.102). While the taking prohibition does not apply to plants, it is illegal under the Act to remove an endangered plant from federal land; the Act also federalizes state laws prohibiting the taking of plants. Some take of listed species is allowed with a

federal permit if it is determined not to jeopardize the species and is incidental to otherwise lawful activity requiring a federal permit.

The California Endangered Species Act (Cal FGC § 2050-2069), established in 1984 and administered by the California Department of Fish and Game, also prohibits the “take” of listed species. A “take” is defined in the law as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill.” While the state law lacks the “harm” provision of the federal law and allows for take incidental to other Projects, it also prohibits the taking of species that are being petitioned for listing. The state law applies to both plants and animals and emphasizes early consultation to avoid negative impacts on listed species (CDFG 2010).

The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) makes it unlawful to pursue, hunt, take, capture, kill or sell birds listed by the statute and extends protections to bird parts, eggs, and nests.

3.4.2 Special-Status Species and Habitats

The biological assessment (Appendix A) of the site analyzed the list of species potentially present on the site generated from state and federal lists and determined the likelihood of each species to occur or use habitat on site. Eco-Analysts also visited the site on October 18, 2012, for a reconnaissance level field survey.

The site consists of agricultural fields used for growing rice, with some small patches of cattails (*Typha latifolia*). Dirt roads surround the site on all sides with some riparian vegetation and trees, mainly Black Willow (*Salix goodingii*) and Fremont’s Cottonwood (*Populus fremontii*) and stands of Giant Reed (*Arundo donax*). The 2047 Drain (the Colusa Trough) borders the eastern edge of the site, and Cortina Creek borders the southern edge. None of the special-status plants in the lists generated for the biological assessment were considered potentially present within the site because the appropriate habitat was not present.

The only special-status wildlife species known to occur on the Project site is the federally and State-threatened Giant Garter Snake, for which the mitigation bank is being developed. Westervelt Ecological Services (2012) determined that several other special-status wildlife species may occur on the site and are listed in the CNDDDB; these include the Aleutian cackling Canada goose (*Branta hutchinsii leucoparia*), white-faced ibis (*Plegadis chibi*), tri-colored blackbird (*Agelaius tricolor*), hoary bat (*Lasiurus cinereus*), Swainson’s hawk (*Buteo swainsoni*), western red bat (*Lasiurus blossovillii*), and the Yuma myotis (*Myotis yumanensis*). All of these species may utilize the site for foraging, but none have been determined to breed in habitat present on the site. The site does not contain any critical habitat for threatened or endangered species. However, habitats within the site may support a number of other migratory bird species, which have protected status under the Migratory Bird Treaty Act.

a) Construction will convert over 200 acres of habitat currently known to support GGS and may disturb GGS on site as well as areas of habitat currently utilized by GGS incidentally to otherwise legal activities.

Potential Impacts: Project construction has potential to adversely impact Giant Garter Snakes and other protected species on site.

However, the Project must go through rigorous review by an interagency review team (IRT) including representatives of USACE, USFWS, and CDFG. The Project requires federal agency approval and permits, which triggers preparation of a Biological Opinion by the USFWS. In the Biological Opinion, the USFWS will determine using the best scientific information available whether the action will jeopardize the species or whether it will not jeopardize the species but may adversely affect or is not likely to adversely affect the species. When the latter happens, the USFWS prepares an incidental take statement for the proposed Federal Project. The Biological Opinion process has already begun for this Project.

The Project also incorporates numerous measures to minimize impacts on vegetation and wildlife, particularly GGS and the other listed species potentially present on site, which help reduce the impact of construction on protected species to **Less Than Significant**:

Vegetation and Wildlife Measures

General Vegetation and Wildlife Measures

1. *Biological Monitoring:* For the duration of Project work activities, a biological monitor will be present within the active work area(s). The monitor will ensure that the appropriate avoidance and minimization measures to reduce the effects of work activities on listed species and migratory birds, as discussed below, are correctly followed and implemented. The biological monitor will be given the authority to stop any work that may result in the take of federally or State-listed species or migratory birds. The monitor will be the contact for any employee or contractor who might inadvertently kill or injure a listed species, or anyone who finds a dead or injured individual of these species.
 - a. The biological monitor will provide oversight for the establishment of any buffers, access roads, or wildlife fencing within the Project area. Any access into these defined habitat buffers or other sensitive areas will be restricted by the biological monitor to the maximum extent practicable.
 - b. At all times, the biological monitor will retain a copy of all approved conservation measures on the Project site while earth-moving and/or construction activities are being conducted. The name and telephone number of the biological monitor will be provided to the appropriate resource agencies prior to groundbreaking for the proposed Project.
2. *Worker Education:* Prior to the start of groundbreaking activities, all construction personnel will receive training on listed species and their habitats by the monitoring biologist. The importance of these species and their habitats will be described to all employees as well as the conservation measures that are to be implemented as part of the Project. An educational brochure containing color photographs of all listed species in the work area(s) will be distributed to all employees working within the Project site. A list of employees who attend the training sessions will be maintained by the applicant and be made available for review by the USFWS, USACE, and CDFG upon request.

3. *Water Quality and Habitat Protection:* All vehicles entering the work area(s) will be confined to the staging area or approved access routes and restoration area. Speed limits within the work area(s) will be limited to 15 miles per hour. No equipment will be allowed to remain parked within 100 feet of aquatic areas.
 - a. When not in use, all vehicles will be parked in the existing staging area. Any re-fueling or vehicle maintenance required during the course of Project activities will be limited to this area. Additionally, any equipment storage such as fence rolls, t-posts, or tools will be retained in this area until ready for installation or use.
 - b. Prior to the start of construction, a SWPPP will be prepared by the Applicant. Included in this plan will be instructions on how to manage hazardous materials to minimize the likelihood of a hazardous materials spill within the Project area. Additionally, the SWPPP will include measures to prevent the discharge of contaminated runoff into on-site wetlands and adjacent offsite wetland habitats.
4. *Rubbish Removal:* To avoid impacts to GGS and minimize the attraction of predators to the site, trash dumping and littering will be prohibited at all times within the Project area. All debris and trash will be contained or removed from the site at the end of each work day.
 - a. Any residual or unused equipment or materials related to Project activities will be removed from the site upon completion of restoration activities. All excess materials will be disposed of at an appropriate off-site location.
5. *Erosion Control:* Upon completion of ground disturbing activities, all restoration planting will be implemented within one (1) growing season. This will minimize degradation to onsite aquatic resources through sedimentation and runoff and aid in the re-establishment and enhancement GGS and wetland habitat within the Project site.
 - a. Unless authorized by the Regional Water Quality Control Board, all ground disturbing activities will occur during the dry season (June 1 through October 15) to minimize erosion and degradation of on-site hydrologic flows. All re-vegetation will occur between October 1 and January 31 to ensure sufficient water for native vegetation establishment and minimization of future run-off or erosion.

Species Avoidance Measures

General

1. In order to clearly identify all sensitive habitats and minimize take of listed species, all ground disturbing activities will occur between 6AM and 6PM daily.
2. Prior to vehicles or equipment entering the Project area each work day, the monitoring biologist will inspect areas within 300 feet of aquatic areas to identify any GGS that may be within the Project area. If GGS are identified, construction activities in these locations will cease until the individuals have been allowed to leave the area.

3. If it is determined that wildlife exclusion fencing is necessary during the implementation of the conservation measures below, this fencing will be checked once per week by the monitoring biologist to identify weaknesses or gaps. All compromised portions of the fencing will be immediately repaired and/or replaced. Wildlife exclusion fencing and any associated materials will be entirely removed from the area upon completion of restoration activities to avoid the future entrapment of wildlife.

GGS Precautions during Construction and Maintenance

WES will take the following precautions to avoid impacts to GGS during the initial construction of habitat:

1. Excavation activities will only be conducted between May 1 and October 1 during the snake's active period; if excavation is needed outside of this window, the US Fish and Wildlife Service must be consulted.
2. "Wetted areas" will be dried out for a minimum of two weeks prior to construction activities, and dewatered areas will be inspected for ponded areas that may concentrate GGS prey and become a GGS attractant. Prey salvage may be necessary to reduce the risk of attracting GGS and other wildlife.
3. A "workers awareness program" will be implemented, and workers will be provided instruction about GGS, their habitat, and the protection provided by the Endangered Species Act.
4. A GGS survey will be conducted 24 hours prior to start of construction; and a biological monitor will be present during the first week of construction to remove any GGS found during that period; if Project construction lapses for more than two consecutive weeks, the Project area will be resurveyed for GGS.

In addition, the following precautions will be implemented on all *maintenance* activities to avoid future impacts to GGS and its habitat:

Channel (open water) cleaning will not be conducted unless absolutely necessary.

5. When channel cleaning is necessary, vegetation will be maintained on both sides of the greatest extent practicable, or if not possible to maintain vegetation on both sides of the channel, vegetation must always be maintained on one bank.
6. Movement of heavy equipment will be restricted to the perimeter berm with the dirt road to the greatest extent possible to minimize habitat disturbance.
7. Annual maintenance activities along channels, such as mowing and disking, will maintain buffer strips of standing vegetation along the ditch.
8. Mowing herbaceous vegetation growing along berms from the top of the bank down to the water line will be avoided to greatest extent practicable except when necessary for the management of noxious weeds.
9. If mowing is used beyond the top of the channel banks, the height of the vegetation after mowing will be at least 4 inches (note: additional precautions for ground-nesting birds are included under the maintenance elements of this plan).

10. Use of aquatic herbicides to control aquatic vegetation shall only be done with prior approval of the USFWS and use shall be consistent with registered label requirements and all applicable laws and regulations.
11. If burning is used to control vegetation; burning will be conducted between November 1 and March 15 and conducted in accordance with applicable rules and regulations of the Colusa Air Pollution Control District.
12. Driving over or in close proximity to snakes that are observed on site will be avoided at all times.

Swainson's Hawk

1. *Biological Monitoring:* Nest surveys will be conducted by the biological monitor within one month of the start of ground disturbing activities during the nesting season (March 1–September 15). Surveys will be conducted according to the Swainson's Hawk Technical Advisory Committee's methodology (CDFG 2000) to determine if Swainson's hawks are nesting within the Project site.
2. *Avoidance of Occupied Habitat:* If nests are observed on-site and are determined to be occupied the following measures will be implemented to prevent nest abandonment and/or harm/harassment of individuals within nesting trees:
 - a. During the nesting season (March 1–September 15), Project activities will be prohibited within 1,000 feet of occupied nests to prevent nest abandonment. If site-specific conditions or the nature of the covered activity indicate that a smaller buffer could be used, the WES will coordinate with CDFG to determine the appropriate buffer size.
 - b. If the biological monitor observes fledging from on-site nests prior to September 15, the Project may proceed normally.
3. *Minimization of Habitat Degradation:* No nesting trees are known to occur within the Project Site. However, several large trees do exist along its boundaries. None of these trees will be removed as part of Project activities.

Tricolored blackbird

1. *Biological Monitoring:* Surveys will be conducted by the biological monitor within 30 days prior to implementation of Project activities for any construction implemented during the breeding season (March 15 – July 31). During this survey, the biological monitor will establish presence or absence of nesting tricolored blackbirds.
2. *Avoidance Measures:* If nesting tricolored blackbird colonies are identified during biological monitoring initial biological monitoring, CDFG will be contacted to determine appropriate avoidance and minimization measures. These measures may include:
 - a. Elimination of construction activities during the breeding season within a minimum 250 foot buffer from the outer edge of all hydric vegetation associated with the tricolored blackbird colony. If the colony is nesting in non-wetland vegetation (e.g., Himalayan blackberry), the no-activity buffer zone will be at least

250-feet from the edge of the colony substrate. The buffer zone will be clearly marked to prevent Project activities from occurring within the buffer zone.

- b. Observation by the biological monitor to confirm that construction activity is not disrupting the colony, and if it is, an increase of the buffer area. If it appears that buffer size needs to be increased or reduced, the biological monitor will coordinate exact amounts with the USFWS and CDFG.

Migratory Birds

The following guidelines are adapted from the *Suggested Priority of Migratory Bird Conservation Actions for Projects* (USFWS 2010).

1. *Biological Monitoring:* Surveys for migratory bird nests will be performed by a biological monitor familiar with migratory birds and their breeding habits within 48 hrs. prior to the start of construction activities. If no nests are identified within the Project site, the Project may proceed as planned. If migratory bird nests are identified in locations that will be impacted by construction activities, the USFWS Migratory Bird Office will be contacted for further guidance.
2. *Avoidance of Nests:* To discourage the development of migratory bird nests within the site, practices will be implemented to discourage nesting activities. This may include, but are not limited to: (1) parking construction equipment in the graveled staging areas away from trees or other cover; (2) reduction of upland grass cover on the Project site via grazing or mowing prior to the start of the peak breeding season (mid-April) and continuing these activities through the end of the breeding season (August 31); and (3) implementing construction activities 6 days every week to discourage nests from forming within the Project area.

The Project also proposes commercial livestock grazing on the entire parcel after the mitigation bank has been constructed. Livestock grazing, particularly over-grazing, has been identified as a potential adverse impact on GGS and their habitat (USFWS 1999- Draft Recovery Plan).

Potential Impacts: Unmanaged commercial livestock grazing may adversely impact Giant Garter Snakes and their habitat.

While grazing is not wholly incompatible with GGS conservation management, to ensure that livestock grazing does not significantly adversely affect GGS on site, the following mitigation measure has been developed:

MITIGATION MEASURE BIO-1: Approved Conservation Grazing Plan

A conservation grazing plan must be prepared and approved by the USFWS and CDFG. A conservation grazing plan that outlines the timing and intensity of grazing across the site shall be prepared and submitted to representatives of USFWS and CDFG responsible for approval of the Project. The grazing plan shall also detail how potential impacts of grazing on GGS will be monitored and how they will be remediated if found to occur.

Implementation of the numerous Project impact minimization measures and Mitigation Measure Bio-1: Approved Grazing Plan, and agency review and approval will reduce potential adverse impacts on GGS and their habitat to **Less Than Significant**.

c) A wetland delineation performed in 2012 identified 5.738 acres of seasonally flooded agricultural wetlands. Section 404 of the Clean Water Act (CWA) established a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands, and requires permits for such activities. The Project design will result in re-contouring of these wetlands and is subject to a U.S. Army Corps of Engineers Permit for wetland fill.

Project proponents have submitted an application for a Nationwide Permit 27 to address the impacts to Waters of the United States. The application has been accepted and deemed complete by USACE regulatory staff, and the Project is currently undergoing Section 7 Consultation with other federal agencies because of the presence of and potential impact on GGS. Any other mitigation measures required by USACE or other federal agencies consulted through the Section 7 process will be attached as required conditions of approval with the permit. With the issuance of the Nationwide 27 permit (or its functional equivalent), this impact is considered **Less Than Significant**.

d) The Project does not conflict with any local policies or ordinances protecting biological resources with provisions of any Habitat Conservation Plans or Natural Community Conservation Plans. However, the Project is not consistent with the Conservation Element of the Colusa County General Plan, Policy CON1-3., which states:

Policy CON 1-3: Lands that are actively managed or placed under conservation easement for habitat, wetlands, species, or other natural resource or open space preservation or conservation shall be limited to lands designated Resource Conservation (RC), unless the conditions identified in Policy AG 1-14 are met.

Mitigation Measure AG-1 (see Section 3.2) addresses this conflict. **Less Than Significant with Mitigation Incorporated**

3.5 Cultural Resources

Table 5. Environmental Effects Checklist for Cultural Resources

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
CULTURAL RESOURCES -- Would the Project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?				X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?				X	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X	
d) Disturb any human remains,			X		

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
including those interred outside of formal cemeteries?					

Source: Literature Review, Project Description, Cultural Resources Survey

A survey for cultural resources (Appendix B) compliant with section 106 of the National Historic Preservation Act was performed by Melinda Peak, Principal Investigator, and Neal Neuenschwander, Staff Archaeologist of Peak & Associates, Inc., El Dorado Hills, California. The survey consisted of office and archival research, a records search, written contact with Native American groups and related agencies, and a survey of the site on April 26 and 28, 2012. The field survey did not reveal the presence of any surface prehistoric or historic cultural resources. No recorded prehistoric or historic archaeological resources are listed with the California Historical Resources Information System on the Project site. Six recorded historic sites are located adjacent to the Project site but the area was most likely only used by Native Americans for transit and temporary resource use. No other records are indicated for the Project area.

The Native American Heritage Commission sacred land file search found no indicated presence of cultural resources in the Project area. There were no responses to letters mailed to Native American individuals/organizations listed by the NAHC.

a-d) During the course of the survey, no historic or prehistoric cultural resources or indications of such were discovered on the Project site. No impact is anticipated to any surface cultural resources. However, the possibility of disturbance to subsurface resources cannot be eliminated.

Potential Impacts: Discovery of and impacts to unanticipated cultural resource materials within the work area.

The Project, however, has incorporated the following minimization measures which will reduce the impact on any significant cultural resources to **Less Than Significant**:

Archaeology/History Measures

If cultural artifacts are unexpectedly discovered during Project implementation, then work will halt in the subject area and an assessment will be made by a qualified archaeologist. Cultural artifacts include archaeological (pre-history) and historical objects. Objects may include, but are not limited to pottery shards, rock implements or flakes, Projectile points (e.g., arrow heads), mortar and pestles, adobe foundations and/or walls, pioneer metal work (e.g., square nails). Additional features indicating archaeological significance include dark friable soils containing shells, animal bones and other refuse deposits.

If human remains are discovered, work will halt in the subject area and the Colusa County Coroner will be notified immediately. An archaeologist will also be brought in for an assessment. If the Coroner determines that the human remains are of Native American origin, then the Coroner will notify the California Native American Heritage Commission at (916) 653-4082, within 24 hours from the initial determination.

3.6 Geology and Soils

Table 6. Environmental Effects Checklist for Geology and Soils

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
GEOLOGY AND SOILS -- Would the Project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X	
ii) Strong seismic ground shaking?				X	
iii) Seismic-related ground failure, including liquefaction?				X	
iv) Landslides?				X	
b) Result in substantial soil erosion or the loss of topsoil?			X		
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X	

Source: Field Survey, Project Description

a, e) The Project will not result in the construction of above-ground structures such as commercial or residential dwellings, which would be negatively affected by geological hazards. Specifically, the Project will not expose people or structures to adverse effects or loss, injury, or death involving seismic rupture, strong-seismic shaking, seismic-related ground failure or liquefaction, landslides, or related soil hazards. The Project will not result in the use of septic tanks or alternative wastewater disposal systems.

c, d) The Project is located within the Colusa Basin, which has geology composed of Pliocene to Holocene aged, unconsolidated alluvium atop Sierran basement. The soil types and their characteristics were assessed from the Soil Survey Geographic Database (2009) for Colusa County,

which is maintained by the Natural Resource Conservation Service. Only one distinct soil map unit, 104 Willows silty clay, exists at the Project site. The Willows series is composed of nearly level, deep, poorly drained sodic soils derived from mixed alluvium. The soil unit is frequently flooded; runoff is slow; permeability is very slow. The soil is not listed as an expansive soil.

b) The Colusa County 2030 draft General Plan identifies the land surrounding the Project as having no to slight erosion potential. The Natural Resource Conservation Service describes the soils surrounding the Project as having a ‘slight’ erosion potential.

Potential Impact: The Project has the potential to increase erosion during construction.

The Project, however, incorporates the following minimization measure, which will reduce the potential for adverse impacts on geology and soils to **Less Than Significant**:

Geology and Soils Measures

Unless otherwise authorized by the Regional Water Quality Control Board, no grading will occur between May 1st and October 15th in order to minimize impacts to soils and possible erosion/sediment discharges. Erosion control seeding will be done after October 15th and planting will occur just prior to flood-up to ensure survival. Details on the best management practices to preserve soils on the site will be described in the Storm Water Pollution Prevention Plan (SWPPP) that will be prepared for the Project.

3.7 Greenhouse Gas Emissions

Table 7. Environmental Effects Checklist for Greenhouse Gas Emissions

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
GREENHOUSE GAS EMISSIONS -- Would the Project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X		
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X		

Source: Project Description, California Air Resources Board, Colusa County Air Pollution Control District

Greenhouse gases (GHG) are gases that trap the heat in the atmosphere and include water vapor, carbon dioxide (CO₂), methane (CH₄) ozone (O₃), and nitrous oxides (N₂O). All of these gases may be produced by natural biological and physical processes, as well as by human activity. Human activities since the Industrial Age have also added various synthetic fluorocarbon compounds and other aerosols to the atmosphere and have increased the rate of release of carbon dioxide, nitrous

oxides and methane, which contribute to “global warming” or global changes in climate that will affect the environment.

AB 32, the Global Warming Solutions Act of 2006, specified that the State of California reduce its greenhouse gas emissions to 1990 levels by 2020. It directed the California Air Resources Board (CARB) to develop discrete early actions to reduce greenhouse gases and to prepare a scoping plan to identify how best to reach the 2020 limit. To date, actions and policies identified are broad measures focusing on the economic sectors that generate the largest amounts of greenhouse gases. At the present time, very few air districts have developed GHG significance thresholds by which to evaluate CEQA Projects. The Colusa Air Pollution Control District has not set formal thresholds for greenhouse gases.

