

5.2 Biological Resources

5.2.1 Introduction

On August 16, 2001, GWF Energy LLC filed an Application for Certification (AFC) with the California Energy Commission (CEC) for the Tracy Peaker Project (TPP). The CEC found the AFC data adequate on October 17, 2001. The CEC released a staff assessment on December 28, 2001, and a supplemental staff assessment on February 1, 2002. The CEC published its Presiding Member's Proposed Decision on May 31, 2002, with the project receiving its Final Decision on July 17, 2002. These documents are incorporated by reference into this AFC and are presented in electronic form in Appendix 1A.

This section describes the laws, ordinances, regulations, and standards (LORS) that apply to biological resource protection, the environmental setting, and conditions associated with the proposed modifications to the existing TPP site and the adjacent area, and reconductoring of Pacific Gas and Electric Company's (PG&E) nearby 115-kV transmission line. This section also describes the LORS that apply to the methods that were used to evaluate the potential presence of special-status species, and the potential adverse impacts on biological resources that could occur as a result of the TPP modification, transmission line reconductoring, and construction and operation. The modifications to the facility and associated reconductoring will be referred to hereinafter as the GWF Tracy Combined Cycle Power Plant (GWF Tracy).

This section also presents measures that would avoid, minimize, and mitigate adverse impacts. Specifically, Section 5.2.2 discusses applicable LORS that govern biological resources. Section 5.2.3 discusses the affected environment, including a regional overview of biological resources, vegetation, sensitive plant communities, wetlands, wildlife, and special-status species. Section 5.2.3 discusses methods and results of biological field surveys. Section 5.2.4 discusses the effects that construction and subsequent operation of GWF Tracy may have on biological resources. Section 5.2.5 addresses mitigation measures that would be implemented to avoid, minimize, or reduce potentially significant impacts. Section 5.2.6 presents agency contacts and Section 5.2.7 presents permit requirements and schedules. Section 5.2.8 contains references.

5.2.2 Laws, Ordinances, Regulations, and Standards

The following sections describe the primary LORS that apply to potential impacts on biological resources in the project area, and list the agencies responsible for enforcing the regulations. A summary of the LORS is provided in Table 5.2-1.

5.2.2.1 Federal LORS

Federal Endangered Species Act (ESA)(16 U.S.C. §1531 et seq.). ESA Section 9 and Federal regulations prohibit the "take" of species listed as endangered or threatened under the Act. "Take" is defined by regulation as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." "Harm" is further defined by the U.S. Fish and Wildlife Service (USFWS) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined by USFWS as intentional or negligent actions that create the likelihood of injury to listed

species by annoying them to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Although "take" of a listed species is prohibited under ESA Section 9, incidental take authorization may be obtained pursuant to ESA Section 7 or Section 10. Species that are not listed are not protected by the federal ESA, even if they are candidates for listing; however, USFWS advises that a candidate species (as well as species of concern) could be elevated to listed status at any time, and applicants therefore should regard these species with special consideration.

Migratory Bird Treaty Act (16 U.S.C. § 703 - 711) protects all migratory birds, including nests and eggs.

Bald and Golden Eagle Protection Act (16 U.S.C. § 668) specifically protects bald and golden eagles from harm or trade in parts of these species.

5.2.2.2 State LORS

California Endangered Species Act (Fish and Game Code Section 2050 et seq.). Species listed as threatened or endangered under CESA cannot be "taken" or harmed unless such "take" is authorized pursuant to an incidental take permit. "Take" currently is defined as to do or attempt to do the following: hunt, pursue, catch, capture, or kill a member of a listed species.

Fish and Game Code Section 3511 describes bird species, primarily raptors, that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements.

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

Fish and Game Code Section 3503.5 protects all birds of prey and their eggs and nests.

Fish and Game Code Section 3513 makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Fish and Game Code Sections 4700, 5050, and 5515 list mammal, amphibian, and reptile species that are fully protected in California.

Fish and Game Code Sections 1900 et seq., the California Native Plant Protection Act, protects rare plants listed as threatened, endangered, and rare.

Title 14, California Code of Regulations (Sections 670.2 and 670.5) lists animals designated as threatened or endangered in California. California "Species of Concern" (CSC) is a category conferred by the California Department of Fish and Game (CDFG) on those species that are indicators of regional habitat changes or are considered potential future protected species. CSC do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

TABLE 5.2-1
Laws, Ordinances, Regulations, and Standards for to Biological Resources

Element	Goal/Policy	Applicability (AFC Section Explaining Conformance)
Federal		
Federal Endangered Species Act (Federal ESA, 16 USC 1531 et seq.)	Applicants for projects that could result in adverse impacts to or take of any federally listed species are required to obtain take authorization and mitigate potential impacts in consultation with USFWS.	GWF Tracy does not include significant habitat for federally listed species. Construction and operation will avoid significant impacts to federally listed species and their habitat. (Sections 5.2.2.1, 5.2.3.3, and 5.2.4.3)
Migratory Bird Treaty Act (16 USC 703 to 711)	Protects all migratory birds, including nests and eggs.	GWF Tracy supports monotypical ruderal habitat that lacks exceptional features to attract significant numbers of migratory birds. GWF Tracy will not introduce features that will increase the profile or collision and electrocution risks at the plant. If necessary, noise minimization measures and other avoidance measures will be implemented during the breeding season. (Sections 5.2.2.1, 5.2.4.2.6, 5.2.4.3.4, 5.2.4.3.5, and 5.2.5.1)
Bald and Golden Eagle Protection Act (16 USC 668)	Specifically protects bald and golden eagles from harm or trade in parts of these species.	GWF Tracy does not include habitat or other features that would likely attract eagles. GWF Tracy will not introduce features that will increase the profile or collision and electrocution risks at the peaker plant. (Section 5.2.2.1 and 5.2.4.2.6)
State		
California Endangered Species Act (Fish and Game Code, Section 2050 et seq.).	Species listed under this act cannot be "taken" or harmed unless authorized by an incidental take permit.	GWF Tracy and vicinity was analyzed and it was determined that GWF Tracy construction or operation will not affect listed species and, therefore, not result in "take." (Sections 5.2.2.2 and 5.2.4.3)
Fish and Game Code, Section 3511	Describes bird species, primarily raptors, that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements.	GWF Tracy construction or operation will not result in "take." GWF Tracy will not introduce features that will increase the profile or collision and electrocution risks at the peaker plant. (Sections 5.2.2.2 and 5.2.3.3)
Fish and Game Code, Section 3503	States that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.	GWF Tracy provides limited nesting opportunities. Preconstruction surveys will be conducted should work begin in the breeding season. If found, measures will be implemented to avoid nest disturbance (Sections 5.2.2.2 and 5.2.5.1)

TABLE 5.2-1
Laws, Ordinances, Regulations, and Standards for to Biological Resources

Element	Goal/Policy	Applicability (AFC Section Explaining Conformance)
Fish and Game Code, Section 3503.5	Protects all birds of prey and their eggs and nests.	GWF Tracy provides limited raptor nesting opportunities. Preconstruction surveys will be conducted should work begin in the breeding season. If found measures will be implemented to avoid nest disturbance (Sections 5.2.2.2 and 5.2.5.1).
Fish and Game Code, Section 3513	Makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.	With the implementation of preconstruction surveys, GWF Tracy construction or operation will not result in "take" of birds of prey, their nests, or eggs. (Sections 5.2.2.2 and 5.2.5.1).
Fish and Game Code, Sections 4700, 5050, and 5515	Lists mammal, amphibian, and reptile species that are fully protected in California.	GWF Tracy was analyzed and does not include likely habitat for fully protected mammal, amphibian, or reptile species. (Sections 5.2.2.2, 5.2.3.3.2, and 5.2.4.3.3).
Fish and Game Code, Sections 1900 et seq.,	The Native Plant Protection Act lists threatened, endangered, and rare plants listed by the state.	GWF Tracy was analyzed and does not include likely habitat for protected plant species. (Sections 5.2.2.2, 5.2.3.3, and 5.2.4.3.1)
Title 14, California Code of Regulations, Sections 670.2 and 670.5	Lists animals designated as threatened or endangered in California.	GWF Tracy was analyzed and does not include likely habitat for state-listed species. (Sections 5.2.2.2, 5.2.3.3.2, and 5.2.4.3.3)
Fish and Game Code Sections 1601 through 1607	Prohibits alteration of any stream, including intermittent and seasonal channels and many artificial channels, without a permit from CDFG.	GWF Tracy construction was analyzed and will not include alteration of any stream or channel. (Sections 5.2.2.2 and 5.2.4.4)
CEQA (Public Resources Code, Section 15380)	CEQA requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.	The AFC analysis and process is CEQA equivalent. All requirements under CEQA are met with the analysis in the GWF Tracy AFC. (Sections 5.2.2.2 and 5.2.4.1)
Warren-Alquist Act (Public Resources Code, Section 25000, et seq.)	Warren-Alquist Act is a CEQA-equivalent process implemented by the CECP.	The AFC analysis and process is CEQA-equivalent. All requirements under the Warren-Alquist Act are met with the analysis in the GWF Tracy AFC. (Section 5.2.2.2)

TABLE 5.2-1
Laws, Ordinances, Regulations, and Standards for to Biological Resources

Element	Goal/Policy	Applicability (AFC Section Explaining Conformance)
Local and Other Jurisdictions		
San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).	The key purpose of the plan is to provide a strategy for balancing the need to conserve Open Space and the need to Convert Open Space to non-Open Space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal ESA or CESA; providing and maintaining multiple-use Open Spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to Project Proponents and society at large.	The GWF Tracy project will not affect the long-term conservation goals for the SJMSCP. Habitat compensation fee for the GWF property was paid for TPP.

Source:

California Fish and Game Code Sections 1601–1607 prohibit alteration of any stream, including intermittent and seasonal channels and many artificial channels, without a Streambed Alteration Agreement from CDFG. This applies to any channel modifications that would be required to meet drainage, transportation, or flood control objectives of a project.

California Environmental Quality Act (CEQA) (Public Resources Code Section 15380) defines “rare” in a broader sense than the California Endangered Species Act (CESA) and CDFG definitions of threatened, endangered, or species of special concern. Under this definition, CDFG can request additional consideration of species not otherwise protected. CEQA requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.

Warren-Alquist Act (Public Resources Code, Section 25000, et seq.) is a CEQA-equivalent process implemented by the CEC. Preparation of this AFC will result in an assessment prepared by the CEC staff that fulfills the requirements of CEQA. Section 25500 provides that the CEC has exclusive power to certify all power plant sites and related facilities exceeding 50 MW, whether a new site and related facility or a change or addition to an existing facility. The issuance of a certificate by the CEC is in lieu of any permit, certificate, or similar document required by any state, local, or regional agency and supersedes any applicable statute, ordinance or regulation of any state, local, or regional agency.

5.2.2.3 Local LORS and Other Jurisdictions

5.2.2.3.1 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

GWF Tracy is located within the jurisdiction of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). As stated in condition BIO-9 of the July 2002 TPP Final Decision, GWF was required to purchase 34.6 acres of land or pay a SJMSCP fee of \$58,474 to satisfy the conditions requiring habitat compensation. GWF satisfied BIO-9 for TPP in July 2002 with a fee payment of \$58,474 to the San Joaquin Council of Governments.

The 3.28 acres of permanent construction in addition to work within the existing TPP and 12.3 acres of temporary laydown and staging area proposed for GWF Tracy are fully contained within the 34.6-acre area covered by the SJMSCP fee for TPP. Reconductoring would involve temporary disturbances along sections of the PG&E transmission line. Work associated with reconductoring, including site access and equipment staging, is proposed to occur within previously disturbed areas, and performed with industry-standard best management practices (BMPs) to avoid and minimize impacts to special-status resources. As a result, no additional SJMSCP fees or other mitigation are anticipated for GWF Tracy construction at this time. In the event that PG&E identifies proposed areas of disturbance that require mitigation, additional mitigation will be provided.

The avoidance and minimization measures implemented for construction of the TPP will also be applied to the construction of GWF Tracy. These BMPs will include specific measures developed for the San Joaquin kit fox (*Vulpes macrotis mutica*) and the western burrowing owl (*Athene cunicularia*).

