Wallace Kuhl
& ASSOCIATES INC

Final Biological Assessment

FORMER SPRECKELS SUGAR FACILITY

INDUSTRIAL AREA

Woodland, California

WKA No. 7864.03

January 28, 2008

Prepared for:

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Biological Assessment
FORMER SPRECKELS SUGAR FACILITY
INDUSTRIAL AREA
Woodland, California
Yolo County APNs: Portions of 027-250-05 and 27-250-06,
WKA No. 7864.03

Dear Mr. Tucker,

Wallace-Kuhl & Associates, Inc. is pleased to provide the results of the Biological Assessment for the Former Spreckels Sugar Facility (herein referred to as the site) for your review.

The observations and site conditions reported in the report listed above represented conditions observed during fieldwork. The site reconnaissance, investigation, and analysis summarized in the report was conducted using that level of skill and care as would be used by industry professionals for similar projects and under similar circumstances.

Thank you for the opportunity to provide environmental and ecological services for your project. Please call either of the undersigned at (916) 372-1434 if you have any questions.

Wallace-Kuhl & Associates, Inc.

Lindsay Tisch
Staff Environmental Scientist

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Ecological Services Director

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1.0 INTRODUCTION

Wallace-Kuhl & Associates, Inc. (WKA) completed a Field Reconnaissance on January 2, 3, 5, 14, and 15, 2008 to support the evaluation of the 40600 County Road 18C, Woodland, California property proposed redevelopment site (site) for a concrete batch plant. As a part of this assessment, WKA reviewed State and Federal databases for issues of ecological concern, and completed a field verification of ecological conditions. This assessment was conducted for 90 acres, which includes the 45 acre existing Spreckels production area and the proposed 45 acre panel storage area, which consists of a small fenced storage area and building, and farmed fields (the former mud ponds).

1.1 Site Description

The site consisted of a proposed 90-acre redevelopment in unincorporated Yolo County, California (Figure 1). The site was located at 40600 County Road 18C, approximately 2.5 miles northeast of Woodland, Yolo County, California, and was comprised of portions of Yolo County Assessor's Parcel Numbers (APNs) of 027-250-05 and 27-250-06.

The site was depicted on the 1981 United States Geological Survey (USGS) 7.5 Minute topographic map of the *Woodland Quadrangle* and the 1978 USGS 7.5 Minute topographic map of the *Grays Bend Quadrangle* as developed land (Figure 2). The site was located within Section 16, Township 10 North, Range 2 East, Mount Diablo Base and Meridian; approximately Latitude 38° 42' 33.5" N Longitude 121° 45' 5.8" W.

The site is a former industrial sugar processing facility on the west side of County Road 100B; a fenced storage area and an associated building and, the former mud ponds on the east side of County Road 100B. A few valley oaks (*Quercus lobata*) were scattered throughout the site. Several elderberry shrubs (*Sambucus* sp.) were located along the eastern edge of the site.

Surrounding land use includes a rail terminal, an active public road, a feedlot, a horse stable, active cropland, industrial waste areas, a bulk chemical storage facility, a feedlot operation, and scattered rural residences.

2.0 REGULATORY CRITERIA

The following sections summarize the general federal and state regulations of natural resources that are applicable to current site conditions. The following description is not all encompassing or intended to substitute for appropriate legal counsel.

2.1 Waters of the United States and California

Waters of the United States, as specified in 33 CFR Part 328 Definition of Waters of the United States, are any navigable body of water, or tributary, however small (including adjacent wetlands), that is regulated by Section 404 of the Clean Water Act (CWA) or Section 10 of the Rivers and Harbors Act. Essentially any project that involves working in or modification of navigable waters of the United States, including the discharge of dredged or fill material, must first obtain authorization from the US Army Corps of Engineers (USACE), under Section 404 of the CWA.

A State of California Water Quality Certification (CWA Section 401 permit) can be required from the Central Valley Regional Water Quality Control Board for potential impacts to waters of the State of California, and would typically involve implementation of a storm water pollution prevention plan (SWPPP) and the use of Best Management Practices (BMPs). Impacts to isolated waters are under the sole jurisdiction of the State, or in some cases, under joint jurisdiction based on specific site discharges, would require a Waste Discharge Requirement (WDR) permit. If a proposed project will result in the alteration of streams or of other waters of the state of California, California Department of Fish and Game (CDFG) requires notification prior to commencement, and also requires a Lake or Streambed Alteration Agreement (CDFG Code § 1600-1603, 5650F).

2.2 Threatened, Endangered or Otherwise Listed Species

The United States Fish and Wildlife Service (USFWS) implements the Federal Endangered Species Act of 1973 ("Federal ESA," 16 USC §1531 *et seq.*). Threatened and endangered species on the Federal list (50 CFR §17.11, 17.12) are protected from "take" (direct or indirect harm), unless a Section 10 Permit is granted or a Biological Opinion with incidental take provisions is rendered.

Pursuant to the requirements of the Federal ESA, a federal agency (or federal funder) reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species.

Under the Federal ESA, habitat loss is considered to be a negative impact to the species. In addition, the USFWS is required to determine whether a project is likely to jeopardize the continued existence of any species proposed to be listed under the Federal ESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Therefore, project-related impacts to these species or their habitats may be considered significant and would require mitigation.

USFWS also designates species of concern. Species of concern may receive attention from federal agencies during environmental review, although these species are not otherwise protected under the Federal ESA. Project-related impacts to such species could also be considered significant and may require mitigation.

The CDFG implements state regulations pertaining to the protection of fish and wildlife and their habitats. The California Native Plant Protection Act of 1977 (CFG Code §1900 *et seq.*) requires CDFG to establish criteria for determining if a species or variety of native plant is endangered or rare. Section 1913 of the code requires that landowners notify CDFG at least 10 days prior to initiating activities that will destroy a listed plant to allow sufficient time for salvaging of plant material.

The California Endangered Species Act of 1970 ("CESA," CFG Code §2050 *et seq.*, and CCR Title 14, §670.2, 670.51) prohibits the take (interpreted to mean the direct killing of a species) of species listed under CESA (14 CCR §670.2, 670.5). A CESA permit must be obtained if a project will result in a take of listed species, either during construction or over the life of the project. Under CESA, CDFG has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFG Code §2070). CDFG also maintains lists of Species of Special Concern (SC), which serve as "watch lists," or species whose breeding populations in California may face extirpation. Although these species have no specific legal status, the CDFG recommends consideration of them during analysis of the impacts of proposed projects to protect declining populations and avoid the need to list them as endangered in the future.

Pursuant to requirements of CESA, an agency reviewing the proposed project within its jurisdiction must determine whether any state-listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA "threatened and endangered species" list would be considered significant and would require mitigation. Impacts to Species of Special Concern would also be considered significant under certain circumstances (CDFG, 2007c).

Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFG (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

2.3 Migratory Bird Treaty Act

Most bird species, except for certain game or "pest" species identified by the State of California are protected under federal or state regulations. Under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC §703-711), migratory bird species (and their nests and eggs) that are federally listed (50 CFR §10.13) are protected from "taking," including injury or death. Project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code §3503, 3503.5, and 3800, also prohibits the possession, incidental take, or needless destruction of birds, their nests, and eggs.

2.4 Regulatory Guidelines

The following mitigation guidelines and requirements are provided by the regulatory agencies to meet specific recovery targets, which vary by potential species impacts and geographic location. In many cases there is often a guidance minimum, such as wetland replacement of 1:1, or one acre for every acre that was impacted by the project.

The USFWS and the CDFG have specific recommendations for directly impacted habitat loss or conversion, and the USFWS has additional requirements for indirect impacts, depending on the species. Project specific requirements for listed species, such as the Swainson's hawk, valley elderberry longhorn beetle, and giant garter snake can be assessed on a case-by-case basis by the USFWS and CDFG.

There are specific regulatory and interpretive variations to these guidance's for each agency and the guidance mitigation ratios are typically the starting point for a project's mitigation evaluation. The following are the USFWS and the CDFG mitigation guidelines for the burrowing owl, Swainson's hawk, valley elderberry longhorn beetle, and giant garter snake.

2.4.1 Staff Report on Burrowing Owl Mitigation (CDFG, 1995b)

California's burrowing owl population is clearly declining and, if declines continue, the species may qualify for listing (CDFG, 1995b). Conflicts between owls and development often occur because of the intense pressure for urban development within suitable burrowing owl nesting and foraging habitat. Owl survival can be adversely affected by disturbance and foraging habitat loss even when impacts to individual birds and nests/burrows are avoided.

The project site and a 150 m (500 ft) buffer (where possible and appropriate based on habitat) should be surveyed to assess the presence of burrowing owls and their habitat. If occupied habitat is detected on or adjacent to the site, measures to avoid, minimize, or mitigate the project's impacts to the species should be incorporated into the project, including burrow preconstruction surveys to ensure avoidance of direct take. It is also recommended that preconstruction surveys be conducted if the species was not detected, but is likely to occur on the project site.

Burrowing owl and burrow surveys should be conducted during both the wintering and nesting seasons, unless the species is detected on the first survey. If possible, the winter survey should be conducted between December 1 and January 31 when wintering owls are most likely to be present. The nesting survey should be conducted between April 15 and July 15 at the peak of the breeding season.

The following should be considered impacts to the species:

- Disturbance within 50 m (160 ft) which may result in harassment of owls at occupied burrows;
- Destruction of natural and artificial burrows (culverts, concrete slabs, and debris piles that provide shelter to burrowing owls); and,
- Destruction and/or degradation of foraging habitat adjacent within 90 m (300 ft) of an occupied burrow(s).

Mitigation actions should be carried out from September 1 to January 31, which is prior to the nesting season. Preconstruction surveys of suitable habitat at the project site and buffer zone should be conducted within the 30 days prior to construction to ensure no additional burrowing owls have established territories since the initial surveys. If ground-disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site should be resurveyed (CDFG, 1995b).

The following specific mitigation measures are required:

- Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive methods that either: the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival;
- To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat per pair or unpaired resident bird should be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG;
- When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created at a ratio of 2:1 on the protected lands site; and,
- If owls must be moved away from the disturbance area, passive relocation techniques should be used rather than trapping. At least one or more weeks will be necessary to accomplish this and allow the owls to acclimate to alternate burrows.

If avoidance is the preferred method of dealing with potential project impacts, then no disturbance should occur within 50 m (160 ft) of occupied burrows during the nonbreeding season of September 1 through January 31 or within 75 m (250 ft) during the breeding season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be permanently preserved contiguous with occupied burrow sites for each breeding pair or single unpaired resident bird. The configuration of the protected habitat should be approved by the CDFG.

2.4.2 CDFG Mitigation Guidelines for Swainson's Hawk (CDFG, 1994)

The primary management issues currently facing Swainson's Hawks in California are:

- Loss of preferred nesting habitat in mature riparian forest;
- Loss or adverse modification of high-quality foraging habitat to development or conversion to incompatible crop types; and,
- High mortality due to pesticide use on migration route and wintering areas.

Loss of nesting and foraging habitat is currently a contentious issue between conservationists and developers in the California's Central Valley. Although not an obligate riparian species, the availability of nesting habitat is strongly tied to the distribution of riparian forest or riparian trees in much of the Central Valley portion of the species' range in California. Loss of small areas of remnant riparian forest within areas of highly suitable foraging habitat can result in permanent losses of Swainson's hawk territories. Similarly, loss of patches of high-quality foraging habitat to development or conversion to high-intensity crop types adjacent to riparian forest or other patches of trees may eliminate territories.

Preferred foraging habitats for Swainson's hawks include: alfalfa; fallow fields; beet, tomato, and other low-growing row or field crops; dry-land and irrigated pasture; rice land (during the non-flooded period); and cereal grain crops (including corn after harvest). Unsuitable foraging habitat types include crops where prey species (even if present) are not available due to vegetation characteristics (e.g., vineyards, mature orchards, and cotton fields, dense vegetation).

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a 0.8 km (½ mi) radius around all project activities, and if active nesting is identified within the 0.8 km (½ mi) radius, consultation is required.

Current management strategies for Swainson's Hawks in the Central Valley are focused on mitigation of habitat losses at known hawk territories (CDFG Mitigation guidelines), and habitat conservation under the USFWS Habitat Conservation Planning (HCP) process.

CDFG suggests the following mitigation guidelines:

- No intensive new disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project related activities which may cause nest abandonment or forced fledging, should be initiated within a 0.4 km (¼ mi) buffer zone of an active nest between March 1 – September 15 or until August 15 if a Management Authorization or Biological Opinion is obtained for the project;
- Nest trees should not be removed unless there is no feasible way of avoiding it. If a nest tree must be removed, a Management Authorization (including conditions to off-set the loss of the nest tree) must be obtained;
- If construction or other project related activities, which may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the project sponsor) by a qualified biologist should be required;
- If a nest is abandoned and if the nestlings are still alive, the project sponsor shall fund the recovery and hacking (controlled release of captive reared young) of the nestlings;
- Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 0.4 km (¼ mi) of an active nest should not be prohibited;
- Projects within 1.6 km (1 mi) of an active nest tree shall provide one acre of Habitat Management (HM) land for each acre of development authorized (1:1 ratio) or ½ acre of HM land (all of HM land requirements shall be met by fee title acquisition or a conservation easement [acceptable to the CDFG] which allows for the active management of the habitat for prey production on the HM lands) for each acre of development authorized (0.5:1 ratio);
- Projects within 8 km (5 mi) of an active nest tree but greater than 1.6 km (1 mi) from the nest tree shall provide 0.75 acres of HM land for each acre of urban development authorized (0.75:1 ratio); and,
- Projects within 16 km (10 mi) of an active nest tree but greater than 8 km (5 mi) from an active nest tree shall provide 0.5 acres of HM land for each acre of urban development authorized (0.5:1 ratio).