Rice production generates large amounts of greenhouse gases, predominantly methane and nitrous oxide. Carbon dioxide is also produced by the agricultural equipment used to grow, transport and dry the rice. Though rice agriculture is considered a large producer of GHG, ricelands within California have been calculated to contribute only 0.1% of California’s total GHG Inventory (Espino 2012).

a, b) The Project will not significantly increase greenhouse gas emissions either directly or indirectly. Greenhouse gases may be released during construction of the Project, but emissions will be less than significant with the small Project size and limited duration of Project construction and the use of air quality mitigation measures. The Project will convert the property from rice agriculture to a wetlands managed to benefit Giant Garter Snakes. The net greenhouse gas emissions after implementation are expected to be slightly reduced from former levels due to the curtailment of rice production activities on the land. Natural wetlands also produce methane and nitrous oxide in approximately equivalent amounts to rice fields (Aselmann and Crutzen 1989), but greenhouse gas production by equipment and vehicles used to harvest and process rice would be eliminated. **Less Than Significant Impact**

The Project does not conflict with current policies for reducing greenhouse gas emissions in California or Colusa County. No mitigations with respect to greenhouse gas emissions are necessary.

3.8 Hazards and Hazardous Materials

Table 8. Environmental Effects Checklist for Hazards and Hazardous Materials

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
HAZARDS AND HAZARDOUS MATERIALS -- Would the Project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X		

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Needed
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X	
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?				X	
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?				X	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X		

Source: Project Description, Field Survey, Literature Review

a) A Phase 1 Environmental Site Assessment for hazardous materials was conducted for the Project site by Acacia Consultants and Engineers on December 12, 2011. This assessment found no physical signs or database records of previous use of hazardous materials on site or within 1 mile of the site. Although the Applicant could not provide a specific list of chemicals that had been used on the site for rice production, it is probable that copper sulfate has been used to control tadpole shrimp and one or more herbicides have been used to control aquatic weeds. Because State water quality regulations require holding water for 30 days after application of these materials so that they completely break down, no significant residues should be present. The only herbicides allowed on the site for this Project will be those approved by the USFWS, and the Project will eliminate routine use of pesticides, herbicides and fungicides typically used for rice agriculture by growers starting in 2015. **Less Than Significant Impact**

b) Some hazardous materials may be used on site during the Project construction phase, however, the Project includes the following measure to minimize the risk of accidental release of hazardous materials:

Hazardous Materials Measures

Hazardous material storage and handling measures will follow best management practices described in the SWPPP that will be prepared for the Project. The SWPPP includes a list of possible hazardous material that will be used on the site (e.g., diesel and grease), requiring spill prevention kits in equipment, creation of containment areas if material are stored on site, and procedures to follow in case a spill occurs.

Thus, the Project will not create a significant hazard to the public or the environment, either through transport or use of hazardous materials. **Less Than Significant Impact**

c, e, f) No schools exist or are proposed within one-quarter mile of the Project, nor are there any public or private air strips within the vicinity an airport land use plan. **No Impact**

d) There are no identifiable hazardous materials, pursuant to Government Code Section 65962.5, on the site, nor will hazardous materials, substances, or wastes be disposed of on site. **No Impact**

g, h) The Project will not interfere with any emergency response or evacuation plans. The site is at low risk of wildfires as the area surrounding the Project is utilized for farming with some riparian vegetation retained along the canals, and the Project incorporates the following minimization measure to reduce the risk of wildfire:

Fire Protection Measures

The Project site, including the staging area, will be “watered” down before and during construction to minimize the chance fire starting during the site grading. Modern equipment with spark arresters will be required on all machinery used on the site, including, but not limited to backhoes, scrapers, graders, etc. All vehicles and construction equipment will carry fire extinguishers. The staging area will be watered periodically during construction.

The project will not introduce new fire hazards to residences. **Less Than Significant Impact**

3.9 Hydrology and Water Quality

Table 9. Environmental Effects Checklist for Hydrology and Water Quality

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Agency Review Required
HYDROLOGY AND WATER QUALITY -- Would the Project:					
a) Violate any water quality standards or waste discharge requirements?				X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?				X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?			X		
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			X		
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X		
f) Otherwise substantially degrade water quality?		X			
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X	
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				X	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X		X
j) Inundation by seiche, tsunami, or mudflow?				X	

Source: Project Description, Wetland Delineation Report

The study area is located in the agricultural lands of central Colusa County on a flat, basin landform with an average elevation of about 43 feet. The site is actively cultivated in rice and encompasses a leveled system of rice checks and berms.

The Project area is bounded by water conveyance structures on all sides. The Glenn-Colusa Irrigation District (GCID) Supply Canal lies along the entire northern boundary, with a smaller supply canal along most of the western boundary. Colusa Trough, a major agricultural drainage canal, is situated along the eastern boundary. Cortina Creek, a heavily modified and impacted waterway, lies along the southern boundary and the southern quarter of the western boundary.

Rice irrigation water is fed to the fields from an offsite header ditch and irrigation water within the rice checks generally flows from the west to the east, eventually draining to the Colusa Trough situated along the eastern parcel boundary. Two discharge points were identified and indicated on the preliminary wetland delineation map (Figure 5), one centrally situated on the eastern boundary and discharging into the Colusa Trough and one situated near the southeastern parcel corner on the southern boundary and discharging into Cortina Creek.

Wetland Delineation Survey

A wetland delineation following USACE standards was prepared and submitted (WES 2012; Appendix C) to assess any potential impacts to Waters of the United States that they Project may create. Field surveys were conducted on July 21 and September 6, 2011, and February 15, 2012.

The site visit conducted on February 15, 2012, focused on identifying areas within the rice fields that retained natural runoff following rain events. A total of 5.738 acres of potentially jurisdictional wetland features consisting of agricultural seasonal wetlands situated within the currently existing rice fields was mapped within the study area. This total was verified by USACE in preliminary jurisdictional determination dated October 15, 2012.

No work will take place on the side of the Colusa Trough, an important drainage canal and flood control structure for the area. However, indirect impacts to this canal could create unintended water supply limitations or other problems for downstream water users. Any work taking place on or potentially impacting this structure must be reviewed and approved by Reclamation District 2047.

a, b) This Project will not create new sources of waste discharge, violate water quality standards, deplete groundwater supplies or significantly interfere with groundwater recharge. **No Impact**

c, d, e) Conversion of relatively flat rice land into a natural landscape with greater diversity in topography will change the drainage patterns within the site but will not change the drainage patterns off site. No changes have been identified that might increase the risk of flooding for areas on or off site. Greater retention of flood waters on site throughout the year, combined with an expected reduction in the velocity of discharge waters, will reduce the amount of siltation and erosion that is currently occurring within the canal. Reduced water demands on the GCID Supply Canal will reduce the site runoff expected to enter the Colusa Trough. **Less Than Significant Impact**

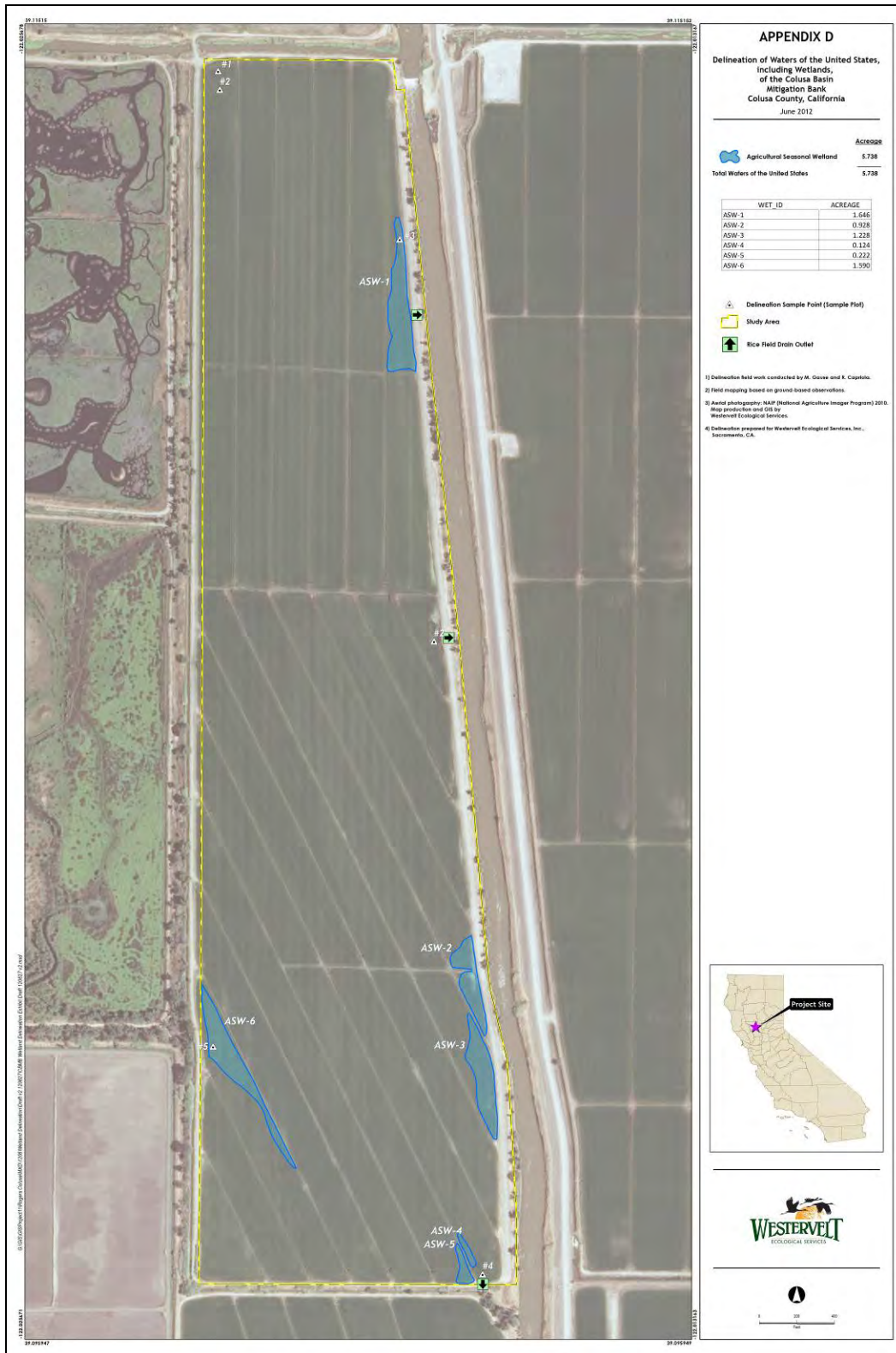


Figure 5. Wetland Delineation Map (Westervelt ES).

f) The Project has the potential to increase erosion temporarily and create limited short-term impacts to the water quality of the Colusa Trough through alterations in the surface drainage patterns of the site and construction activity. This potential can be reduced to less than significant through appropriate site design and soil conservation practices during construction. After construction activities and soil stabilization, the Project is expected to have a beneficial impact on water quality due to a reduction/elimination of agricultural pesticides and herbicides associated with rice production. These long term benefits are considered to outweigh the short term impacts.

Potential Impact: The Project has the potential to significantly increase erosion, which may impact water quality.

The Project incorporates the following measure as a condition of approval to minimize impacts to water quality:

Drainage, Hydrology, and Water Quality Measures

The Project will utilize the existing water supply system to provide water for the GGS wetlands. The amount of water used and drainage will conform to existing patterns of use and drainage for rice cultivation. The 404 wetlands will depend on rainfall and overflow from the 2047 canal for water. Water will not need to be provided to these wetlands through the irrigation system. No changes to surrounding drainage/water supply canals will be made as part of the Project. Permits from the USACE (CWA Sec. 404 NWP 14 & 27), CDFG (1600), and the Central Valley Regional Water Quality Control Board (CWS Sec. 401 & 402) will be obtained before construction commences. A SWPPP will be prepared for the Project and will describe the best management practices to be used during construction and through site re-vegetation.

Preparation of a storm water pollution prevention plan (SWPPP) by Project engineers will ensure that Project design attributes do not contribute to increased erosion. Additional Project design review by Reclamation District 2047, the Central Valley Flood Protection Board, Central Valley Regional Water Quality Control Board, and USACE will ensure impacts to water quality and the river bank are minimized. **Less Than Significant with Mitigation Incorporated**

g, h) The Project will not create new housing. No permanent structures will be built in the flood hazard area that could significantly impede or redirect flood flows. No Impact

i) Work will not occur on a levee or a dam that could expose people or structures to a new risk of loss, injury or death involving flooding. However, land alteration activities are proposed for lands directly adjacent to a 150' Reclamation District 2047 easement that includes the western bank and much of the channel of the Colusa Trough. Any work performed within the RD 2047 easement will require the explicit approval of DWR and the CVFPB.

The reduced drainage associated with the Project as compared to normal agricultural use of the site will increase the available capacity of the Colusa Trough, the primary means by which excess water, including flood water, leaves the area. Work will occur, however, in lands immediately adjacent to the Colusa Trough and the GCID Supply Canal. These structures are major water conveyance structures within this flood-prone area, and any work taking place along site these structures should

be reviewed by all agencies with jurisdiction prior to Project implementation. These agencies include the Glenn-Colusa Irrigation District, Reclamation District 2047, and the Central Valley Flood Protection Board. Their review will determine if any encroachment is occurring within their jurisdiction and, if so, ensure that standards for the construction, maintenance and protection of any associated flood control structures are met. Although the Project is expected to have a **Less Than Significant Impact** on flood control structures in the area, **Agency Review is Required**.

j) The area is not prone to seiche (intermittent waterways), tsunamis (marine environments), or mudflow (steep slopes). **No Impact**

3.10 Land Use and Planning

Table 10. Environmental Effects Checklist for Land Use and Planning

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
LAND USE AND PLANNING -- Would the Project:					
a) Physically divide an established community?				X	
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?		X			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X	

Source: Project Description, General Plan

The Project proposes establishment of a conservation easement for the purposes of providing mitigation credits to other local Projects that require impact mitigation for Giant Garter Snakes and wetlands. The land will no longer be used to grow rice after 2015. It will, however, continue to be used for agricultural purposes, including livestock grazing.

a) There are no established residential communities within 5 miles of the Project. The City of Colusa is located approximately 5.9 miles to the north, the City of Williams is approximately 6 miles to the west-northwest, the unincorporated community of Meridian about 5.8 miles to the east-northeast, and the unincorporated community of Grimes approximately 6.5 miles to the east-southeast. Surrounding land uses are primarily agricultural. Accordingly, the Project will not divide an established community. **No Impact**

b) The parcels are currently designated AG (Agriculture General) and zoned E-A (Exclusive Agriculture). The Project proposes a rezone from E-A to O-S (Open Space) and re-designation to RC (Resource Conservation) to comply with General Plan requirements (Colusa County 2030 General Plan pg 8-7, Table LU1) and to comply with the appropriate zoning requirements as discussed in the Agricultural Resources section.

The Colusa County General Plan (2012) includes several policies related to agricultural land conversion and conservation lands. Specifically, Policy AG-14 states the following:

Policy AG 1-14: Resource conservation activities such as habitat creation and active habitat or species management on lands designated for agricultural uses shall require a General Plan Amendment to Resource Conservation unless all of the following conditions are met:

- a. The resource conservation activities involve active and on-going agricultural activities on the majority of the site.
- b. The resource conservation activities are compatible with agricultural activities on the site and existing or potential agricultural activities in the vicinity.
- c. There would not be a concentration of resource conservation lands in the immediate area.

Policy AG 1-14 consistency: The activities (a) involve ongoing agricultural activities and (b) are compatible with those agricultural operations. Surrounding land uses are predominantly agricultural, with rice production immediately adjacent to the north, east, and south. There (c) are a number of resource conservation lands in the immediate area, including the Delevan National Wildlife Preserve to the northwest, and other state and private managed wetlands immediately west. Both are managed as flooded habitats in the winter for waterfowl hunting.

In consideration of Policy AG 1-14(c) there is no concentration of conservation lands in this area, which is dominated by rice production and will remain so regardless of project implementation. Although the project is consistent with Policy AG 1-14, a General Plan Amendment to Resource Conservation is required (Mitigation Measure AG-1), based on Table LU1, Allowable Uses (2030 Colusa County General Plan pg. 8-7).

To remain consistent with Policy AG 1-14 a General Plan Amendment re-designation to RC (Resource Conservation) shall be required (Mitigation Measure AG-1). A complete analysis of consistency associated with agricultural lands is provided in the Agricultural Resources section of this document. **Less Than Significant with Mitigation Incorporated**

c) There are currently no applicable habitat conservation plans or natural community conservation plans in the immediate area. However, the Project site is adjacent to several areas managed for habitat and wildlife conservation, including the Colusa National Wildlife immediately to the northwest and private mitigation lands immediately to the west. Operation of this mitigation bank will complement existing conservation management plans on these surrounding properties. No conflict with any existing HCP or NCCP has been identified. **No Impact**

3.11 Mineral Resources

Table 11. Environmental Effects Checklist for Mineral Resources

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
MINERAL RESOURCES -- Would the Project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X	
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X	

Source: Project Description

a, b) The Colusa County General Plan (2012) addresses important mineral resources in the Conservation Element. The Project does not propose to harvest locally important mineral resources. One of the previous owners of the Property retains the mineral rights below 500' and has reserved a pad and access way that would allow for a drill site in the event that deposits of natural gas or oil are discovered. The Colusa County General Plan 2030 Agriculture Element (2012), Policy AG 2-4, allows for the exploration and extraction of oil, gas and other minerals as long interference of agricultural operations is minimized and there is no permanent loss of agricultural viability. **No Impact**

3.12 Noise

Table 12. Environmental Effects Checklist for Noise

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
NOISE -- Would the Project result in:					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X	
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?				X	
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?				X	

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?				X	
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?				X	
f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?				X	

Source: Project Description, Noise Element of the Colusa General Plan

a-f) The Project site is located in an area dominated by the Colusa National Wildlife Refuge and rice production fields. Noise sources include machine noise associated with land cultivation and harvest of rice and shotguns during the fall hunting waterfowl and pheasant season. There are no sensitive receptors in the immediate vicinity of the Project parcel.

The proposed use as a giant garter snake mitigation site will limit large equipment noise to the construction period. The Project incorporates a noise minimization measure:

Noise Measures

While the Project is in a rural part of the county, noise control measures will be implemented as part of the Project. Specifically, the Project hours of operation will be done during regular agricultural business hours from 6 AM to 6 PM, Monday through Friday and, if needed, from 7 AM to 5 PM on Saturdays. No work will occur on Sundays or on federal holidays.

Overall noise levels will be reduced with the reduction in land cultivation and harvest activities.

No impacts are anticipated in regard to noise; no mitigation measures are required.

3.13 Population and Housing

Table 13. Environmental Effects Checklist for Population and Housing

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
POPULATION AND HOUSING -- Would the Project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X	

Source: Project Description, Field Survey, Colusa County Zoning Ordinance

a- c) The Project does not propose construction of homes or extension of infrastructure that could cause substantial population growth. Neither people nor housing will be displaced, and no construction of replacement housing will be necessitated. No mitigation measures are warranted with respect to population and housing. **No Impact**

3.14 Public Services

Table 14. Environmental Effects Checklist for Public Services

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
PUBLIC SERVICES – Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
a) Fire protection?				X	
b) Police protection?				X	
c) Schools?				X	
d) Parks?				X	
e) Other public facilities?				X	

Source: Project Description

a-d) The Project will not create a new need for governmental facilities and, as such, will not increase the need for police protection, schools, parks, or other public facilities. The Project will create a change in habitat for the parcel from annually flooded rice land to annually flooded mesic grassland. No significant change to the risk of wildfires is anticipated due to the wet/perennially flooded nature of the land use change. In addition, the Project includes the following minimization measure for fire protection:

Fire Protection Measures

The Project site, including the staging area, will be “watered” down before and during construction to minimize the chance fire starting during the site grading. Modern equipment with spark arresters will be required on all machinery used on the site, including, but not limited to backhoes, scrapers, graders, etc. All vehicles and construction equipment will carry fire extinguishers. The staging area will be watered periodically during construction.

There will be **No Impact** on Public Services. No mitigation measures are warranted with respect to public services.

3.15 Recreation

Table 15. Environmental Effects Checklist for Recreation

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
RECREATION --					
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X	
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				X	

Source: Project Description

a, b) The Project will not increase the use of any existing neighborhood or regional parks, nor will the Project include, or require the construction or expansion of recreational facilities due to the nature of the Project. The Project will allow opportunities for recreational hunting on site, this is compatible with current practices on surrounding lands. **No Impact**

3.16 Transportation/Traffic

Table 16. Environmental Effects Checklist for Transportation/Traffic

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
TRANSPORTATION/TRAFFIC -- Would the Project:					
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X		
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X	
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X	
e) Result in inadequate emergency access?				X	
f) Result in inadequate parking capacity?				X	
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X	

Source: Project Description, General Plan

The Property is located approximately 5 miles south of Colusa, California, (see Figure 1) in an unincorporated portion of Colusa County. Surrounding properties are either rice fields or conservation lands. Abel Road, the primary public road in the area, is used primarily by farm equipment. No changes to Abel Road are proposed, and all Project-related activities will occur approximately one mile south of Abel Road on private lands. Traffic on Abel Road is likely to increase temporarily during the construction phases of the Project.