5.2.3 Affected Environment

The following sections describe the biological conditions of the GWF Tracy project area, beginning with a regional overview, the vegetation types and habitat present in the project area, a description of wildlife typical to the area, and a discussion of specific special-status species known to occur in the general region.

5.2.3.1 Regional Overview

The modified TPP will occupy a 16.38-acre area located within the existing GWF-owned 40-acre parcel for the TPP in an unincorporated portion of northern San Joaquin County immediately southwest of Tracy, California, and approximately 20 miles southwest of Stockton, California. The project site is approximately 50 feet above mean sea level and can be found on the Tracy U.S. Geological Survey (USGS), California 7.5-minute series topographic quadrangle within Township 2 South, Range 4 in the southwest quarter of Section 36. The property is bounded by the Delta-Mendota Canal to the southwest, agricultural property to the south and east, and the Union Pacific Railroad to the north.

GWF Tracy includes reconductoring three segments of PG&E's 115-kV transmission line. Segment 1 includes an approximately 1-mile section starting at the TPP and heading east to the PG&E Schulte Switching Station. Segment 1 is located on the Tracy USGS quadrangle. Segment 2 is located approximately 8 miles east of the TPP site east of the town of Tracy and includes an approximately 1-mile section starting at the Kasson Substation and ending north at tower 7/56. Segment 3 is located just east of Segment 2 and includes an approximately 2-mile section starting at tower 6/49 and ending at tower 5/37. Segment 2 is located within the Lathrop and Vernalis USGS quadrangles and Segment 3 is located within the Lathrop USGS Quadrangle.

Figures 5.2-1 and 5.2-2 show regional biological resources. Habitat within the vicinity of the project area is predominately developed agricultural lands with commercial and industrial development to the north before entering into the residential development of the City of Tracy. All three segments of the proposed reconductoring line fall within agricultural developments and occur along existing county roads or major highways including Interstate 5.

The TPP power plant area is accessed via an existing 3,300-foot, asphalt-paved service road southward from W. Schulte Road. A 12.3-acre construction laydown and parking area will be located within a previously disturbed portion of the 40-acre GWF property that was used for construction of the TPP but is located outside the current fence line for TPP. This area will have gravel surfacing and will be restored to pre-existing conditions upon completion of construction. Areas within the existing TPP site not occupied by structures, the stormwater basin, or roads, are surfaced with gravel. There is no landscaping within the fenced TPP.

The area needed for TPP upgrades was used as a temporary staging and parking area during TPP construction. Following TPP construction, this area was restored to open and uniform non-native annual grassland.

The proposed 12.3-acre temporary staging and parking area supporting GWF Tracy construction will be located within the GWF property immediately northeast of TPP. This area is predominately a uniform grassy open area that was once used for agriculture but

includes trees planted on top of a constructed berm for visual screening during TPP construction.

The reconductoring work includes replacement of conductors only. No new towers are proposed, and all existing towers will remain in place. Ground-disturbing activities will most likely be limited to temporary staging areas and pull sites. To the extent practicable, previously disturbed areas located along each segment will be used during reconductoring. Each segment passes through agricultural areas that are interspersed by a variety of mature ornamental tree species. In addition, Segment 3 crosses Tom Paine Slough and Paradise Cut, two perennial creeks that support native riparian habitat. Riparian tree species at these crossings include Valley oak (*Quercus lobata*) and Fremont cottonwood (*Populus fremontii*).

5.2.3.2 Biological Survey Methods

Biological surveys were completed in 2001 for the assessment of biological resources as part of the permitting process prior to construction of TPP. The surveys included the entire 40-acre GWF property and associated utilities.

As a result of the 2001 surveys for TPP, GWF determined that the proposed TPP site had been managed as intensive agricultural land and did not exhibit habitat features that would be of value to sensitive plant or animal species. GWF did conclude that the Delta-Mendota Canal area just southwest of TPP had potential to provide foraging and denning habitat for San Joaquin kit fox (GWF, 2001).

Additional reconnaissance-level biological surveys were conducted for the proposed GWF Tracy project area in 2007 and 2008. The entire 40-acre GWF property was surveyed on foot on April 23, 2007, and the three reconductoring segments were surveyed on foot or from existing roads on May 30, 2008. A list of plant and wildlife species was compiled from both surveys. No herbarium collections were made. A habitat analysis was performed utilizing descriptions of special plant communities known from the San Joaquin Valley. In this analysis, the habitat within a 1-mile radius of the GWF Tracy project area and the three reconductoring segments was assessed for potential to support rare and special-status plant species and special-status wildlife species. The field reconnaissance of the three reconductoring segments also included a 1,000-foot radius survey area and an additional 10-mile radius area for potential Swainson's hawk (*Buteo swainsonii*) nest sites.

The surveyor's qualifications are provided in Appendix 5.2A. The field surveys were aided by aerial photographs (1:4,800 scale), which helped identify land uses and natural habitat areas. The presence, or potential presence, of sensitive biological resources was determined from information gathered during field surveys conducted for the project, published and unpublished literature, and natural resource agency databases. Plant and animal species observed in the project vicinity during the surveys are included in Tables 5.2-2 and 5.2-3. Based on the project setting and the reconnaissance field surveys, it was determined that additional species-specific focused surveys or botanical surveys would not be necessary within the proposed project impact area because impacts to biological resources that may occur within the immediate vicinity of the project area would be avoided or minimized.

TABLE 5.2-2
 Plant Species Observed on and in the Vicinity of the GWF Property and Reconductoring Segments in April 2007 and May 2008

Scientific Name	Common Name
Aceraceae	
<i>Acer negundo</i>	California box elder
Apiaceae	
<i>Foeniculum vulgare</i>	sweet fennel
Asclepiadaceae	
<i>Asclepias fascicularis</i>	narrow-leaf milkweed
Asteraceae	
<i>Artemisia douglasiana</i>	mugwort
<i>Baccharis salicifolia</i>	mulefat
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	yellow star-thistle
<i>Lactuca serriola</i>	prickly lettuce
<i>Senecio vulgaris</i>	common groundsel
<i>Silybum marianum</i>	milk thistle
Boraginaceae	
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	orange-flowered Menzies' fiddleneck
Brassicaceae	
<i>Brassica nigra</i>	black mustard
<i>Lepidium nitidum</i>	shining pepper-grass
<i>Sisymbrium irio</i>	London rocket
Caprifoliaceae	
<i>Sambucus mexicana</i>	blue elderberry
Chenopodiaceae	
<i>Chenopodium album</i>	white goosefoot
<i>Salsola kali</i>	Russian thistle
Convolvulaceae	
<i>Convolvulus arvensis</i>	field bindweed
Cyperaceae	
<i>Scirpus</i> spp.	bulrush
Euphorbiaceae	
<i>Eremocarpus setigerus</i>	turkey mullein
Fabaceae	
<i>Cercis occidentalis</i>	western redbud
<i>Lupinus bicolor</i>	miniature lupine
<i>Lupinus microcarpus</i>	chick lupine
<i>Medicago polymorpha</i>	California burclover

TABLE 5.2-2
 Plant Species Observed on and in the Vicinity of the GWF Property and Reconductoring Segments in April 2007 and May 2008

Scientific Name	Common Name
<i>Trifolium hirtum</i>	rose clover
<i>Vicia villosa</i>	hairy vetch
Fagaceae	
<i>Quercus lobata</i>	valley oak
Geraniaceae	
<i>Erodium cicutarium</i>	red-stemmed filaree
Grossulariaceae	
<i>Ribes aureum</i>	golden currant
Hippocastanaceae	
<i>Aesculus californica</i>	California buckeye
Malvaceae	
<i>Malva parviflora</i>	cheeseweed
Myrtaceae	
<i>Eucalyptus</i> spp.	Eucalyptus
Poaceae	
<i>Arundo donax</i>	giant reed
<i>Avena barbata</i>	slender wild oats
<i>Bromus diandrus</i>	ripgut brome
<i>Bromus hordeaceus</i>	soft chess
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome
<i>Bromus tectorum</i>	cheatgrass
<i>Cynodon dactylon</i>	bermuda grass
<i>Hordeum brachyantherum</i>	meadow barley
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	foxtail barley
<i>Lolium multiflorum</i>	Italian rye-grass
<i>Phalaris paradoxa</i>	hood canarygrass
<i>Vulpia bromoides</i>	brome fescue
<i>Vulpia myuros</i>	rattail fescue
Salicaceae	
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
<i>Salix</i> spp.	Willow
Typhaceae	
<i>Typha latifolia</i>	broadleaf cattail

TABLE 5.2-3
Wildlife Species Observed on and in the Vicinity of the GWF Property and Reconducting Segments in April 2007 and May 2008

Common Name	Scientific Name	Location
Reptiles		
Western fence lizard	<i>Sceloporus occidentalis</i>	GWF property, Segment 1
Western whiptail	<i>Cnemidophorous tigris</i>	GWF property
Birds		
Great blue heron	<i>Ardea Herodias</i>	Segment 1
Great horned owl	<i>Bubo virginianus</i>	GWF property
Green heron	<i>Butorides virescens</i>	Segment 2
Turkey Vulture	<i>Cathartes aura</i>	Flew over site, All Segments
Northern harrier	<i>Circus cyaneus</i>	Segment 1
Swainson's hawk	<i>Buteo swainsoni</i>	Segment 1
Red-tailed Hawk	<i>Buteo jamaicensis</i>	GWF property, Segment 1 & 3
American Kestrel	<i>Falco sparverius</i>	GWF property
California quail	<i>Callipepla californica</i>	Segment 3
Rock Dove	<i>Columba livia</i>	GWF property
Mourning Dove	<i>Zenaida macroura</i>	TPP, Segment 1
Barn Owl	<i>Tyto alba</i>	Feathers found on GWF property
Mourning dove	<i>Zenaida macroura</i>	
Black Phoebe	<i>Sayornis nigricans</i>	Near Delta-Mendota Canal, Segment 3
Western Kingbird	<i>Tyrannus verticalis</i>	On the fence of TPP, Segment 1
Northern Mockingbird	<i>Mimus polyglottos</i>	GWF property, Segment 1
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Near I-580, Segment 1
Western Scrub-jay	<i>Aphelocoma californica</i>	Near I-580, Segment 3
American Crow	<i>Corvus brachyrhynchos</i>	GWF property, Segment 1
Common Raven	<i>Corvus corax</i>	GWF property, Segment 1
European Starling	<i>Sturnus vulgaris</i>	GWF property, Segment 1
Song sparrow	<i>Melospiza melodia</i>	Segment 2
House Sparrow	<i>Passer domesticus</i>	Near I-580
House Finch	<i>Carpodacus mexicanus</i>	GWF property, Segment 1 & 3
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Near I-580
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Segment 1
Western Meadowlark	<i>Sturnella neglecta</i>	GWF property, Segment 1

TABLE 5.2-3
Wildlife Species Observed on and in the Vicinity of the GWF Property and Reconductoring Segments in April 2007 and May 2008

Common Name	Scientific Name	Location
Tree swallow	<i>Tachycineta bicolor</i>	Segment 3
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	Segment 1
Barn Swallow	<i>Hirundo rustica</i>	GWF property, Segment 1
Bewick's wren	<i>Thryomanes bewickii</i>	Segment 3
Mammals		
Black-tailed Jackrabbit	<i>Lepus californicus</i>	GWF property, Segment 1
Desert Cottontail	<i>Sylvilagus audubonii</i>	GWF property, Segment 1
California Ground Squirrel	<i>Spermophilus beecheyi</i>	Adjacent to site, Segment 1 & 3
House Mouse	<i>Mus musculus</i>	GWF property
Botta's pocket gopher	<i>Thomomys bottae</i>	Segment 3 (burrows)
Coyote	<i>Canis latrans</i>	GWF property (scat), Segment 3 (scat)
Fish		
Mosquitofish	<i>Gambusia affinis</i>	Segment 2

A list of special-status plant and animal species was analyzed in the assessment of the TPP. Two species from this list, the federally endangered and State threatened San Joaquin kit fox, and the State species of special concern Western burrowing owl, have potential to occur within the vicinity of the TPP. The same was considered relevant for the GWF Tracy analysis.