2.4.3 Yolo County Swainson's Hawk Mitigation Agreement (JPA, 2002)

In August of 2002, the Yolo County Habitat Conservation Joint Powers Agency (JPA) was formed for the purposes of acquiring habitat conservation easements and to prepare a Natural

Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) for all of Yolo County. The CDFG and USFWS have been working with the JPA on a Planning Agreement. Steering Committee. Once the NCCP/HCP and other planning documents are finalized, a comprehensive mitigation strategy will be available.

2.4.4 Conservation Guidelines for the VELB (USFWS, 1999)

Avoid and Protect Habitat Wherever Possible

Project sites that do not contain beetle habitat are preferred. If suitable habitat for the beetle occurs on the project site, or within close proximity where beetles will be affected by the project, these areas must be designated as avoidance areas and must be protected from disturbance during the construction and operation of the project. When possible, projects should be designed such that avoidance areas are connected with adjacent habitat to prevent fragmentation and isolation of beetle populations. Any beetle habitat that cannot be avoided as described below should be considered impacted and appropriate minimization measures should be proposed as described below.

Avoidance: Establishment and Maintenance of a Buffer Zone

Complete avoidance (i.e., no adverse effects) may be assumed when a 30 m (100 ft) (or wider) buffer is established and maintained around elderberry plants containing stems measuring 2.5 cm (1.0 in) or greater in diameter at ground level. Firebreaks may not be included in the buffer zone. In buffer areas construction-related disturbance should be minimized, and any damaged area should be promptly restored following construction. The USFWS must be consulted before any disturbances within the buffer area are considered. In addition, the USFWS must be provided with a map identifying the avoidance area and written details describing avoidance measures.

Protective Measures

1. Fence and flag all areas to be avoided during construction activities. In areas where encroachment on the 30 m (100 ft) buffer has been approved by the USFWS, provide a minimum setback of at least 6 m (20 ft) from the dripline of each elderberry plant.
2. Brief contractors on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.
3. Erect signs every 15 m (50 ft) along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment."

The signs should be clearly readable from a distance of 6 m (20 ft), and must be maintained for the duration of construction.

4. Instruct work crews about the status of the beetle and the need to protect its elderberry host plant.

Restoration and Maintenance

- Restore any damage done to the buffer area (area within 30 m [100 ft] of elderberry plants) during construction. Provide erosion control and re-vegetate with appropriate native plants;
- Buffer areas must continue to be protected after construction from adverse effects of the project. Measures such as fencing, signs, weeding, and trash removal are usually appropriate;
- No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 30 m (100 ft) of any elderberry plant with one or more stems measuring 2.5 cm (1.0 in) or greater in diameter at ground level;
- The applicant must provide a written description of how the buffer areas are to be restored, protected, and maintained after construction is completed; and,
- Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within 1.5 m (5 ft) of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment).

Transplant Elderberry Plants That Cannot Be Avoided

Elderberry plants must be transplanted if they cannot be avoided by the proposed project. All elderberry plants with one or more stems measuring 2.5 cm (1.0 in) or greater in diameter at ground level must be transplanted to a conservation area (see below). At the USFWS's discretion, a plant that is unlikely to survive transplantation because of poor condition or location, or a plant that would be extremely difficult to move because of access problems, may be exempted from transplantation. In cases where transplantation is not possible the minimization ratios may be increased to offset the additional habitat loss.

Trimming of elderberry plants (e.g., pruning along roadways, bike paths, or trails) with one or more stems 2.5 cm (1.0 in) or greater in diameter at ground level, may result in take of beetles.

1. **Monitor**: A qualified biologist (monitor) must be on-site for the duration of the transplanting of the elderberry plants to insure that no unauthorized take of the valley elderberry longhorn beetle occurs. If unauthorized take occurs, the monitor must have the authority to stop work until corrective measures have been completed. The monitor must immediately report any unauthorized take of the beetle or its habitat to the USFWS and to the California Department of Fish and Game.

2. **Timing**: Transplant elderberry plants when the plants are dormant, approximately November through the first two weeks in February, after they have lost their leaves. Transplanting during the non-growing season will reduce shock to the plant and increase transplantation success.

3. **Transplanting Procedure**:

   a. Cut the plant back 1 to 2 m (3 to 6 ft) from the ground or to 50 percent of its height (whichever is taller) by removing branches and stems above this height. The trunk and all stems measuring 2.5 cm (1.0 in) or greater in diameter at ground level should be replanted. Any leaves remaining on the plant should be removed.

   b. Excavate a hole of adequate size to receive the transplant.

   c. Excavate the plant using a Vemeer spade, backhoe, front end loader, or other suitable equipment, taking as much of the root ball as possible, and replant immediately at the conservation area. Move the plant only by the root ball. If the plant is to be moved and transplanted off site, secure the root ball with wire and wrap it with burlap. Dampen the burlap with water, as necessary, to keep the root ball wet. Do not let the roots dry out. Care should be taken to ensure that the soil is not dislodged from around the roots of the transplant. If the site receiving the transplant does not have adequate soil moisture, pre-wet the soil a day or two before transplantation.

   d. The planting area must be at least 170 square meters (1,800 square feet) for each elderberry transplant. The root ball should be planted so that its top is level with the existing ground. Compact the soil sufficiently so that settlement does not occur. As many as 5 additional elderberry plantings (cuttings or seedlings) and up to 5 associated native species plantings (see below) may also be planted within the 170 square meter (1,800 square foot) area with the transplant. The transplant and each new planting should have its own watering basin measuring at least 1 m (3 ft) in diameter. Watering basins should have a continuous berm measuring approximately 20 cm (8 in) wide at the base and 15 cm (6 in) high.

   e. Saturate the soil with water. Do not use fertilizers or other supplements or paint the tips of stems with pruning substances, as the effects of these compounds on the beetle are unknown.

f. Monitor to ascertain if additional watering is necessary. If the soil is sandy and well-drained, plants may need to be watered weekly or twice monthly. If the soil is clayey and poorly-drained, it may not be necessary to water after the initial saturation. However, most transplants require watering through the first summer. A drip watering system and timer is ideal. However, in situations where this is not possible, a water truck or other apparatus may be used.

Plant Additional Seedlings or Cuttings

Each elderberry stem measuring 2.5 cm (1.0 in) or greater in diameter at ground level that is adversely affected (i.e., transplanted or destroyed) must be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems). Stock of either seedlings or cuttings should be obtained from local sources. Cuttings may be obtained from the plants to be transplanted if the project site is in the vicinity of the conservation area. If the USFWS determines that the elderberry plants on the proposed project site are unsuitable candidates for transplanting, the USFWS may allow the applicant to plant seedlings or cuttings at higher than the stated ratios for each elderberry plant that cannot be transplanted.

Plant Associated Native Species

Studies have found that the beetle is more abundant in dense native plant communities with a mature overstory and a mixed understory. Therefore, a mix of native plants associated with the elderberry plants at the project site or similar sites will be planted at ratios ranging from 1:1 to 2:1 (native tree/plant species to each elderberry seedling or cutting). These native plantings must be monitored with the same survival criteria used for the elderberry seedlings (see below). Stock of saplings, cuttings, and seedlings should be obtained from local sources. If the parent stock is obtained from a distance greater than one mile from the conservation area, approval by the USFWS of the native plant donor sites must be obtained prior to initiation of the revegetation work. Planting or seeding the conservation area with native herbaceous species is encouraged. Establishing native grasses and forbs may discourage unwanted non-native species from becoming established or persisting at the conservation area. Only stock from local sources should be used.

Conservation Area—Provide Habitat for the Beetle in Perpetuity

The conservation area is distinct from the avoidance area (though the two may adjoin), and serves to receive and protect the transplanted elderberry plants and the elderberry and other native plantings. The USFWS may accept proposals for off-site conservation areas where appropriate.

1. **Size**. The conservation area must provide at least 170 square meters (1,800 square feet) for each transplanted elderberry plant. As many as 10 conservation plantings (i.e., elderberry cuttings or seedlings and/or associated native plants) may be planted within the 170 square meter (1800 square foot) area with each transplanted elderberry. An additional 170 square meters (1,800 square feet) shall be provided for every additional 10 conservation plants. Each planting should have its own watering basin measuring approximately three feet in diameter. Watering basins should be constructed with a continuous berm measuring approximately 20 cm (8 in) wide at the base and 15 cm (6 in) high.

   The planting density specified above is primarily for riparian forest habitats or other habitats with naturally dense cover. If the conservation area is an open habitat (i.e., elderberry savanna, oak woodland) more area may be needed for the required plantings. Contact the USFWS for assistance if the above planting recommendations are not appropriate for the proposed conservation area.

   No area to be maintained as a firebreak may be counted as conservation area. Like the avoidance area, the conservation area should connect with adjacent habitat wherever possible, to prevent isolation of beetle populations.

   Depending on adjacent land use, a buffer area may also be needed between the conservation area and the adjacent lands. For example, herbicides and pesticides are often used on orchards or vineyards. These chemicals may drift or runoff onto the conservation area if an adequate buffer area is not provided.

2. **Long-Term Protection**. The conservation area must be protected in perpetuity as habitat for the valley elderberry longhorn beetle. A conservation easement or deed restrictions to protect the conservation area must be arranged. Conservation areas may be transferred to a resource agency or appropriate private organization for long-term management. The USFWS must be provided with a map and written details identifying the conservation area; and the applicant must receive approval from the USFWS that the conservation area is acceptable prior to initiating the conservation program. A true, recorded copy of the deed transfer, conservation easement, or deed restrictions protecting the conservation area in perpetuity must be provided to the USFWS before project implementation.

   Adequate funds must be provided to ensure that the conservation area is managed in perpetuity. The applicant must dedicate an endowment fund for this purpose,

and designate the party or entity that will be responsible for long-term management of the conservation area. The USFWS must be provided with written documentation that funding and management of the conservation area (items 3-8 above) will be provided in perpetuity.

3. **Weed Control**. Weeds and other plants that are not native to the conservation area must be removed at least once a year, or at the discretion of the USFWS and the California Department of Fish and Game. Mechanical means should be used; herbicides are prohibited unless approved by the USFWS.

4. **Pesticide and Toxicant Control**. Measures must be taken to insure that no pesticides, herbicides, fertilizers, or other chemical agents enter the conservation area. No spraying of these agents must be done within 30 m (100 ft) of the area, or if they have the potential to drift, flow, or be washed into the area in the opinion of biologists or law enforcement personnel from the USFWS or the CDFG.

5. **Litter Control**. No dumping of trash or other material may occur within the conservation area. Any trash or other foreign material found deposited within the conservation area must be removed within 10 working days of discovery.

6. **Fencing**. Permanent fencing must be placed completely around the conservation area to prevent unauthorized entry by off-road vehicles, equestrians, and other parties that might damage or destroy the habitat of the beetle, unless approved by the USFWS. The applicant must receive written approval from the USFWS that the fencing is acceptable prior to initiation of the conservation program. The fence must be maintained in perpetuity, and must be repaired/replaced within 10 working days if it is found to be damaged. Some conservation areas may be made available to the public for appropriate recreational and educational opportunities with written approval from the USFWS. In these cases appropriate fencing and signs informing the public of the beetle's threatened status and its natural history and ecology should be used and maintained in perpetuity.

7. **Signs**. A minimum of two prominent signs must be placed and maintained in perpetuity at the conservation area, unless otherwise approved by the USFWS. The signs should note that the site is habitat of the federally threatened valley elderberry longhorn beetle and, if appropriate, include information on the beetle's natural history and ecology. The signs must be approved by the USFWS. The

signs must be repaired or replaced within 10 working days if they are found to be damaged or destroyed.

Monitoring

The population of valley elderberry longhorn beetles, the general condition of the conservation area, and the condition of the elderberry and associated native plantings in the conservation area must be monitored over a period of either 10 consecutive years or for 7 years over a 15-year period. The applicant may elect either 10 years of monitoring, with surveys and reports every year; or 15 years of monitoring, with surveys and reports on years 1, 2, 3, 5, 7, 10, and 15. The conservation plan provided by the applicant must state which monitoring schedule will be followed. No change in monitoring schedule will be accepted after the project is initiated. If conservation planting is done in stages (i.e., not all planting is implemented in the same time period), each stage of conservation planting will have a different start date for the required monitoring time.

In any survey year, a minimum of two site visits between February 14 and June 30 of each year must be made by a qualified biologist. Surveys must include:

1. A population census of the adult beetles, including the number of beetles observed, their condition, behavior, and their precise locations. Visual counts must be used; mark-recapture or other methods involving handling or harassment must not be used.
2. A census of beetle exit holes in elderberry stems, noting their precise locations and estimated ages.
3. An evaluation of the elderberry plants and associated native plants on the site, and on the conservation area, if disjunct, including the number of plants, their size and condition.
4. An evaluation of the adequacy of the fencing, signs, and weed control efforts in the avoidance and conservation areas.
5. A general assessment of the habitat, including any real or potential threats to the beetle and its host plants, such as erosion, fire, excessive grazing, off-road vehicle use, vandalism, excessive weed growth, etc.

The materials and methods to be used in the monitoring studies must be reviewed and approved by the USFWS. All appropriate Federal permits must be obtained prior to initiating the field studies.