Project Impact: Traffic will be temporarily increased on Able Road, a public access dirt road.

The following measure designed to minimize impacts to traffic systems has been incorporated into the Project design:

Transportation/Circulation Measures

Ingress and egress will occur from the existing access to the property (Abel Rd.) and is anticipated to have the highest frequency the morning and evening when workers arrive and leave the site during construction. All excavated material will be balanced on the site and water for dust control will be obtained from the adjacent canals and drains so that no truck traffic on public roads will be generated by these activities.

- a) Normal mitigation bank operations will not entail changes in population and associated increases in traffic. However, short term traffic associated with initial construction activities will occur. Impacts related to construction shall be limited by the design features discussed above. **Less Than Significant Impact**
- b) The Project will not exceed LOS standards for designated roads or highways. The LOS for Able Road is currently “A” with very low use. Projected traffic levels will not affect the rating (Colusa County Planning Department, pers. comm.). **No Impact**
- c) The Project is not located near an airport or have growth inducing effects and will have no impact on air traffic patterns. **No Impact**
- d) The Project does not propose changes to any public road or generate significant traffic and will not increase hazards to drivers through design features or incompatible uses. **No Impact**
- e, f) The Project will not generate new needs for emergency services or parking and will have no impact on existing emergency service provision. **No Impact**
- g) No impact to alternative transportation services, such as bicycle lanes, is expected as a result of this Project. No alternative transportation routes or facilities are situated near the Project site. **No Impact**

3.17 Utilities and Service Systems

Table 17. Environmental Effects Checklist for Utilities and Service Systems

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
UTILITIES AND SERVICE SYSTEMS -- Would the Project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X	
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X	

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Special Studies Required
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X	
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?				X	
e) Result in a determination by the wastewater treatment provider that serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?				X	
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?				X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X	

Source: Project Description

a-g) The Project will not create new facilities applicable to requirements of the Regional Water Quality Control Board for construction, expansion of new or existing wastewater treatment or storm water drainage. No additional water supply entitlements will be required. The Project will comply with all federal, state, and local regulations related to solid waste. The Project will not create a permanent increase in need for disposal of solid waste or exceed available capacity of landfills. No new requirements of or impacts to utilities and service systems are identified; no mitigation measures are warranted. **No Impact**

4.0 Mandatory Findings of Significance

Table 18. Environmental Effects Checklist for Mandatory Findings of Significance

Effect	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)?			X	
c) Does the Project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?				X

Source: Project Description, Field Survey, General Plan, Literature Review

a) Project impacts to the environment that require mitigation are limited to short-term impacts to air quality arising from construction traffic and potential impacts to habitat (once restored) arising from grazing. Mitigation Measure AIR-1 (Fugitive Dust and Air Pollutants) and Mitigation Measure BIO-1 (Approved Conservation Grazing Plan) are designed to reduce these impacts to **Less Than Significant with Mitigation Incorporated**.

b) The project will convert rice lands into resource conservation lands with a minimized agricultural component. Conversion of agricultural lands could be considered cumulatively significant if other agricultural conversion projects were being considered by Colusa County Planning. According to County Planners no other agricultural conversion projects are being considered at the time. In addition, significant policies are in place with the County that minimizes conversion of agricultural lands to other uses. Finally, no construction or urbanization of the site is planned and the physical environment of the project site will not be altered to render the site unsuitable for agricultural activities. Some agricultural uses of the land will still be in place after project implementation, including livestock grazing. Cumulative impacts are considered **Less Than Significant**.

c) No impacts to substantial impact to humans, either direct or indirect, have been identified. **No Impact**

5.0 Mitigation Measures

Implementation of design measures included in the Project proposal and compliance with existing regulations will greatly minimize Project impacts and result in adverse environmental impacts that are less than significant. Existing environmental regulations applicable to the Project include those of the California Endangered Species Act through the California Department of Fish and Game, air quality requirements through the Colusa County Air Pollution Control District, threatened and endangered species and migratory bird regulations through the US Fish and Wildlife Service, wetland regulations through US Army Corps of Engineers, and water quality certification, erosion control, and hazardous materials regulations administered by the Regional Water Quality Control Board. Implementation of the required mitigation measures, or other equally effective measures, will ensure that the environmental impacts of the Project are not significant.

MITIGATION MEASURE AR-1: GENERAL PLAN AMENDMENT – LAND DESIGNATION AND ZONING AMENDMENT

Prior to the applicant commencing active habitat restoration activities, such as grading, the Board of Supervisors shall approve the proposed General Plan land use designation change from Agriculture General (A-G) to Resource Conservation (R-C) and Zoning Amendment change from Exclusive Agriculture (E-A) to Open Space (O-S).

MITIGATION MEASURE AIR-1: FUGITIVE DUST & AIR POLLUTANTS

Fugitive dust and air pollutant emissions shall be minimized during construction. Construction contracts shall require the primary construction contractor to implement the following practices during all construction activities:

- Construction equipment shall use aqueous diesel fuel and shall be equipped with particulate traps and catalytic converters.
- All disturbed areas, including soil piles, areas that have been graded, and unpaved roads shall be watered twice daily and, when feasible, covered and enclosed.
- When materials are transported off site, loads shall be wetted and covered securely; at least two feet of freeboard shall be maintained.
- Limit traffic speeds on unpaved roads to 15 mph and install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.
- Turn off equipment not in use for more than ten minutes.
- Curtail construction activities when the County's Air Quality Index exceeds 150 (= unhealthy for sensitive groups) for ozone, PM_{2.5}, or PM₁₀.

MITIGATION MEASURE BIO-1: APPROVED CONSERVATION GRAZING PLAN

A conservation grazing plan must be prepared and approved by the USFWS and CDFG. A conservation grazing plan that outlines the timing and intensity of grazing across the site shall be prepared and submitted to representatives of USFWS and CDFG responsible for approval of the Project. The grazing plan shall also detail how potential impacts of grazing on GGS will be monitored and how they will be remediated if found to occur.

6.0 Mitigation Monitoring Plan

Implementation of a mitigation monitoring or reporting program is required under CEQA whenever a public agency approves a Project that may have a significant adverse effect on the environment and the agency requires modification of the Project or implementation of mitigation measures to avoid or substantially lessen the adverse effects of the Project. The requirement to prepare a mitigation monitoring or reporting program applies to Projects for which either a Mitigated Negative Declaration or Environmental Impact Report has been prepared. The objective of the program is to ensure that the required modifications and/or mitigation measures are indeed implemented.

Monitoring will involve review and approval of the construction bid package and other documentation, as well as site inspections, follow-up studies, and/or other actions. Monitoring is divided into three categories related to the timing of activities and implementation of mitigations.

1. **Pre-Project Mitigations.** These are activities that precede any actual land disturbance. Included among these mitigations are the development of drainage, erosion control and vegetation management plans. Also included are the delineation of any wetlands that may be subject to development impact and the establishment of Environmentally Sensitive Areas (ESAs) or Zones (ESZs) around archaeological sites or other designated sensitive areas.
2. **Project-Related Mitigations.** These include implementation of the drainage and erosion control plans and all other measures required to reduce the impacts of development and Project implementation.
3. **Post-Project Mitigations.** These include the maintenance programs necessary to ensure long-term control of erosion, protection of surface water quality in runoff, and protection of plants and wildlife and their habitats within the Project area.

The lead agency (County of Colusa), upon adopting a Mitigated Negative Declaration, will be responsible for any mitigations and shall adopt a mitigation monitoring program which will ensure the successful completion of mitigation measures during Project implementation (Section 21081(a)). The Project proponent shall negotiate with the County to determine a reasonable fee to recover the costs of mitigation monitoring programs (Section 21081(a)). The County will establish success criteria for each required mitigation. All mitigation monitoring reports and forms will be filed with the Planning Director of the County of Colusa.

Mitigation measures forms developed specifically for this Project identify the specific measures recommended for adoption by the applicant, describe the monitoring actions to be taken, and identify the timing and frequency of monitoring actions. In some cases, a single review of written documentation will satisfy the monitoring requirement. In other cases, monitoring may involve site-specific resource surveys followed by periodic field checks during construction and beyond. The required monitoring frequency is a minimum; additional monitoring may be required as a condition of Project permits or may otherwise be warranted, particularly if there are repeated violations of conditions.

Where inspection indicates that mitigation measures have not been fully implemented, the environmental monitor will submit a written description of all noted deficiencies to the lead agency, which will be responsible for working with Project staff and/or contractors to remedy any lack of compliance. Following this, a verification inspection will be conducted and the results documented.

All inspection reports, noncompliance notices, and verification reports prepared following rectification of noncompliance will be kept on file at the Colusa County Planning Commission Office. The documentation will be kept up to date at all times and will be made available to the public upon request.

7.0 References

- Acacia CE. 2011. Phase one environmental site assessment report, Rogers Property 017-110-45 & 019-010-016. Placerville, CA 95667. 140 p.
- Aselmann I, Crutzen PJ. 1989. Global distribution of natural freshwater wetlands and rice paddies, their net primary productivity, seasonality and possible methane emissions. *Journal of Atmospheric Chemistry* 8:307-358.
- CBEC Inc. 2012. Colusa Basin Mitigation Bank project flood impact assessment draft technical memorandum. 5 p. plus attachments.
- California Department of Fish and Game. 2000. Recommended timing and methodology for Swainson's Hawk nesting surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee, March 31, 2000. 5 p.
- Colusa County, California California Air Resources Board. 2012. Current ambient air quality standards and state and federal attainment designations. Available online at: arb.ca.gov.
- County of Colusa. 2012. 2030 General Plan. Colusa County Department of Planning and Building.
- Division of Land Resource Protection. 2011. Colusa County Important Farmlands dataset. Farmland Mapping and Monitoring Program. Available online at: <http://www.conservation.ca.gov/DLRP/fmmp/Pages/Index.aspx>
- Espino L. 2012. "Ricelands contribution to greenhouse gas production." University of California Cooperative Extension, Colusa County. October, 24, 2012. <http://www.ccolusa.ucnr.edu>.
- Westervelt Ecological Services. 2012. Colusa Basin Mitigation Bank biological assessment. 6 p. plus attachments.
- US Army Corps of Engineers. 2008. Wetland delineation manual and the regional supplement to the Corps of Engineers wetland delineation manual: Arid West Region, Version 2.0.
- US Fish and Wildlife Service. 1997. Appendix C. Standard avoidance and minimization measures during construction activities in Giant Garter Snake (*Thamnophis gigas*) habitat. Programmatic consultation with the US Army Corps of Engineers 404 permitted projects with relatively small effects on the giant garter snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California. 2 p.
- US Fish and Wildlife Service. 1999. Draft recovery plan for the giant garter snake (*Thamnophis gigas*). US Fish and Wildlife Service, Portland, Oregon. Ix _ 192 p.
- US Fish and Wildlife Service. 2010. Suggested priority of migratory bird conservation actions for projects.

Peak & Associates, Inc. 2012. Determination of eligibility and effect for the Colusa Basin Mitigation Bank Project area Colusa County, California. El Dorado Hills, California 95762. 20 p. plus Appendices.

8.0 Report Preparation Personnel and Persons Contacted

8.1 Report Preparation Personnel

Eco-Analysts

Albert J. Beck, PhD, Principal and Senior Analyst, Principal Biologist

Lauren Wemmer, PhD, Senior Biologist, Ornithologist

Rodney Lacey, BS, Environmental Analyst, Botanist

Anita Grey, BS, Environmental Analyst

8.2 Persons and Organizations Contacted

Rob Capriola, Westervelt Ecological Services, 600 North Market Boulevard
Suite 3, Sacramento, CA 95834

Kent Johanns, Associate Planner, County of Colusa, 220 12th Street, Colusa, CA

Mike Peters, Manager, Colusa National Wildlife Refuge, Sacramento NWR Complex, 752 County
Road 99W, Willows, CA 95988

James Herota, Staff Environmental Scientist, Central Valley Flood Protection Board, 3310 El
Camino Avenue, Room 151, Sacramento, CA 95821

**Response to Comments Received on the
Draft Mitigated Negative Declaration, Westervelt Ecological Services Mitigation Bank Project
SCH No. 2013012062, Colusa County**

The following comments were received during the Public Review period of the Draft Mitigated Negative Declaration (MND), Westervelt Ecological Services Mitigation Bank Project (Project). The concerns expressed in the comment letters have been described below, with responses following. The complete comment letters are appended to this document.

No comments received warrant substantial changes to the MND. The responses given below provide the additional details or clarifications requested by the commenters and shall be appended to the final document.

Commenter 1: Trevor Cleak, Environmental Scientist, Central Valley Regional Water Quality Control Board. Letter dated 15 February 2013.

Responder's notes: This letter appears to be a standard agency response and does not include any comments specific to this project.

Comment 1: (pg. 1, paragraph 3) “Dischargers whose projects disturb one or more acres of soil...are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ.”

Response 1: The project will disturb one or more acres of soil and will require a Construction General Permit. The need for this permit is recognized on Page 3 of the MND. As is standard practice, this permit will be applied for after a federal 404 Permit for Wetland Impacts from the U.S. Army Corps of Engineers (USACOE) is obtained. The Final Draft Initial Study will be modified to reflect this permit in Section 1.3 (Permits and Approvals).

Comment 2: (pg. 2, paragraph 1) “The Phase 1 and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP).”

Response 2: Measures designed to reduce pollutants and runoff flows from the project are described in Section 1.2.1 (Elements Incorporated into the Project, MND Pg. 3). A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and submitted for CVRWQCB review and a Clean Water Certification (MND Pg. 9) obtained prior to ground alterations.

Comment 3: (pg. 2, paragraph 3) “Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.”

Response 3: The Project is not associated with an industrial site. No action required.

Comment 4: (pg. 2, paragraph 5) “If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE).”

Response 4: The Applicant recognized the need for a Section 404 Permit (MND Pg. 9) and has submitted a Section 404 permit application to USACOE. The project will be covered as a NWP 27.

Comment 5: (pg. 3, paragraph 1) “If an USACOE permit, or any other federal permit, is required...then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities.”

Response 5: USACOE has determined that federally jurisdictional wetlands and waters are present and federal permits will be required. Accordingly, an application for a Water Quality Certification has been submitted to the regional water board.

Comment 6: (pg. 3, paragraph 3) “If USACOE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present..., the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by the Central Valley Water Board.”

Response 6: Comment Noted. USACOE has determined that only federally jurisdictional wetlands and waters are present and federal permits will be required. Accordingly, the permitting conditions described in Comment 5 are applicable and the conditions described in Comment 6 are not.

Commenter 2: James Herota, Staff Environmental Scientist, Central Valley Flood Protection Board. Letter dated 15 February 2013.

Responder’s notes: This letter appears to be a standard agency response and does not include any comments specific to this project.

Comment 1: (pg. 1, paragraph 3) “A Board permit is required prior to starting work within the Board’s jurisdiction for the following [multiple paragraphs describing conditions follow]”

Response 1: A CVFPB Encroachment Permit is recognized as being required (MND Pg. 9). The Applicant has submitted a permit application to the CVFPB and has met with staff several times.

Comment 2: (pg. 2, paragraph 3) “The project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts.”

Response 2: Measures designed to avoid and minimize potential impacts, including impacts to the channel and levee, are described in Section 1.2.1 (MND Pg. 9) and Section 3.9 (MND Pg. 37). A hydraulic analysis was completed that showed negligible effects of the project if built and managed as designed. The CVFPB will review the project design, including the SWPPP, prior to issuance of an Encroachment Permit. These steps will ensure that hydraulic impacts to the channel and levee are prevented and/or reduced to the maximum extent possible.

Commenter 1: Tina Bartlett, Regional Manager, Department of Fish and Wildlife. Letter dated 22 February 2013.

Comment 1: Discrepant Information (pg. 2, paragraph 3)

“Although the Project location map indicates the boundary of the property, throughout the IS/MND and supporting documents the "property boundary" is referred to as the 'Project boundary', 'Project site,' 'site', 'Project area', 'assessment area', 'study area', 'action area', 'Mitigation Site', 'Mitigation Bank', or 'Colusa Basin Mitigation Bank'. The impact area from the Project should be consistent and clearly defined as it is referenced throughout the final IS/MND.”

Response 1: For the purposes of this CEQA document, the area within the “Property Boundary as depicted in Figures 2,4, and 5 is synonymous and interchangeable with the terms 'Project boundary', 'Project site, ' 'site', 'Project area', 'assessment area', 'study area', 'action area', 'Mitigation Site', 'Mitigation Bank', or 'Colusa Basin Mitigation Bank'. This area defines the impact area for the Project.

Comment 2: (pg. 2, paragraph 4) “In the supporting documents of the IS/MND, there is a discrepancy between the year in which the GGS survey was conducted. The Biological Assessment Report from WES indicates that a protocol-level GGS survey was conducted in 2010; whereas, the GGS survey results from Eric Hansen indicated that the GGS survey was conducted in 2011.”

Response 2: This discrepancy was a typographical error in the Biological Assessment Report written by Westervelt Ecological Services. The GGS survey results from Eric Hansen are in fact from a survey completed in the late summer of 2011.

Comment 3: (pg. 3, paragraph 2) Jurisdictional Riparian Habitat

“The impacts from the installation and replacement of the outfall structures include but are not limited to: soil compaction or other disturbance, loss or decline of instream channel habitat, disruption to nesting birds, reptiles and other wildlife. The IS/MND should include specific, enforceable measures to be carried out onsite or within the same stream system that will avoid, minimize and/or mitigate for project impacts to the natural resources. These measures may include, but are not limited to, the following:

1. Protection and maintenance of the riparian, wetland, stream or lake systems to ensure a "no-net-loss" of habitat value and acreage. Vegetation removal should not exceed the minimum necessary to complete operations;
2. Cover Excavations and open pipes. Unattended, open excavations shall be properly covered to prevent wildlife entrapment. Open ends of pipes, conduits and similar materials shall be covered to exclude wildlife. Such materials shall be checked for signs of wildlife prior to disturbance;
3. Delineation of buffers along streams and wetlands to provided adequate protection to the aquatic resource. No grading or construction activities should be allowed within these buffers;
4. Placement of construction materials, spoils or fill, so that they cannot be washed into a stream or lake;

5. Prevention of downstream sedimentation and pollution. Provisions may include but not be limited to oil/grit separators, detention ponds, buffering filter strips, silt barriers, etc., to prevent downstream sedimentation and pollution;
6. Restoration plans must include quantifiable performance standards and pertinent information such as the types of vegetation to be planted, the timing of implementation, and contingency plans if the replanting is not successful. Restoration of disturbed areas should utilize native vegetation.

The use of products with plastic monofilament or cross joints in the netting that are bound/stitched (such as found in straw wattles/fiber rolls and some erosion control blankets) which may cause entrapment of wildlife, should not be used for erosion control. Additionally, any non-biodegradable materials used for erosion control, such as silt fencing, should be removed upon project completion.”

Response 3: The Applicant is applying for a CDFW Lake and Streambed Alteration Permit (1600 Agreement) that covers the installation of the outfall structures. The Applicant agrees to incorporate all of the above measures in the permit conditions for the outfall structure replacements.

Comment 4: (pg. 4, paragraph 1) Special Status Species

“The IS/MND indicates that several State-listed species may occur in the vicinity of the proposed Project; including giant garter snake, Swainson's hawk and tricolored blackbird. It is unlawful to take a State-listed endangered or threatened species (FCG §2050 et seq.). Take is defined as "hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture or kill" (FGC §86). California Endangered Species Act (CESA) take authorization, should be obtained if the proposed Project has the potential to result in take of a State-listed plant or wildlife species, either during construction, or over the life of the Project. Long-term maintenance and management activities may also have the potential to take giant garter snake, Swainson's hawk and tricolored blackbird.

Issuance of a CESA permit is subject to CEQA documentation; therefore the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the proposed Project will impact CESA listed species, early consultation is encouraged, as significant modification to the proposed Project and mitigation measures may be required in order to obtain a CESA permit. A CESA permit may only be obtained if the impacts of the authorized take of the species are minimized and fully mitigated and adequate funding has been ensured to implement the mitigation measures.”

Response 4: While State-listed species may occur in the vicinity of the proposed Project, the site was selected because it does not currently have species occupation, yet has good potential for those species once suitable habitat is re-established there. Additionally, the Project has incorporated avoidance and minimization measures to address any indirect effects on State-listed species and the Project applicant has indicated a willingness to implement further measures recommended by the Department of Fish and Wildlife.

The nature of this Project is to create a beneficial effect on State-listed species, with a particular focus on the giant garter snake. Every detail of the design, implementation, management, and monitoring is being overseen by the Department and the US Fish and Wildlife Service. Consequently, the very purpose and nature of the Project is to both avoid take and to benefit special-status species in perpetuity.