The TPP assessment also included the federally threatened and state species of concern California tiger salamander (*Ambystoma californiense*) and the state species of concern Western spadefoot toad (*Spea hammondi*). Based on the results of the TPP assessment, GWF and the CEC determined that the TPP project was unlikely to adversely affect these two amphibian species (CEC, 2002). The GWF Tracy modification is also unlikely to adversely affect the tiger salamander or the western spadefoot toad.

Special attention was also given previously to TPP's potential effects on the California red-legged frog (*Rana aurora draytonii*), raptors, and other bird species.

5.2.3.3 Vegetation Communities and Wildlife Habitats

Much of the proposed GWF Tracy site activities will be located within the existing TPP site. The TPP site currently consists of structures, paved roads, a stormwater basin, and gravel-topped open spaces. There is no bare soil or landscaping within the fenced TPP site.

The remainder of the 40-acre GWF property, which includes the TPP expansion area and temporary work area, is characterized by ruderal non-native grasses on leveled former agricultural land. The property has been altered by current and past industrial and

agricultural development and is currently maintained with ornamental plantings, cultivation, and weed control. Many of the ornamental or visual screening plantings of cottonwoods (*Populus fremontii*), redbud (*Cercis occidentalis*), and elderberry (*Sambucus mexicanus*) installed following TPP construction were in declining condition during the April 2007 survey, with less than 10 percent of the plantings in stable or thriving condition. The failed trees have since been replaced and irrigation has been effected to ensure trees received adequate water. During the 2008 survey, the new plantings were observed as thriving.

Grassland habitats adjacent to the TPP site are uniformly dominated by weedy red brome (*Bromus madritensis rubens*). This fallow area is partially cultivated for fire control, although it is likely to have supported agricultural crops in the past.

Surrounding habitats in the immediate vicinity of the project include grassland/pasture, agricultural fields of grain, alfalfa, and orchards. Industrial and rural residential land uses are present but less extensive. The Delta-Mendota Canal is located immediately south of the TPP site. This large concrete-lined canal is a major fragmenting feature in the San Joaquin Valley. Other than occasional road crossings of the canal, the Delta-Mendota Canal is a formidable barrier to wildlife movement between the coastal hills to the west and the San Joaquin Valley to the east.

The vegetation communities remaining within the GWF property were determined to support reptile, bird, and mammal species common to the San Joaquin Valley such as Pacific gopher snake (*Pituophis catenifer catenifer*), great horned owl (*Bubo virginianus*), and red fox (*Vulpes vulpes*). Wildlife observed at the site through direct observation or sign included western fence lizard (*Sceloporus occidentalis*), red-tailed hawk (*Buteo jamaicensis*), rock dove (*Columba livia*), black phoebe (*Sayornis nigricans*), western kingbird (*Tyrannus verticalis*), European starling (*Sturnus vulgaris*), western meadowlark (*Sturnella neglecta*), black-tailed jackrabbit (*Lepus californicus*), house mouse (*Mus musculus*), and coyote (*Canis latrans*).

There is no vegetation within the fenced TPP site, but this area provides potential roosting structures for birds and there is sign that small mammals such as California ground squirrel (*Spermophilus beecheyi*) and cottontail (*Sylvilagus audubonii*) enter the area under the security fence. In April 2008, a great horned owl established a nest on piping of one of the peaking units at the site. After consultation with the CEC biological staff and other agencies, the affected peaking unit was started (for scheduled maintenance) and the owls were not disturbed by the unit's operation, with the adult and juvenile owls continuing to be present at the site. GWF Energy anticipates coordinated discussions with the CEC biological staff and other wildlife agencies to determine if more appropriate nesting habitat can be established.

All three segments of transmission line reconductoring occur either within agricultural developments or adjacent to existing roads. In addition, Segment 3 crosses the riparian corridor of Tom Paine Slough and Paradise Cut. Edges of agricultural fields and roads are dominated by non-native grasses and forbs, including ripgut brome (*Bromus diandrus*), wild oat (*Avena* spp.), and wild mustard (*Synapis* spp.); or planted with ornamental trees including Eucalyptus (*Eucalyptus* spp.). Wildlife common to the reconductoring segments include mammals such as California ground squirrel, black-tailed jackrabbit, and coyote.

A list of plant and animal species observed on the GWF property and along the reconductoring segments during the 2007 and 2008 surveys are included in Tables 5.2-2 and 5.2-3.

5.2.3.4 Special-status Species

A list of federal and state special-status plant and wildlife species was compiled for the GWF Tracy project area using the following sources: the prior surveys completed for TPP (GWF, 2001); the California Natural Diversity Database (CNDDDB) (CDFG, 2007; CDFG, 2008); California Native Plant Society's (CNPS) Electronic Inventory (CNPS, 2007; CNPS, 2008); the USFWS Species List (USFWS, 2008); and field reconnaissance surveys, conducted in April 2007 and May 2008.

Reference information is based on known occurrences, historical records, or the presence of suitable habitat for any given life stage of a particular species. The known locations of special-status species identified in a 10-mile radius of the GWF Tracy area are provided in Figures 5.2-3 and 5.2-4. Known locations of special-status species identified in a 1-mile radius of the reconductoring segments are provided in Figure 5.2-5 and Figure 5.2-6. A query of CNDDDB records within representative 7.5-minute USGS quadrangles, the onsite field survey, and habitat assessment resulted in the comprehensive special-status species lists is provided in Appendix 5.2B. The lists include species listed as threatened or endangered that have special requirements under the federal ESA and CESA, and other unlisted special-status species that could become listed in the future. Any special-status species whose habitat(s) and/or known distribution are within the project area were evaluated for potential impacts from GWF Tracy construction and operation. Other special-status species that were included on the USFWS, CDFG, and CNPS lists whose habitats or known distribution do not occur within the project area were also included in Appendix 5.2B, but not evaluated further. Therefore, Table 5.2-4 represents an abbreviated list of special-status species that were evaluated for GWF Tracy.

5.2.3.4.1 Special-status Plants

Information acquired from the CNDDDB (species listed as endangered, threatened, or California Species of Special Concern species), CNPS (List 1 and 2), and other sources resulted in a list of forty-six special-status plant species that could occur within a nine-quad search area (Tracy, Clifton Court Forebay, Union Island, Lathrop, Midway, Vernalis, Cedar Mountain, Lone Tree Creek, and Solyo 7.5-minute USGS quadrangles)(Appendix 5.2B). Of these forty-six species, twenty have potential to occur within the project area (Table 5.2-4). A total of two special-status plants are known to occur within one mile of the TPP site and Segment 1 (reconductoring) and include: Caper-fruited tropidocarpum (*Tropidocarpum capparideum*) and big tarplant (*Blepharizonia plumosa* ssp. *plumosa*). A total of two special-status plants are known to occur within one mile of Segments 2 and 3 of reconductoring and include Suisun marsh aster (*Symphotrichum lentum*) and Delta button-celery (*Eryngium racemosum*).

The special-status plants of the lower San Joaquin Valley are largely associated with alkaline soils of scrub, grasslands, playas, or seasonal wetland habitats. These habitats including vernal pools, playa lakes, and other seasonal alkaline wetlands (Holland, 1986; Sawyer and Keeler-Wolf, 1995) are also considered worthy of conservation. The large-scale conversion of

these natural habitats to agricultural use has eliminated habitats capable of supporting these species at the site and within 1 mile of GWF Tracy.

Other habitats known to support special-status plants in the Tracy area include oak woodlands, chaparral, and serpentine vegetation communities. None of these habitats have been observed on the project site or adjoining vicinity. None of the special-status plants known from the San Joaquin Valley were observed on the project site due to the lack of appropriate habitats.

A focused survey for special-status plants was performed April 2007, which resulted in negative results for the GWF site. A focused survey was not performed along the reconductoring routes. Due to the lack of suitable habitat, special-status plants are not expected to occur at GWF Tracy. Special-status plant species potentially occurring in the vicinity of the GWF Tracy project area are listed in Table 5.2-2. A list of plant species observed during the surveys is included in Table 5.2-3.

No special-status plant species were observed on the GWF property during the 2001 surveys performed for the TPP project (GWF, 2001).

5.2.3.4.2 Special-status Wildlife

Information obtained from the CNDDDB, USFWS, and other sources resulted in a cumulative list of thirty-seven special-status wildlife species that potentially occur within the nine-quad reference search area (Appendix 5.2B). Undeveloped areas of the GWF property are characterized by a fallow agricultural field that lacks surface hydrology, seasonal ponding, or native vegetation communities that would be likely to attract or be of value to special-status wildlife. Most of the reconductoring consists of a predominance of actively managed agricultural fields providing low habitat value for many special-status wildlife species. In addition, Segment 3 intersects the riparian corridors of Tom Paine Slough and Paradise Cut, which may contain potential habitat for a variety of special-status species. The native habitat occurring within the 1-mile survey area may also provide potential habitat for special-status wildlife species. Therefore, although there is a low likelihood for special-status wildlife species to occur within the TPP project area, native habitat within the 1-mile vicinity and along sections of the reconductoring route have potential for such occurrences.

A total of twenty-four special-status wildlife species have the potential to occur within the 1-mile survey area (Table 5.2-4). Of these, a total of 4 special-status wildlife species are known to occur within the 1-mile survey area of the TPP site and Segment 1 (reconductoring) and include: Swainson's hawk, Western burrowing owl, Loggerhead shrike (*Lanius ludovicianus*), and San Joaquin kit fox (CNDDDB, 2007; CNDDDB, 2008; CEC, 2002). A total of two special-status wildlife species are known to occur within the 1-mile survey area of the segments 2 and 3 (reconductoring) and include riparian brush rabbit (*Sylvilagus bachmani riparius*) and Swainson's hawk.

TABLE 5.2-4
Abbreviated List of Special-status Species Evaluated for the Proposed GWF Tracy Project

Scientific Name	Common Name	Status ^a	Season ^b	Primary Habitat ^c	Potential Occurrence in Project Area
Plants					
<i>Amsinckia grandiflora</i>	Large-flowered fiddleneck	FE/CE/1B	Apr-May	Lower portions of steep, protected north- and east-facing slopes in oak woodlands and grasslands	Low
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vetch	--/--/1B	Mar-Jun	Playas, grasslands on adobe clay soils, alkaline vernal pools	Low
<i>Atriplex cordulata</i>	Heartscale	--/--/1B	Apr-Oct	Chenopod scrub and sandy, alkaline grasslands	Low
<i>Atriplex depressa</i>	Brittlescale	--/--/1B	May-Oct	Alkaline or clay grasslands, chenopod scrub, and playas	Low
<i>Atriplex joaquiniana</i>	San Joaquin spearscale	--/--/1B	Apr-Oct	Alkaline scrub, meadows, and grasslands	Low
<i>Blepharizonia plumosa</i> ssp. <i>plumosa</i>	Big tarplant	--/--/1B	Jul-Oct	Grasslands on clay soils, with low cover	Low
<i>California macrophylla</i>	Round-leaved filaree	--/--/1B	Mar-May	Cismontane woodlands, valley and foothill grasslands	Low
<i>Caulanthus coulteri</i> var. <i>lemmonii</i>	Lemmon's jewelflower	--/--/1B	Mar-May	Pinon/juniper woodland, valley and foothill grasslands	Low
<i>Cirsium crassicaule</i>	Slough thistle	--/--/1B	May-Aug	Slow-moving water with saturated soils in various plant communities along canals and rivers	Low
<i>Delphinium californicum</i> ssp. <i>interius</i>	Interior California larkspur	--/--/1B	Apr-Jun	Mesic woodland	Low
<i>Delphinium recurvatum</i>	Recurved larkspur	--/--/1B	Mar-Jun	Grasslands, woodlands, scrub, vernal pools with alkaline soils	Low
<i>Eryngium racemosum</i>	Delta button-celery	--/CE/1B	Jun-Sep	Mesic clay depressions in riparian scrub	Low

TABLE 5.2-4
Abbreviated List of Special-status Species Evaluated for the Proposed GWF Tracy Project