A written report, presenting and analyzing the data from the project monitoring, must be prepared by a qualified biologist in each of the years in which a monitoring survey is required. Copies of the report must be submitted by December 31 of the same year to the USFWS (Chief of Endangered Species, Sacramento Fish and Wildlife Office), and the Department of Fish and Game (Supervisor, Environmental Services, Department of Fish and Game, 1416 Ninth Street, Sacramento, California 95814; and, Staff Zoologist, California Natural Diversity Data Base, Department of Fish and Game, 1220 S Street, Sacramento, California 95814). The report must explicitly address the status and progress of the transplanted and planted elderberry and associated native plants and trees, as well as any failings of the conservation plan and the steps taken to correct them. Any observations of beetles or fresh exit holes must be noted. Copies of original field notes, raw data, and photographs of the conservation area must be included with the report. A vicinity map of the site and maps showing where the individual adult beetles and exit holes were observed must be included. For the elderberry and associated native plants, the survival rate, condition, and size of the plants must be analyzed. Real and likely future threats must be addressed along with suggested remedies and preventative measures (e.g., limiting public access, more frequent removal of invasive non-native vegetation, etc.).

A copy of each monitoring report, along with the original field notes, photographs, correspondence, and all other pertinent material, should be deposited at the California Academy of Sciences (Librarian, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118) by December 31 of the year that monitoring is done and the report is prepared. The USFWS's Sacramento Fish and Wildlife Office should be provided with a copy of the receipt from the Academy library acknowledging receipt of the material, or the library catalog number assigned to it.

Biologists and law enforcement personnel from the CDFG and the USFWS must be given complete access to the project site to monitor transplanting activities. Personnel from both these agencies must be given complete access to the project and the conservation area to monitor the beetle and its habitat in perpetuity.

2.4.5 Standard Measures in Giant Garter Snake Habitat (USFWS, 1997)

The purpose of this programmatic consultation is to expedite Corps permitted projects, including activities, which may qualify for authorization under nationwide permitting, with relatively small effects on the giant garter snake and its habitat. Projects, which exceed the programmatic threshold, will require individual biological opinions.

Disturbance Area. Primary disturbance acreage will be determined by project area; however, disturbance area may exceed project boundaries because a 61 m radius (200 ft) from the edge of giant garter snake aquatic habitat is incorporated to include essential habitat components and determine potential take. Disturbance may be temporary and/or permanent and should consider: (1) opportunities to avoid habitat within the project area; (2) area of dewatering and period of time dewatered; and (3) temporary haul roads and equipment staging areas. The 61 m (200 ft) radius also will be used to evaluate aquatic habitat disturbance during temporary alterations, i.e., upstream and downstream from berms placed for temporary dewatering.

Temporary Impacts. Temporary impacts are project activities, which temporarily remove essential habitat components, but can be restored to preproject conditions of equal or greater habitat values. Projects, which are to be considered temporary impacts, must be able to implement the project and restore the affected habitat within two seasons.

Permanent Impacts. Permanent impacts are those project activities, which result in loss of habitat and/or permanently remove essential habitat components. Temporary projects that exceed two seasons to complete will be considered permanent impacts and require mitigation equal to permanent impacts. Temporary projects that exceed two seasons may partially compensate the permanent impact ratio by completing restoration of the affected habitat.

Season. A season is defined as the calendar year period between May 1 and October 1, the active period for giant garter snake when mortality is less likely to occur. Project impacts and restoration of habitat that can be completed within this period or, if necessary, within the same calendar year with an approved extension, will be considered occurring within one season for the purposes of mitigation.

Monitoring. The following level of monitoring is required when specified: (1) photo documentation included in a report notifying the Service when the habitat restoration or creation was completed, what materials were used, plantings (if specified) and justification of any substitutions to the Service recommended guidelines included in Appendix A; (2) photo documentation and progress report submitted one year from restoration implementation, or years one, two, and five for replacement habitat; (3) justification from release of any further monitoring, if requested; and (4) recommendations for remedial actions and request for approval from the Service, if necessary.

Programmatic Consultation Guidelines

Initial project authorization under this programmatic opinion is dependent upon the following criteria:

1. Impacts will not exceed permanent losses of 3.00 acres of giant garter snake habitat. Giant garter snake habitat includes both upland and aquatic habitat components. The aquatic habitat component of giant garter snake habitat will not exceed more than 1.00 acre of the total permanent losses.
2. Impacts will not exceed permanent loss of 66 m (218 linear ft) of bankside habitat.
3. Impacts will not exceed 20.00 acres of temporary disturbance to giant garter snake habitat. This total includes both upland and aquatic habitat components of giant garter snake habitat.
4. The Scope of Work is one or more of the types listed below and routinely authorized under the Corps Nationwide permitting program, or by individual permit as appropriate.

Avoidance and Minimization Measures:

1. Avoid construction activities within 61 m (200 ft) from the banks of giant garter snake aquatic habitat. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
2. Construction activity within habitat should be conducted between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.
3. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project area as Environmentally Sensitive Areas. This area should be avoided by all construction personnel.
4. Construction personnel should receive Service-approved worker environmental awareness training. This training instructs workers to recognize giant garter snakes and their habitat(s).
5. 24-hours prior to construction activities, the project area should be surveyed for giant garter snakes. Survey of the project area should be repeated if a lapse in construction

activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6600.

6. Any dewatered habitat should remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.
7. After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.

Giant garter snake habitat includes 2.0 acres of surrounding upland habitat for every 1.0 acre of aquatic habitat. The 2.0 acres of upland habitat also may be defined as 66 m (218 linear ft) of bankside habitat, which incorporates adjacent uplands to a width of 200 feet from the edge of each bank. Each acre of created aquatic habitat should be supported by two acres of surrounding upland habitat. Compensation may include creating upland refuges and hibernacula for the giant garter snake that are above the 100-year flood plain.

3.0 METHODOLOGY

3.1 Species Description

This section presents a description of the listed species that have the potential to occupy the site. This description does not mean that the species occupy or are even likely to occupy the site. The California Natural Diversity Database (CNDDB) was used as the starting point for identifying species that may occur on the site (Figure 3). The field team queried the site-specific database prior to the site visit to ensure familiarity with the potential species associated with or areas adjacent to the site, and where previous observations had occurred or how far away they may be from the site.

A lack of observations within the CNDDB database does not necessarily exclude species' presence at the site today or in the future. It is also important to note that the time of day, time of year, unusually wet or dry periods, agricultural and other land use practices, and random chance, can all influence the potential for observations of plants and animals at the site. Use of the database and field visits are the only available means for investigating the documented and observed plant and animal use of a site, but they do not preclude use of the site by species that were not observed. In cases where the USFWS or CDFG assess that the habitat is sufficient to support use, these agencies may require habitat assessments and/or protocol level surveys to further investigate the potential for use by listed species.

The following Tables (1 and 2) describe species that have been identified in the area (within the quadrangle and on/proximate to the site respectively) by the CNDDB and may have the potential to occupy the site. Actual site use by a particular species is constrained by a number of factors including the availability of suitable habitat, and other site uses and disturbance.

Table 1. CNDDB Woodland and Gray's Bend Quadrangle Query Results.

Scientific Name	Common Name	Federal Status	CA Status*	CDFG	CNPS
Agelaius tricolor	tricolored blackbird	None	None	SC	
Antrozous pallidus	pallid bat	None	None	SC	
Astragalus tener var. tener	alkali milk-vetch	None	None		1B.2
Atriplex depressa	brittlescale	None	None		1B.2
Atriplex joaquiniana	San Joaquin spearscale	None	None		1B.2
Buteo swainsoni	Swainson's hawk	None	Threatened		
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None		
Charadrius montanus	mountain plover	None	None	SC	
Cordylanthus palmatus	palmate-bracted bird's-beak	Endangered	Endangered		1B.1
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Threatened	None		
Lasionycteris noctivagans	silver-haired bat	None	None	SC	
Lasiurus cinereus	hoary bat	None	None	SC	
Lepidium latipes var. *heckardii*	Heckard's pepper-grass	None	None		1B.2
Plegadis chihi	white-faced ibis	None	None	SC	
Pogonichthys macrolepidotus	Sacramento splittail	None	None	SC	
Taxidea taxus	American badger	None	None	SC	
Thamnophis gigas	giant garter snake	Threatened	Threatened		

CDFG, 2007b. CDFG-California Department of Fish and Game. CNPS-California Native Plant Society List. CDFG SC-Species of Special Concern. *CA Status is CESA, and project-related impacts to species on the "threatened and endangered species" list could be considered significant and require mitigation. CNPS 1B.1-seriously endangered in California; and, 1B.2-fairly endangered in California.

Table 2. CNDDB Site-Specific Query Results.

Scientific Name	Common Name	Fed. Status	CA Status*	CDFG	CNPS	Distance[1]
Agelaius tricolor	tricolored blackbird	None	None	SC		0.62[2], 1.64[3]
Antozous pallidus	pallid bat	None	None	SC		1.51
Atriplex depressa	brittlescale	None	None		1B.2	1.44
Atriplex joaquiniana	San Joaquin spearscale	None	None		1B.2	1.44
Buteo swainsoni	Swainson's hawk	None	Threatened			0.06[4], 0.24[2], 0.78[3]
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None			0.62
Charadrius montanus	mountain plover	None	None	SC		0.62[2], 1.37[3]
Cordylanthus palmatus	palmate-bracted bird's-beak	Endangered	Endangered		1B.1	1.44
Lasionycteris noctivagans	silver-haired bat	None	None	SC		1.51
Lasiurus cinereus	hoary bat	None	None	SC		1.51
Taxidea taxus	American badger	None	None	SC		1.51

CDFG, 2007b. CNPS 1B.1-seriously endangered in California; and, 1B.2-fairly endangered in California. *CA Status is CESA, and project-related impacts to species on the "threatened and endangered species" list could be considered significant and require mitigation. [1]Distance is in miles. [2]Distance from site boundary to closest edge of species radius (e.g., the center of the tri-colored blackbird observation was 5,076 feet further away than the radius). [3]Several sightings were noted, so the mean distance used. [4]Distance is from center of reported nest to site boundary, as CNDDB species circle is approximately 80 meters wide.

3.2 Species Detail

Tricolored blackbird

The tricolored blackbird (*Agelaius tricolor*) is a small bird measuring 19-22 centimeters (cm) (7.5-8.75 inches [in]) in length. An adult male blackbird has bright red shoulder patches bordered by white. The females usually lack the red on the shoulder and are a sooty brown with a heavily streaked breast. The male tricolored blackbird can be distinguished from the red-winged blackbird by its white, not yellow, shoulder patch. The females, however, are quite similar to the red-winged blackbird, but the tricolored blackbirds typically have a darker belly (Dunn and Alderfer, 2006). The tricolored blackbird has been listed as a Species of Special Concern by the CDFG since 1990 (The Tricolored Blackbird Working Group, 2007).

The tricolored blackbird can be found from southern Oregon east of the coast range, south through the interior of California along the Pacific Coast from central California to northwest Baja California. They are residents from northern California south throughout the breeding range and adjacent to agricultural areas. Some northern birds are migratory (USDA Forest Service, 2007).

The tricolored blackbird breeds in freshwater marshes of cattail, tule, bulrush, and sage and roosts in the strips along marshes between rice fields. They build nests of cattails, sedges, grasses, or other aquatic vegetation gathered from the surface or in shallow water. The nests are attached to cattails or twigs in shrubs and blackberry thickets, usually near water. The tricolored blackbird prefers live emergent vegetation for nesting. They feed and roost in dense flocks, ranging from 4 to over 20,000 in a colony, throughout the year. In winter, they move through marshes, open cultivated lands, and pastures (USDA Forest Service, 2007).

The diet of the tricolored blackbird consists of food from the ground and low vegetation; such as insects, spiders, and occasionally small tadpoles and snails. In winter, they eat rice and a variety of grain crops (USDA Forest Service, 2007).

It is unlikely that the tricolored blackbird has any significant use of the project site. There were no tricolored blackbirds observed at the site during field reconnaissance, despite significant time observing the most likely habitat. Suitable nesting habitat is not present for this species at the site. The tricolored blackbird is a communal nester that requires a significant area of suitable nesting habitat of a kind (extent and vegetation structure) that was not observed at the site. There are no specific mitigation guidelines for this species, except for the standard breeding bird survey, and avoidance of disturbance of active nests.

Pallid bat

The pallid bat (*Antrozous pallidus*) is large and pale, with large ears (not joined at base), large eyes, a simple muzzle, and a yellowish drab dorsal pelage that is paler towards the hair tips and darker at the base (palest in deserts, darkest along coast). The total length is 92 to 135 millimeters (mm) (3.7 to 5.4 in), ear length is 21 to 37 mm (0.84 to 1.5 in), and forearm length is 45 to 60 mm (1.8 to 2.4 in). Females tend to be larger than males with an average weight of 13.9 to 28.0 grams (g) (0.03 to 0.06 pounds [lbs]) in females and 13.6-24.1 grams (0.03 to 0.05 lbs) in males. The calcar lacks a keel (the foot cartilage does not have a projection). Pallid bats also have a distinctive skunky odor (Montana Fish, Wildlife and Parks, 2007). The pallid bat is listed as a Species of Special Concern by the CDFG.

It differs from the Townsend's big-eared bat (*Corynorhinus townsendii*) by lacking the lumps on the nose, having ears that are not joined at the base, a pale rather than brownish pelage, and a larger body size. It differs from the spotted bat (*Euderma maculatum*) most noticeably by lacking the dark pelage with the prominent white spots (Montana Fish, Wildlife and Parks, 2007).