If further precautions are identified through the project review and implementation process, the applicant agrees to comply with any further measures that might be required in connection with CESA compliance.

Comment 5: (pg. 4, paragraph 4) Nesting Riparian and Migratory Species

“The Species Avoidance Measures state that a pre-construction survey for active nests in the project site shall be conducted by a qualified biologist no more than 30 days prior to the initiation of construction activities. The 30-day window identified in the Species Avoidance Measures is too long and does not ensure that nests would not be disturbed or removed once construction begins. This should be changed to no more than 15 days prior to the onset of ground disturbance or vegetation removal. During project implementation and within the nesting season, if construction should halt for more than 15 days, an additional survey for active nests should be conducted.”

Response 5: The Applicant agrees to conduct the pre-construction survey for active nests of riparian and migratory species in the Project site no more than 15 days prior to the onset of ground disturbance or vegetation removal. Additionally, the applicant agrees that during project implementation and within the nesting season, if construction should halt for more than 15 days, an additional survey for active nests should be conducted.

Comment 6: (pg. 4, paragraph 5)

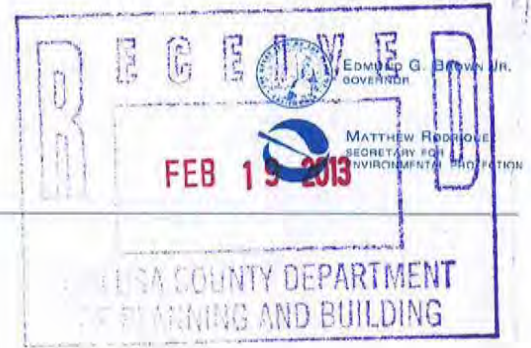
Long-term maintenance and management activities have the potential to impact nesting birds. The CDFW recommends that if maintenance activities such as prescribed burns, mowing or disking is conducted outside of the nesting season (approximately between March 1st and September 1st). If activities cannot be conducted outside the nesting season then a nest survey will be conducted within a 250-foot buffer of the maintenance activities. If active nests are found, then an exclusionary buffer around the nest will be maintained until the chicks have fledged.

Response 6: The Applicant agrees to conduct maintenance activities such as prescribed burns, mowing or disking outside of the nesting season (approximately between March 1st and September 1st). If activities cannot be conducted outside the nesting season then a nest survey will be conducted within a 250-foot buffer of the maintenance activities. If active nests are found, then an exclusionary buffer around the nest will be maintained until the chicks have fledged.

Comment 7: (pg. 5, paragraph 2)

“All measures to protect raptors should be performance-based specifically on the type, extent timing, duration, and visibility of disturbance, as well as the sensitivity of the species. While some birds may tolerate disturbance within 250 feet of construction activities, other birds may have a different disturbance threshold and "take" (FGC §2081 and §3503.5) could occur if the temporary disturbance buffers are not designed to reduce stress to that individual pair. The CDFW recommends including performance-based protection measures for avoiding all nests protected under the Migratory Bird Treaty Act and FGC §3503.5. A 250-foot exclusion buffer may be sufficient; however that buffer may need to be increased based on the birds tolerance level to the disturbance.”

Response 7: The Applicant agrees to implement measures to protect raptors which are performance-based, specifying the type, extent timing, duration, and visibility of disturbance, as well as the sensitivity of the species. Should construction activities cause the nesting migratory bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest; then an exclusionary buffer will be increased such that activities are far enough from the nest to stop this agitated behavior by the raptor. The exclusionary buffer should remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.



Central Valley Regional Water Quality Control Board

15 February 2013

Kent Johanns
County of Colusa
220 12th Street
Colusa, CA 95932

CERTIFIED MAIL
7012 0470 0000 9904 4670

COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT MITIGATED NEGATIVE DECLARATION, WESTERVELT ECOLOGICAL SERVICES MITIGATION BANK PROJECT, SCH NO. 2013012062, COLUSA COUNTY

Pursuant to the State Clearinghouse's 25 January 2013 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Mitigated Negative Declaration* for the Westervelt Ecological Services Mitigation Bank Project, located in Colusa County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

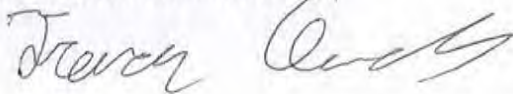
Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.



Trevor Cleak
Environmental Scientist

cc: State Clearinghouse Unit, Governor’s Office of Planning and Research, Sacramento

CENTRAL VALLEY FLOOD PROTECTION BOARD

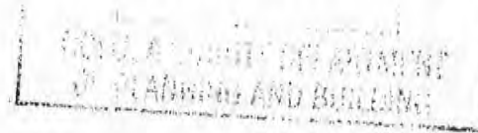
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682



February 15, 2013

Mr. Kent Johanns
Colusa County
220 12th Street
Colusa, California 95932

FEB 19 2013



Subject: Westervelt Ecological Services Mitigation Bank
SCH Number: 2013012062
Document Type: Mitigated Negative Declaration

Dear Mr. Johanns:

Staff of the Central Valley Flood Protection Board (Board) has reviewed the subject document and provides the following comments:

The proposed project is located adjacent to or within the Colusa Basin Drain which is under the jurisdiction of the Central Valley Flood Protection Board. The Board is required to enforce standards for the construction, maintenance and protection of adopted flood control plans that will protect public lands from floods. The jurisdiction of the Board includes the Central Valley, including all tributaries and distributaries of the Sacramento River, the San Joaquin River, and designated floodways (Title 23 California Code of Regulations (CCR), Section 2).

A Board permit is required prior to starting the work within the Board's jurisdiction for the following:

- The placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (CCR Section 6);
- Existing structures that predate permitting or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (CCR Section 6);
- Vegetation plantings will require the submission of detailed design drawings; identification of vegetation type; plant and tree names (i.e. common name and scientific name); total number of each type of plant and tree; planting spacing and irrigation method that will be utilized within the project area; a complete vegetative management plan for maintenance to prevent the interference with flood control, levee maintenance, inspection, and flood fight procedures (CCR Section 131).

Mr. Kent Johanns
February 15, 2013
Page 2 of 2

Vegetation requirements in accordance with Title 23, Section 131 (c) states "Vegetation must not interfere with the integrity of the adopted plan of flood control, or interfere with maintenance, inspection, and flood fight procedures."

The accumulation and establishment of woody vegetation that is not managed has a negative impact on channel capacity and increases the potential for levee over-topping. When a channel develops vegetation that then becomes habitat for wildlife, maintenance to initial baseline conditions becomes more difficult as the removal of vegetative growth is subject to federal and State agency requirements for on-site mitigation within the floodway.

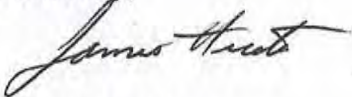
Hydraulic Impacts - Hydraulic impacts due to encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. Off-site mitigation outside of the State Plan of Flood Control should be used when mitigating for vegetation removed within the project location.

The permit application and Title 23 CCR can be found on the Central Valley Flood Protection Board's website at <http://www.cvfpb.ca.gov/>. Contact your local, federal and State agencies, as other permits may apply.

The Board's jurisdiction, including all tributaries and distributaries of the Sacramento River and the San Joaquin River, and designated floodways can be viewed on the Central Valley Flood Protection Board's website at <http://gis.bam.water.ca.gov/bam/>.

If you have any questions, please contact me by phone at (916) 574-0651, or via email at jherota@water.ca.gov.

Sincerely,



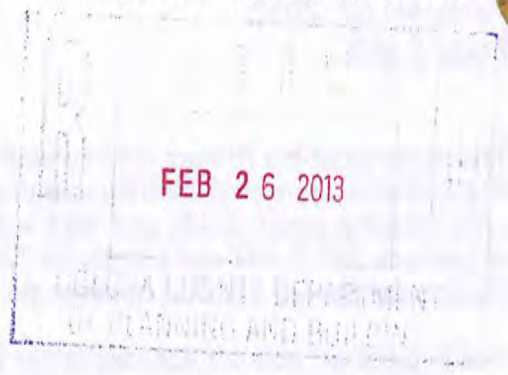
James Herota
Staff Environmental Scientist
Projects and Environmental Branch

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814



California Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 North Central Region
 1701 Nimbus Road
 Rancho Cordova, CA 95670
 (916) 358-2900
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
 CHARLTON H. BONHAM, Director



February 22, 2013

Kent Johanns
 County of Colusa
 220 12th Street
 Colusa, CA 95932

Subject: Westervelt Ecological Services Mitigation Bank, Initial Study/Mitigated Negative declaration (SCH# 2013012062), Colusa County

Dear Mr. Johanns:

On January 28, 2013, the Department of Fish and Wildlife (CDFW) received a Notice of Completion from the County of Colusa regarding an Initial Study/ Mitigated Negative Declaration (IS/MND) for the Westervelt Ecological Services (WES), Mitigation Bank (Project). The CDFW appreciates the Lead Agency's willingness to accept comments on the Project until February 25, 2013. The comments provided herein are based on our review of the following:

- Public Draft Initial Study/Proposed Mitigated Negative Declaration for the Colusa Basin Mitigation Bank Project;
- Preliminary Jurisdictional Wetland Delineation for the Colusa Basin Mitigation Bank Project;
- Biological Assessment Report for the Colusa Basin Mitigation Bank Project by WES; and
- Results of Year 2011 Giant Garter Snake (*Thamnophis gigas*) Survey at the Proposed Colusa Basin Mitigation Bank, Colusa County, CA by Eric C. Hansen 2011.

As a trustee for California's fish and wildlife resources, the CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and their habitat. As a responsible agency, the CDFW administers the California Endangered Species Act (CESA), the Native Plant Protection Act, and other provisions of the Fish and Game Code (FGC) that conserve the State's fish and wildlife public trust resources.

The CDFW offers the following comments and recommendations on the proposed Project in our role as a trustee and responsible agency pursuant to the California Environmental Quality Act (CEQA), California Public Resource Code §21000 et seq.

The CDFW's primary concerns relate to the jurisdictional riparian habitat, as explained below, and how the Project as proposed may lead to additional indirect impacts to special status species, such as nest abandonment by Swainson's hawk (*Buteo swainsoni*) or tricolored blackbird (*Agelaius tricolor*).

Conserving California's Wildlife Since 1870

The purpose of the Project is to convert the property (Assessor's Parcel Number 017-110-045 & 019-010-016) currently used for rice production into a mitigation bank for giant garter snake (*Thamnophis gigas*; GGS) and "404 wetlands". The Project is located in the County of Colusa at Latitude 39° 7' 0"N and Longitude 122° 0' 30"W in the *Arbuckle, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle.

The Project will convert approximately 160 acres of the property into a Mitigation Bank for GGS and 404 wetlands. The remaining 33.5 acres of the property will be developed as dedicated GGS habitat mitigation for the Maxwell Public Utility District Treated Effluent Re-Use Project. The Project will be developed in two phases beginning in 2013. In the summer of 2013, 33.5 acres of the property will be converted to managed-marsh and upland GGS habitat. The balance of the property will remain in rice productivity until 2015 when the remaining area will be converted to managed marsh and upland habitat for GGS and wetlands to serve as a mitigation bank for Colusa County and surrounding counties.

Discrepant Information

The CDFW finds that discrepancies throughout the IS/MND make it difficult to effectively analyze the impacts of the Project. The Project title for the Notice of Completion and Environmental Document Transmittal conflicts with the Project title for the IS/MND. Although the Project location map indicates the boundary of the property, throughout the IS/MND and supporting documents the "property boundary" is referred to as the 'Project boundary', 'Project site,' 'site', 'Project area', 'assessment area', 'study area', 'action area', 'Mitigation Site', 'Mitigation Bank', or 'Colusa Basin Mitigation Bank'. The impact area from the Project should be consistent and clearly defined as it is referenced throughout the final IS/MND.

In the supporting documents of the IS/MND, there is a discrepancy between the year in which the GGS survey was conducted. The Biological Assessment Report from WES indicates that a protocol-level GGS survey was conducted in 2010; whereas, the GGS survey results from Eric Hansen indicated that the GGS survey was conducted in 2011. The timing of the GGS survey should be consistent in the final IS/MND.

The Project description states that approximately 118 acres of the property will be developed as GGS credits, 33.5 acres of the property will be developed as dedicated GGS habitat mitigation for the Maxwell Public Utility District Treated Effluent Re-Use Project, and 42 acres of the property will be developed as wetland credits. This is inconsistent with the proposal to the Interagency Review Team, in which the credits were reported at 122.1 acres for GGS habitat and 40.8 acres for 404 wetlands. The final IS/MND should reconcile these discrepancies.

Jurisdictional Riparian Habitat

The IS/MND also does not state which features are under the jurisdiction of the CDFW, nor does it state that a Lake or Streambed Alteration (LSA) Agreement is needed. Notification to the CDFW is required, pursuant to FGC §1600 et seq., for proposed projects that may: divert, obstruct, or change the natural flow or the bed, channel or bank of any river, stream, or lake; use material from a streambed; or result in the disposal or deposition of debris, waste, or other material where it may pass into any river stream, or lake. The Project will result in alterations to

the bank of the Colusa Trough and Cortina Creek when constructing the new water features. In issuing a LSA Agreement, the CDFW will be acting as a Responsible Agency pursuant to CEQA. The CDFW is required by California Code of Regulations Title 14 Chapter 3 (CEQA Guidelines) §15096 to review the CEQA document certified by the Lead Agency approving the Project and, from that review, to make certain findings concerning the activities' potential to cause significant, adverse environmental effects. It is, therefore, important that the IS/MND address all of the potential biological streambed alteration impacts and propose feasible mitigation. This will reduce the need for the CDFW to require additional environmental review for preparation of the LSA Agreement.

The impacts from the installation and replacement of the outfall structures include but are not limited to: soil compaction or other disturbance, loss or decline of instream channel habitat, disruption to nesting birds, reptiles and other wildlife. The IS/MND should include specific, enforceable measures to be carried out onsite or within the same stream system that will avoid, minimize and/or mitigate for project impacts to the natural resources. These measures may include, but are not limited to, the following:

1. Protection and maintenance of the riparian, wetland, stream or lake systems to ensure a "no-net-loss" of habitat value and acreage. Vegetation removal should not exceed the minimum necessary to complete operations;
2. Cover Excavations and open pipes. Unattended, open excavations shall be properly covered to prevent wildlife entrapment. Open ends of pipes, conduits and similar materials shall be covered to exclude wildlife. Such materials shall be checked for signs of wildlife prior to disturbance;
3. Delineation of buffers along streams and wetlands to provided adequate protection to the aquatic resource. No grading or construction activities should be allowed within these buffers;
4. Placement of construction materials, spoils or fill, so that they cannot be washed into a stream or lake;
5. Prevention of downstream sedimentation and pollution. Provisions may include but not be limited to oil/grit separators, detention ponds, buffering filter strips, silt barriers, etc., to prevent downstream sedimentation and pollution;
6. Restoration plans must include quantifiable performance standards and pertinent information such as the types of vegetation to be planted, the timing of implementation, and contingency plans if the replanting is not successful. Restoration of disturbed areas should utilize native vegetation.

The use of products with plastic monofilament or cross joints in the netting that are bound/stitched (such as found in straw wattles/fiber rolls and some erosion control blankets) which may cause entrapment of wildlife, should not be used for erosion control. Additionally, any non-biodegradable materials used for erosion control, such as silt fencing, should be removed upon project completion.

Special-status Species

The IS/MND indicates that several State-listed species may occur in the vicinity of the proposed Project; including giant garter snake, Swainson's hawk and tricolored blackbird. It is unlawful to take a State-listed endangered or threatened species (FCG §2050 et seq.). Take is defined as "hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture or kill" (FGC §86). California Endangered Species Act (CESA) take authorization, should be obtained if the proposed Project has the potential to result in take of a State-listed plant or wildlife species, either during construction, or over the life of the Project. Long-term maintenance and management activities may also have the potential to take giant garter snake, Swainson's hawk and tricolored blackbird.

Issuance of a CESA permit is subject to CEQA documentation; therefore the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the proposed Project will impact CESA listed species, early consultation is encouraged, as significant modification to the proposed Project and mitigation measures may be required in order to obtain a CESA permit. A CESA permit may only be obtained if the impacts of the authorized take of the species are minimized and fully mitigated and adequate funding has been ensured to implement the mitigation measures. The CDFW may only issue a CESA permit if the CDFW determines that issuance of the permit does not jeopardize the continued existence of the species. The CDFW will make this determination based on the best scientific information available, and shall include consideration of the species' capability to survive and reproduce, including the species known population trends and known threats to the species. Issuance of a CESA permit may take up to 180 days from receipt of an application from the applicant.

Nesting Migratory Birds and Raptors

As indicated in the IS/MND several trees are located within the vicinity of the Project and have the potential to support nesting birds or raptors. Swainson's hawk and tricolored blackbird could occur in the project vicinity and are of specific concern. Noise impacts from the Project occurring during the nesting season (approximately between March 1st and September 1st), along with construction activities could result in disturbance to raptors and migratory bird nests. Raptors and other migratory birds are protected under the Migratory Bird Treaty Act and FGC §3503.5. If ground disturbance or vegetation removal is proposed during the nesting season, a survey for nests should be conducted by a qualified biologist to reduce potential take of nests.. It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (FGC §3503).

The Species Avoidance Measures state that a pre-construction survey for active nests in the project site shall be conducted by a qualified biologist no more than 30 days prior to the initiation of construction activities. The 30-day window identified in the Species Avoidance Measures is too long and does not ensure that nests would not be disturbed or removed once construction begins. This should be changed to no more than 15 days prior to the onset of ground disturbance or vegetation removal. During project implementation and within the nesting season, if construction should halt for more than 15 days, an additional survey for active nests should be conducted.

Long-term maintenance and management activities have the potential to impact nesting birds. The CDFW recommends that if maintenance activities such as prescribed burns, mowing or

disking is conducted outside of the nesting season (approximately between March 1st and September 1st). If activities cannot be conducted outside the nesting season then a nest survey will be conducted within a 250-foot buffer of the maintenance activities. If active nests are found, then an exclusionary buffer around the nest will be maintained until the chicks have fledged.

All measures to protect raptors should be performance-based, specifically on the type, extent timing, duration, and visibility of disturbance, as well as the sensitivity of the species. While some birds may tolerate disturbance within 250 feet of construction activities, other birds may have a different disturbance threshold and "take" (FGC §2081 and §3503.5) could occur if the temporary disturbance buffers are not designed to reduce stress to that individual pair. The CDFW recommends including performance-based protection measures for avoiding all nests protected under the Migratory Bird Treaty Act and FGC §3503.5. A 250-foot exclusion buffer may be sufficient; however that buffer may need to be increased based on the birds tolerance level to the disturbance. Below is an example of a performance-based protection measure:

Should construction activities cause the nesting migratory bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest; then an exclusionary buffer will be increased such that activities are far enough from the nest to stop this agitated behavior by the raptor. The exclusionary buffer should remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

Conclusion

Thank you for considering our concerns with the adequacy of the IS/MND. The CDFW personnel are available for consultation regarding biological resources and strategies to minimize impacts. If you have questions please contact Tanya Sheya, Environmental Scientist, by e-mail at Tanya.Sheya@wildlife.ca.gov or by phone at (916) 358-2953.

Sincerely,



Tina Bartlett
Regional Manager

cc: Tanya Sheya
Isabel Baer
Jeff Drongesen
Department of Fish and Wildlife

State Clearinghouse

Appendix F
Errata to the Public Draft Initial Study

Errata – Colusa Basin Mitigation Bank Project Public Draft Initial Study

Several minor errors and omissions have been identified in the Colusa Basin Mitigation Bank Public Draft Initial Study (PDIS) in the course of public and administrative review. The changes described below shall be considered as replacements to the original text of the PDIS. The errors and changes are as follows:

1. Throughout the document, California Department of Fish and Game, or CDFG, is referenced. The California Department of Fish and Game changed its name to California Department of Fish and Wildlife on January 1, 2013, during the public draft period of the Initial Study. All references to California Department of Fish and Game and CDFG should be considered to refer to the California Department of Fish and Wildlife.
2. In Section 1.3: Permit and Approvals, pp. 9-10, the list of permits and approvals should include a 1600 Series Streambed Alteration Permit issued by California Department of Fish and Wildlife.
3. In Section 1.3: Permit and Approvals, pp. 9-10, the applicant is being required to submit an application for a Minor Use Permit to allow seasonal hunting activities to comply with Williamson Act program.
4. In Section 2.0: Environmental Setting, p. 15, the first sentence should read “The assessment area is located approximately 5.5 miles south of Colusa, California...,” not 9 miles.
5. In Section 3.2: Agricultural Resources, p. 17 (last paragraph), the project site is identified as being currently under a Williamson Act contract. The contract should be specifically described as a Farmland Security Zone (Super Williamson Act) contract rather than a traditional Williamson Act contract because the project site lies within a County-designated Farmland Security Zone. The two contract types are similar, and the impact analysis is unaffected by this clarification.
6. In Section 3.9: Hydrology and Water Quality, p. 37, checklist item f and p. 40, paragraph 4, the box “less than significant” should be checked rather than “less than significant with mitigation incorporated.” The minimization measure incorporated as a condition of approval (discussion, p. 40) is not considered a mitigation measure as it is already part of the project description. Paragraph 4 should conclude “**Less than Significant Impact.**”

Notice of Determination

Rec# 439531
Doc# 13-06

ENDORSED

To: Office of Planning and Research
For U.S. Mail: P.O. Box 3044
Sacramento, CA 95812-3044
Street Address: 1400 Tenth St.
Sacramento, CA 958-14

From: Public Agency: Colusa County Department
of Planning and Building
Address: 220 12th Street
Colusa, CA 95932

FILED

MAR 07 2013

County Clerk
County of Colusa
546 Jay Street, Suite 200
Colusa, CA 95932

KATHLEEN MORAN
COLUSA COUNTY CLERK-RECORDER

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

Project Title: ED #12-12, Westervelt Ecological Services (Greg D. Young), General Plan Amendment #12-6-1 and Zoning Amendment #12-6-1

Project Applicant: Westervelt Ecological Services (Greg D. Young)
Address: 600 N. Market Street, Suite 3, Sacramento, CA 95834
Phone: 916-646-3644

2013012062 State Clearinghouse Number (If submitted to Clearinghouse)
Stephen Hackney Lead Agency Contact Person
(530) 458-0480 Area Code/Telephone/Extension

Project Location (include county): Located approximately 5.5-miles south of the City of Colusa adjacent to the southeast corner of the Colusa National Wildlife Refuge and west of the Colusa Basin Drain, identified as APN 017-110-045 and 019-010-016, Colusa County.