Scientific Name	Common Name	Status ^a	Season ^b	Primary Habitat ^c	Potential Occurrence in Project Area
<i>Eschscholzia rhombipetala</i>	Diamond-peteled California poppy	--/--/1B	Mar-Apr	grasslands	Low
<i>Helianthella castanea</i>	Diablo helianthella	--/CNPS 1B	Mar-Jun	Broadleaf upland forest, Cismontane, Chaparral, Coastal scrub, riparian woods, and grasslands	Low
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	--/CR/1B	Apr-Nov	Marshes and swamp (brackish or freshwater), riparian scrub	Low
<i>Madia radiata</i>	Showy madia	--/CNPS 1B	Mar-May	Cismontane and grasslands	Low
<i>Senecio aphanactis</i>	Chaparral ragwort	--/--/2	Jan-Apr	Cismontane woodland, chaparral, coastal scrub	Low
<i>Symphotrichum lentum</i>	Suisun marsh aster	--/--/1B	May-Nov	Marshes and swamp (brackish and freshwater)	Low
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	--/--/2	May-Sep	Meadows, marshes, riparian, and vernal pools	Low
<i>Tropidocarpum capparideum</i>	Caper-fruited tropidocarpum	--/--/1B	Mar-Apr	Grasslands	Low
Invertebrates					
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT	RES	Elderberry tree (obligate host plant), riparian	Low
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT	RES	Seasonal wetland (vernal pools)	Low
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	FE	RES	Seasonal wetland (vernal pools)	Low

TABLE 5.2-4
Abbreviated List of Special-status Species Evaluated for the Proposed GWF Tracy Project

Scientific Name	Common Name	Status ^a	Season ^b	Primary Habitat ^c	Potential Occurrence in Project Area
Amphibians					
<i>Ambystoma californiense</i>	California tiger salamander	FT, CSC	RES	Intermittent wetlands, vernal pools and surrounding uplands	Low
<i>Rana aurora draytonii</i>	California red-legged frog	FT	RES	Permanent and long-term intermittent wetlands, streams, and ponds	Low
<i>Spea hammondi</i>	Western spadefoot toad	CSC	RES	Intermittent wetlands, vernal pools	Low
Reptiles					
<i>Anniella pulchra pulchra</i>	Silvery legless lizard	CSC	RES	Riparian, chaparral, woodlands with moist loose soils	Low
<i>Actinemys marmorata</i>	Western pond turtle	CSC	RES	Streams and large rivers	Low
<i>Masticophis flagellum ruddocki</i>	San Joaquin whipsnake	CSC	RES	Grasslands, savannas, chaparral, and woodlands	Low
Birds					
<i>Agelaius tricolor</i>	tricolored blackbird	CSC	SUMR	(Nesting colony) Requires open water, riparian areas.	Low
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed blackbird	CSC	MGR	Wetlands/marshes with tall emergent vegetation	Low
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	FC, CE		Riparian systems	Low
<i>Athene cunicularia</i>	burrowing owl	CSC, HMP: Yes	RES	Grasslands and agricultural areas.	Low
<i>Buteo swainsoni</i>	Swainson's hawk	CT	SUM	Riparian systems, grasslands and agricultural areas.	Low
<i>Lanius ludovicianus</i>	Loggerhead shrike	CSC	RES	Valley grasslands and saltbush scrub	Low

TABLE 5.2-4
Abbreviated List of Special-status Species Evaluated for the Proposed GWF Tracy Project

Scientific Name	Common Name	Status ^a	Season ^b	Primary Habitat ^c	Potential Occurrence in Project Area
<i>Aquila chrysaetos</i>	Golden eagle	CSC*	SUMR	Mountain and Foothill grasslands	Low
<i>Elanus leucurus</i>	White-tailed kite	CSC*	RES	Valley and Foothill grasslands	Low
Mammals					
<i>Antrozous pallidus</i>	Pallid bat	CSC	RES	Rock crevices, caves, mines, rock piles, tree cavities, usually near water.	Low
<i>Eumops perotis californicus</i>	Western mastiff bat	CSC	RES	Rock crevices in vertical cliffs, buildings	Low
<i>Perognathus inornatus</i>	San Joaquin pocket mouse	CSC	RES	Valley grasslands and saltbush scrub	Low
<i>Neotoma fuscipes riparia</i>	Riparian (=San Joaquin valley) woodrat	FE	RES	Riparian systems	Low
<i>Sylvilagus bachmani riparius</i>	Riparian brush rabbit	FE/CE	RES	Riparian systems	Low
<i>Taxidea taxus</i>	American badger	CSC	RES	Shrub, forest, and herbaceous habitats,	Low
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE, CE	RES	Grassland and scrub habitats of the San Joaquin Valley and surrounding foothills	Low

TABLE 5.2-4
Abbreviated List of Special-status Species Evaluated for the Proposed GWF Tracy Project

Scientific Name	Common Name	Status ^a	Season ^b	Primary Habitat ^c	Potential Occurrence in Project Area
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Notes:

^a **Status.**

^b **Season.** Blooming period for plants. Season of use for animals. RES=Resident; SUMR=Summer; WNTR=Winter; rare visitor; MGR=Migrant

^c **Primary Habitat.** Most likely habitat association

Federal Status

FE – federally listed as endangered

FT - federally listed as threatened

State Status

CE = state listed as endangered

CT = state listed as threatened

CR = state rare

CSC = state species of special concern

CSC* = fully protected state species of special concern

California Native Plant Society (CNPS) Status

1A = plants presumed extinct in California

1B = plants rare, threatened, or endangered in California, but more common elsewhere

2 = plants rare, threatened, or endangered in California, but more common elsewhere

Sources:

(Tracy, Clifton Court Fore Bay, Union Island, Lathrop, Midway, Vernalis, Cedar Mountain, Lone Tree Creek, and Solyo 7.5-minute USGS quadrangles searched) California Department of Fish and Game. Natural Diversity Database Program "Rarefind" (August 2007, May 2008). California Natural Diversity Database. The Resources Agency, Sacramento.

California Native Plant Society. 2007 & 2008. Inventory of Rare and Endangered Plants (online 7th edition). California Native Plant Society. Sacramento, CA.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White. 1990a, 1990b, 1990c. *California's Wildlife, Volume 2: Birds, Volume 3: Mammals, Volume 1: Amphibians*. California Department of Fish and Game. Sacramento.

Sibley, D.A. 2003. The Sibley Field Guide to Birds of Western North America.

As addressed in the licensing and construction of TPP, the structures associated with the peaker plant present roosting opportunities for common and special-status bird species. However, the profile of TPP was not considered a significant risk to bird strikes for special-status birds such as raptor species common to the Valley. The proposed GWF Tracy modifications to TPP include the expansion of the fenced peaker plant site but will not include the installation of additional structures that will increase the site profile or result in an increased risk to birds or other animals. As noted above, the project site has experienced nesting raptors (great horned owls) in the past. GWF Energy anticipates working with wildlife agencies to develop more nesting habitat.

The towers and substations along the reconductoring segments provide potential roosting and nesting opportunities for common and special-status species. During the 2008 field survey, an unidentified inactive raptor nest was observed in the PG&E Schulte Switching Station of Segment 1. Although the PG&E transmission lines (including towers) may pose an existing significant risk to bird electrocution and strikes, the proposed reconductoring will not result in an increased risk to these hazards, because new conductors will be installed with the same configuration.

The existing TPP stormwater basin is not vegetated and holds water temporarily following rain events. This feature was not considered a significant attractant or threat to common or special-status birds or other wildlife during the licensing, construction, and operation of TPP. The GWF Tracy modifications will include the relocation of the stormwater basin into the expansion area but, consistent with the TPP determination, it is not considered to be a likely attractant or threat to common or special-status birds or other wildlife. No special-status wildlife species were observed at or adjacent to the GWF property during the April 2007 site visit or during the 2001 investigations completed for TPP licensing. However, Swainson's hawk, northern harrier (*Circus cyaneus*), and Loggerhead shrike (*Lanius ludovicianus*) were observed during the 2008 survey in the vicinity of the TPP site along the reconductoring route. Several special-status wildlife species such as vernal pool fairy shrimp (*Branchinecta lynchi*), burrowing owls, American badger, and San Joaquin kit fox are associated with grassland communities in the San Joaquin Valley. These species occur in patchy distributions throughout available but degraded habitat within agricultural lands in the Valley. Special-status species associated with riparian habitats include western pond turtle (*Actinemys marmorata*), California red-legged frog, tri-colored blackbird (*Agelaius tricolor*), Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), riparian (San Joaquin) woodrat (*Neotoma fuscipes riparia*), riparian brush rabbit, and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) within the Valley. None of these species were observed during the May 2008 survey and the expansion area does not contain any riparian habitat. The TPP Final Decision concluded that the site was used for intensely managed agricultural activities and was considered marginal grassland habitat for the San Joaquin kit fox, and that special-status wildlife were considered unlikely to occur on the GWF property during the TPP licensing and the same determination was reached in the assessment of the same property for GWF Tracy. GWF Tracy also is unlikely to result in cumulative adverse effects to special-status species during the operation phase because operational impacts are expected to be equal or lower than the existing TPP operation (specifically air quality impacts). The areas of the GWF property used for temporary equipment laydown and parking will be restored to ruderal grassland that will likely continue to provide forage and resting habitat for a variety of animals. Likewise, any

vegetated areas disturbed during reconductoring will be restored to match pre-existing conditions.

As previously stated, the habitat value of the GWF property is further compromised by the proximity of the Delta-Mendota Canal. The canal presents a significant movement barrier particularly for the San Joaquin kit fox. However, the east and west levees of the canal are likely north-south movement corridors that kit fox and other species use for dispersal or other movements. Therefore, this feature may direct animals such as the kit fox to close proximity to GWF Tracy. Protocol San Joaquin kit fox surveys were not conducted for the project. No potential kit fox burrows were found in the canal levee near the project site. However, PVC pipes extending out of a screening berm within the proposed laydown area northeast of TPP do provide potential refuge sites for foxes. This berm was constructed as part of the TPP project. Also, two corrugated culverts beneath the TPP main access road at the railroad crossing provide refuge sites for the kit fox and burrowing owl. The canal levee berm, pipes extending from the screening berm, and California ground squirrel burrows (*Spermophilus beechyi*) along the nearby railroad tracks provide potential nesting and refuge sites for western burrowing owls. Burrowing owls and their sign were not observed during 2001 or 2007 biological surveys of the GWF property but appropriately sized burrows were observed during a February 2008 site visit (John Cleckler, CH2M HILL, personal observation). Likewise, neither burrowing owls nor their sign were observed during the May 2008 survey of the reconductoring routes. However, segments of the reconductoring route provide potentially suitable nest sites for the owl. Ground squirrel burrows were observed within the railroad right of way adjacent to Segment 1 and within the earthen levee of Paradise Cut at Segment 2. Standard BMPs were implemented during TPP construction to avoid and minimize potential adverse impacts to these two species and will be implemented once again for GWF Tracy activities. These measures are included in Section 5.2.5.

5.2.4 Environmental Analysis

Potential direct and indirect impacts to biological resources were evaluated to determine the permanent and temporary effects of construction, operation, and maintenance of GWF Tracy. Results from the April 2007 and May 2008 reconnaissance surveys, habitat evaluations, and aerial photographs conclude a likely absence of significant biological resources at the GWF Tracy site and along the reconductoring routes. Although Segment 2 crosses over sensitive riparian habitats, reconductoring will completely avoid direct and indirect impacts to these habitats by working from outside the riparian corridors within previously disturbed areas.

The analysis and determinations were consistent with those made for the original TPP project. Special-status species and habitat that would provide significant value to special-status species has not been observed at the GWF property. The area could provide foraging and dispersal habitat for a variety of species that may be temporarily interrupted by construction but will be restored following the GWF Tracy modifications.

The stormwater detention basin is designed to hold water temporarily following rain events. The basin will be within the fenced site and will likely attract brief and seasonal bird activity but is not expected to remain inundated long enough to attract waterfowl. There are no property or project features that would support special-status plant species or attract

special-status wildlife species. Potential minor and less-than-significant impacts are limited to temporary construction activity and noise impacts and possible avian collisions with existing TPP and transmission line structures. A summary of potential project impacts is presented in Table 5.2-5.