Pallid bats have been found in arid deserts, juniper woodlands, sagebrush shrub-steppe, and grasslands, often with rocky outcrops and water nearby. They are less abundant in evergreen and mixed conifer woodlands. They typically roost in rock crevices or buildings, less often in caves, tree hollows, under bridges, and in abandoned mines. Day and night roosts are usually distinct. Day roosts include rock piles, tree hollows, and rock crevices. Pallid bats found in caves or mines usually use crevices within these places. Maternity colonies are often located in horizontal crevices in rock outcrops and man-made structures (Montana Fish, Wildlife and Parks, 2007).

The primary diet is arthropods, which are often captured on the ground after an aerial search. They also capture some food (large insects) in flight, within a few meters of ground vegetation. Food items include flightless arthropods, such as scorpions, solpugids, centipedes, Jerusalem crickets, grasshoppers, moths, and beetles; they may eat small vertebrates, such as lizards and mice. Pallid bats also visit bat-adapted plants (e.g., Agave), probably seeking insects. Foraging often occurs at 0.5 to 2.5 meters (m) (1.65 to 8.25 feet [ft]) above ground (Montana Fish, Wildlife and Parks, 2007).

This species was not observed at the site during the field reconnaissance, however potentially suitable habitat does exist on and adjacent to the site. There were numerous small cavities and hollows in the valley oak trees found onsite, and the buildings located onsite could also provide

suitable habitat for this species. There are no specific mitigation guidelines for this species, except for the standard bat survey, and avoidance of disturbance of active roosts.

Alkali milk-vetch

Alkali milk-vetch (*Astragalus tener* var. *tener*) is a delicate, 4-30 cm (1.5-11.8 in) tall, annual herb in the pea family. Its leaves are pinnately compound, 2-9 cm (0.8-3.5 in) long, with seven to 17 well-separated leaflets. The inflorescence is dense and consists of 3 to 12 pink-purple, pea-like flowers. It can be confused with Ferris's milk vetch (*A. t.* var. *ferrisiae*), another rare plant, but can be distinguished by its *fruits*, which are up to 2.5 cm (1 in) long on a round base whereas those of Ferris's milk-vetch are up to 5 cm (2 in) on a short, stalk-like base (LSA Associates Inc., 2004a). Alkali milk-vetch is a CNPS 1B.2 (fairly endangered in California) species.

The alkali milk-vetch can be found in Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, Santa Clara, San Francisco, San Joaquin, Solano, Sonoma, Stanislaus, and Yolo counties (CNPS, 2007). It grows in alkaline/saline soils in playas, valley and foothill grasslands on adobe clay, and in vernal pools (CNPS, 2007). It most often occurs at elevations between 1 to 60 meters (m) (3 to 197 feet [ft]) and can be found growing with *Chamaesyce hooveri, Orcuttia pilosa, Neostapfia colusana, Astragalus tener var. ferrisiae,* Sacramento saltbush (*Atriplex persistens*), *Legenere limosa, Tuctoria greenei, Cressa truxillensis,* hyssop-leaved bassia (*Bassia hyssopifolia*), *Frankenia salina, Grindelia camporum*, common spikeweed (*Hemizonia pungens*) and *Distichlis spicata* (CNPS, 2007; Sacramento Fish and Wildlife Office, 2001). It flowers between March and June (CNPS 2007).

There were no observations of alkali milk-vetch at the site. There is limited to no potential for this species at the site since the land is extensively disturbed by site uses, and there were no observations of alkaline/saline flats, clay flats or vernal pools. There are no specific mitigation guidelines for this species, however if alkalie milk-vetch is identified at the site during vegetation screening, the landowner must notify CDFG at least 10 days prior to initiating activities to allow sufficient time for salvaging of plant material.

Brittlescale

The brittlescale (*Atriplex depressa*) is an annual herb that generally grows prostrate and rarely exceeds 20 cm (8 in) (Jones and Stokes, 2006a). Very little ecological information is available for the brittlescale. The brittlescale is a CNPS 1B.2 (fairly endangered in California) species.

The brittlescale can be found in Alameda, Contra Costa, Fresno, Glenn, Merced, Solano, Stanislaus, Tulare, and Yolo counties (CNPS, 2007). It grows in meadows, seeps, playas, valley and foothill grasslands and vernal pools with alkaline clay soils. It most often occurs at elevations of 1 to 320 m (3 to 1056 ft). It flowers between May and October (CNPS, 2007). There were no observations of brittlescale at the site during the field reconnaissance. There is limited to no potential for this species to occur at the site since the site is extensively disturbed by site uses, and there is no evidence of meadows, seeps, playas, grasslands or vernal pools on site. There are no specific mitigation guidelines for this species, however if brittlescale is identified at the site during vegetation screening, the landowner must notify CDFG at least 10 days prior to initiating activities to allow sufficient time for salvaging of plant material.

San Joaquin spearscale

The San Joaquin spearscale (*Atriplex joaquiniana*) is an annual herb between 30 cm and 1 m (1 and 3 ft) tall (Jones and Stokes, 2006b). Very little ecological information is available for the San Joaquin spearscale. The San Joaquin spearscale is a CNPS 1B.2 (fairly endangered in California) species.

The San Joaquin spearscale can be found in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano, Tulare, and Yolo counties (CNPS, 2007). It grows in Chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands with alkaline soils. It most often occurs at elevations of 1 to 835 m (3 to 2755 ft). It flowers between April and October (CNPS, 2007).

There were no observations of San Joaquin spearscale at the site during the field reconnaissance. There is limited to no potential for this species to occur at the site since the site is extensively disturbed by site uses, and there is no evidence of Chenopod scrub, meadows, seeps, playas or valley and foothill grasslands with alkaline soils on the site. There are no specific mitigation guidelines for this species however, if San Joaquin spearscale is identified at the site during vegetation screening, the landowner must notify CDFG at least 10 days prior to initiating activities to allow sufficient time for salvaging of plant material.

Swainson's hawk

The Swainson's hawk (*Buteo swainsoni*) is a medium-sized hawk with long, pointed wings and a long, squaretail. Adult hawks are 48-56 cm (19-22 in) in length with a wingspan of 119-145 cm (47-57 in) and an average weight of 0.82 kg (1.81 lbs) for males and 1.11 kg (2.44 lbs) for females, respectively (Brown, 1996). Swainson's hawks have light and dark color phases (morphs) with several variations. Hawks of the light morph have a whitish forehead and white patch on the throat below the bill. The remainder of the head, sides of the throat, patch on its

chest, and all other upper body parts are dark brown (Brown, 1996). The belly is white and barred with brown. Hawks of the dark morph are entirely dark brown, except for a patch under the tail. Within northern California, the dark morph constitutes 35% of the population (Brown, 1996). California also has a rufous-colored variant of the dark morph with lighter brown and rusty barring on its underparts. All but the darkest hawks show a contrast between the lighter wing linings to the darker flight feathers (Dunn and Alderfer, 2006). The Swainson's hawk was listed as a State Threatened species on April 17, 1983 (CDFG, 2007d).

Nesting Swainson's hawks are still locally common to rare in the Central Valley and Great Basin (Woodbridge, 1998). Central Valley populations are centered in Sacramento, San Joaquin, Solano, and Yolo counties. Central Valley population estimates range from 280 (Bloom, 1980) to as high as 1000 nesting pairs (Woodbridge, 1998). Another relatively large population resides in the northern San Joaquin Valley. In the 1980's, an estimated 375 pairs existed in California, but not all of them nested (Brown, 1996). A study conducted in 1994 estimated the statewide population as approximately 800 pairs (CDFG, 2000).

Swainson's hawks breed from late March to late August, with young usually fledging by July. Nests are built on trees or utility poles at 1-30 m (4-100 ft) from the ground (CDFG, 2000). Nest materials consist of sticks and plant parts of sagebrush, Russian thistle, and other weeds (Fitzner, 1980). The female performs almost all the incubation, except when the male relieves the female during brief periods for feeding (Woodbridge, 1998). The incubation period is 34-35 days (Fitzner, 1980). Young are able to venture out onto branches at 27-33 days and can fly at 38-46 days (Fitzner, 1980). Young hawks may return to nests to be fed by parents or roost for up to 10 days following fledging. Fledgling success has been estimated at 0.6 per pair (Craighead and Craighead, 1956). Juveniles remain within the parental territory for 2-4 weeks after fledging and are dependant on adults for food (Fitzner, 1980; Estep, 1989). Length of stay within the parental territory may depend on food supply. Sometimes in agricultural areas, juveniles depart parental territories earlier and congregate at insect concentrations or agricultural harvest operations where food is more abundant (Estep, 1989; Woodbridge, 1998). Swainson's hawks have a life span of 15-20 years (Woodbridge, 1998).

Swainson's hawks forage over open habitats and often hunt from perches such as power poles and fence posts. During the breeding season, Swainson's hawks are known to travel long distances (up to 29 km or 18 mi) in search of habitats with abundant prey (Estep, 1989; Woodbridge, 1991). In agricultural habitats, foraging activity is closely associated with harvest or cultivation activities that expose prey to predation (Estep, 1989; Woodbridge, 1991).

The diet of nesting Swainson's hawks includes ground squirrels, voles, and other small mammals (Woodbridge, 1998). In Central California, territory density appears to be positively associated with the availability of the California vole (Estep, 1989). Swainson's hawks in the Central Valley of California preyed on a wide variety of species, ranging from small mammals and birds to toads, crayfish, and insects. Swainson's hawks have been observed using a variety of habitat types, including various prairie, shrub steppe, desert, and agricultural habitats. Swainson's hawks require large, open grassland with suitable prey for foraging and suitable trees for nests (CDFG, 2000).

This species was not observed on site during the field reconnaissance, but this was obviously limited by the seasonal migration of this species away from the region in winter. The industrialized nature of the vast majority of the site generally precludes Swainson's hawk nesting and foraging, although some suitable habitat exists on the east side of County Road 100B.

Approximately 7 mature trees suitable for perching and potentially nesting habitat does exist on the site (CDFG, 1994). WKA proposes that a qualified biologist conduct pre-project surveys to confirm that no Swainson's hawk nests within 0.8 km (½ mi) of the project site will be disturbed. Standard mitigation guidelines are found in Section 2.4.2.

Western snowy plover

The western snowy plover (*Charadrius alexandrinus nivosus*) is a small shorebird, about 15 cm (6 in) long, with a thin dark bill, pale brown to gray upper parts, white or buff colored belly, and darker patches on its shoulders and head, white forehead and supercilium (eyebrow line). Snowy plovers also have black patches above their white forehead and behind the eye. Juvenile and basic winter plumages are similar to the adult, but the black patches are absent. Some breeding males, especially in the southern portion of the species' range, may exhibit a rusty or tawny cap. Their dark gray to black legs is a useful characteristic when comparing them to other plover species (USFWS, 2007b). The federal government listed the western snowy plover as threatened in 1993 (USFWS, 2001).

The Pacific coast population of the snowy plover is defined as those individuals that nest adjacent to tidal waters of the Pacific Ocean, and includes all nesting birds on the mainland coast, peninsulas, offshore islands, adjacent bays, estuaries, and coastal rivers. The current known breeding range of this population extends from Damon Point, Washington, to Bahia Magdelena, Baja California, Mexico. Snowy plovers that nest at inland sites are not considered part of the Pacific coast population, although they may migrate to coastal areas during winter months (USFWS, 2007b).

The western snowy plover breeds primarily above the mean high tide line. Their preferred coastal nesting habitats are sand spits, dune-backed beaches, unvegetated beach strands, open areas around estuaries, and beaches at river mouths. Their nests typically are shallow scrapes or depressions on the ground on flat, open areas with sandy or saline substrates, where vegetation and driftwood is sparse or absent. The nesting season extends from early March through September, with peak nesting occurring from mid-April through mid-August (National Park Service, 2006).

Snowy plovers are primarily visual foragers, using the run-stop-peck method of feeding. They forage on invertebrates in the wet sand and amongst surf-cast kelp within the intertidal zone, in dry, sandy areas above the high tide, on salt pans, on spoil sites, and along the edges of salt marshes, salt ponds, and lagoons. They sometimes probe for prey in the sand and pick insects from low-growing plants (USFWS, 2001).

This species was not observed on the site during the field reconnaissance, however marginal habitat does exist on and adjacent to the site. There are no specific mitigation guidelines for this species, except for the standard breeding bird survey, and avoidance of disturbance of active nests.

Mountain plover

The mountain plover (*Charadrius montanus*) is a small bird about 20-24 cm (8-9.5 in) long and weighing about 105 grams (3.7 ounces). Breeding adults have black forecrowns, white foreheads and a thin, black eyeline. In winter, adults and young birds appear with a plain face, making their dark eyes stand out. Mountain plovers have a white wing stripe and wing linings, and a black band near the tail tip (Colorado Department of Natural Resources, 2007). The mountain plover is listed as a Species of Special Concern by the CDFG.

The mountain plover breeds in Montana, Wyoming, Colorado, New Mexico, and the Texas Panhandle east to Nebraska, and winters from central California and southern Arizona southward into Mexico. They do not breed in California (Colorado Department of Natural Resources, 2007).

Mountain plovers inhabit prairie grasslands, arid plains and fields. Nesting plovers choose shortgrass prairies grazed by prairie dogs, bison and cattle, and overgrazed tallgrass and fallow fields. Nests are usually situated on hilltops and in dry swales, sometimes in the shelter of manure piles. Hens lay about three eggs, first on bare ground and then gradually building up a nest around the hatched eggs with rootlets and grass (Colorado Department of Natural

Resources, 2007). The diet of the mountain plover consists of insects, primarily grasshoppers (Colorado Department of Natural Resources, 2007).

This species was not observed onsite during the field reconnaissance, however suitable foraging habitat is available on site. Since mountain plovers do not nest in California it is not necessary to conduct a breeding bird survey for this species.