Project Description: A General Plan Amendment from Agriculture General (AG) to Resource Conservation (RC) and a Zoning Amendment from Exclusive Agriculture (E-A) to Open Space (O-S) to allow the creation of a mitigation bank (habitat restoration) affecting approximately 215±acres.

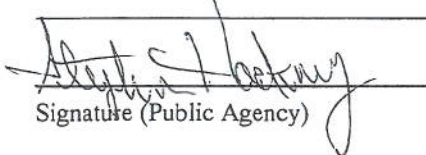
This is to advise that the Colusa County Planning Commission (Lead Agency) has approved the above described project on: March 4, 2013 (Date);

and has made the following determinations regarding the above described project:

- 1. The project [will will not] have a significant effect on the environment.
- 2. An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA. A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
- 3. Mitigation measures [were were not] made a condition of the approval of the project.
- 4. A statement of Overriding Considerations [was was not] adopted for this project.
- 5. Findings [were were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the Negative Declaration, is available to the General Public at:

Colusa County Department of Planning and Building, 220 – 12th Street, Colusa, CA 95932


Signature (Public Agency)

March 4, 2013
Date

Director of Planning and Building
Title

Date received for filing at OPR: _____

State of California—Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
2013 ENVIRONMENTAL FILING FEE CASH RECEIPT

RECEIPT# **439531**
 STATE CLEARING HOUSE # (if applicable)

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY

LEAD AGENCY: Colusa County Planning and Building
 COUNTY/STATE AGENCY OF FILING: Colusa County Clerk-Recorder
 PROJECT TITLE: ED #12.12, Westervest Ecological Services (Greg Young) General Plan, Westervest Ecological Services
 PROJECT APPLICANT NAME: Westervest Ecological Services
 PROJECT APPLICANT ADDRESS: 600 N. Market St. Ste 3
 CITY: Sacramento STATE: CA ZIP CODE: 95834
 PHONE NUMBER: (916) 646-3644
 DATE: 3-7-2013
 DOCUMENT NUMBER: 13-06

PROJECT APPLICANT (Check appropriate box):
 Local Public Agency
 School District
 Other Special District
 State Agency
 Private Entity

CHECK APPLICABLE FEES:

<input type="checkbox"/> Environmental Impact Report (EIR)	\$2,995.25	\$
<input checked="" type="checkbox"/> Mitigated/Negative Declaration (ND)(MND)	\$2,156.25	\$ <u>2,156.25</u>
<input type="checkbox"/> Application Fee Water Diversion (State Water Resources Control Board Only)	\$850.00	\$
<input type="checkbox"/> Projects Subject to Certified Regulatory Programs (CRP)	\$1,018.50	\$
<input checked="" type="checkbox"/> County Administrative Fee	\$50.00	\$ <u>50.00</u>
<input type="checkbox"/> Project that is exempt from fees		
<input type="checkbox"/> Notice of Exemption		
<input type="checkbox"/> DFW No Effect Determination (Form Attached)		
<input type="checkbox"/> Other		

PAYMENT METHOD: CR# 1125 & CK# 1126
 Cash
 Credit
 Check
 Other
 TOTAL RECEIVED \$ 2,206.25

SIGNATURE: X Jackie Sanchez
 TITLE: Deputy Clerk

TRANSMITTAL



April 15, 2013

Gary Lemon

Project Manager / Engineer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Trevor Cleak, Environmental Scientist
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-8114

Tanya Sheya
California Department of Fish and Wildlife
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Please find the attached a CEQA Notice of Determination (NOD) for the Colusa Basin Mitigation Bank which refers to the Initial Study/Mitigated Negative Declaration approved by the Colusa County Planning Commission on March 4, 2013. The 30 day appeal period closed April 6, making the NOD final. We believe that this fulfills the requirement for completion of CEQA before our respective permits can be finalized with your agencies.

Please contact me immediately if you need further information in order to process our permits. We are set to go to construction at the end of may and desire to have all permits in hand prior to that date in order to plan for any pre-construction surveys, documentation, or notifications.

Rob Capriola
Westervelt Ecological Services
600 N. Market Boulevard, Ste. 3
Sacramento, CA 95835

Exhibit D-5 LONG TERM MANAGEMENT PLAN

I	Introduction.....	3
A	Purpose of Establishment.....	3
B	Purpose of this Long Term Management Plan	3
C	Bank Manager and Responsibilities.....	3
II	Property Description	4
A	Setting and Location	4
B	History and Land Use	5
C	Cultural Resources	5
D	Hydrology and Topography	5
E	Soils.....	10
F	Existing Easements and Mineral Rights	10
G	Adjacent Land Uses	10
III	Habitat and Species Descriptions.....	12
A	Biological Resources Survey of Bank Property.....	12
B	Summary of Bank Property Development Plan.....	13
C	Endangered and Threatened Species	14
IV	Management and Monitoring.....	14
A.	Habitat Management and Species Elements	17
Element A.1	Seasonal Wetlands (Waters of the US including Wetlands).....	17
Element A.2	Giant Garter Snake Habitat.....	18
Element A.3	“Non-listed” Wildlife Species	21
Element A.4	Non-native Invasive Species.....	21
Element A.5	Mosquito Abatement.....	24
B	Site Security and Public Access.....	25
Element B.1	Trash and Trespass.....	25
C	Infrastructure and Facilities	25
Element C.1	Gates, and Signage.....	25
Element C.2	Water Control System.....	26
D.	Agricultural Use Element	28
E.	Outreach and Recreational Use Elements.....	28
Element E.1	Hunting	28
Element E.2	Educational and Scientific Use	29
F	Biological Monitoring Elements.....	30
Element F.1	Giant Garter Snake.....	30
Element F.2	Vegetation (Seasonal Wetlands and GGS Habitats).....	30
G.	Reporting and Administration.....	31
Element G.1	Annual Report.....	31
V	Transfer, Replacement, Amendments, and Notices	32
A	Transfer	32
B	Replacement.....	32
C	Amendments	32
D	Notices	33

VI Funding and Task Prioritization.....	34
A Funding	34
B Task Prioritization.....	34

FIGURES

Figure 1. Bank Property Location Map.....	6
Figure 2. Bank Property Vicinity Map	7
Figure 3. 1998 Aerial of the Property.....	8
Figure 4. Bank Property Topographic Map.....	9
Figure 5. Bank Property and Existing Easements	11
Figure 6. Bank Conceptual Plan.....	15
Figure 7. Bank Property Typical Cross Section.....	16
Figure 8. Control of Trees within the Designated Floodway	22

Appendices

Appendix A. Grazing Plan

I Introduction

A Purpose of Establishment

The Colusa Basin Mitigation Bank (“Bank” or “Bank Property”) is being established to provide compensation for impacts to Waters of the United States and habitats of the giant garter snake (*Thamnophis gigas*) located in the Central Valley of California. It will be managed in perpetuity as a preserve for wetlands and for the giant garter snake (“GGS”).

B Purpose of this Long Term Management Plan

The purpose of this long-term management plan (“Management Plan”) is to ensure the Bank Property is managed, monitored, and maintained in perpetuity. This Management Plan establishes objectives, priorities, and tasks to monitor, manage, maintain, and report on the restored habitat on the Bank Property and is a binding and enforceable instrument, incorporated by reference into the conservation easement covering the Bank Property.

Specifically:

1. The Management Plan serves as a guide for appropriate public and private uses of the Bank Property.
2. The Management Plan serves as a descriptive inventory of fish, wildlife, and plants which occur on or use the Bank Property.
3. The Management Plan provides an overview of the Bank Property operation and maintenance, requirements including all actions required of the Bank Manager to achieve the Bank’s management goals. It also serves as a budget planning aid for the long-term management endowment (“Endowment Fund”).
4. The Management Plan provides guidance for the Bank Property stewardship in perpetuity.

C Bank Manager and Responsibilities

The property owner, Westervelt Ecological Services (“WES”), will be the long term land manager (“Bank Manager”). WES, and any subsequent Bank Manager if transferred, shall implement this Management Plan, managing, and monitoring the Bank Property in perpetuity to preserve its habitat and conservation values in accordance with the Bank Property’s Bank Enabling Instrument and the Conservation Easement. Long term management tasks shall be funded through the Endowment Fund. The Bank Manager shall be responsible for providing an annual report to the U.S. Army Corps of Engineers (“USACE”), the U.S. Environmental Protection Agency (“USEPA”), the U.S. Fish and Wildlife Service (“USFWS”) and the California Department of Fish and Wildlife (“CDFW”) (collectively the “Signatory Agencies” or the “IRT”) detailing the time period covered, and a description of the management tasks accomplished.

The Bank Manager's responsibilities will include but are not be limited to:

- Maintaining gates and signage.
- Coordinating trash removal.
- Managing water levels.
- Conducting exotic plant management when necessary with qualified personnel.
- Coordinating grazing of the Bank Property.
- Reviewing monitoring data, and recommending to/coordinating with the Signatory Agencies for any adaptive management actions.
- Performing general inspections of the Bank Property
- Coordinating an annual biological inspection by a qualified biologist. ("Monitoring Biologist")
- Arranging for any corrective action necessary to ensure the sustainability of the habitat at the Bank Property, as required by this Management Plan.
-

The Monitoring Biologist will be a professional botanist, biologist, or restoration ecologist familiar with California flora and fauna, and will have a working knowledge of jurisdictional wetland hydrology and vegetation, as well as management of marsh and upland habitats for GGS. The functions of the Monitoring Biologist will be performed by WES staff.

Overall, duties of the Monitoring Biologist may include but are not limited to:

- Monitoring wetland functions and water delivery system.
- Evaluating the presence and extent of introduced non-native (exotic) plant and animal species and recommending management, if needed.
- Conducting the monthly and annual inspections, collecting data on the Bank Property and preparing reports required by this Management Plan.
- Evaluating site conditions and recommending remedial action to the Bank Manager.
- Assisting in the review of or planning of restoration activities, use of the Bank Property for education, or other tasks.

A change of either Bank Manager or Monitoring Biologist will be made in consultation with the Signatory Agencies at the time of the change. If the Bank Manager or the Monitoring Biologist is changed, the outgoing and incoming personnel will tour the Bank Property together, and the former will advise the latter of trends, problem areas, and any administrative difficulties.

II Property Description

A *Setting and Location*

The Bank Property is located approximately 5 miles south of City of Colusa in an unincorporated portion of Colusa County California. The property on which the Bank Property occurs is owned in fee title by WES and is identified by the following assessor parcel numbers: 017-110-045 and

019-010-016 (“Property”) (**Figure 1**). The Bank Property is a 162.78-acre subset of the 215-acre Property (**Figure 2**). The Bank Property location corresponds to portions of Sections 6, of Township 14N, Range 1W, of the Arbuckle, California 7.5-minute quadrangle.

The Bank Property is located adjacent to Colusa National Wildlife Refuge (“NWR”) where GGS have been recently documented. In addition, the Bank Property is near or adjacent to other wetland conservation projects including Wetland Reserve Program and Wildlife Conservation Board Easements and contributes to a much larger conservation area (**Figure 2**).

B History and Land Use

The Bank Property has been farmed for rice production since 1964 (**Figure 3**). Seasonal hunting for waterfowl and pheasants is an ongoing use, but there are no structures or improvements such as residential or agricultural buildings on the Property. There are unimproved perimeter farm roads unlined irrigation canals to the north and south, and corrugated metal and plastic culverts serving water management needs for rice cultivation. A lift pump owned and operated by the Sycamore Mutual Water Company provides water to the Bank Property and is located near the northwest corner of the Bank Property.

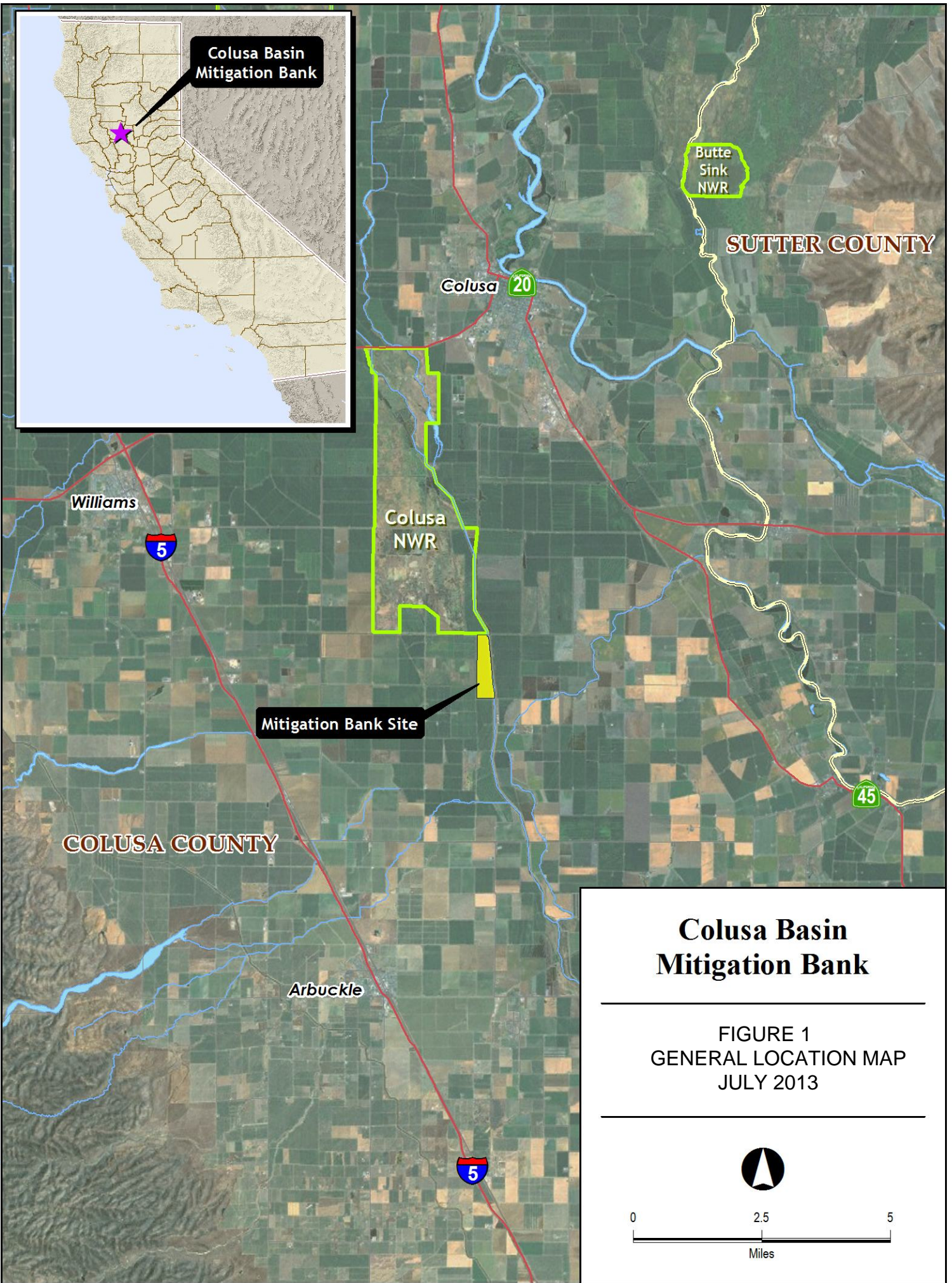
C Cultural Resources

The Cultural Resources Survey and Report (BEI Exhibit J) indicates that there are no significant cultural resources on the Bank Property, and that the area was most likely only used by Native Americans for transit and temporary resource use.

D Hydrology and Topography

The Bank Property is located within the Colusa Basin, an historic floodplain that drains the western portion of the northern Sacramento Valley. The Reclamation District 2047 drain (“RD 2047 Drain”) borders the Bank Property on its eastern edge and was designed to provide drainage and conveyance for summer agricultural drain water. The RD 2047 Drain does not provide flood protection for the surrounding landscape, and the Property may be temporarily flooded during periodically heavy winter and spring rainfall events. Once floodwaters recede, waters within the Property currently flow into the RD 2047 Drain via corrugated metal and plastic culverts. Drain ditches that serve adjoining lands border the Property on its north, western, and southern boundaries.

The topography is gently sloping (0 to 2% slopes) from west to east, and the entire Bank Property is currently divided into “checks” for rice cultivation (**Figure 4**). The land within the checks is either level or gently sloping (1%) and there are only 3 or 4 inches difference between the elevations of the checks.