TABLE 5.2-5
Summary of Potential GWF Tracy Impacts on Biological Resources During Construction

Location	Project Work	Construction Zone Size	Habitat Type	Sensitive Biological Resources	Impacts to Biological Resources	
					Temporary	Permanent
GWF Tracy site combined with TPP site	Construction	16.3 acres	Developed and Disturbed	None	None	None
Construction parking and laydown areas	Paved or Gravel	12.3 acres	Ruderal	None	None	None
Natural gas pipeline	Connection to existing onsite line	None	None	None	None	None
Potable water supply line	Connection to existing sanitary sewer line	None	None	None	None	None
Segments 1, 2, & 3	Transmission Line Reconductoring	To Be Determined	Disturbed and Active Agricultural	None	None	None

5.2.4.1 Standards of Significance

Impacts on biological resources are considered significant if one or more of the following conditions could result from implementation of the proposed project:

- Substantial effect, reduction in numbers, restricted range, or loss of habitat for a population of a state or federally listed threatened or endangered species.
- Substantial effect, reduction in numbers, restricted range, or loss of habitat for a population of special-status species, including fully protected, candidate proposed for listing, CSC, and certain CNPS list designations.
- Substantial interference with the movement of any resident or migratory fish or wildlife species.
- Substantial reduction of habitat for native fish, wildlife, or plants.
- Substantial disturbance of wetlands, marshes, riparian woodlands, and other wildlife habitat.
- Removal of trees designated as heritage or significant under County or local ordinances.
- Conflict with local habitat conservation plan or other approved local, regional, or state plan.

5.2.4.2 Potential Impacts of Construction and Operation

The GWF Tracy site is currently characterized by a combination of developed and ruderal areas. Active construction will take place within the existing TPP and an additional expansion area that was previously used for temporary laydown area during TPP construction and is now a ruderal grassy field of marginal habitat quality. The proposed 12.3-acre construction and equipment laydown areas and parking will be located immediately northeast of TPP within a ruderal and previously disturbed grassy area of the GWF property. Planning for the proposed reconductoring work is preliminary at this time, therefore, proposed affected areas have not been identified.

Transmission line reconductoring is expected to use previously used pull sites along the alignments. Pull sites generally include a small staging area for a truck-mounted wire-puller and support vehicles. Reconductoring will upgrade existing towers with new conductors, not replace or install new towers. Ground-disturbing activities would be limited to parking vehicles along the alignments, but would require minimal vegetation disturbance and ground leveling. Most of the alignment follows existing busy roads and active agricultural fields, providing previously disturbed areas as potential pull sites.

Modifications needed to the existing TPP for GWF Tracy, and temporary staging areas is unlikely to involve the removal of native or special-status plant species but may discourage wildlife from frequenting the area for forage or dispersal during construction. Crepuscular wildlife will likely continue to use the site outside of working hours during the construction phase and following project completion. Depending on when construction begins, activities may discourage some bird species from nesting in the landscape trees planted following TPP construction. Ground disturbance in the expansion area and the staging areas will likely result in crushing and entombment of small mammals and reptiles in their burrows. These impacts will be minimized by performing pre-construction clearance surveys of disturbed areas.

The temporary staging areas are flat and will not require any grading preparation. These areas will be covered with gravel, temporarily removing small mammal burrows and subsequently foraging habitat for a variety of species. Killdeer (*Charadrius vociferous*) will likely nest in graveled staging areas and common passerines such as house sparrows (*Passer domesticus*) and house finches (*Carpodacus mexicanus*) may build nests in stored equipment. Small wildlife species such as house mice (*Mus musculus*), deer mice (*Peromyscus maniculatus*), cottontail, lizards, and snakes have also been known to nest or take cover in stored equipment. Wildlife and nests within the staging area will be at risk as equipment is moved. Common species such as western kingbird (*Tyrannus verticalis*), red-tailed hawk (*Buteo jaimancensis*), and common raven (*Corvus corax*) will nest in tall transmission line towers, and the Swainson's hawk, a state-threatened species, will nest in the upper canopy of mature cottonwoods of riparian corridors.

Measures included in Section 5.2.5 will be implemented to minimize and avoid the direct adverse impacts to common and special-status wildlife species. These measures include preconstruction surveys to clear special-status wildlife from areas prior to ground disturbance and to identify active bird nests within project impact areas that will require avoidance buffers. Common species such as California ground squirrels will be avoided

where practicable. Similar avoidance plans or relocation plans will be developed when active nests or wildlife are found during project implementation.

5.2.4.2.1 Noise Impacts of Construction and Operation

Noise Impact Criteria

Because birds primarily communicate with one another through vocalizations and auditory cues, increased noise levels can interfere with normal communication. Therefore, background noise can interfere with maintenance of contact between mated birds, warning and distress calls that signify predators and other threats, and feeding behavior and protection of the young. In addition, high noise levels may prevent an area that is otherwise appropriate for nesting from being suitable. If feasible, excessively noisy (greater than 60 A-weighted decibels [dBA]) uses or activities adjacent to active nest habitat will either incorporate noise reduction measures or be curtailed during the breeding season of birds, especially of sensitive bird species. However, as noted in Section 5.2.3.3, the TPP peaking units were started while a great horned owl was nesting on the unit and the adult and young did not depart the site due to operational noise.

Construction Noise

Construction equipment will include various excavators and backhoes, dump trucks, cranes, compressors, welders, concrete vibrators, paving equipment, wire pullers, and other trucks. Construction activities may, at times, exceed the 60 dBA threshold, which may result in temporary, indirect noise impacts to sensitive animal species foraging and nesting in the area. If construction cannot avoid the nesting season, then a qualified biologist will conduct a preconstruction survey of all project impact areas to determine the presence/absence of nesting bird species. If nesting bird species are detected, then noise monitoring and mitigation will be incorporated. Should noise levels exceed 60 dBA during the breeding season, then feasible noise reduction measures (e.g., ensuring that construction equipment and mufflers are in good working condition, locating stationary equipment away from biologically sensitive areas, and sound barriers) will be implemented to reduce average noise levels to below 60 dBA. Mitigation measures are further discussed in Section 5.2.5. Therefore, temporary, indirect impacts associated with increased noise levels during construction may occur. However, with the implementation of avoidance and mitigation measures discussed above, the impacts are anticipated to be less than significant.

Operational Noise

GWF Tracy is located in an isolated area adjacent to open agricultural fields and a bio-fuels power plant. Ambient noise is low and the planned modifications to TPP will not result in any cumulative increase in the existing operational noise level or duration. Therefore, operational noise impacts are expected to be less than significant. Noise impacts and design features are further discussed in Section 5.7.

5.2.4.2.2 Light Impacts from Operation

Bright night lighting can potentially disturb wildlife (e.g., nesting birds, foraging mammals, and flying insects). Night lighting is also suspected to attract migratory birds to some areas and, if the lights are on tall buildings or the stacks, then collisions could occur. San Joaquin kit fox are primarily active at night and are especially sensitive to night lighting. Lighting can also adversely affect animals that rely on darkness for cover or for foraging. As described in Section 5.13, Visual Resources, any additional facility lighting associated with the GWF Tracy modifications will be shielded and pointed downwards to minimize offsite

lighting impacts, thereby reducing impacts on wildlife and migrating birds to less-than-significant levels. Outdoor lighting will continue to be limited to minimal security and operational lighting in the form of pole-mounted and building-mounted fixtures. Operational lighting is anticipated to remain at approximately the same level as existing conditions. If nighttime construction occurs, then nighttime lighting will be limited to minimal work space lighting. Therefore, construction and operational light impacts to wildlife and migrating birds from GWF Tracy are expected to be less than significant.

5.2.4.2.3 Water Discharge

GWF Tracy modifications to TPP will not involve modifications to water discharge. GWF Tracy will continue to use the existing water supply and sewage system for operation.

5.2.4.2.4 Air Emissions from Operation

Air emissions from the project's combustion sources include nitrogen oxides (NO_x). Nitrogen oxide gases (NO, NO₂) convert to nitrate particulates in a form that is suitable for uptake by most plants. The effect of this nitrogen could be to promote plant growth that could potentially encourage non-native plant species at the expense of native species. As discussed in Section 5.1.7 (Air Quality), the NO_x emissions were fully offset for the TPP and the conversion project shows that GWF Energy has provided over 53 tons per year of excess NO_x mitigation beyond the amount required by the project. Consequently, the nitrogen deposition impacts associated with the project is not expected to be significant.

5.2.4.2.5 Avian Collision and Electrocutation Hazards

GWF Tracy modifications will not significantly increase the risk of avian collision and electrocution hazards over the existing conditions. Moreover, the reconductoring work will upgrade existing conductors and wires, using the same tower configuration.

5.2.4.3 Special-status Species

The following paragraphs briefly describe potential project impacts that could occur to special-status species that have suitable habitat, were observed during surveys, or are known to be present on site or in adjacent habitats. Protection measures that were developed for these species are included in Section 5.2.5.

5.2.4.3.1 Plants

A total of eight special-status plant species are known to occur within the 1-mile radius survey area and vicinity and include: Caper-fruited tropidocarpum, big tarplant, round-leaved filaree (*California macrophylla*), Lemmon's jewelflower (*Caulanthus coulteri* var. *lemmonii*), Mason's lilaepsis (*Lilaeopsis masonii*), Slough thistle (*Cirsium crassicaule*), Suisun marsh aster, and Delta button celery (CDFG, 2008). However, the GWF property and reconductoring routes are characterized by developed and disturbed areas dominated by upland ruderal habitat that does not support habitat for any special-status plant species. Therefore, no impacts to special-status plant species are anticipated.

5.2.4.3.2 Wildlife

Information acquired from the CNDDDB, USFWS, and other sources resulted in a list of 37 special-status wildlife species whose occurrence has been previously recorded in San Joaquin County (Table 5.2-4). Of these, none have been recorded or observed in the project disturbance areas, although twenty-four have the potential to occur in the project area (Table 5.2-4). Their potential for occurrence is dependent on available suitable habitat on the

project site. The potential for occurrence is low due to the predominance of intensive agriculture that characterizes the area. The following paragraphs briefly describe the potential for special-status animals to occur in the project disturbance areas.

Amphibians

The amphibians known to occur in the general project vicinity (e.g., California tiger salamander and western spadefoot toad that inhabit vernal pool habitats, and the California red-legged frog that inhabits riparian areas along streams with side pools) depend on aquatic resources for portions of their life history. Aquatic sites are limited to the Tom Paine Slough and Paradise Cut, two perennial drainages located along Segment 2 of reconductoring. Tom Paine Slough is dominated by willow (*Salix* sp.) and Valley oak (*Quercus lobata*), with large patches of rush (*Scirpus* spp.) and cattail (*Typha* spp.) growing in the deep water areas. This drainage provides potential breeding habitat for amphibians, however none were observed during the 2008 field survey. Furthermore, there are no known CNDDDB occurrences of California red-legged frog in Tom Paine Slough. Paradise Cut also provides suitable habitat for amphibians. The creek channel is slow moving, with emergent *Typha* spp. growing along the stream margins. The adjacent floodplain may support seasonal ponding (e.g., side pools), however none were observed during the field survey.

Tiger salamanders and spadefoot toads take cover while in open areas and rely on ephemeral pools that last at least 3 months for breeding. They use underground burrows as aestivation habitat. The highly modified and frequently maintained ruderal character of the project impact areas and vicinity are not conducive to occupation of these species. Frog and salamander populations have also been associated with constructed stock ponds and other artificial standing water habitats with vegetation cover. A perennial pond choked with *Typha* spp. exists near the terminal end of Segment 3, approximately 400 feet southeast of the Kasson Substation. A railroad track separates the pond from the substation. The pond is relatively deep and used for agricultural purposes. An abundance of mosquitofish (*Gambusia affinis*) was observed during the May 2008 survey, including green heron (*Butorides virescens*). No frogs or salamanders were observed during the field survey. The presence of the predatory species likely limits existence of native amphibians in this pond.

The Delta-Mendota Canal immediately southwest of the TPP site is a major barrier to these species and there are no natural aquatic features such as vernal pools or riparian corridors or created breeding habitat such as stock ponds within a reasonable dispersal distance for these species.