Palmate-bracted bird's-beak

The palmate-bracted bird's beak (*Cordylanthus palmatus*) is an annual herb approximately 10 to 30 cm (4 to 12 in) tall and highly branched. The stems and leaves are grayish green and sometimes covered with salt crystals excreted by glandular hairs. Small, pale, whitish flowers, 1.25 to 2.5 cm (0.5 to 1 in) long, are arranged in dense clusters (spikes) and densely surrounded by herbaceous leaf-like bracts. The petals are divided into two lips with the upper one shaped like a bird's-beak, leading to the common name of the genus (Sacramento Fish and Wildlife Office, 2007b). The palmate-bracted bird's-beak is a CNPS 1B.1 (seriously endangered in California) species.

The palmate-bracted bird's-beak can be found in Alameda, Colusa, Fresno, Glenn, Madera, San Joaquin, and Yolo counties (CNPS, 2007). It grows in valley and foothill grasslands with alkaline soils. It most often occurs at elevations of 5 to 155 m (16.5 to 512 ft). It flowers between May and October (CNPS, 2007).

There were no observations of palmate-bracted bird's-beak at the site during the field reconnaissance. There is limited to no potential for this species to occur at the site since the site is extensively disturbed by site uses, and there is no evidence of valley and foothill grasslands with alkaline soils on the site. There are no specific mitigation guidelines for this species, however if palmate-bracted bird's-beak is identified at the site during vegetation screening, the landowner must notify CDFG at least 10 days prior to initiating activities to allow sufficient time for salvaging of plant material.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) is large and stout-bodied. Male beetles, measured from head to abdomen, are 13 to 21 mm (0.52 to 0.8 in) in length with their antenna about as long as their body (Sacramento Fish and Wildlife Office, 2007d). Females are more robust than males and range from 18 to 25 mm (0.72 to 1.0 in) in length with a slightly shorter antenna. VELB are black or very dark gray in color with a red-orange border on their elytra (forewings). Males' elytra have four oblong dark spots and prominently show the bright red-orange coloration. Females and some males are colored mostly

dark with only a small band of red-orange color along the front margin of the elytra (Sacramento Fish and Wildlife Office, 2007d). The valley elderberry longhorn beetle was listed as a federally Threatened Species in 1980.
At the time of listing in 1980, the beetle was known from less than 10 locations on the American River, Putah Creek and Merced River. Now it is know to occur from southern Shasta County to Fresno County. There are about 190 records, mostly based on exit holes (Sacramento Fish and Wildlife Office, 2007d).

VELB is closely associated with blue elderberry (*Sambucus mexicana* or *S. velutina*), which is an obligate host for the beetle larvae. Adult valley elderberry longhorn beetles are usually found upon or flying between elderberry plants (Sacramento Fish and Wildlife Office, 2007d).

There is the potential for this species to occur on or adjacent to the site, however as expected, no VELBs were observed during the field reconnaissance. Several elderberry shrubs (*Sambucus* sp.), with greater than 2.5 cm (1.0 in) stems, were located along the eastern border of the site. Elderberry is the host plant to the VELB. Standard mitigation guidelines are found in Section 2.4.4.

Silver-haired bat
The silver-haired bat (*Lasionycteris noctivagans*) is a medium sized bat, weighing 8 to 12 g (0.02 to 0.03 lbs) and measuring 90 to 115 mm (3.6 to 4.6 in). Silver-haired bats receive their name from their dark, silver-tipped fur. The fur is usually black in color, however some individuals may be dark brown with yellow-tipped fur. The ears of these bats are relatively short, round, and naked. The dorsal surface of the interfemoral membrane is lightly furred, with 50 to 75% of the tail being naked (Naumann, 1999). The silver-haired bat is listed as a Species of Special Concern by the CDFG.

Silver-haired bats are found throughout the United States (with Florida as a possible exception), northward into southern Canada up to the treeline, and reach their northern limits in Alaska. Their range may also include extreme northeastern Mexico (due to similar habitat conditions), although there have been no confirmed sightings of the bat there (Naumann, 1999).

Silver-haired bats are most closely associated with coniferous or mixed coniferous and deciduous forest types, especially in areas of old growth. They form maternity colonies almost exclusively in tree cavities or small hollows. Unlike many bat species, silver-haired bats also appear to hibernate mainly in forested areas, though they may be making long migrations from their summer forest to a winter forest site. Typical hibernation roosts for this species include small

tree hollows, beneath exfoliating bark, in woodpiles, and in cliff faces. Occasionally silver-haired bats will hibernate in cave entrances, especially in northern regions of their range. The diet of the silver-haired bat mainly consists of flies, beetles, and moths. However, these bats feed opportunistically on any concentration of insects they come across. They have a short-range foraging strategy, traveling over woodland ponds and streams. Silver-haired bats do not always feed in mid-flight; they have been caught in mouse traps, suggesting ground foraging, and they have been reported to consume larvae on trees (Naumann, 1999).

This species was not observed on site during the field reconnaissance, however potentially suitable habitat does exist on the site. Although there is no native old growth vegetation at the site, there were numerous small cavities and hollows in the valley oak trees found onsite, as well as a large wood pile located at the southwestern edge of the industrial facility. There are no specific mitigation guidelines for this species, except for the standard bat survey, and avoidance of disturbance of active roosts.

Hoary bat

The hoary bat (*Lasiurus cinereus*) is a small bat weighing 20 to 35 g (0.04 to 0.08 lbs) and measuring 13 to 15 cm (5.2 to 6 in). They have a wingspan of 43 cm (17.2 in). These bats have blunt, rounded noses and small, beady eyes. The ears are short, thick, broad, and rounded. The thumbs are long and the calcar is twice as long as the hindfoot and is narrowly keeled on the posterior edge, bearing lobes on the tip. Thick, long, soft hair covers the entire dorsal surface extending to the elbow, the median ventral border of the undersides of the wings, the ventral side of the long bones that make up the upper arm and forearm, and the basal part of the lower surface of the interfemoral tail membrane. The coloring of the dorsal area (including the tail membrane) is a mixed brown-gray with a heavy white tinge, giving these bats a frosty appearance. The belly of these bats is not heavily frosted and the throat has a distinct yellow patch. The hair on the elbow, at the base of the clawed thumb, and the upper arm is yellowish as well. The ears are yellow with black edges. Brownish fur extends out on the underside of the wing nearly to the wrist. Juveniles appear nearly grayish, but still have a frosty appearance (Anderson, 2002). The hoary bat is listed as a Species of Special Concern by the CDFG.

Hoary bats are the most widespread of all bats in the United States. Though not yet recorded in Alaska, these bats are thought to occur in all 50 states. They range from the tree limit in Canada down to at least Guatemala in Central America, and throughout South America. They are the only bats found in Hawaii. They are rare in most of the eastern United States and northern Rockies but common in the Pacific Northwest and prairie states. They winter in southern California, the southeastern United States, Mexico, and Guatemala, but have also been found in

Michigan, New York and Connecticut during December and in Indiana during January (Anderson, 2002).

Hoary bats are thought to prefer trees at the edge of clearings, but have been found in trees in heavy forests, open wooded glades, and shade trees along urban streets and in city parks. They roost 3 to 5 m (9 to 15 ft) above ground during the day, usually in the foliage of trees. They prefer dense leaf coverage above and an open area below. They also prefer trees that border clearings. They have been seen roosting in a woodpecker hole in British Columbia, in the nest of a gray squirrel, and under a driftwood plank. Occasionally they are found clinging to the overhangs of buildings and in caves in the latter part of the summer. They often have trouble finding their way out of the caves and die there (Anderson, 2002).

The diet of the hoary bat consist mainly of moths. These bats are also known to feed on flies, beetles, small wasps and their relatives, grasshoppers, termites, and dragonflies. On rare occasions, these bats have been observed to feed on leaves, grass, and shed snake skin.

This species was not observed on site during the field reconnaissance, however suitable habitat does exist on the site. The mature valley oaks within and adjacent to the site have a dense canopy cover and open area below. The dense stand of trees along the eastern edge of the site could also provide suitable habitat. There were numerous small cavities and hollows in the valley oak trees found onsite as well as a large wood pile located at the southwestern edge of the industrial facility. The buildings located onsite could also provide suitable habitat for this species. There are no specific mitigation guidelines for this species, except for the standard bat survey, and avoidance of disturbance of active roosts.

Heckard's pepper-grass

The Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*) is an annual herb in the mustard family (Brassicaceae). It is 3 to 25 cm (1.2 to 10 in) tall, densely hairy, with 5 to 10 cm (2 to 4 in) long linear leaves. Small, greenish flowers with ciliate petals are borne in dense spikes. The flat, oval fruits are deeply notched at the top (LSA Associates Inc., 2004b). The Heckard's pepper-grass is a CNPS 1B.2 (fairly endangered in California) species.

The Heckard's pepper-grass can be found in Glenn, Solano, and Yolo counties (CNPS, 2008). It grows in valley and foothill grasslands with alkaline soils. It most often occurs at elevations of 10 to 200 m (30 to 660 ft). It flowers between March and May (CNPS, 2008).

There were no observations of Heckard's pepper-grass at the site during the field reconnaissance. There is limited to no potential for this species to occur at the site since the site is extensively disturbed by site uses, and there is no evidence of valley and foothill grasslands with alkaline soils on the site. There are no specific mitigation guidelines for this species, however if Heckard's pepper-grass is identified at the site during vegetation screening, the landowner must notify CDFG at least 10 days prior to initiating activities to allow sufficient time for salvaging of plant material.

White-faced ibis

The white-faced ibis (*Plegadis chihi*) is a medium sized wading bird measuring approximately 46 to 56 cm (18 to 22 in) in length and weighing approximately 450 to 525 g (15.89 to 18.53 oz) (Cornell Lab of Ornithology, 2004). It is a dark, chestnut colored-bird with green or purple on its head and upper parts, and a long, down-curved bill. It is very similar in appearance to the glossy ibis except during the breeding season when the white-faced ibis has a narrow border of white feathers all around its bare facial skin at the base of the bill. This ibis has reddish legs and feet and red bare skin on the face around the eyes. In winter, white-faced Ibis has streaks on head and neck, and brown eyes; it is then virtually impossible to distinguish the two species (Texas Parks and Wildlife Department, 2007). The white-faced ibis is listed as a Species of Special Concern by the CDFG.

The white-faced ibis breeds across the western United States northward to Montana, eastward to western Louisiana, and southward to South America. They winter from southern California and Louisiana, southward (Cornell Lab of Ornithology, 2004). The white-faced ibis frequents marshes, swamps, ponds and rivers and roost on low platforms of dead reed stems or on mud banks. They are colonial and will construct a deep cup of dead reeds among beds of bulrushes, on floating mats of dead plants or they may nest in trees. The areas where these nests are built usually are where water is less than 1 m (3 ft) deep. The nests are lined with grasses in preparation for the ibis nestlings (Texas Parks and Wildlife Department, 2007).

The diet of the white-faced ibis consists of insects, newts, leeches, earthworms, snails, crayfish, frogs, fish and crabs (Texas Parks and Wildlife Department, 2007).

This species was not observed on the site during the field reconnaissance. There is limited to no potential for this species at the site. Suitable habitat for this species, with sufficient wetland vegetation, is not present at the site. There are no specific mitigation guidelines for this species, except for the standard breeding bird survey, and avoidance of disturbance of active nests.

Sacramento splittail

The Sacramento splittail (*Pogonichthys macrolepidotus*) are large fish in the cyprinid family. The fish are silver on the sides and olive gray on their backs. They can reach lengths up to 30 cm (12 in) and are distinctive in having the upper lobe of the tail fin larger than the lower lobe. The body shape is elongate with a blunt head. Small barbels may be present on either side of the subterminal mouth. They possess 14 to 18 gill rakers and their pharyngeal teeth are hooked and have narrow grinding surfaces. During the breeding season, the tail, pectoral and pelvic fins take on a red-orange hue and males develop small white nuptial tubercles in the head region (Sacramento Fish and Wildlife Office, 2007c). The Sacramento splittail is listed as a Species of Concern by the Sacramento Fish and Wildlife Office.

Sacramento splittail are found only in California's Central Valley where they were once widely distributed in lakes and rivers. They are largely confined to the Delta, Suisun Bay, Suisun Marsh, Napa River, Petaluma River and other parts of the Sacramento-San Joaquin Estuary (Sacramento Fish and Wildlife Office, 2007c)

Splittail are primarily freshwater fish, but are tolerant of moderate salinity and can live in water with salinities of 10-18 parts per thousand. Adults migrate upstream from brackish areas to spawn in freshwater. Because they require flooded vegetation for spawning and rearing, they are frequently found in areas subject to flooding. The onset of spawning in the upper Delta seems to be associated with increasing water temperature and day length between early March and May. Spawning begins by late January and early February and continues through July, with most spawning taking place from February through April (Sacramento Fish and Wildlife Office, 2007c).

Splittail spawn on submerged vegetation in temporarily flooded upland and riparian habitat. Typically, terrestrial shrubs and herbs are preferred over emergent wetland vegetation such as cattails and tules. Spawning occurs in the lower reaches of rivers, bypasses used for flood management, dead-end sloughs and in the larger sloughs such as Montezuma Slough. Larvae remain in the shallow, weedy areas inshore near the spawning sites and move into the deeper offshore habitat as they mature (Sacramento Fish and Wildlife Office, 2007c).