**Colusa Basin
Mitigation Bank**

**Butte
Sink
NWR**

SUTTER COUNTY

Colusa 20

**Colusa
NWR**

Williams

5

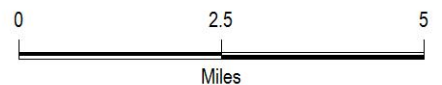
Mitigation Bank Site

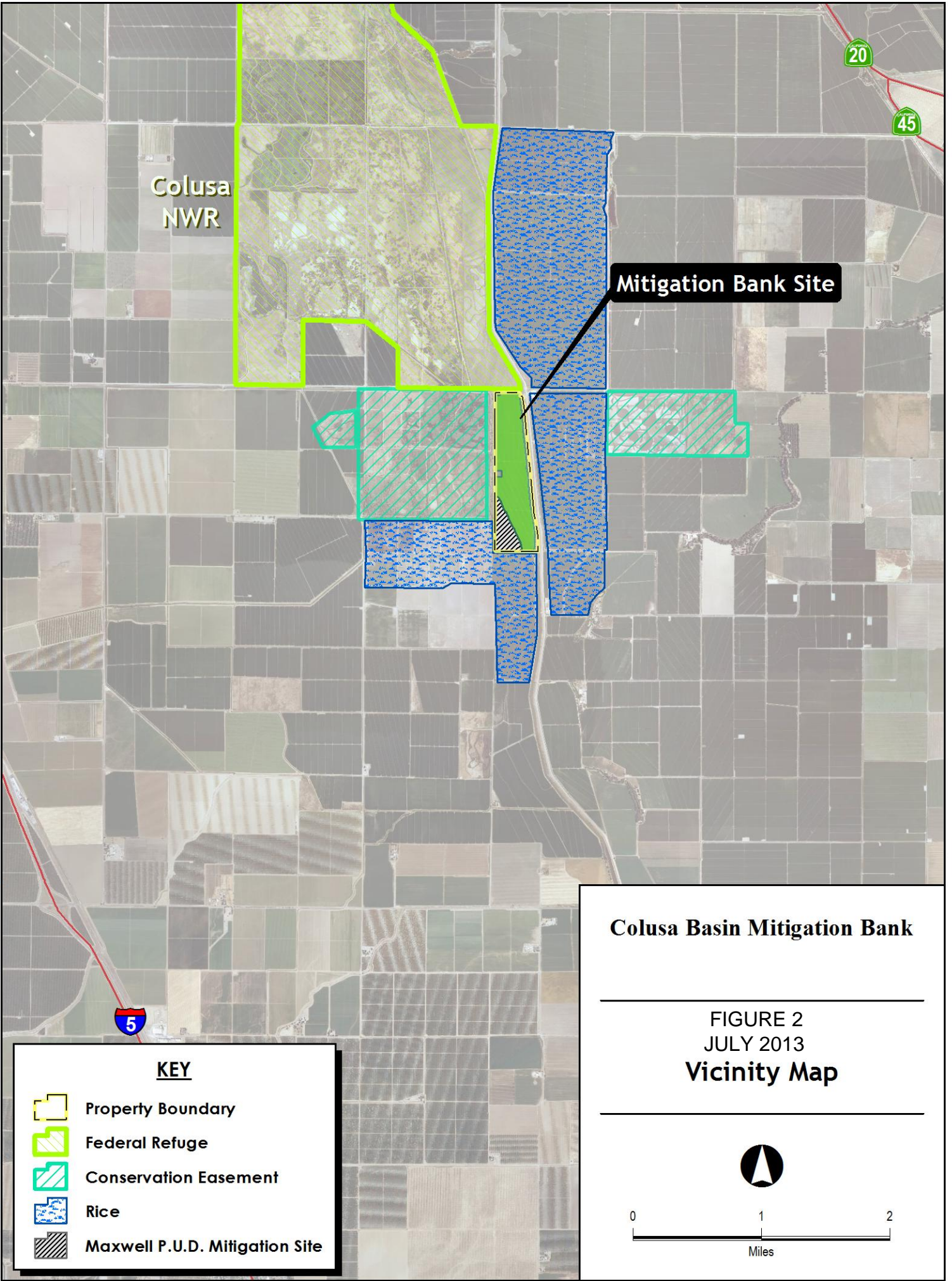
COLUSA COUNTY

45

Arbuckle

5





Colusa
NWR

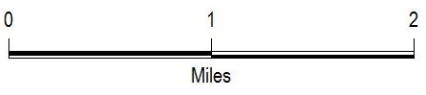
Mitigation Bank Site

Colusa Basin Mitigation Bank

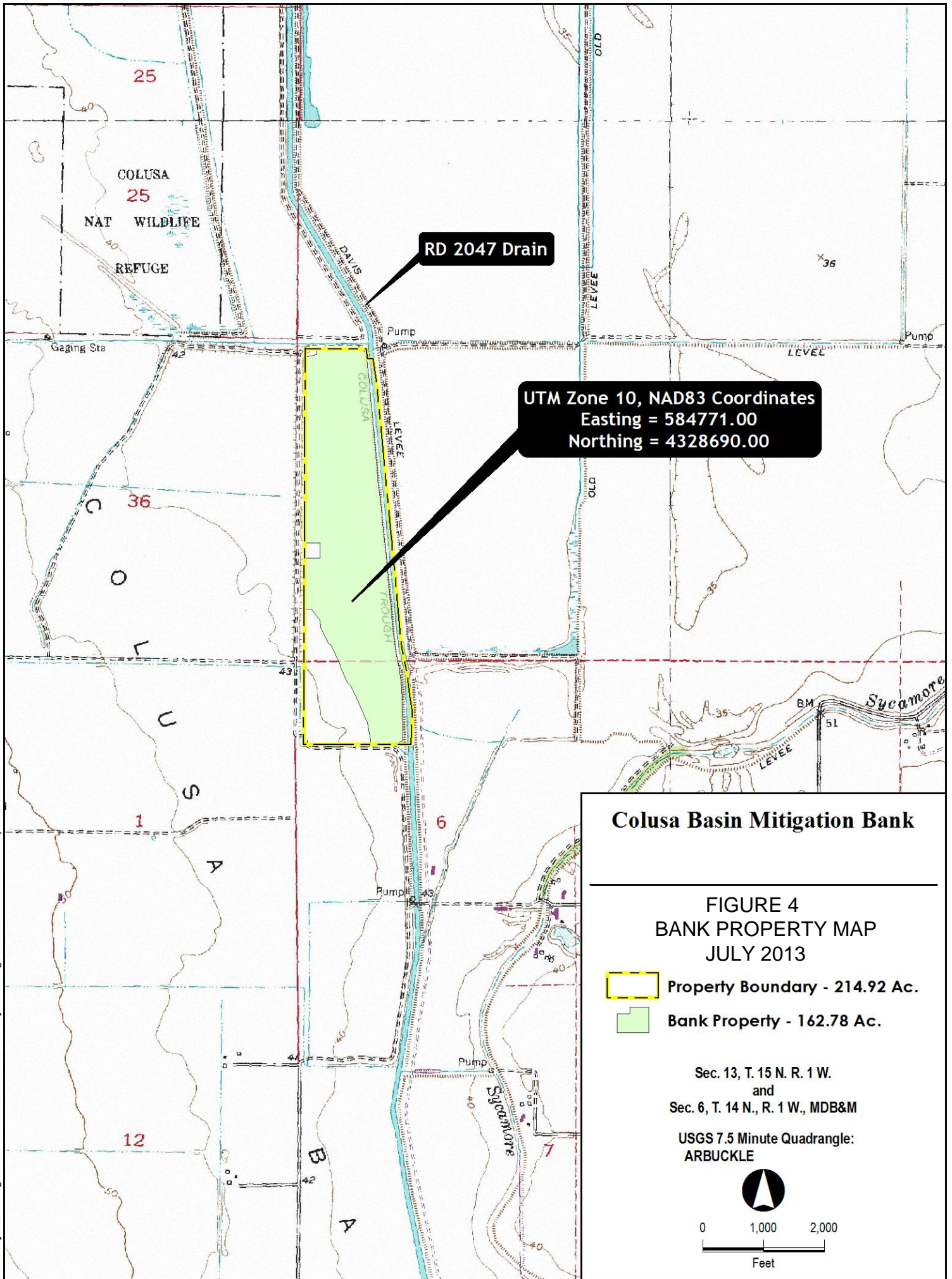
FIGURE 2
JULY 2013
Vicinity Map

KEY

-  Property Boundary
-  Federal Refuge
-  Conservation Easement
-  Rice
-  Maxwell P.U.D. Mitigation Site









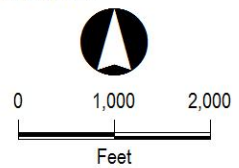
Colusa Basin Mitigation Bank

FIGURE 4
BANK PROPERTY MAP
JULY 2013

-  Property Boundary - 214.92 Ac.
-  Bank Property - 162.78 Ac.

Sec. 13, T. 15 N. R. 1 W.
and
Sec. 6, T. 14 N., R. 1 W., MDB&M

USGS 7.5 Minute Quadrangle:
ARBUCKLE



E Soils

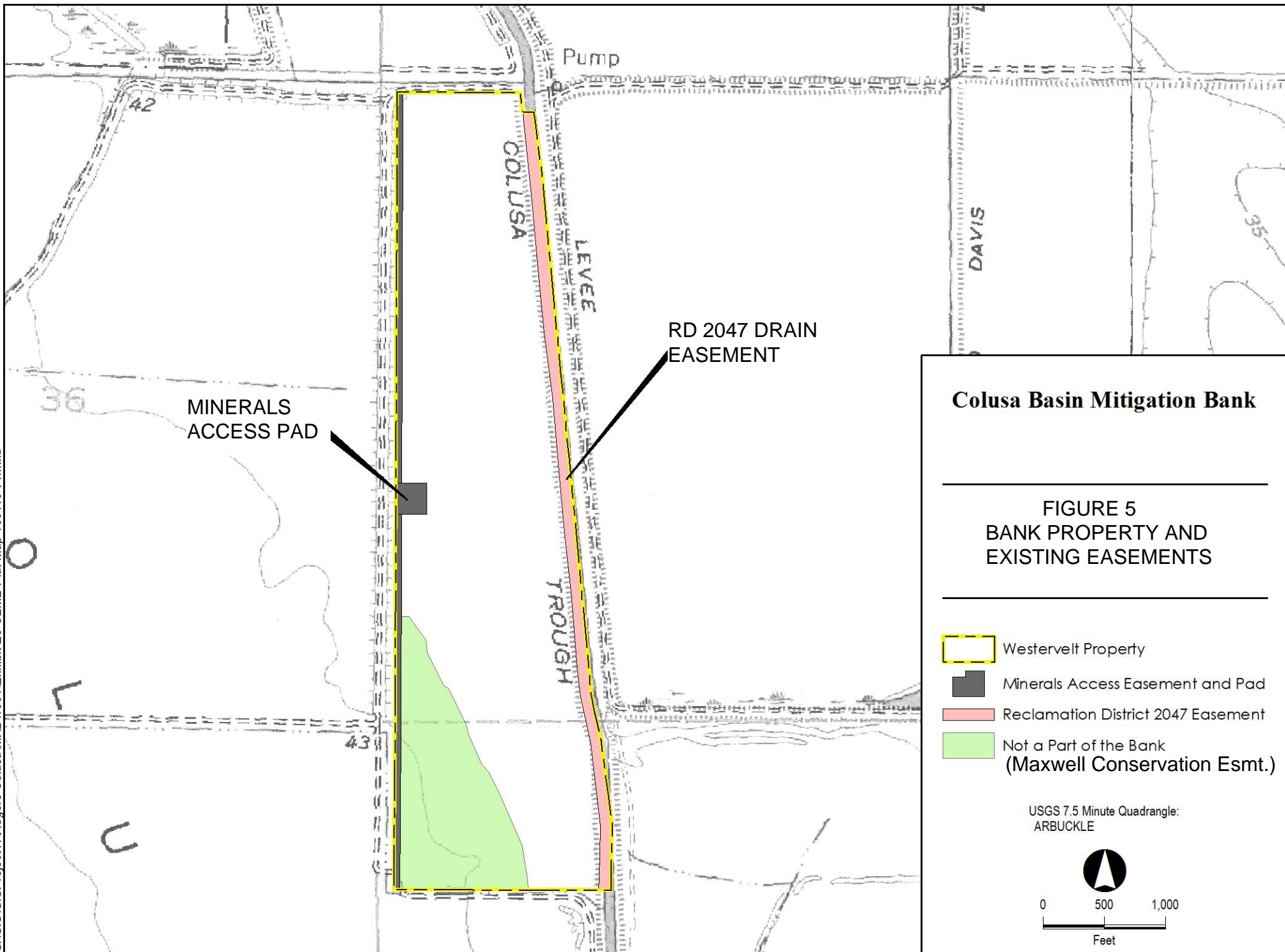
The Colusa County USDA Soil Survey lists Willows silty clay, frequently flooded (map unit 104) as the dominant soil type of the Bank Property. The soils report for the Bank Property is found in **Appendix C** to Exhibit C-1 Development Plan.

F Existing Easements and Mineral Rights

Reclamation District 2047 retains an easement for maintenance of the RD 2047 Drain that encompasses the eastern edge of the property (the west bank of the Drain). The boundary of the Reclamation District 2047 easement within the Property lies within the farm road bordering the easternmost edges of the existing farm fields. This entire area is excluded from the Bank and Bank credit calculations. When WES purchased the Property, mineral rights had been severed from fee-title ownership of the parcels. One of the previous owners of the Property, Sycamore Minerals Management, retains the mineral rights and has reserved a pad and access way on the western edge of the Bank Property that would allow for a drill site if future deposits of oil or natural gas are discovered. This easement area is excluded from the Bank and Bank credit calculations. WES has researched the minerals history of the Property and has found that three individual gas/oil wells were drilled below the surface of the Property from beyond the Property boundary. These drilling locations are all located behind the DWR levee across the RD 2047 Drain and the wells were drilled diagonally to locations below the Bank Property to depths of between 7,000 and 8,000 feet. None of the three wells ever produced any oil or gas and all three wells have been filled and capped. Further development of oil and gas resources below the Bank Property is highly unlikely in light of this drilling history. Although the mineral rights holders retain the access reservation to build a road and pad within the Property, it is likely any further attempts to access oil and gas will once again be made from behind the protection of the DWR levee (**Figure 5**).

G Adjacent Land Uses

The Property is surrounded on all sides by dirt roads and drainage and irrigation canals. Adjacent land use to the south is rice production, and managed wetlands can be found on the west and north borders of the Property. The surrounding managed wetlands and rice fields are seasonally flooded habitats in the winter for waterfowl hunting. The RD 2047 Drain is immediately to the east of the Property.

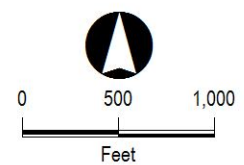


Colusa Basin Mitigation Bank

FIGURE 5
BANK PROPERTY AND
EXISTING EASEMENTS

- Westervelt Property
- Minerals Access Easement and Pad
- Reclamation District 2047 Easement
- Not a Part of the Bank
(Maxwell Conservation Esmt.)

USGS 7.5 Minute Quadrangle:
ARBUCKLE



III Habitat and Species Descriptions

A *Biological Resources Survey of Bank Property*

The Bank Property is located within the Colusa Basin Population area of the Northern Sacramento Valley GGS Recovery Unit and is adjacent to the Colusa National Wildlife Refuge, which supports a well-documented population center for GGS (Wylie, et al 2010). In 1997 alone, Wylie captured 53 individuals within Colusa National Wildlife Refuge as part of the above-referenced study. Within Tract 27 one and a half miles northwest of the Bank Property, a total of 718 snakes (464 females and 234 males) were captured (included 425 recaptures or sighted between May of 1996 and September of 2004. GGS were observed and documented on the Bank Property in 2011 by Eric Hansen (see Exhibit H-2, GGS Survey Results). Other documented GGS occurrences are located within waterways both upstream and downstream of the Bank Property along the RD 2047 Drain (see Exhibit H-4 CNDDDB Search Results). Protection of habitat in the Colusa Basin where numerous GGS have been documented is a priority one recovery task within the GGS Draft Recovery Plan (USFWS 1999, unpublished).

The Bank Property is immediately to the west of, and adjacent to, the RD 2047 Drain. The drain provides GGS habitat connectivity between the Bank Property and GGS occurrences to the north as well as to conserved habitats with GGS occurrences along the drain to the south of the Bank Property. The RD 2047 Drain itself may also provide suitable GGS habitat. The east side of the RD 2047 Drain contains a high levee that remains above flood level during high rainfall events. Over-wintering GGS from interior bypasses appear to rely on the levees as refuge during periods of inundation. Accordingly, GGS occupying the west side of the RD 2047 Drain or dispersing along the 2047 levee may colonize the adjacent habitat within the Bank Property. The RD 2047 Drain and associated habitats provide a suitable aquatic movement corridor between the conserved habitat areas around the Colusa Refuge population of GGS, the Bank Property, and existing GGS populations downstream.

The surrounding lands provide functional GGS habitat values and connectivity between the Bank Property, nearby conserved lands, and rice foraging habitat (**Figure 2**). Lands bordering the Bank Property to the west are protected from development by Wetlands Reserve Program Federal perpetual conservation easements, and are managed to provide habitat for a variety of wetland-dependent species, including GGS. Protected lands to the east of the Bank Property include Conservation Easements held by the State of California Wildlife Conservation Board under the Inland Wetland Conservation Program. Protected lands to the north of the Bank Property are within the fee-title boundary of the Colusa National Wildlife Refuge, held and managed for wetland-dependent species by the US Fish and Wildlife Service. Colusa National Wildlife Refuge currently manages several wetland units specifically for GGS and is developing a new GGS mitigation project north of the Bank Property.

The other adjacent land use is rice production. The adjacent rice fields provide suitable habitat features for foraging GGS and expand the potential migration corridor between the Bank

Property and habitats beyond the constraints of the channelized waterways.

There are numerous species associated with the upland and wetland habitat features on the Bank Property. Bird species include white-faced ibis (*Plegadis chihi*), great egret (*Casmerodius albus*), great blue heron (*Ardea herodias*), marsh wren (*Cistothorus palustris*), red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*Agelaius tricolor*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), ring-necked pheasant (*Phasianus colchicus*), mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), ruddy duck (*Oxyura jamaicensis*), Canada goose (*Branta canadensis*), snow goose (*Chen caerulescens*), Ross's goose (*Chen rossii*), and other waterfowl, wading birds, and migratory shorebirds. Mammal species include ground squirrels, coyote (*Canis latrans*), raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), muskrat (*Ondatra zibethicus*), beaver (*Castor canadensis*), black-tail deer (*Odocoileus hemionus*), and various small rodent species.

B Summary of Bank Property Development Plan

The goal of the habitat development activities is to restore a complex of wetlands and uplands in place of the existing rice fields. In addition to creating wetlands with natural hydrology, ("Seasonal Wetlands") this plan provides all of the necessary habitat requirements for GGS including: (1) adequate water during the GGS's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails (*Typha* spp.) and bulrushes, (*Schoenoplectus acutus*) for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking sites to thermoregulate; and (4) higher elevation uplands for cover and refuge from flood waters during the GGS's dormant season in the winter.

Habitat types that will be developed on the Bank Property were defined in the Development Plan and include Open Water, Perennial Marsh, Semi-Permanent Marsh, Uplands, and Seasonal Wetlands. To create the proposed habitat features, portions of the existing rice field will be leveled to create the habitat complex. Channels in the managed-marsh will be cut and the fill will be used to create berms and mounds. Berms are planned to be no greater than 3-feet above existing field elevations. Upland refugia mounds will be up to 6 feet high and are all located outside of the designated floodway. Existing and new water control structures will be used to adjust the water level in the managed marsh GGS habitat. Approximately 121 acres of GGS Habitat will be developed in a matrix consisting of approximately 17 acres of Open Water, 41 acres of Perennial Marsh, 51 acres of Semi-permanent Marsh, and 12 acres of Uplands.

Approximately 42 acres of Seasonal Wetlands Palustrine Emergent Marsh Persistent Seasonally Flooded- PEM1C) that rely on precipitation and temporary inundation from floodwaters for their hydrology will be restored in the lowest-lying areas of the Bank Property closest to the RD 2047 Drain. The drains for the GGS wetlands will be dug below the ground level of the Seasonal Wetlands, and the hydrology of the Seasonal wetlands will be derived from precipitation and temporary inundation from floodwaters. These wetlands will contain an array of grass-like plants such as cattails, bulrushes, sedges (*Carex* spp.), true grasses such as swamp timothy (*Crypsis schoenoides*), rabbitsfoot grass (*Polypogon monspeliensis*), creeping wild rye (*Elymus triticoides*), and broadleaf emergent such as dock (*Rumex* spp.), smartweed (*Polygonum* spp.), fat hen (*Atriplex triangularis*), and saltmarsh aster (*Symphotrichum subulatum*). **Figures**

6 and 7 illustrate the location of restored habitat features.

C Endangered and Threatened Species

Several endangered, threatened, and rare species are known to occur in the vicinity of the Bank Property (CNDDDB 2007see Exhibit H-4 CNDDDB, CNPS and USFWS search results) but only GGS have been documented as occurring on or near the Bank Property. Protocol-level surveys have detected GGS in irrigation ditches and canals adjacent to the site (Exhibit H-2 GGS Survey Results). Other special-status wildlife species that may occur on the Bank Property and be reported by the CNDDDB include the Aleutian cackling Canada goose (*Branta hutchinsii leucoparia*), white-faced ibis (*Plegadis chihi*), tri-colored blackbird (*Agelaius tricolor*), hoary bat (*Lasiurus cinereus*), Swainson's hawk (*Buteo swainsoni*), western red bat (*Lasiurus blossovillii*), and the Yuma myotis (*Myotis yumanensis*). All of these species may utilize the Bank Property for foraging but none have been determined to breed in habitat present on the site.

The Bank Property does not support suitable habitat for any of the special-status plants reported from the region by the CNDDDB., USFWS, or CNPS (BEI **Exhibit H-4**).

IV Management and Monitoring

The overall goal of long-term management is to maintain the long term viability of the Bank Property for providing natural wetland functions and GGS habitat functions, which will often coincide and complement each other. The routine monitoring and maintenance tasks included within this Management Plan are intended to assure the viability of the Bank Property in perpetuity.

The approach to the long-term management of the Bank Property's biological resources is to conduct annual site examinations and periodic monitoring of selected elements to determine stability and ongoing trends of the preserved and restored wetlands and habitats provided for GGS. Annual monitoring will assess the Bank Property's condition, invasion of exotic or non-native species, vegetation densities, infrastructure condition, and/or other aspects that may warrant management actions. While it is not anticipated that major remedial actions will be needed, an objective of this Management Plan is to conduct monitoring to identify any issues that arise, and using adaptive management to determine what actions might be appropriate.