Western Burrowing Owl

The Western burrowing owl could forage over the agricultural fields and nest in burrows in the banks of the Delta-Mendota Canal. Although intensive agricultural practices make the habitat marginally suitable for nesting, burrowing owls may also find nesting opportunities along the margins of agricultural fields, in open fallow fields, or along the railroad corridor where ground squirrel burrows provide nesting sites and shelter. While they occur from Canada to South America, their habitat in California and western states is being reduced by land conversion for urban and agricultural uses. Most burrowing owls in this region are residents; but some owls are migratory, spending winters nearby or in Southern California or Mexico and appearing in the San Joaquin Valley to breed in summer. Burrowing owls use mammal burrows dug by ground squirrels, skunks, and hares for shelter and nesting. Appropriate-sized burrows are nearly absent from agricultural areas due to frequent soil

disturbance and pest control measures. Ground squirrels are often poisoned in agricultural areas. Although no active nest sites appeared in the CNDDDB records and no owl sign was observed during reconnaissance-level surveys of the project area, additional nesting-season surveys will be conducted in potentially suitable areas (e.g., the canal berm). Dispersing owls may later colonize burrows in suitable habitats that have not been previously used.

Resident and Migratory Birds

Tricolored blackbird could forage over the agricultural fields in the project area. Tricolored blackbird nesting colonies are associated with densely vegetated wetland areas, including stock ponds and other artificial wet areas in the Central Valley. The perennial drainages and agricultural pond located adjacent to Segment 2 and Segment 3 provide potential breeding habitat for this species. Also, the surrounding agricultural fields provide potential forage for tri-colored blackbirds. This species was not observed during the 2008 survey. The riparian and wetland areas also provide suitable nesting habitat for other birds species (e.g., snowy egret [*Egretta thula*], great egret [*Ardea alba*], and great blue heron [*Ardea herodias*]). These birds are colonial nesters that set up rookeries in tall trees near water, typically in remote riparian habitats. They are likely to forage for small mammals and reptiles in the adjacent fields and pastures, as well as on fish and amphibians in the irrigation canals.

Mammals

The San Joaquin pocket mouse, a California species of concern, occurs in sandy soils at the base of shrubs in open grassland and scrub areas with little disturbance. The project disturbance areas are routinely disturbed from farm equipment and the San Joaquin pocket mouse is not expected to occur in the project area.

San Joaquin kit fox occurs primarily in open grasslands and farm land in the Central Valley. Although no potential burrow sites or kit fox sign was observed during reconnaissance-level surveys of the project area, there is potential for foxes to disperse and forage through the project while traveling along the Delta-Mendota Canal. Dispersing foxes may later colonize burrows in suitable habitats that have not been previously used.

5.2.4.3.3 Nesting Birds on Site

The open ruderal grass areas of the proposed project impact areas, including recent tree plantings associated with TPP visual screening, provides tree and ground nesting opportunities for a variety of medium to small passerines. If construction activities occur during nesting season (typically March through August), take of nests and or young could occur. To avoid and minimize impacts to nesting birds, areas to be disturbed will be cleared of vegetation that could act as songbird nesting substrate (taller plants) before construction activities begin. Vegetation removal will be conducted outside of the nesting season (typically September through February), and will be preceded by a survey to protect biological resources. The open areas requiring grading would be graded prior to March 1 and will be routinely inspected for nesting activities throughout construction and demolition. Killdeer may nest in graveled staging areas and common passerines such as house sparrows and house finches may build nests in stored equipment. Any nests found in or adjacent to disturbance areas would be flagged and the area immediately around the nest protected from construction equipment. However, overall construction activities of GWF Tracy would not be affected by nests on site, rather the protection and monitoring of the nests would allow construction activities to continue. These nests would be monitored and results included in the monthly compliance reports to the CEC.

5.2.4.3.4 Migratory Birds and Raptors

Migratory passerines are addressed in the previous paragraph. Migratory waterfowl and shorebirds may visit the project area occasionally for foraging but are not likely to attempt to nest within the project impact areas because they are open and exposed and lack wetland and standing water. The relocated stormwater basin will be designed to hold water temporarily following rain events. This basin is not expected to be inundated for such sufficient duration as to attract waterfowl or shorebirds.

A variety of raptors are likely to forage on the GWF property and reconductoring areas and may be discouraged from frequenting the areas during construction activities. The recently planted landscape trees adjacent to TPP are small and unlikely to provide nesting opportunities for raptors larger than an American kestrel (*Falco sparverius*), or like the great horned owl that recently established a nest on the TPP site. Western burrowing owls may establish nests along the Delta-Mendota Canal or in the pipes extending from the landscape berm. The larger trees of the riparian corridors may provide suitable nest sites for larger raptors including red-tailed hawk and Swainson's hawk. As stated in the previous section, preconstruction surveys will be conducted to identify nesting birds should construction begin during the breeding season and strategies will be implemented to avoid effects to nesting birds. TPP modifications will result in the addition of a few perching structures for raptors or other bird species. However, these additional perch opportunities are not expected to be a particular attractant to bird activity or result in increased risk to birds. Construction and operation of GWF Tracy is not expected to result in significant impacts to migratory birds or raptors.

5.2.4.4 Water Resources, Wetlands, and Waters

There is no existing natural hydrology on the GWF property. Drainage on site is captured in the existing stormwater system, which percolates into the groundwater. This existing stormwater collection system will be used for the GWF Tracy development and modified as necessary to accommodate the plant layout. The collection system and basin are free of vegetation and are not expected to be inundated for sufficient duration to provide aquatic habitat for animals.

No surface or groundwater would be used for the operation of the GWF Tracy site. Additionally, drainage flow from the GWF Tracy site will be about the same or less flow as that from the site under current conditions. Water will be applied to the site and laydown area for dust control during construction. As discussed further in Section 5.15, Water Resources, the Applicant will prepare an erosion and sediment control plan that specifies BMPs to be implemented during all project activities to avoid sediment runoff and erosion that would cause water quality degradation. Therefore, impacts to water resources, wetlands, and waters of the U.S. are expected to be less than significant.

The reconductoring routes cross two potentially jurisdictional waters, including Tom Paine Slough and Paradise Cut. These drainages are perennial and tributaries to the San Joaquin River. There is also a seasonal wetland area just west of Tom Paine Slough. This potential wetland is located under the transmission line at the edge of a fallow agricultural field. The source of inundation is likely from stormwater discharge from the adjacent Mancuso Road. The wetland area supports hydrophytic vegetation including *Polypogon* spp. and *Lolium* spp.

All water resources found along the reconductoring routes will be avoided during project implementation.

5.2.4.5 Impacts to Trees

The trees surrounding TPP were planted as visual barriers. These landscaped trees will remain and additional plantings may occur to replace dead and dying trees and/or enhance the visual block. No trees will be impacted during reconductoring work.

5.2.4.6 Conflict with Regional Habitat Conservation Plans

SJMSCP habitat compensation fees were paid for GWF property, including the GWF Tracy project site, during the licensing and permitting process for the TPP project. The same SJMSCP measures implemented for TPP will be applied to the GWF Tracy construction, including specific measures developed for the San Joaquin kit fox and the Western burrowing owl.

5.2.5 Cumulative Effects

GWF Tracy is not expected to result in measurable cumulative effects associated with habitat loss, noise, or lighting. Compensation for habitat loss was previously accomplished under the SJMSCP for the TPP project. Avoidance measures outlined in the SJMSCP will be implemented for GWF Tracy, and areas of temporary disturbance will be restored to baseline conditions. The proposed reconductoring work will include upgrades to existing aboveground infrastructure only. Effects associated with reconductoring are temporary in nature, and, therefore, cumulative effects of reconductoring are immeasurable. In addition, no other development projects are dependent on the GWF Tracy project and the GWF Tracy project will not enable other development.

5.2.6 Mitigation Measures

The construction and operation of GWF Tracy is not expected to result in significant biological impacts. However, the following avoidance and minimization measures will be incorporated to minimize temporary construction impacts.

5.2.6.1 Noise Impacts

A preconstruction survey within GWF Tracy impact areas should be conducted prior to ground disturbance and construction activities, between March 15 and August 31. The survey will be conducted no more than two weeks prior to construction activities and should be conducted by a qualified biologist familiar with the San Joaquin kit fox, Western burrowing owl, raptors, and other species of the San Joaquin Valley. If nesting bird species are detected, then noise monitoring and mitigation will be incorporated. Noise mitigation measures could include locating stationary equipment away from biologically sensitive areas and/or shielding nesting sites by installing sound barriers. Educational programs to enhance employee awareness will be implemented as necessary.

The presence of any nesting raptors in the vicinity of the GWF Tracy site and reconductoring corridors should be considered and addressed prior to the start of construction. The CDFG typically imposes a 300-foot radius for protection of nesting raptors. However, this can be addressed on a case-by-case basis as some raptors have been

observed to nest much closer to human activities without exhibiting any stress, and raptors at these locations may be habituated to human activity. Surveys conducted by a qualified biologist will also be conducted for nesting raptors within 300 feet of the project impact area prior to the start of construction between January 1 and August 31. Should a raptor nest be observed within 300 feet of a work site, a qualified biologist will determine whether or not construction activities could potentially disturb nesting raptors and implement appropriate measures (e.g., onsite monitor, timing restriction) to adequately protect nesting raptors.

5.2.7 Agencies and Agency Contacts

Involved agencies and agency contacts are listed in Table 5.2-6

TABLE 5.2-6
Agency Contacts for Biological Resources

Issue	Agency	Contact
Habitat compensation to the SJMSCP to satisfy Bio-9 of the July 2002 TPP Commission Decision.	San Joaquin County	Chandler Martin Senior Planner Community Development Department 1810 E. Hazelton Avenue Stockton, CA 95205-6298 (209) 468-3144 cmartin@sjgov.org
Section 7 or Section 10 of ESA prohibiting "take" of Federally listed plants and/or wildlife; issuance of USFWS Biological Opinion, letter of concurrence, or "no effects" determination.	U.S. Fish and Wildlife Service	Peter Cross 2800 Cottage Way, W-2605 Sacramento, CA 95825 (916) 441-6655 Peter_Cross@fws.gov
Protection of state listed plants and/or wildlife: issuance of letter of concurrence or "take" authorization under CESA; authorization of lake or streambed alteration under 1602 of the Fish and Game code.	California Department of Fish Game	Banky Curtis 1701 Nimbus Road, Suite A Rancho Cordova, CA 95670 (916) 358-2899 bcurtis@dfg.ca.gov

5.2.8 Permits and Permit Schedule

Because no streams or wetlands will be impacted, and no special-status species would be adversely affected, no federal, state, or local permits are anticipated for Biological Resources.

5.2.9 References

California Department of Fish and Game (CDFG). 2007. State and Federally Listed Endangered, Threatened, and Rare Plants of California. Biogeographic Data Branch, CNDDDB. March 2008.

California Energy Commission (CEC). 1995. *Avian Collision and Electrocution: An Annotated Bibliography*. P. 114.

California Native Plant Society (CNPS). 2007. Inventory of Rare and Endangered Vascular Plants of California, online 7th edition. Search of the Tracy, Clifton Court Fore Bay, Union Island, Lathrop, Midway, Vernalis, Cedar Mountain, Lone Tree Creek, and Solyo 7.5-minute USGS quadrangles searched-minute USGS quadrangles.

CDFG. 2008. State and Federally Listed Endangered, Threatened, and Rare Plants of California. Biogeographic Data Branch, CNDDDB. May.

CEC. 2002. Tracy Peaker Project Application For Certification (01-AFC-16) Commission Decision. July 2002. Sacramento, California.