The diet of the Sacramento splittail consists of bottom dwelling invertebrates and detritus in low to moderate currents. Young splittail focus their feeding on benthic crustaceans and they show an ability to swim against strong tides and currents. In the Sacramento-San Joaquin Delta splittail feed opportunistically during the day with peak feeding early in the morning. Prey items include clams, crustaceans, insect larvae, and other invertebrates (University of California, 2003).

The Sacramento splittail was not observed during the field reconnaissance and there is no potential for this species to be present in or adjacent to the project site, given the lack of site waters and connectivity to potentially occupied habitat, such as Cache Creek.

American badger

The American badger (*Taxidea taxus*) is a large mustelid, measuring 50-90 cm (20-35 in) from head to tail, that is specialized for a semi-fossorial life. Weight can range from 5-11 kg (12-24 lbs) with the males weighing more on the average. It has powerful, short legs with partially webbed toes and claws measuring 2.5-4 cm (1 to 1-1/2 in), which aid in digging; the hind feet have shovel-like claws. The body is stout and flat, wider than it is tall. The badger has a shaggy coat, which is silver gray, with a dark head with a white stripe that often extends down the back. The snout of the badger is slightly upturned and has small eyes with nictating membranes, an adaptation for its fossorial lifestyle. The skin of the badger is loose, particularly across the chest, shoulder, and back (CDFG, 1995a). The tail is relatively short, moderately furred and somewhat yellowish. The legs are black. The American badger is listed as a Species of Special Concern by the CDFG.

The American badger can be found primarily in the Great Plains region of North America. Badgers occur north through the central western Canadian provinces, throughout the western United States and south throughout the mountainous regions of Mexico (Shefferly, 1999). The badger is an uncommon, permanent resident found throughout most of California with the exception of the northern coast area (CDFG, 1995a). They are most abundant in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Badgers are generally associated with treeless regions, prairies, parklands and cold desert areas (CDFG, 1995a).

Badgers are basically nocturnal, foraging at night and then remaining underground during the daylight hours. Badgers dig burrows with 20 to 30 cm (8 to 12 in), wider than tall, elliptical entrances, in friable soil types. They generally have a single entrance. They frequently reuse old burrows, although some have been known to dig a new den each night, especially in summer (CDFG, 1995a). Soil excavated during formation of the den is piled at the entrance. Often when a den is occupied in cold weather, the tunnel is partially plugged. Female badgers prepare a grass-lined den in which to give birth (Shefferly, 1999).

The diet of the American badger consists of small mammals, especially ground squirrels, pocket gophers, rats, mice, and chipmunks. Badgers capture their prey by digging out the animal's burrows. The badger captures some of its prey above ground and also forages on birds, eggs, reptiles, invertebrates, and carrion. Diet will shift seasonally and yearly depending upon prey availability and the badger buries surplus food (CDFG, 1995a).

The American badger was not observed at the site and no discernible burrows were encountered during the field reconnaissance. Several enlarged California ground squirrel burrows were discovered, although further observation identified that dogs were responsible for the over-excavation. Suitable habitat is marginal for this species at the site, however there is the potential for the species to use the site and surrounding area for foraging. There are no specific mitigation guidelines for this species.

Giant garter snake

The giant garter snake (*Thamnophis gigas*) is one of the largest garter snakes, reaching a total length of at least 158 cm (63 in). Females tend to be slightly longer and proportionately heavier than males. Female giant garter snakes typically weigh 0.45 to 0.68 kg (1 to 1.5 lbs). The dorsal background coloration (the basic color on the snake's back) varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light colored lateral stripes. The ventral surface (the snake's underside) is cream to olive or brown and sometimes infused with orange, especially in northern populations (Sacramento Fish and Wildlife Office, 2007b). The federal government listed the giant garter snake as threatened in 1993.

Historically, this snake ranged from Kern County north along the Central Valley to Butte County, with a gap in the central part of the valley. Currently, its range extends from Glenn County to the southern edge of the San Francisco Bay Delta, and from Merced County to northern Fresno County, apparently no longer occurring from south of northern Fresno County (CaliforniaHerps.com, 2008).

Habitat requirements consist of: (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and, (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter. The giant garter snake inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. Giant garter snakes typically select burrows with sunny exposure along south and west facing slopes. The breeding season extends through March and April, and females give birth to live young from late July through early September.

There is the potential for this species to occur on or adjacent to the site for dormancy, however no giant garter snakes were observed during the field reconnaissance. Burrow areas can be habitat for giant garter snakes. Numerous scattered small animal burrows, associated with California ground squirrels, were found throughout the site. Standard mitigation guidelines are found in Section 2.4.5.

Other Species

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is one of the smallest owls in North America. They measure 23-28 cm (9-11 in) and weigh about 170 grams (g) (6 ounces [oz]) (CDFG 2007a). The adults are boldly spotted and barred with the males being paler in color and proportionately larger in size than the females. The juveniles are buffy below (CDFG, 2007a). The burrowing owl's head is rounded, there are no ear tufts, the eyes are yellow, and they have whitish eyebrows, a white chin stripe, a short tail and long legs (CDFG, 2007a). The burrowing owl is listed as a Species of Special Concern by the CDFG. The Migratory Bird Treaty Act also protects the burrowing owl.

The burrowing owl can be found throughout California, and the western United States, Florida, northern Alaska and southwestern Canada, inhabiting open, dry grasslands and deserts (CDFG, 2007a). They can also be found in grass, forb and open shrub stages of pinyon-juniper, and ponderosa pine habitats (CDFG, 2007a).

The owl usually nests in an old burrow of a ground squirrel, badger or other small mammal, although they may dig their own burrow in soft soil. Where burrows are scarce, owls have been found to utilize pipes, culverts, and nest boxes.

There is the potential for this species to occur on the site, however no owls were observed during the field reconnaissance. Burrow areas are considered potential habitat for burrowing owls. Numerous scattered small animal burrows, typically associated with California ground squirrels, were found throughout the site. WKA recommends that a qualified biologist conduct pre-project protocol surveys to confirm that no burrowing owl nests within 0.8 kilometers (km) (½ mile [mi]) of the project site will be disturbed. Standard mitigation guidelines are found in Section 2.4.1.

3.3 Wetland Status

The site was assessed for wetland features, first through a review of the National Wetland Inventory (NWI) (Figure 4), then through a review of the relevant site aerial photos and topographic maps, and finally through a field investigation to identify wetland features. The NWI is a compilation of information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats and other wildlife habitats. The NWI is managed by the USFWS for use in identifying and classifying wetlands, and reporting trends to Congress. The NWI identified two areas located in the northeastern corner of the site as Palustrine

Unconsolidated Shore Temporarily Flooded Excavated (PUSAx) and Palustrine Unconsolidated Bottom Semipermanently Flooded Excavated (PUBFx) wetlands. The subscript "x" is used by the NWI to identify excavated features of human origin. The area identified by the NWI also does not have the characteristic soils and near-surface, low-permeability confining layer associated with vernal wetlands. Field investigation revealed that these areas are the former mud ponds associated with the sugar facility, and have been breached and excavated for clean up, and are currently being farmed. No vernal wetland features were identified for the site.
The majority of the site appears to be elevated approximately 30 to 45 cm (12 to 18 in) above the surrounding properties. Based on observations after the January 4, 2008 storms, there was little to no standing water on the site or in the ditches bordering the southern and western edges. The site perimeter ditches appear to be associated solely with stormwater management and are not associated with the irrigation of the agricultural fields, have been excavated in uplands, do not have any connectivity to jurisdictional features, and are therefore considered not to be jurisdictional.

The entire site is located within FEMA flood zone X (Figure 5). Flood zone X are areas outside the 1-percent annual chance floodplain, areas of 1% annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1% annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1% annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone (FEMA, 2007).

4.0 RESULTS

A WKA field team visited the site on January 2, 3, 5, 14 and 15, 2008 to assess the site for potential ecological constraints to proposed land redevelopment. The team was comprised of a Senior Ecologist and a Staff Environmental Scientist. The team completed a reconnaissance-level site assessment of ecological features.

The notable ecological features at the site include: several large valley oak trees with small cavities; numerous elderberry shrubs along the eastern border of the property; and, numerous burrow complexes scattered throughout the site. The buildings located on site also provided potential suitable habitat for some species (Figure 6).

4.1 Vegetation and Wildlife Habitat Classifications

Vegetation Communities were classified using the CDFG Terrestrial Natural Communities of California system (September 2003 edition), or "Holland type" (Holland, 1986), and where applicable, detailed by Vegetation Series using the California Native Plant Society (CNPS) Vegetation Classification system (Sawyer and Keeler-Wolf, 1995).

According to the April 7, 2004 Yolo County Fire and Resource Assessment Program map, the California Wildlife Habitat Relationship (WHR) classifications for the site are WHR URB (urban) for the industrial facility, and WHR FEW (freshwater emergent wetland) for the former mud ponds.

There are no specific restrictions or protection policies on the removal of or construction by oak trees in Yolo County (Yolo County Community Development Agency 1983). The Oak Tree Retention/Replacement Provisions, as stated in the General Plan of the Yolo County Planning and Public Works Department, calls for site development standards to prevent unnecessary disruption of vegetation, and that the county shall establish a tree-planting program and a Tree Preservation Ordinance.

4.2 Field Observations

The site mainly consisted of an industrial facility, with the associated historic ponds and waste piles. Ruderal grass species (*Poa* sp.) dominated the site along with a couple valley oak (*Quercus lobata*) trees, and several elderberry shrubs (*Sambucus* sp.). There were approximately 2 oaks with a diameter at breast height (dbh) greater than 50 centimeters (cm) (20 inches [in]). Approximately 25 elderberry shrubs measure greater than 2.5 cm (1 in) at ground level.

Observed habitat use at the site included numerous small burrow complexes, several of which showed active use by California ground squirrels. There was also significant use by yellow-billed magpies, crows, mourning doves, and mixed flocks of sparrows, wrens, and warblers, throughout the site. Killdeer, kestrels, starlings, pheasants, phoebes, red-shafted flickers, sharp-shinned hawks, and cottontails and jackrabbits were also observed on the site. There were several large burrows located near the waste piles that appeared to be potential badger burrows, however closer inspection revealed the burrows to be overexcavated by dogs. Numerous pigeons were observed roosting on the buildings and flying around the industrial facility, and swallow nests were located under the eaves of numerous buildings.

A pair of red-tailed hawks was observed roosting on a large valley oak on the northern side of Best Ranch Road. A large stick nest was also observed in this tree. Several sizes of stick nests were found nearby the site, mainly in the valley oak trees, but a few were located in eucalyptus trees. The following tables (Tables 3 and 4) summarize the observations of animal and plant species at the site. Figure 6 depicts the specific areas where the animal species were observed.

Table 3. Animal Species Observations.

Scientific Name	Common Name	Federal Status	California Status
Accipiter striatus	sharp-shinned hawk	None	None
Buteo jamaicensis	red-tailed hawk	None	None
Charadrius vociferous	killdeer	None	None
Colaptes auratus	red-shafted flicker	None	None
Columba livia	rock pigeon	None	None
Corvus brachyrhynchos	American crow	None	None
Dendroica caronata	Audubon's warbler	None	None
Falco sparverius	American kestrel	None	None
Lepus sp.	jackrabbit species	None	None
Passer domesticus	house sparrow	None	None
Pica nuttalli	yellow-billed magpie	None	None
Phasianus colchicus	ring-necked pheasant	None	None
Sayornis nigricans	black phoebe	None	None
Spermophilus beecheyi	California ground squirrel	None	None
Spizella passerine	chipping sparrow	None	None
Sturnus vulgaris	European starling	None	None
Sylvilagus spp.	cottontail species	None	None
Troglodytes aedon	house wren	None	None
Zenaida macroura	mourning dove	None	None
Zonotrichia leucophyrs	white-crowned sparrow	None	None

Table 4. Plant Species Observations.

Scientific Name	Common Name
Eucalyptus camaldulensis	redgum eucalyptus
Juglans sp.	walnut species
Nerium oleander	oleander
Opuntia ficus-indica	Indian fig
Oxalis pes-caprae	Bermuda sorrel
Poa sp.	grass species
Quercus lobata	valley oak
Salsola kali	Russian thistle
Sambucus spp.	elderberry species
Urtica dioica	stinging nettle

In summary, the overall wildlife habitat is highly disturbed, and appears to be in relatively poor condition. The site is predominately industrial, characterized by extensive impervious surfaces with miscellaneous industrial structures and associated waste piles/ponds where most of the burrows are found.

The primary area of ecological significance adjacent to the site is a tree row of non-native mature trees at the property line. These trees provide perching and nesting structure for birds of prey and a variety of other species. The ecological value of this row is magnified by the presence of a significant number of California ground squirrels, using the waste piles. No observations of any species of regulatory concern were made other than the potential host elderberry shrubs.

5.0 DISCUSSION

The site encompasses or adjoins a large industrial facility, a rail terminal, an active public road, a feedlot, a horse stable, and waste areas. The industrial nature and ongoing uses of the site have essentially eliminated most historic natural features.

The remnant natural features include isolated valley oaks and rows of non-native walnut, and eucalyptus, (eastern and southern edges respectively). Within the eucalyptus belt, on the waste pile, a narrow stand of elderberry shrubs has re-established. The approximately 25 shrubs will either be avoided or mitigated for under the previously mentioned USFWS mitigation guidelines.

Off of the project site, on an extension of the eucalyptus row and on scattered matures trees, small stick nests associated with yellow-billed magpies and larger nests associated with Swainson's hawks occur. Two documented Swainson's nests occur near the eastern edge of the site, but could not be confirmed as active due to the seasonal migration and the timing of the field survey. However, other raptor use of the site was observed (red-tailed and sharp-shinned hawks, and kestrels), concentrated in this same eucalyptus stand or near the valley oaks. This raptor concentration appears to be associated with the availability of mature or dead trees for perching, the vantage points provided by the elevated waste pile, and the large number of California ground squirrels in the disturbed areas of the waste piles and along the fence lines.