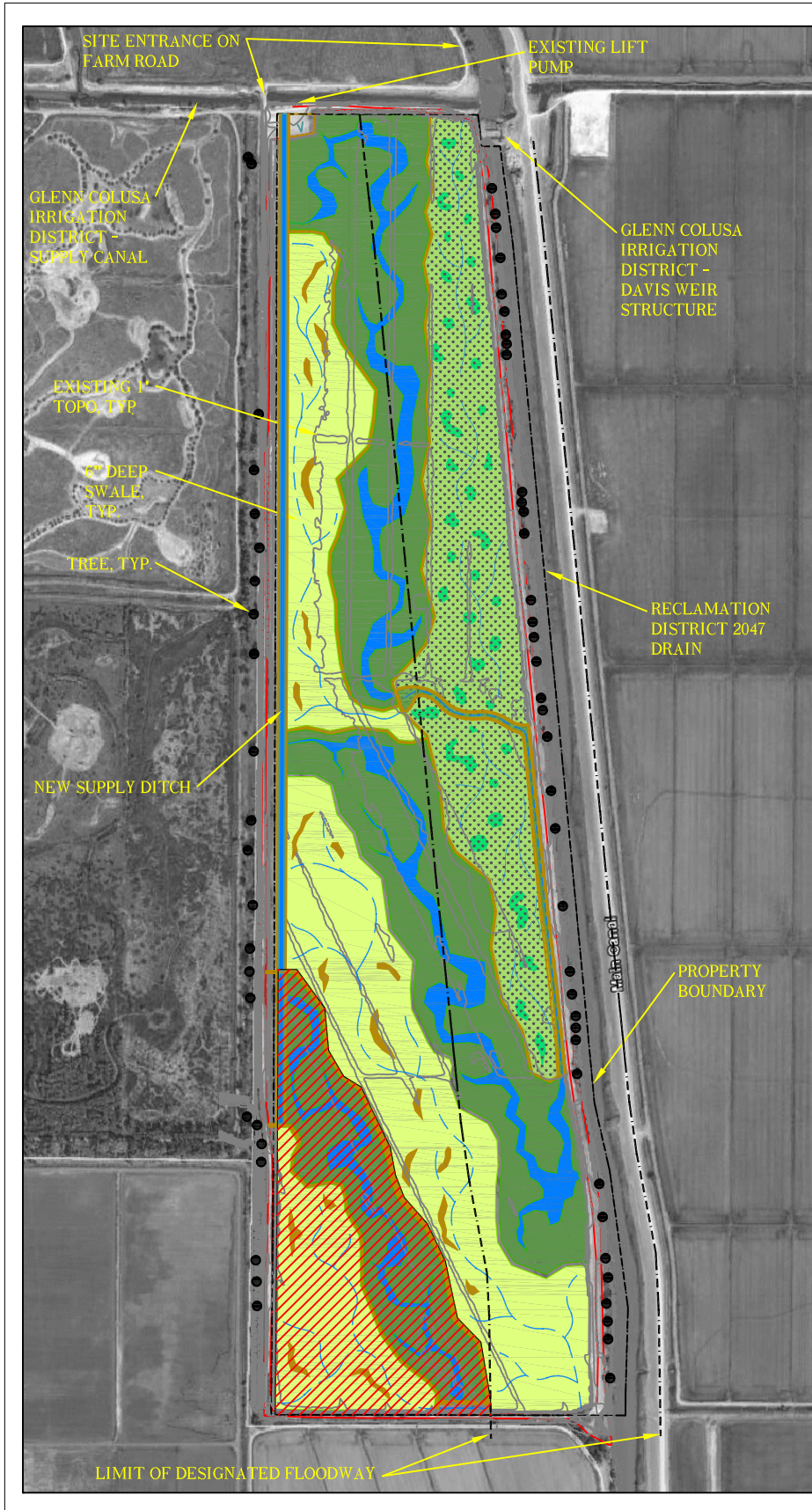
Adaptive management means an approach to natural resource management which incorporates changes to management practices, including corrective actions as determined to be appropriate by the Signatory Agencies in discussion with the Bank Manager. Adaptive management includes those activities necessary to address the effects of climate change, fire, flood, other natural events, or unforeseen future changes to the landscape. Before considering any adaptive management changes to the Management Plan, the Signatory Agencies will consider whether such actions will help ensure the continued viability of Bank Property's biological resources.



Colusa Basin Mitigation Bank

GIANT GARTER SNAKE HABITAT / WETLAND RESTORATION

COLUSA COUNTY, CALIFORNIA



HABITAT RESTORATION LEGEND	
Item	Description
	Perennial Marsh
	Semi-Permanent Marsh
	Open Water Within Perennial Marsh
	Seasonal Wetlands - (404/GGS Wetlands)
	Uplands
	1' Deep Pothole Within Seasonal Wetland

MAXWELL P.U.D MITIGATION SITE

FIGURE 6 BANK CONCEPTUAL PLAN
JULY 2013

Berms and Refugia



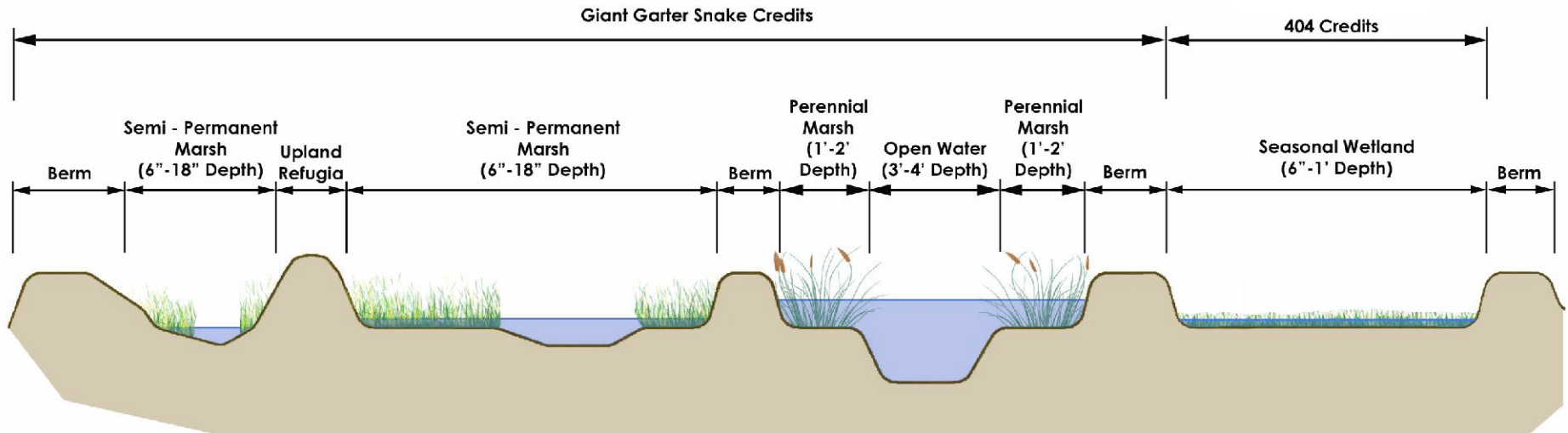
Semi-Permanent Marsh



Perennial Marsh and Open Water



Seasonal Wetland



Colusa Basin Mitigation Bank

FIGURE 7
JULY 2013
Typical Habitat Cross-section

Not To Scale

A. Habitat Management and Species Elements

The restored habitat types at Bank Property include 1) Seasonal Wetlands, 2) Open Water, 3) Perennial Marsh, 4) Semi-Permanent Marsh, and 5) Uplands. Restoration activities for the Bank Property habitat types are described in detail in the Habitat Development Plan and in the notes section and detail sections of the restoration plans. Management objectives and tasks are described below for each habitat type and species.

The Bank Manager shall implement the following:

Element A.1 Seasonal Wetlands (Waters of the US including Wetlands)

Objective: Monitor, conserve, and maintain the Bank's Waters of the U.S., including wetlands. Limit any impacts to Waters of the U.S. from vehicular travel or other adverse impacts.

Task1: Conduct Monthly and Annual Inspections

Monthly site visits will occur to monitor the conditions of the Bank during the wet season (normally considered November through May). During at least one of the surveys (defined as the Annual Walk-through Survey) qualitative monitoring of the general condition of these habitats will be conducted. General topographic conditions, hydrology, general vegetation cover and composition, invasive species, erosion, will be noted, evaluated and mapped during a site examination in the spring. Notes to be made will include observations of species encountered, water quality, general extent of wetlands, and any occurrences of erosion, and weed invasion.

Task 2: High-Resolution Aerial Photograph

Acquire an aerial photograph of the Bank Property every ten years. A baseline of low-level aerial photographs will be taken during the Interim Management Period to track habitat development, and monitor hydrology of the Bank. Timing of the aerial photos will be targeted in late spring, following drawdown of Seasonal Wetlands.

Task 3: Annual Walk-Through Survey

One annual walk-through survey will be conducted to qualitatively monitor the general condition of these habitat features. Visually observe for changes to occupied habitat, such as changed hydrology or vegetation composition. Record any observed changes.

Element A.2 Giant Garter Snake Habitat

Objective 1: Monitor, conserve, and maintain the Bank Property's wetlands, uplands, and their associated habitat features for GGS. Limit any impacts to GGS and GGS habitats from vehicular travel or other adverse activities.

Task 1: Annual Walk-Through Survey

One annual walk-through survey will be conducted to qualitatively monitor the general condition of these habitat features. Visually observe for changes to occupied habitat, such as changed hydrology or vegetation composition. Record any observed changes.

A portion of the Bank Property is being established to compensate for impacts to GGS and its habitat, as well as contribute to the recovery of the species. GGS surveys are scheduled to begin following habitat restoration and will continue through habitat establishment, and every five years after final habitat performance standards are met.

Management activities based on the most current GGS and habitat management practices will be reviewed to maximize the Bank Property value for GGS. Any new techniques that can be reasonably implemented within constraints of the Bank Property (i.e., the restoration design, annual endowment funding, etc...) will be implemented.

Maintenance Precautions

Management and maintenance activities described in this Management Plan are covered by approval of the BEI and its attachments by the Signatory Agencies. To avoid impacts to GGS and minimize habitat disturbance, precautions will be implemented for all maintenance activities. These precautions are described below.

The following precautions will be implemented on all maintenance activities to avoid impacts to GGS and its habitat:

- (1) channels/open water (channel) cleaning will not be conducted unless absolutely necessary;
- (2) when channel cleaning is necessary, vegetation will be maintained on both sides of the greatest extent practicable, or if not possible to maintain vegetation on both sides of the channel, vegetation must always be maintained on one bank;
- (3) movement of heavy equipment will be restricted to the perimeter berm with the dirt road to the greatest extent possible to minimize habitat disturbance;
- (4) excavation activities will be conducted between May 1 and October 1 during the snake's active period, if excavation is needed outside of this window, the

Signatory Agencies must be consulted;

(5) before channels are excavated, the channel will be dried out for a minimum of two weeks before cleaning begins;

(6) annual maintenance activities along channels, such as mowing and disking, will maintain buffer strips of standing vegetation along the ditch;

(7) mowing herbaceous vegetation growing along berms from the top of the bank down to the water line will be avoided to greatest extent practicable except when management of noxious weeds is called for (note: additional precautions for ground-nesting birds are included under the maintenance elements of this Management Plan);

(8) if mowing is used beyond the top of the channel banks, the height of the vegetation after mowing will be at least 4 inches (note: additional precautions for ground-nesting birds are included under the maintenance elements of this Management Plan);

(9) use of aquatic herbicides to control aquatic vegetation will be minimized to the greatest extent practicable, and use shall be consistent with manufacturer's recommendations and all applicable laws and regulations;

(10) driving over or in close proximity to snakes that are observed on site will be avoided at all times.

At least once per year, the Monitoring Biologist will coordinate with the USFWS, CDFW and/or other species experts to discuss the current GGS research, management and regulations. The Monitoring Biologist will discuss the applicability of any new information to the Bank Property and if adaptive management needs to be considered. This coordination may occur through phone conversation, meeting, email, or other written correspondence.

Objective: Manage all habitat types represented within the GGS credited portions of the Bank Property to benefit all life stages of GGS including foraging, breeding, thermo-regulation, and aestivation.

Task: 2 Water Management

The Bank Manager will visit the Bank Property at least once a month (twice a month in summer) to maintain proper water depth. Proper water management should minimize the amount of active vegetation management required at the Bank Property. **Table 1** provides a general guideline for water level management for all wetland features. The depths are the basis for the design of the marsh habitat, while the dates are the basis for promoting development of target wetland

vegetation. Because water in the marsh habitats is lost to seepage, evapotranspiration (evaporation plus plant transpiration), and outflow, frequent water input may be needed to maintain water at design depths.

Table 1 Water Management Schedule

Wetland Habitat Type	Water Present	Water Depths (approx.)	Drawdown
Open Water	12 months	36 to 48 inches	Once in 5 years
Perennial Marsh	12 months	12 to 24 inches	Once in 5 years
Semi-Permanent Marsh	May 1 to Sept. 30, Intermittently	4 to 12 inches	April 1 to July 15

Complete draw-downs of selective open water and perennial marsh habitats will occur on a rotating basis every five to seven years to dry these areas out, manage vegetation, and recycle nutrients. These draw-downs should also decrease the opportunity for carp and predatory fish (such as largemouth bass) populations to establish at the Bank Property. During these draw-downs, sediment removal, or vegetation mowing or disking to eliminate vegetation encroachment on open water, may occur if necessary. The habitat complex will be drawn down in phases (i.e., only one management unit at a time) to ensure availability of flooded habitat during the maintenance period. The periodic draw-down task for GGS aquatic habitats at the Bank Property is conducted in order to germinate herbaceous growth and to eliminate predators from shallow flooded wetlands. Drawdowns in the Semi-Permanent Marsh occur during late March or April, and again after summer irrigations.

Task 3: Sediment Control.

Water supplied to the GGS aquatic habitats will have some suspended sediment; the natural accumulation of sediment plus the contribution of vegetative detritus will gradually diminish water depth throughout the open water and marsh habitat areas over time. It is expected that more than 10 or 15 growing seasons would occur before sediment accumulation is significant enough to have an observable effect on open water or marsh plain water depth (i.e., causing the encroachment of perennial marsh vegetation (cattails and tules) into open water or succession of perennial marsh vegetation into semi-permanent wetland habitat). Because the rate of sediment accretion in this habitat is expected to be very slow, sediment control will only be necessary every 15 or 20 years. Sediment will be removed with an excavator or scraper after complete de-watering. No temporary pads or fill areas are required for this action. When sediment control is needed the Bank Manager will make every reasonable effort to excavate only from the channel bottom, lifting spoils straight up, and placing them away from the marsh and banks. and onto the berms and upland areas. This maintenance activity will not result in the filling of any Waters of the US. Sediment removal will follow the GGS Maintenance Precautions listed above (beginning on page 18) to minimize the risk of GGS take.

Task 4: Vegetation Management.

Based upon the best professional judgment of the Bank Manager, portions of the Bank Property will be grazed, disked, or mowed to maintain basking areas for GGS and prevent excessive perennial marsh plant encroachment into Open Water and Semi-Permanent Marsh habitat areas. It is expected that portions of the Bank Property will be treated each year resulting in a mosaic of habitat that is optimal for GGS.

Several options are available to manage vegetation height, density, and arrangement within the GGS Habitats including grazing mowing and disking. Each year the Bank Manager (using best professional judgment) will select the option that has the least amount of impact to GGS and the highest probability of success. The Bank Manager will follow the GGS Maintenance Precautions listed above (page 16). It is expected mowing will occur once or twice a year on the perimeter berms depending on growing conditions and will typically occur prior to February 1 or after August 15, thus avoiding the primary nesting season for ground-nesting birds. If mowing or disking are necessary during the nesting season, then nest surveys will be conducted prior to commencing vegetation management activities.

No trees or woody vegetation will be planted in the uplands or wetlands, but woody vegetation may naturally establish itself along portions of the upland-wetland habitat edge. Within the upland portions of the designated floodway woody vegetation canopy cover will be limited to no greater than 50% of the area. The areas where trees will be allowed to naturally establish are defined in **Figure 8**. These are the only areas within the designated floodway portion of the Bank that woody vegetation will be allowed to establish. Techniques for managing vegetation height and woody vegetation include mowing, hand removal, grazing, and/or herbicide application.

Element A.3 “Non-listed” Wildlife Species

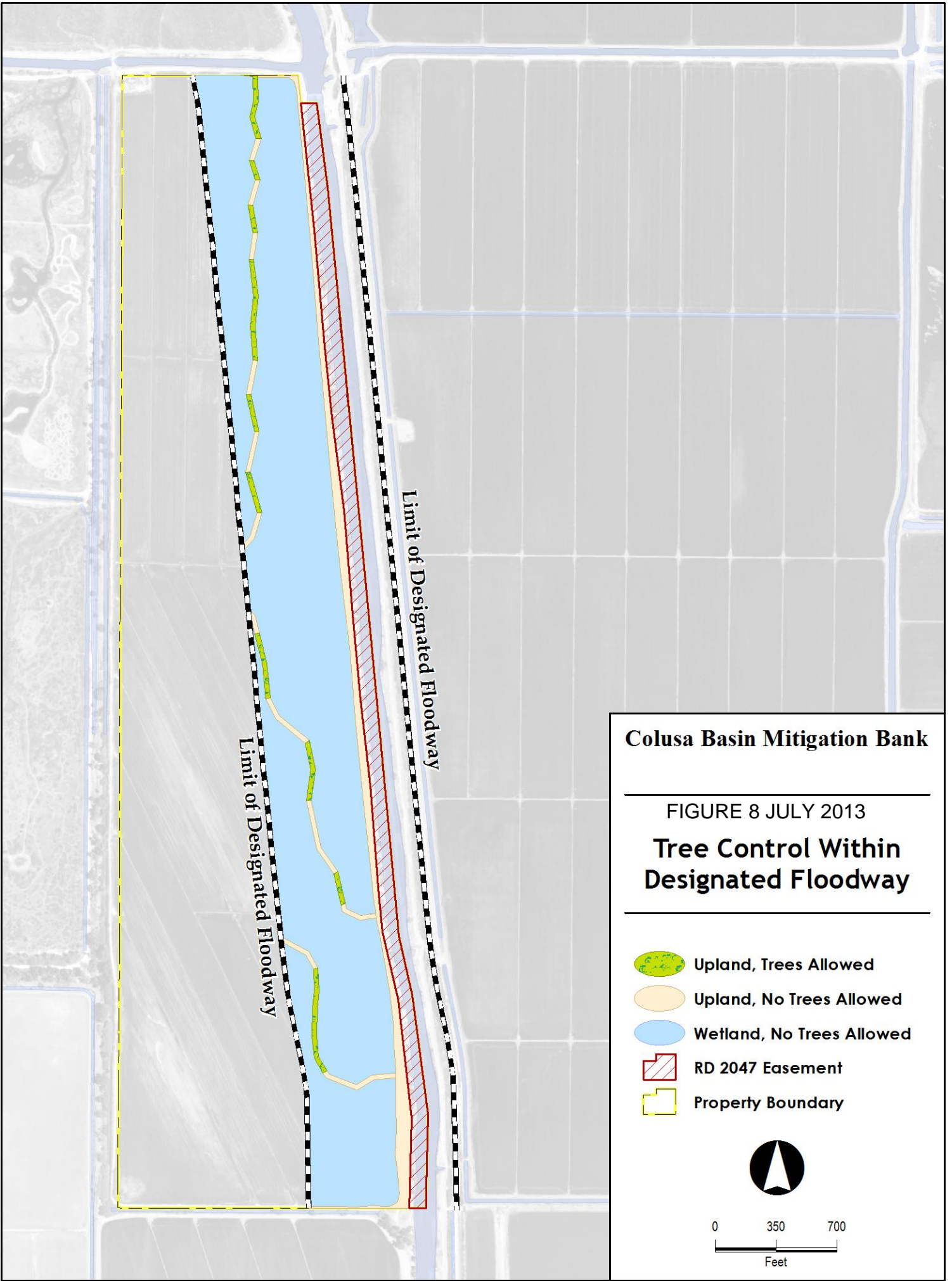
Objective: Monitor occurrence of wildlife species utilizing the Bank Property.

Task 1: Wildlife Surveys

During Monthly Inspections, walk-through surveys will be conducted to qualitatively monitor the wildlife species present. New or unusual occurrences will be noted and recorded for presentation in the annual report.

Element A.4 Non-native Invasive Species

Invasive species threaten the diversity or abundance of native species through



competition for resources, predation, parasitism, interbreeding with native populations, transmitting diseases, or causing physical or chemical changes to the invaded habitat. For the purposes of this Management Plan, plants and animals native to the Bank Property will be defined as those believed by the scientific community to have been present in northern Sacramento Valley prior to the settlement of Europeans.

Objective: Monitor and maintain control of non-native invasive plant species, including but not limited to noxious weeds that diminish site quality.

The following sources may be used for guidance on management of those species: The California Department of Food and Agriculture list of "noxious weeds" that are subject to regulation or quarantine by county agricultural departments the Jepson Manual (Baldwin, et al., 2012) the University of California State Integrated Pest Management Program list of "Exotic and invasive pests and diseases that threaten California's agricultural, urban, or natural areas," and the California Invasive Plant Council (CAL-IPC) List A and Red Alert Lists.

Task 1: Annual Survey of Invasive Plants.

Each year's annual walk-through surveys (or a supplemental survey) will include a qualitative assessment (e.g. visual estimate of cover) of potential or observed noxious weeds or other non-native species invasions, occurring in either wetlands or uplands of the Bank Property. Actions to control invasive species will be evaluated and prioritized.

Task 2: Removal of Invasive Plants.