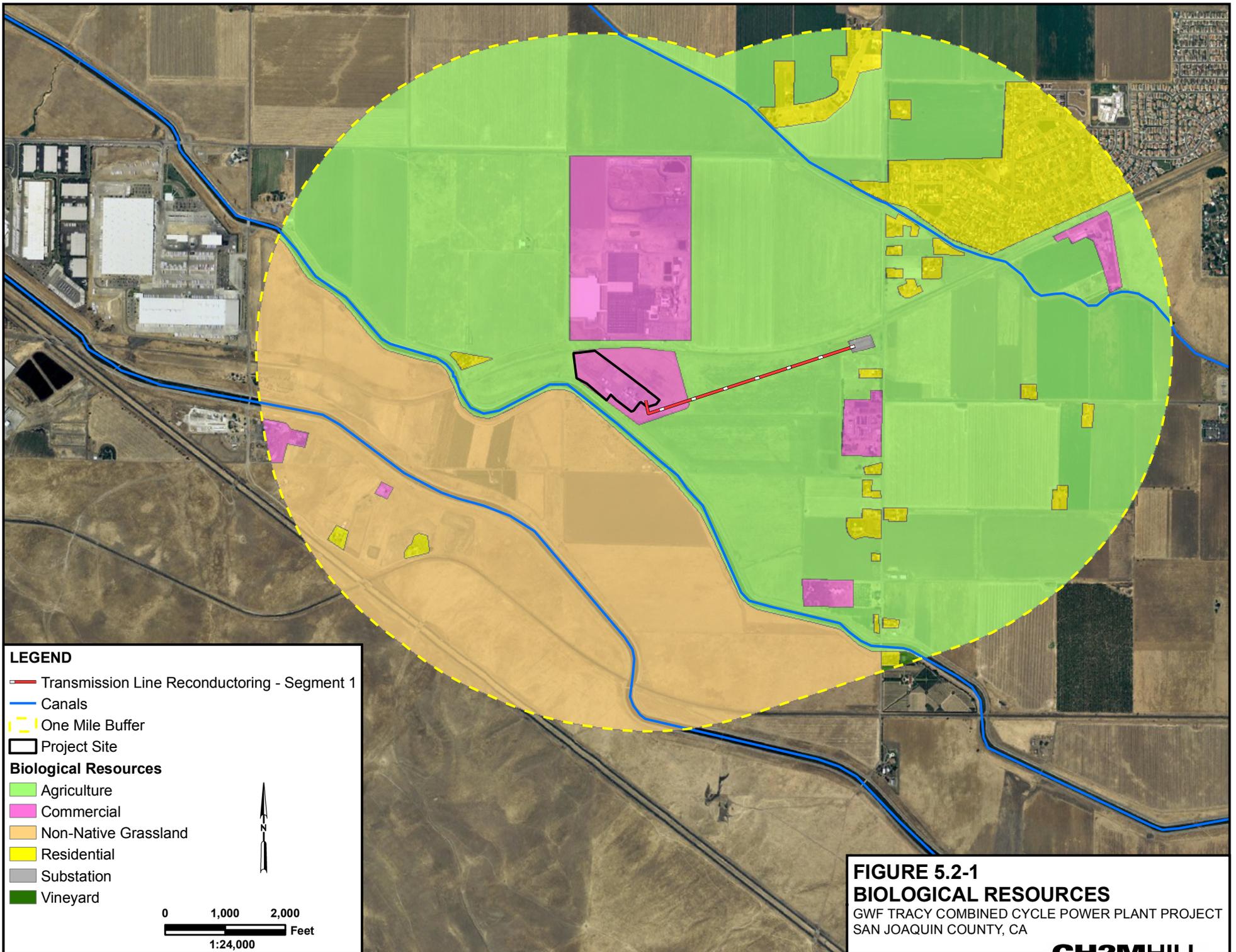
CNPS. 2008. Inventory of Rare and Endangered Vascular Plants of California, online 7th edition. Search of the Tracy, Lathrop, and Vernalis 7.5-minute USGS quadrangles searched-minute USGS quadrangles. May.

GWF. 2001. Tracy Peaker Plant Application for Certification. Prepared by URS Corp.

Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Unpublished report for Nongame-Heritage Program, California Department of Fish and Game, Sacramento.

Sawyer, J.O. and T. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society. Sacramento, California.

United State Fish and Wildlife Service (USFWS). 2008. Federal endangered and threatened species list website. Available at: http://sacramento.fws.gov/es/spp_list.htm



LEGEND

- - - Transmission Line Reconductoring - Segment 1
- Canals
- One Mile Buffer
- Project Site
- Biological Resources**
- Agriculture
- Commercial
- Non-Native Grassland
- Residential
- Substation
- Vineyard

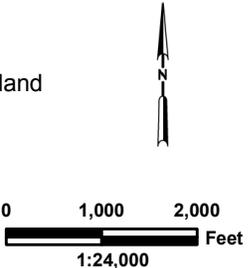
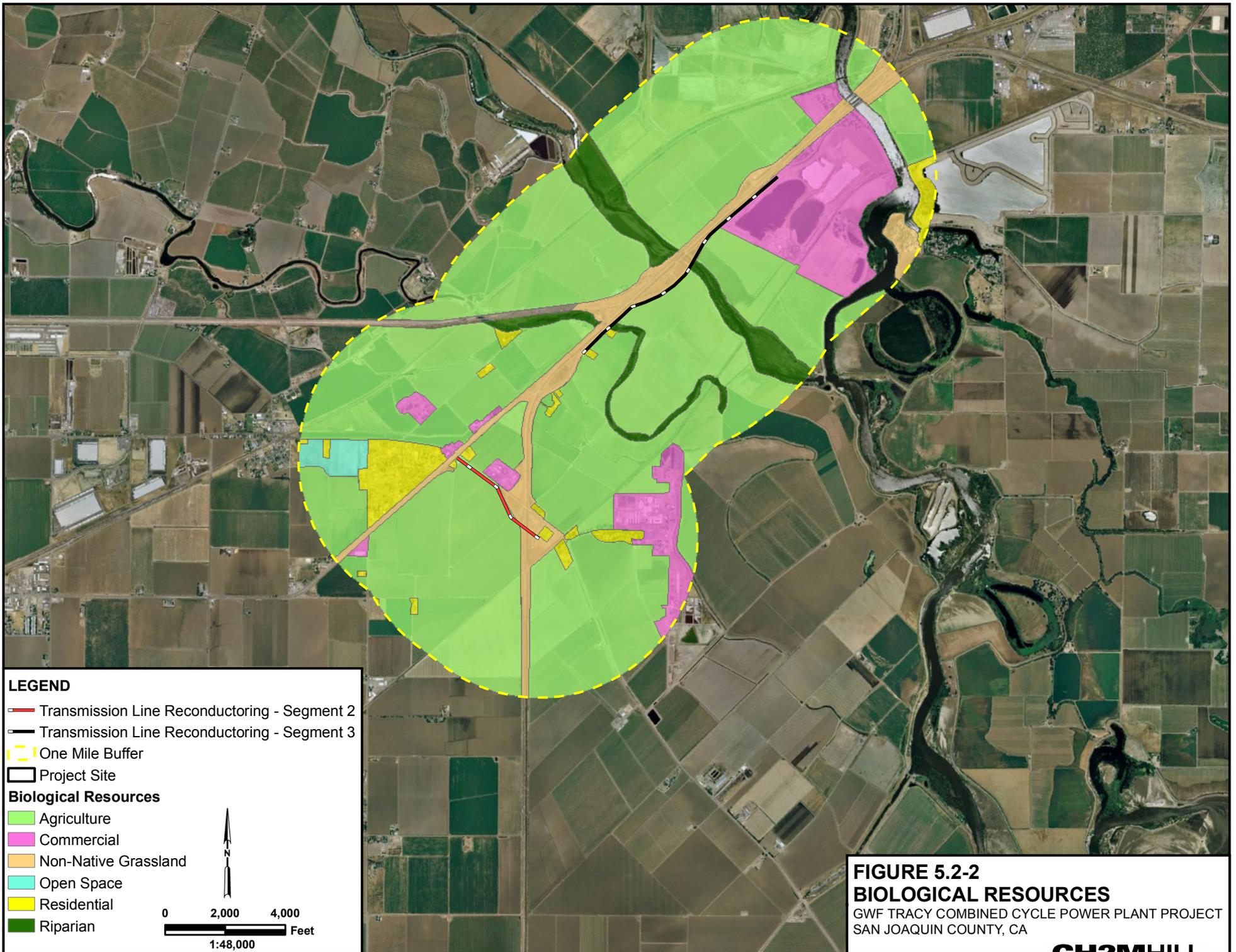


FIGURE 5.2-1
BIOLOGICAL RESOURCES
 GWF TRACY COMBINED CYCLE POWER PLANT PROJECT
 SAN JOAQUIN COUNTY, CA



LEGEND

- Transmission Line Reconducting - Segment 2
- Transmission Line Reconducting - Segment 3
- One Mile Buffer
- Project Site

Biological Resources

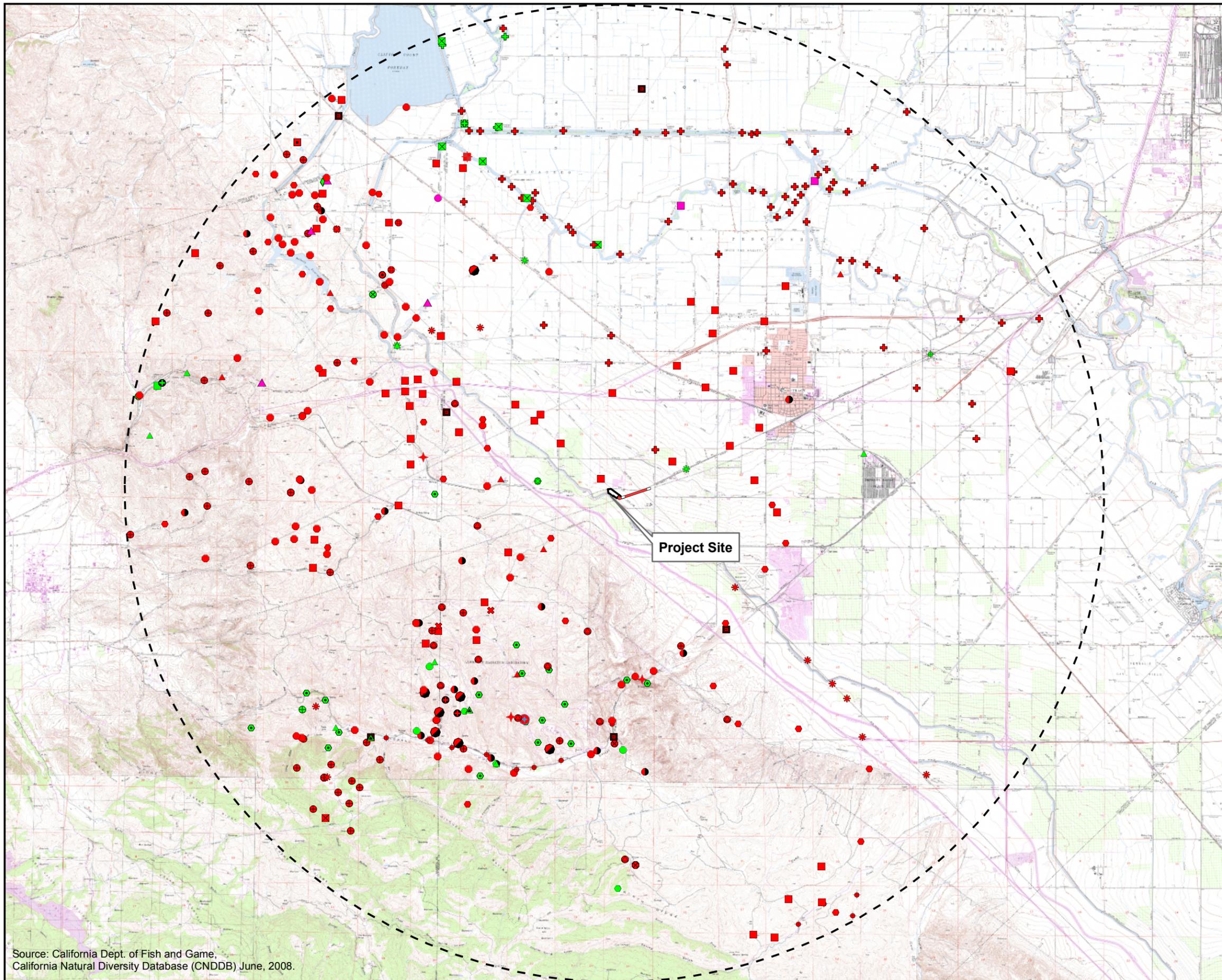
- Agriculture
- Commercial
- Non-Native Grassland
- Open Space
- Residential
- Riparian