In this case, based on the proposed project activities as described to WKA, disturbance to nesting birds is not likely given the highly disturbed condition of the site as a result of current and historic activities.

"Nesting Swainson's Hawks are somewhat tolerant of human activity, particularly in areas where activity is regular and individual pairs are able to habituate to it. Nest sites are sometimes located near roads and houses, and frequently near field edges where crop cultivation activities regularly occur. However, changes in activity regime (construction in previously open areas, human intrusion at nest site) frequently causes nest abandonment, particularly during the pre-nesting, egg-laying, and incubation stages of the reproductive cycle," (Woodbridge, 1998).

To illustrate the degree of industrial use in or around the site, the WKA field team observed tractor-trailer traffic and staging through and along the site (from approximately 6:30 am to 4:00 pm), active use of the rail yard, recent farming operations including disking and planting, recent heavy equipment use of the spoils area, a large groundwater extraction drill rig operation to the northeast, and diesel truck, tractor, and generator use adjacent to the tree line on the adjacent property to the east.

Given the long history of continuous industrial use of the site since 1937, and the current activities on the site and neighboring properties, it is likely that wildlife have acclimated to these disturbances. The standard ¼ mile buffer, or whatever distance is identified in the CDFG permitting process, from the potentially active nests should be sufficient to protect the Swainson's hawks from disturbance and any potential take. Routine monitoring of the site during proposed precast panel storage area development activities by a qualified biologist should provide confirmation that there are no impacts or identify the need for further consultation.

The site was also assessed for wetland features, first through a review of the National Wetland Inventory (NWI), then through a review of the relevant site aerial photos and topographic maps, and finally through a field investigation to identify wetland features. The NWI identified two features located in the proposed precast panel area of the site as Palustrine Unconsolidated Shore Temporarily Flooded Excavated (PUSAx) and Palustrine Unconsolidated Bottom Semipermanently Flooded Excavated (PUBFx) wetlands. The subscript "x" is used by the NWI to identify excavated features of human origin.

Field investigation revealed that these areas are former waste ponds associated with the sugar facility, and have been breached and excavated for clean up, and are currently in ruderal condition. The area identified by the NWI also does not have the characteristic soils and near-surface, low-permeability confining layer associated with vernal wetlands. No vernal wetland features were observed at the site.

6.0 RECOMMENDATIONS

Based on the results of this assessment WKA makes the following recommendations:

I. Contact the USFWS and the CDFG and complete the necessary permitting for any elderberry mitigation, and to assess the need for consultation on Swainson's hawks.

II. Complete a bat survey in buildings and structures prior to demolition activities to identify and remove these animals, as needed.

III. Complete a breeding bird survey, with emphasis on Swainson's hawks, prior to site activities to assess the current occupancy by bird species and any observable nests.

IV. Complete a VELB survey prior to site activities to assess the presence or absence of this species within the project area.

V. Establish a Worker Environmental Awareness Program (WEAP) to train all site workers regarding the presence of any potential listed or otherwise regulated species.

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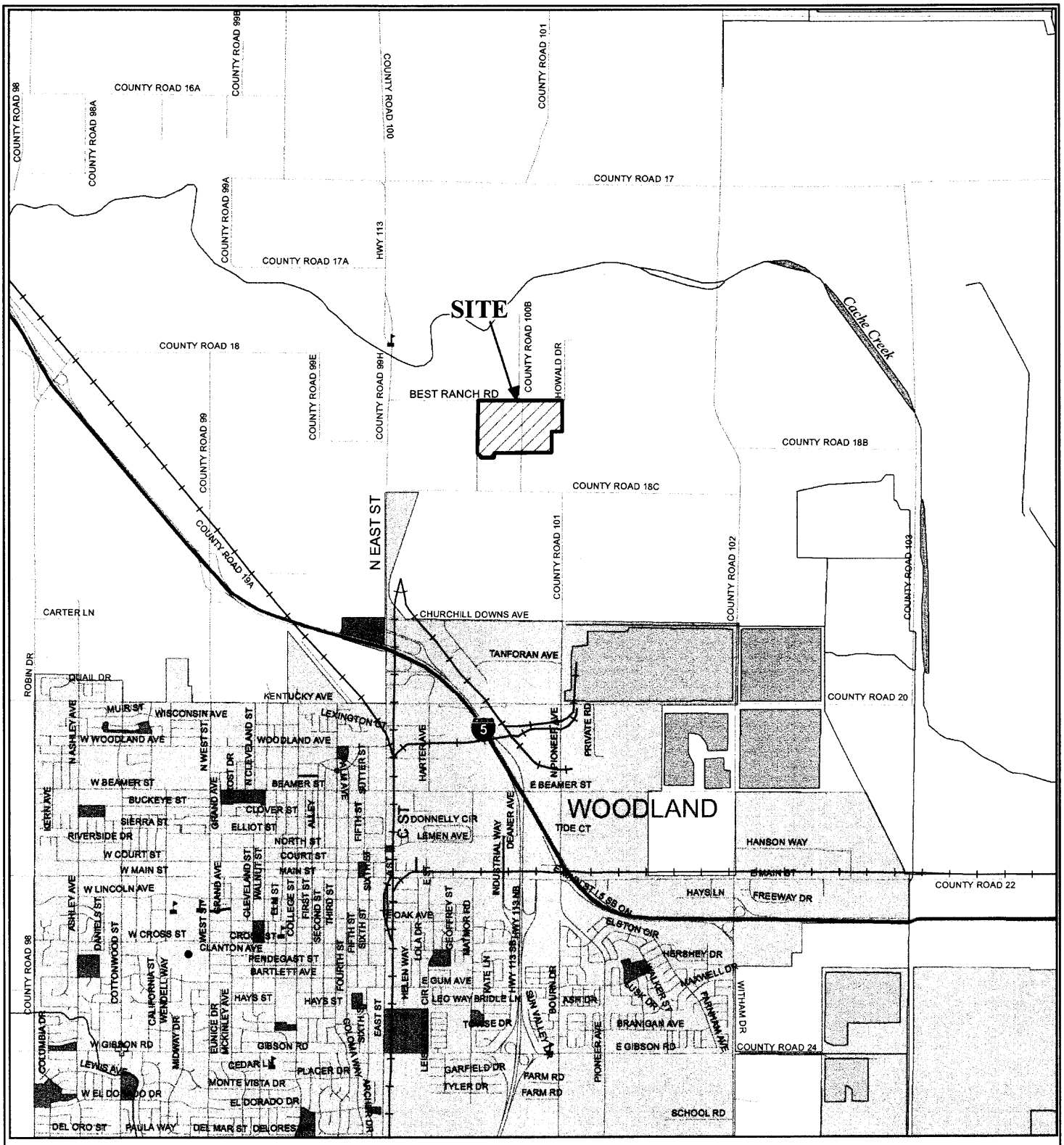

Adapted from Data Provided By Yolo County, 2007
Projection: NAD 83, California State Plane, Zone II

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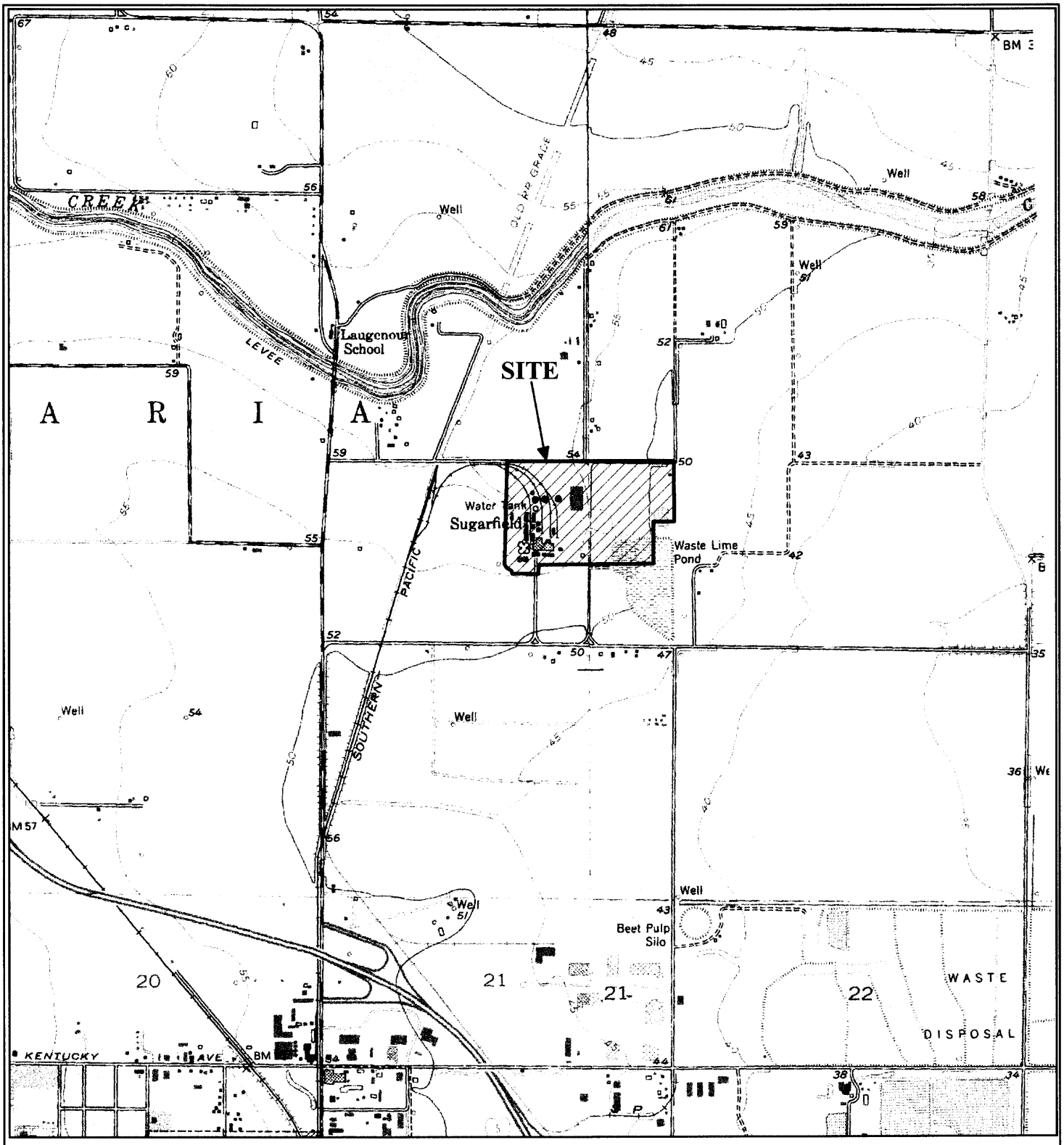
VICINITY MAP

FORMER SPRECKELS SUGAR FACILITY
INDUSTRIAL AND MUD PIT AREAS
Woodland, California

FIGURE	1
DRAWN BY	JG
CHECKED BY	LT
PROJECT MGR	ER
DATE	1/08

WKA NO. 7864.03



Adapted from U.S. Geological Survey 7.5 minute topographic map
of the Woodland and Grays Bend quadrangles, California, 1981 and 1978
Provided By The California Geospatial Information Library, 2007
Projection: California State Plane, Zone II

N

0 1,000 2,000
Feet

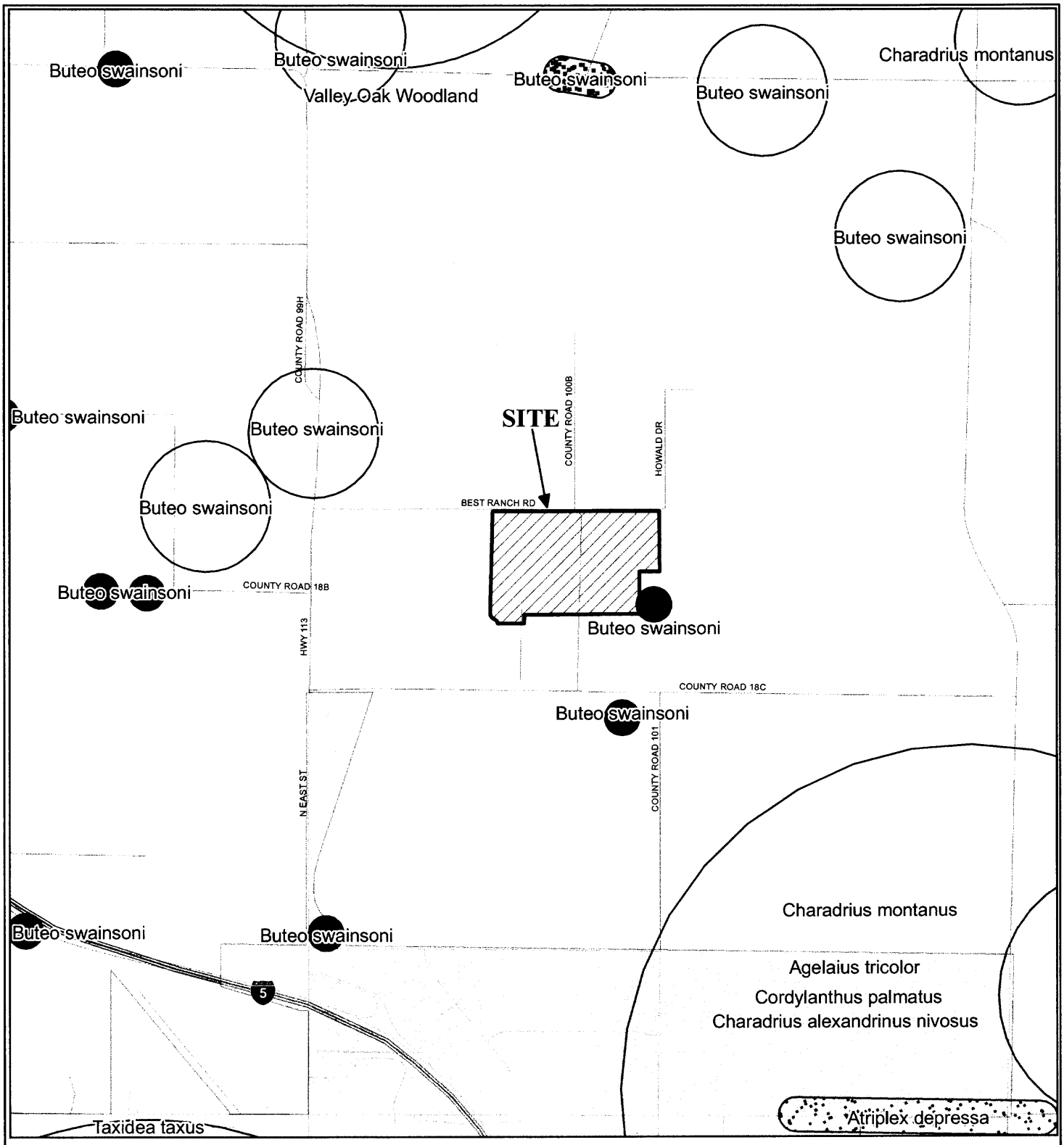
Wallace Kuhl & Associates Inc

TOPOGRAPHIC MAP

FORMER SPRECKELS SUGAR FACILITY
INDUSTRIAL AND MUD PIT AREAS
Woodland, California