If necessary, exotic pest plants will be controlled by hand removal, mechanical equipment, biological controls, or herbicides. Upland areas may require control of invasive non-native plant species such as Himalaya blackberry (*Rubus armeniacus*), giant reed (*Arundo donax*), milk thistle (*Silybum marianum*), bull thistle (*Cirsium vulgare*), and yellow starthistle (*Centaurea solstitialis*). Invasive wetland plants may include water primrose (*Ludwigia hexapetala*) water hyacinth (*Eichhornia crassipes*) or Brazilian waterweed (*Egeria densa*) among others. Several options are available to manage invasive vegetation. The specific option each year will be selected by the Bank Manager using best professional judgment and accepted integrated pest management approaches to select the option that has the least amount of impact to GGS and the highest probability of success. This activity will be implemented as needed, and is not expected to be a significant issue once vegetative cover is established. For budgeting purposes, this activity is expected to occur every five years, but in actuality may occur only sporadically as nascent populations of invasive plant species are detected during routine management. Herbicide application will follow the recommendations of a California licensed pest control advisor familiar with managed marsh settings. Herbicides must be applied according to the label directions, and in accordance

with applicable federal, state, and local laws. Any use of herbicides will be described in detail in the Annual Report. The Bank Manager will follow the GGS maintenance precautions listed above.

Objective: Minimize predation on GGS by non-native predators.

Predation by native wildlife species is natural and acceptable at low levels, but predation by feral and domestic animals to any significant extent is unacceptable. The Bank Manager will coordinate with the local animal control agency for removal of any problem animal. If action to control feral or domestic animals is needed, funds will be provided from the Endowment Fund contingency to develop and pay for those actions.

Element A.5 Mosquito Abatement

Objective: Prevent conflicts between Bank Property management and mosquito abatement efforts

The Colusa Mosquito Abatement District (“District”) currently operates a mosquito control program in the vicinity of the Bank Property. The Bank Manager will coordinate with the District to coordinate mosquito control efforts and minimize disturbance to GGS. Some methods, such as the addition of mosquitofish (*Gambusia affinis*) into the aquatic habitat, may even enhance the GGS prey base.

In addition, a number of the Bank Property design features, such as water level control, and interspersed channels through the perennial marsh, should minimize mosquito breeding conditions or facilitate water level manipulation to disrupt the mosquito life-cycle. As part of habitat management for the Bank Property, the Bank Manager may net mosquito fish to relocate them from one habitat area to another.

Task 1: Coordination with the District.

Once per year, the Bank Manager will coordinate the District to discuss the Bank Property management practices.

Task 2: Water Management

Whenever feasible, the Bank Manager will manage water depth, in-flow, and out-flow, to create the maximum disruption for the mosquito life-cycle. This management activity should not increase disturbance to GGS or its habitat.

Task 3: Relocation of mosquitofish.

If it is determined to be necessary, mosquitofish may be moved to the Bank Property at the request of the District. In addition, unless determined to have a negative impact to GGS, the Bank Property is available to serve as a mosquitofish

fishery for other sites.

B Site Security and Public Access

The Bank Property is in a remote location, at least two miles from the nearest public road. Deep, steep-banked irrigation canals surround the Bank Property and their width and depth are not easily passable. The Bank Property is not directly adjoined by public roads, and is accessible by passing on farm roads and field borders linking this property to the public roads. These field access routes are gated to prevent easy access to the Bank.

Element B.1 Trash and Trespass

The intent of this mitigation bank is to maintain the habitats of the area in perpetuity. Pedestrian access to the Bank Property will be minimal due to its location remote from any public road. Trespass will be discouraged through signage, outreach activities, and education of adjacent landowners. To prevent management disruptions, and harm or harassment of GGS, Bank Manager will maintain perimeter drains and gates that prevent easy access to the site. The Bank Property should remain free of trash and other debris that harms the aesthetic value and ecological function of the site. Proper control of access and the remote location of the site will limit the amount of trash on Bank Property.

Objective: Monitor sources of trash and trespass.

Objective: Collect and remove trash, repair vandalized structures, and rectify trespass impacts.

Task1: Monthly Inspections

During each site visit, record occurrences of trash and/or trespass. Record type, location, and management mitigation recommendations to avoid, minimize, or rectify a trash and/or trespass impact.

Task2: Trash Removal

Collect and remove trash and repair and rectify vandalism and trespass impacts on site visits.

C Infrastructure and Facilities

Element C.1 Gates, and Signage

Objective: Monitor and maintain gates and signage.

The Bank Manager will monitor and maintain gates, and signage to prevent casual

trespass, allow necessary access, and facilitate grazing regime and management. Due to the Bank Property's remote location, surrounding ditches, and compatible adjacent land uses, fencing the perimeter of the Bank Property is not necessary. Temporary electric fencing will be used to control livestock within treated sections of the Bank Property if and when grazing is used for vegetation management.

In addition to providing gates at the access point, signs will be posted around the perimeter of the Bank Property notifying people of the site's status as a conservation property and warning them not to trespass.

Task1: Inspection of Gates and Signage

During each Monthly Inspection, record condition of gates and signage. Record location, type, and recommendations to implement repair or replacement, if applicable.

Task 2: Replacement of Gates

Replace gates as necessary to maintain security at the Bank Property.

Task 3: Replacement of Signage

Replace signs and posts as necessary to maintain security at the Bank Property.

Element C.2 Water Control System

The Bank Property lies within the boundaries of and is served by the Sycamore Mutual Water Company (the "District"). Water is delivered to the Bank Property by the District from their lift pump on the northern edge of the Bank Property. The District has the responsibility to maintain the ditches and pumps required to lift the water from the canal on the northern edge of the Bank Property into the distribution (header) ditch along the Bank Property's western border. The District is responsible for all costs associated with maintaining the canal and pump, including electrical fees.

Once the water enters the header ditch within the western edge of the Bank Property, it is the responsibility of the Bank Manager to distribute to the various habitat cells. The water control system for distribution of this water to the GGS aquatic habitats consists of the ditches, berms, and water control structures including flashboard risers, weirs, canal gates. Flashboard risers and canal gates and other water control facilities must be properly functioning for habitat management to be successful. All maintenance activities conducted on water control system will follow the previously detailed GGS avoidance measures.

Objective: Maintain functioning water control system for dependable water

supply to the restored habitat.

Task 1: Inspection of Water Control Structures

Each month, and incidentally during water management activities, the Bank Manager will inspect the water control structures and gates for signs of wear and tear, or vandalism. Berms will be inspected for excessive erosion or beaver and muskrat burrows. These inspections may happen concurrently with site visits conducted for other purposes (i.e., water depth maintenance, etc.).

Task 2: Maintenance of Water Control Structures

If the Bank Manager determines that a water control structure needs preventive maintenance or repair, the Bank Manager will complete the work within 60 days of the determination. It is expected that this task will require one day per year of the Bank Manager's time.

Task 3: Replacement of Water Control Structures.

Expected wear and tear, or the occasional act of vandalism, will require that water control structures and delivery appurtenances (screw gates, culverts etc.) are periodically replaced. If the Bank Manager determines a water control structure or appurtenance needs to be replaced or upgraded, the Bank Manager will complete the work within 60 days. It is expected that the boards of the flashboard risers will need to be replaced every five years. The concrete portion of the flashboard riser and canal gates will be replaced once every 40 years.

Task: 4 Berm repair.

Although the berms are designed to be permanent structures there may be some occasions in the future when repairs are necessary. Repair may be necessary when berm integrity has been compromised by erosion or excessive burrowing by fossorial mammals. When berm repair is necessary the adjacent aquatic habitat will be drawn down and all GGS maintenance precautions will be followed. To the extent feasible other marsh management activities requiring drawdown (e.g., mowing, disking, or grazing) will also be conducted at this time so that additional drawdowns are not required in the near future. As mentioned previously berm repair is expected to occur infrequently, however; for the purposes of budgeting this Management Plan assumes a total of 100 feet of berm repair is necessary every ten years.

Task 5: Muskrat and Beaver Control.

Musk rats and beavers may live in the adjacent canals, ditches close to the Bank Property. Like GGS, these species will likely colonize the Bank Property, but have the potential to damage water control structures, especially berms and

flashboard risers. These species burrow into berms, which eventually undermines these structures. Beavers also construct dams, and plug water control structures. Muskrats also burrow in levees and eat tule and cattail roots. If the Bank Manager determines that beavers or muskrats are negatively impacting the Bank Property habitat structure or water management regime, the Bank Manager may start a control program.

If necessary, the following tasks will be developed: (1) Obtain a depredation permit from CDFW; and (2) body-trapping or shooting beaver and muskrat, focused during the early portion of the breeding season, between February and the end of April. Trapping or shooting may occur other times of year, if necessary under appropriate depredation permits issued by CDFW. For budgeting purposes, this task is expected to occur once every ten years and funds for these activities will be provided from the Endowment Fund contingency.

D. Agricultural Use Element

Objective: Maintain grazing as a compatible use of the property and as a valuable cover management tool with in the Bank Property.

Wetlands and uplands in restored landscapes within the Central Valley of California are extremely productive, generating annual herbaceous growth that, unless managed, rapidly becomes dense with old and dead growth. Periodic grazing can reduce this tendency, and creates soil conditions that contribute to proper plant germination and a proper mix of open water areas and emergent vegetation. Income from a grazing lease can also offset some of the management costs of the Bank Property such as water supply, and weed control.

Task 1: Contract with Grazing Lessee.

The Bank Manager will contract with a grazing lessee for spring and summer grazing within the Bank Property at appropriate stocking rates and intervals adjusted for economic viability for the lessee and ecological benefit to the Bank Property.

E. Outreach and Recreational Use Elements

Element E.1 Hunting

Objective: Ensure hunting practices at the Bank Property are compatible with the land stewardship goals of maintaining and enhancing habitat for GGS and wetlands.

The hunting season for upland birds and waterfowl occurs during the winter dormancy period for GGS while GGS are estivating and below ground level. Waterfowl hunting

season typically begins the third weekend in October of each year extending through January of the same winter migratory season. Occasional conservation hunts are allowed to extend through February. Pheasant season typically runs from mid-November through December each year. The hunting program for the Bank Property will not be open to the general public. All hunters are guests of WES staff and will be informed of the presence of GGS and the necessary precautions to avoid disturbing or harming the species. All hunting at the Bank Property will follow CDFW and USFWS regulations including open seasons and species to be taken, daily limits, shooting hours, use of non-toxic shot, shell and gauge restrictions, and collection of spent shotgun hulls after each hunt.

Use of trained bird hunting dogs is encouraged as a conservation measure. Hunting dogs reduce the avoidable crippling and loss of birds and will be under the control of their owners at all times.

Up to two waterfowl hunting blinds may be located within the Bank Property. Blinds will accommodate up to 3 hunters each (approximately 3 feet wide by 9 feet long) and may be constructed of wood or metal frames covered with native materials. The blinds will be temporary in nature (may be relocated, if necessary) and will likely be located on the edges of low islands within the Semi-Permanent Marsh units. These blinds may have ancillary value as GGS basking sites for thermal regulation in marsh areas.

WES staff will make sure all hunters have a valid hunting license, and are aware of the purpose of the Bank Property and the necessary precautions while on the site. Hunting activities are funded by each individual hunter, and are not funded out of the long-term management endowment.

Element E.2 Educational and Scientific Use

Due to the remote location of the Bank Property, currently, no education or interpretive program is planned at the Bank Property. However, at the discretion of the Bank Manager and with permission of the Signatory Agencies, access can be provided for educational and scientific opportunities. These opportunities include public or private school classes, boy scout, girl scout, Y.M.C.A., or other youth group educational visits and research. Educational visits by school age children will be limited to 30 visitors per tour. These opportunities will not be funded out of the long-term management endowment. Property Individuals or groups using the Bank Property for educational purposes will coordinate their use with the Bank Manager. If the educational activities will be passive in nature, such as an occasional walk through the Bank Property to discuss plants and animals of the Bank Property habitats, then the consent of the Bank Manager is sufficient. If active use of the Bank Property is proposed, or regular, but passive use of the Bank Property is proposed, review and approval by the Signatory Agencies is required. To avoid repeated inquiries with the Signatory Agencies, a use plan could be developed by the interested organization for a one-time approval. Interpretive trails and benches are not proposed on the Bank Property.

Objective: Support educational and scientific use of the Bank Property to

increase understanding of the value of habitat and management for GGS.

Task1: Coordination of Educational Site Visits

The Bank Manager will coordinate and lead educational or interpretive site visits, as necessary.

F Biological Monitoring Elements

Element F.1 Giant Garter Snake

Objective: Determine GGS occupancy at the Bank Property.

To assist with adaptive management, the Monitoring Biologist or qualified contractors will regularly monitor the occurrence of GGS at the Bank Property. Monitoring efforts can provide information about the efficacy of the Bank Property design or a particular management action.

The Monitoring Biologist will review results of the GGS surveys with the Signatory Agencies. An increase or decrease of GGS occurring at the Bank Property may not be related to the Bank Property design or management. Changes in regional land use, disease, or climate conditions, or other stochastic events may also cause overall fluctuations in population size or distribution. Review the Bank Property monitoring data with data from other GGS monitoring efforts will help determine if the results are site-specific or indicative of a range-wide change.

Task1: Quantitative GGS Monitoring

The Bank Manager will monitor GGS at the Bank Property every five years in perpetuity. GGS monitoring will utilize sampling methods tailored towards gathering information on GGS abundance, demographics, habitat selection and spatial distribution within the site. Data gathered will be compatible with ongoing population and habitat utilization modeling efforts currently being developed throughout the range of the species by Eric Hansen, as well as, the US Geological Survey. In general, this monitoring approach will involve establishing up to ten 5-trap lines randomly distributed within each habitat type on the site (i.e., open water, permanent marsh, semi-permanent marsh, and perimeter drains). Traps will be deployed three times each season for a total of 10 days for each trapping event. The actual number of traps and their placement will be determined prior to the onset of monitoring through evaluation of site characteristics and previous results of other sampling efforts utilized to develop the species modeling efforts.

Element F.2 Vegetation (Seasonal Wetlands and GGS Habitats)

Objective: Monitor vegetation structure and composition at the Bank Property.

Vegetation structure is a key component of each habitat type. Vegetation monitoring is intended to be of a general nature to determine if the desired plant species and associated habitat features are persisting under the current management practices.

Task 1: Quantitative Vegetation Survey

The Bank Manager will monitor vegetation and map the extent of Seasonal Wetlands and GGS habitats within the Bank Property every five years. As part of vegetation monitoring a low-level aerial photograph will be taken of the Bank Property in late-spring or summer to document vegetation growth within the Bank Property habitats. For each field, the Monitoring Biologist will conduct a relevé plot (Mueller-Dombois and Ellenberg 1974) within each plant community identifying all plant species, and estimating percent cover of each plant species present. Monitoring will occur in the late-spring or summer of each year in which GGS monitoring occurs (i.e., every five years). Vegetation communities and seasonal wetland extent will also be mapped and quantified through aerial photograph interpretation.

Task 2: Annual Photo Documentation

The Bank Manager will establish permanent photopoints and prepare a site map showing the locations and direction of view. A total of not less than 5 sites within the restored Seasonal Wetlands and not less than 5 sites within the GGS Habitats, will be identified and permanently marked in the field during Interim Management Period. Photos will be taken in late spring after Seasonal Wetlands have dried. Photos will be taken at least every five years from the beginning of the long-term management period.

G. Reporting and Administration

Element G.1 Annual Report

Objective: Provide annual report that addresses all management and monitoring tasks conducted and general site conditions to the Signatory Agencies, and any other appropriate parties.

The reporting period will be from September 1 of each year through August 30th of the following year. The annual report will be due October 30th each year. This reporting period and due date will allow for inclusion of hydrological monitoring of the Seasonal Wetlands, which takes place in late winter and spring, vegetative surveys, which take place in early summer, as well as any GGS surveys that may take place during June, July, and August.

Task1: Annual Report

The Bank Manager will prepare an annual report including a summary, and circulate the report to the Signatory Agencies, and other parties by October 31 of each year.

The Annual Report will include, at a minimum, the following components:

- A description of funds received and expended for management of the Bank Property during the previous year
- Status of biological resources on the Bank Property
- Results of biological monitoring or studies conducted on the Bank Property
- Description of all management actions taken on the Bank Property
- Descriptions of any problems encountered in managing the Bank Property
- Description of anticipated management actions for the coming year including any habitat enhancement measures deemed to be warranted
- Description of any changes in the monitoring or management program that appear to be warranted based on monitoring results to date

V Transfer, Replacement, Amendments, and Notices

A Transfer

Any subsequent transfer of responsibilities under this Management Plan to a different Bank Manager shall be requested by the Bank Manager in writing to the Signatory Agencies, shall require written approval by the Signatory Agencies, and shall be incorporated into this Management Plan by amendment. Any subsequent Property Owner assumes the Bank Manager responsibilities described in this Management Plan and as required in the Conservation Easement, unless otherwise amended in writing by the Signatory Agencies.

B Replacement

If the Bank Manager fails to implement the tasks described in this Management Plan and is notified of such failure in writing by the Signatory Agencies, the Bank Manager shall have 90 days to cure such failure. If failure is not cured within 90 days, the Bank Manager shall meet with the Signatory Agencies to resolve the failure. Such meeting shall occur within 30 days or a longer period if approved by the Signatory Agencies. Based on the outcome of the meeting, the Signatory Agencies may request, in writing, a replacement Bank Manager by amendment of this Management Plan. If Bank Manager fails to designate a replacement Bank Manager, then such public or private land or resource management organization acceptable to the Signatory Agencies and Property Owner may enter onto the Bank Property in order to fulfill the purposes of this Management Plan.

C Amendments

The Bank Manager along with the Signatory Agencies may meet and confer from time to time,

upon the request of any one of them, to discuss how the Management Plan could be revised to better meet the management objectives and preserve the habitat and conservation values of the Bank Property. Any proposed changes to the Management Plan shall be discussed with the Signatory Agencies, and the Bank Manager. Any proposed changes will be designed with input from all parties. Amendments to the Management Plan shall be approved by the Signatory Agencies in writing and shall be implemented by the Bank Manager.

If the Signatory Agencies determine, in writing, that continued implementation of the Management Plan would jeopardize the continued existence of a state or federally listed species, any written amendment to this Management Plan, determined by Signatory Agencies as necessary to avoid jeopardy, shall be a required management component and shall be implemented by the Bank Manager.

D Notices

Any notices regarding this Management Plan shall be directed as follows:

Bank Manager and Property Owner

Westervelt Ecological Services
600 North Market Blvd. Suite 3
Sacramento, CA 95834
Telephone: (916) 646-3644
Fax: (916) 646-3675

IRT, BEI Signatory Agencies:

US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1480
Sacramento, CA 95814
Attn: Chief, Regulatory Section
Telephone: (916) 557-2520
Fax: (916) 557-6877

U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105
Attn: Director, Water Division
Telephone: 415-947-8707
Fax: 415-947-3549

United States Fish and Wildlife Service
Sacramento Field Office
2800 Cottage Way Room 2605
Sacramento, CA 95825

Attn: Field Supervisor
Telephone: (916) 414-6600
Fax: (916) 414-6712

California Department of Fish and Wildlife
Region 2 Office
1701 Nimbus Road
Rancho Cordova, CA 95670
Attn: Regional Manager Department of Fish and Wildlife

VI Funding and Task Prioritization

A Funding

The attached Long-Term Management Endowment Analysis summarizes the anticipated costs of long-term management for the Bank Property. The total Endowment required for management of the Bank Property with a 5% contingency and current annual estimated capitalization rate of 3.5% is **\$685,777**. The National Fish And Wildlife Foundation will hold the Endowment Fund endowment principal and interest monies in a dedicated account, which consists of monies that are paid into it in trust pursuant to law, and with interest earned dispersed to fulfill the purposes for which payments into it are made. These interest monies will fund the long-term management, and monitoring activities on the Bank Property in a manner consistent with this Management Plan.

B Task Prioritization

The Bank Manager is only responsible for completing management tasks detailed in this plan and commensurate with funding available from the Endowment. If insufficient funding appears likely to affect the Bank Manager's ability to implement the management tasks as described, the Bank Manager along with the Signatory Agencies shall discuss task priorities and funding availability to determine which tasks will be implemented. In general, tasks are prioritized in this order: 1) required by a local, state, or federal agency; 2) tasks necessary to maintain or remediate habitat function; and 3) tasks that monitor resources, particularly if past monitoring has not shown downward trends. Equipment and materials necessary to implement priority tasks will also be considered priorities. Final determination of task priorities in any given year of insufficient funding will be determined in consultation with the Signatory Agencies, and as authorized by the Signatory Agencies in writing.

REFERENCES

- Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. *The Jepson manual: vascular plants of California*, second edition. University of California Press, Berkeley.
- California Department of Fish and Game (CDFG). 2013 California Natural Diversity Database. Computer file.
- Mueller-Dombois D.R., Ellenberg, H. 1974. *Aims and methods of vegetation ecology*. Wiley, New York..
- Reed, P. B. Jr. 1988. National list of plant species that occur in wetlands: California (Region 0). (Biological Report 88 [26.10].) U.S. Fish and Wildlife Service. Fort Collins, CO.
- U.S. Fish and Wildlife Service. 1999. (unpublished) Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). Portland, Oregon. ix + 192 pp.
- Wylie, Glenn D, Michael L, Cassaza, Christopher J Gregory, and Brian J. Halstead 2010 U.S. Geological Survey, Western Ecological Research Center. Abundance and Sexual Size Dimorphism of the Giant Gartersnake (*Thamnophis gigas*) in the Sacramento Valley of California. *Journal of Herpetology*, Vol. 44, No. 1, pp. 94–103, 2010