0 2,000 4,000

Feet

1:48,000

FIGURE 5.2-2
BIOLOGICAL RESOURCES
 GWF TRACY COMBINED CYCLE POWER PLANT PROJECT
 SAN JOAQUIN COUNTY, CA



LEGEND

CNDDDB Data June 2008

Plant

- diamond-petaled California poppy
- brittlescale
- ▲ round-leaved filaree
- large-flowered fiddleneck
- ◆ recurved larkspur
- * caper-fruited tropidocarpum
- ⊕ woolly rose-mallow
- showy madia
- San Joaquin spearscale
- bent-flowered fiddleneck
- Suisun Marsh aster
- big tarplant
- ▲ Lemmon's jewelflower
- Mason's lillaeopsis
- chaparral ragwort

Animal

- western pond turtle
- ▲ tricolored blackbird
- burrowing owl
- San Joaquin kit fox
- California red-legged frog
- ★ western mastiff bat
- ⊕ Swainson's hawk
- * California horned lark
- American badger
- white-tailed kite
- pallid bat
- coast (California) horned lizard
- silvery legless lizard
- × ferruginous hawk
- midvalley fairy shrimp
- Townsend's big-eared bat
- curved-foot hygrotes diving beetle
- western spadefoot
- California tiger salamander
- loggerhead shrike
- golden eagle
- foothill yellow-legged frog
- San Joaquin pocket mouse
- northern harrier
- ◆ San Joaquin whipsnake

Terrestrial Community

- Northern Claypan Vernal Pool
- Great Valley Valley Oak Riparian Forest
- ▲ Valley Sink Scrub

— Transmission Line Reconductoring - Segment 1

□ Project Site

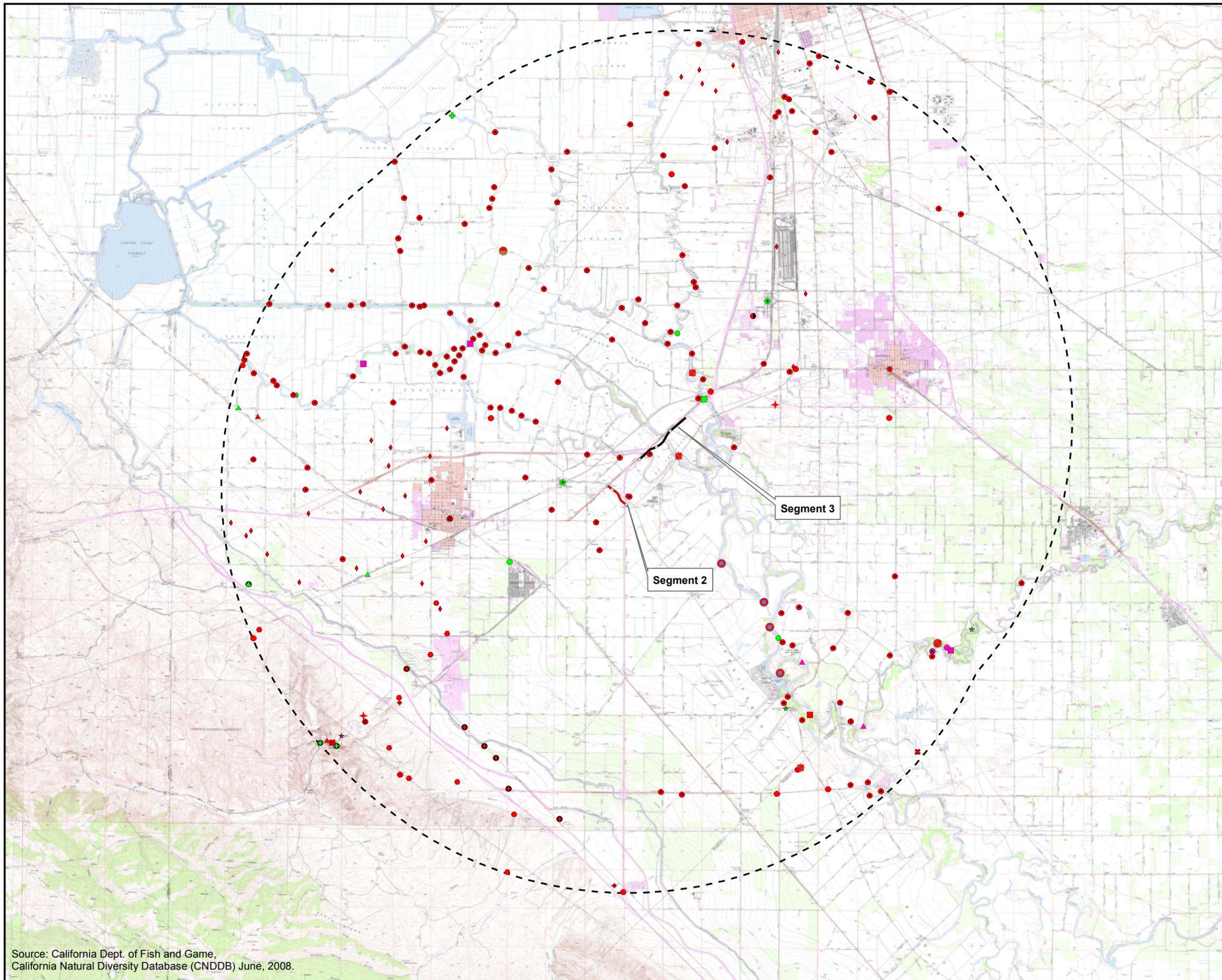
⊔ Ten Mile Buffer

0 1 2 Miles

1:126,720

FIGURE 5.2-3
CNDDDB OCCURRENCES WITHIN
TEN MILES OF SITE
 GWF TRACY COMBINED CYCLE POWER
 PLANT PROJECT
 SAN JOAQUIN COUNTY, CA

Source: California Dept. of Fish and Game,
 California Natural Diversity Database (CNDDDB) June, 2008.



LEGEND

CNDDB Data June 2008

Plant

- round-leaved filaree
- Wright's trichocoronis
- ▲ caper-fruited tropidocarpum
- slough thistle
- ✦ woolly rose-mallow
- ★ Delta button-celery
- Suisun Marsh aster
- big tarplant
- ◆ Mason's lilaeopsis

Animal

- tricolored blackbird
- riparian (=San Joaquin Valley) woodrat
- ▲ western pond turtle
- San Joaquin kit fox
- ★ California red-legged frog
- ◆ burrowing owl
- ✦ moestan blister beetle
- Swainson's hawk
- California horned lark
- American badger
- yellow-headed blackbird
- coast (California) horned lizard
- western yellow-billed cuckoo
- ▲ cackling (=Aleutian Canada) goose
- ✦ California tiger salamander
- ◆ San Joaquin pocket mouse
- ✦ vernal pool fairy shrimp
- riparian brush rabbit
- San Joaquin whipsnake
- Sacramento anthicid beetle
- valley elderberry longhorn beetle

Terrestrial Community

- Elderberry Savanna
- Great Valley Valley Oak Riparian Forest
- ▲ Great Valley Cottonwood Riparian Forest
- Great Valley Mixed Riparian Forest
- Transmission Line Reconductoring - Segment 2
- Transmission Line Reconductoring - Segment 3

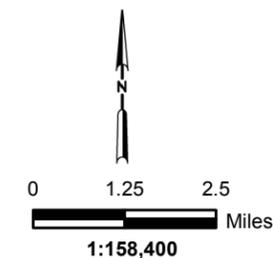


FIGURE 5.2-4
CNDDB OCCURRENCES WITHIN
TEN MILES OF SEGMENTS 2 & 3
 GWF TRACY COMBINED CYCLE POWER
 PLANT PROJECT
 SAN JOAQUIN COUNTY, CA

Source: California Dept. of Fish and Game,
 California Natural Diversity Database (CNDDB) June, 2008.

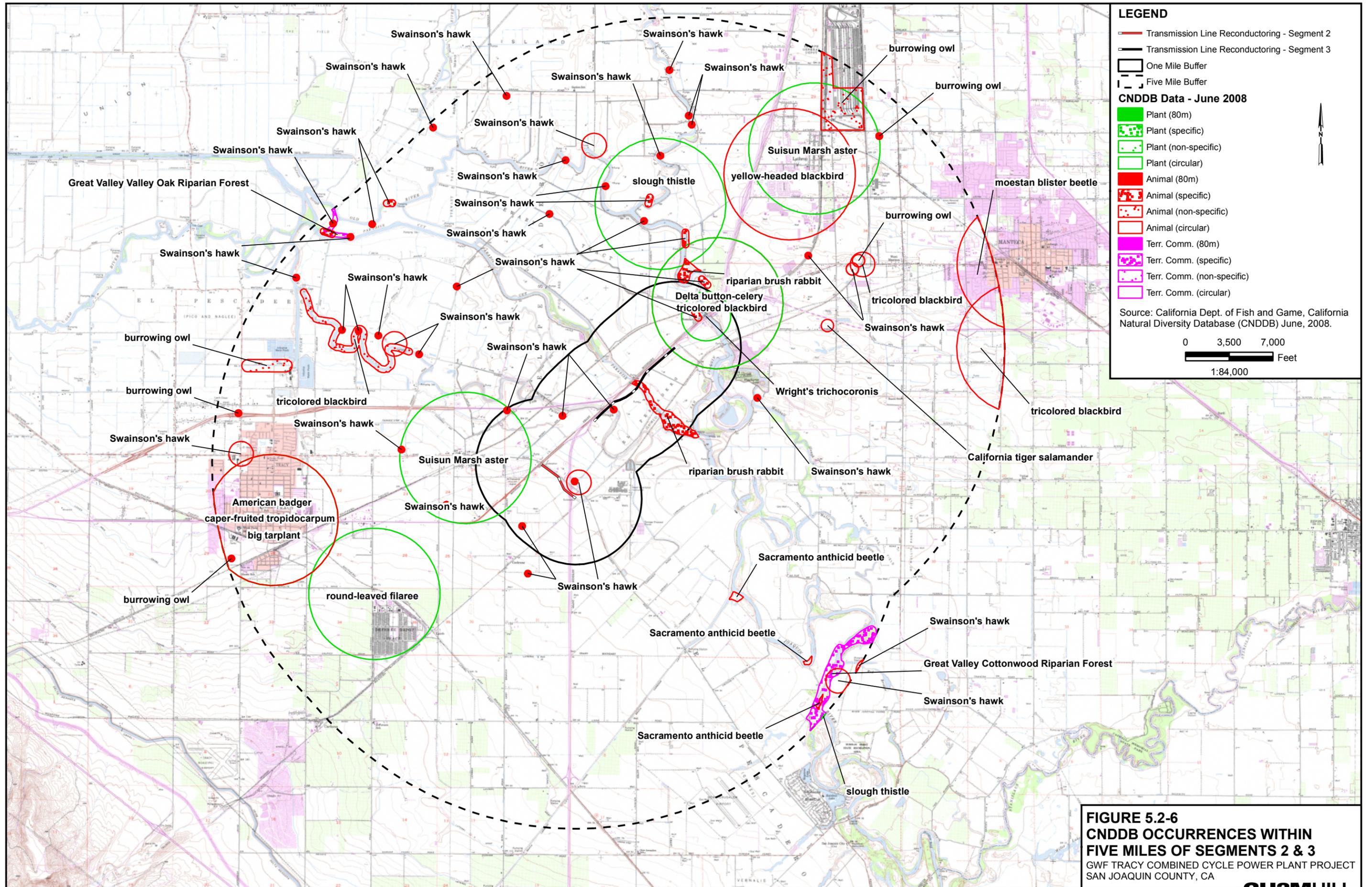


FIGURE 5.2-6
CNDDB OCCURRENCES WITHIN
FIVE MILES OF SEGMENTS 2 & 3
 GWF TRACY COMBINED CYCLE POWER PLANT PROJECT
 SAN JOAQUIN COUNTY, CA