FIGURE	2
DRAWN BY	JG
CHECKED BY	LT
PROJECT MGR	ER
DATE	1/08

WKA NO. 7864.03



LEGEND

Plant (80m)	Animal (80m)
Plant (specific)	Animal (specific)
Plant (non-specific)	Animal (non-specific)
Plant (circular)	Animal (circular)

N

0 1,000 2,000

Feet

Adapted from the CNDDB provided by the California Department of Fish and Game's Biogeographic Data Branch, 2008.
Projection: NAD83, California State Plane, Zone II

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CALIFORNIA NATURAL DIVERSITY DATABASE

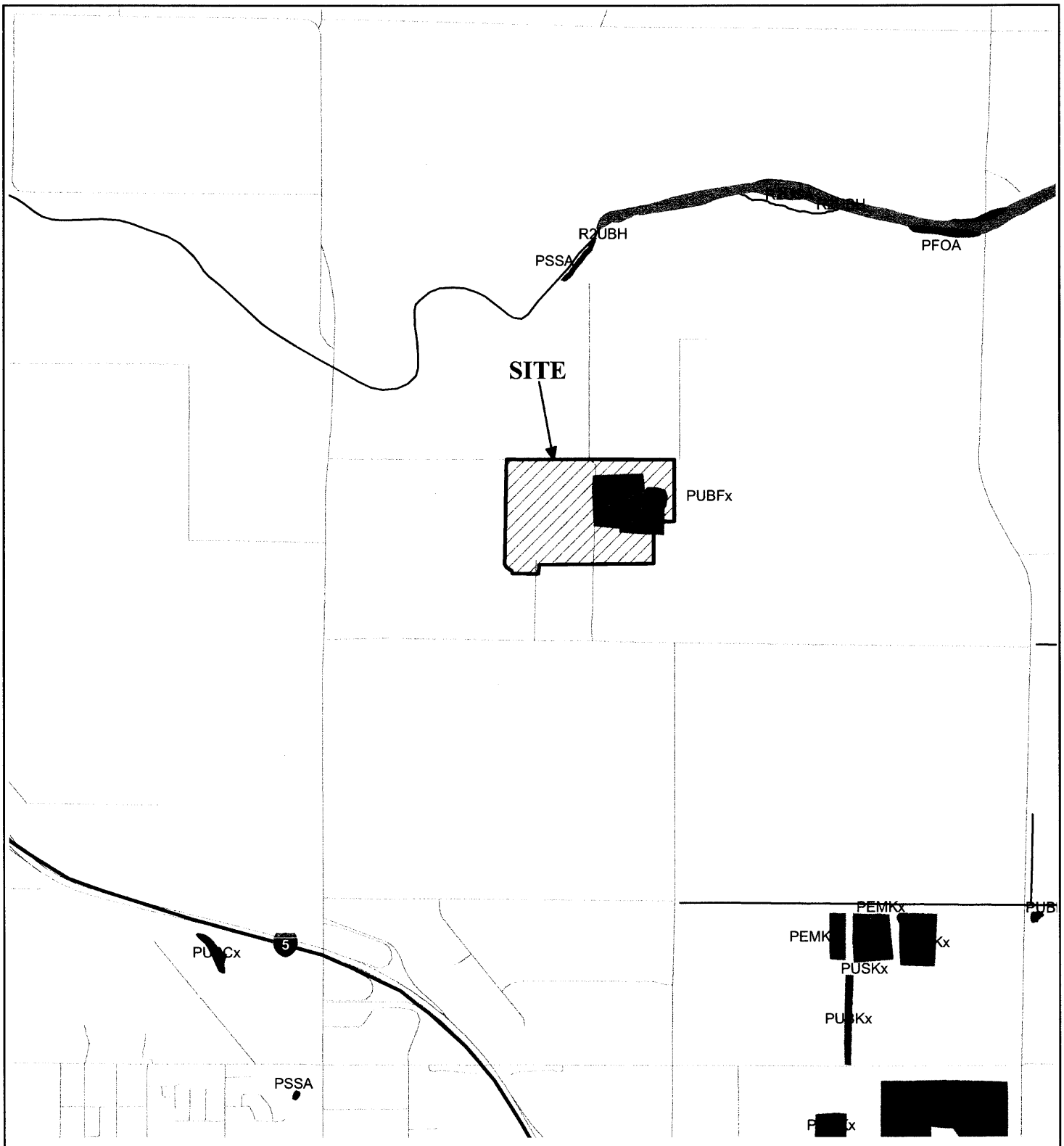
FORMER SPRECKELS SUGAR FACILITY

INDUSTRIAL AND MUD PIT AREAS

Woodland, California

FIGURE	3
DRAWN BY	JG
CHECKED BY	LT
PROJECT MGR	ER
DATE	1/08

WKA NO. 7864.03



LEGEND

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Other

Adapted from the NWI dataset and the USGS National Hydrologic Dataset for the Woodland and Grays Bend 7.5 minute topographic quadrangles, California acquired from the GIS Data Depot, December, 2007
Projection: NAD83, California State Plane, Zone II

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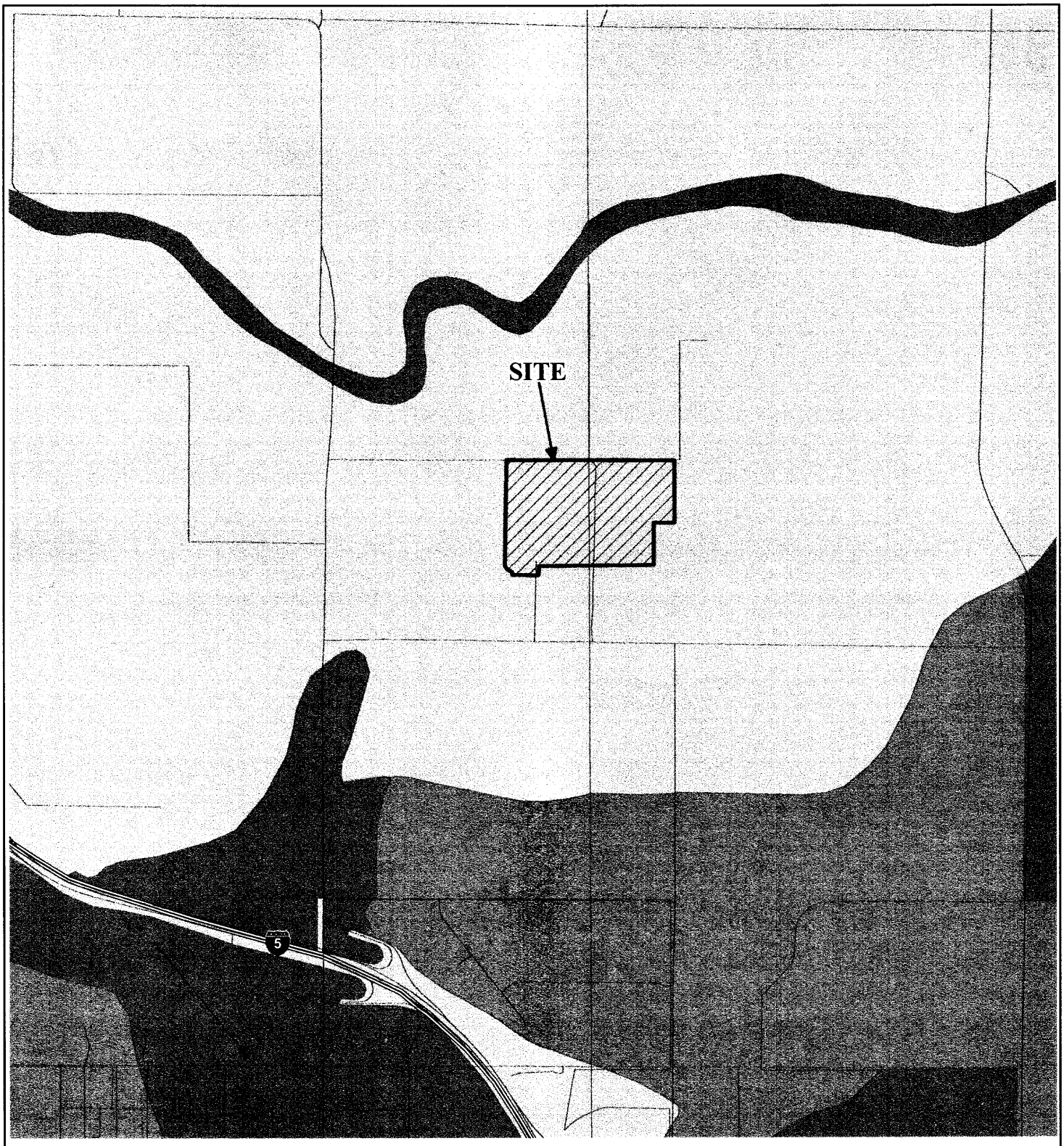
NATIONAL WETLAND INVENTORY

FORMER SPRECKELS SUGAR FACILITY
INDUSTRIAL AND MUD PIT AREAS
Woodland, California

FIGURE	4
DRAWN BY	JG
CHECKED BY	LT
PROJECT MGR	ER
DATE	1/08

WKA NO. 7864.03



LEGEND

ZONE

A X

ANI X500

N

0 1,000 2,000

Feet

Adapted from the FEMA Quarter 3
dataset for Yolo County acquired from
the GIS Data Depot, December 2007
Projection: NAD83, California State Plane, Zone II

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FEMA FLOOD MAP

FORMER SPRECKELS SUGAR FACILITY
INDUSTRIAL AND MUD PIT AREAS
Woodland, California

FIGURE	5
DRAWN BY	JG
CHECKED BY	LT
PROJECT MGR	ER
DATE	1/08

WKA NO. 7864.03


BEST RANCH RD
HOWALD DR
COUNTY ROAD 18C
Valley oak
Large stick nest
Pair of red-tailed hawks
Valley oak with small stick nest
Pigeons
Valley oak
Swallow nest
California ground squirrel burrow complexes
Scattered burrows
Red-tailed hawk
Pheasants
California ground squirrel burrow
Cottontail
Cottontail
Red-shafted flicker
Elderberry shrubs
Yellow-billed magpies and small stick nest
Small stick nest
Mourning doves
Large stick nest
Red-shafted flicker
Phoebe
Small stick nest
Valley oak
Large stick nest
Yellow-billed magpies
Yellow-tailed magpie nests
LEGEND
N

Photo 1: View of the site east of County Road 100B, looking north. Former mud pits and waste piles visible in the foreground.

Photo 2: View along eastern boundary of site, looking north. Firebreak and storage building visible.

Photo 3: View along eastern boundary of site, looking west. Former mud pits, waste piles and main facility visible in background.

Photo 4: View of an over-excavated California ground squirrel burrow, within mud ponds.

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SITE PHOTOGRAPHS
SPRECKELS FORMER SUGAR FACILITY
INDUSTRIAL AND MUD PIT AREAS
Woodland, California

FIGURE 7

DRAWN BY	LT
CHECKED BY	ER
PROJECT MGR	ER
DATE	1/08

WKA NO. 7864.03

Photo 5: Long view of the southeastern portion of the site (upper left), including mounds and treeline. Most of the mound in the center and right are off of the site.

Photo 6: View of an over-excavated California ground squirrel burrow at fence line of main facility.

Photo 7: View of a large stick nest in one of the trees onsite.

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SITE PHOTOGRAPHS
SPRECKELS FORMER SUGAR FACILITY
INDUSTRIAL AND MUD PIT AREAS
Woodland, California

FIGURE 8

DRAWN BY	LT
CHECKED BY	ER
PROJECT MGR	ER
DATE	1/08

WKA NO. 7864.03