APPENDIX E

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

(T.H. HARVEY, 2005)

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES ASSESSMENT

for the

RIOLO VINEYARDS PROJECT SITE

prepared by

H.T. Harvey & Associates

June 2005

SPECIAL STATUS PLANT AND WILDLIFE SPECIES

An overview of special-status species regulations is provided in Appendix A.

Special-status Plant Species

Methods. Protocol-level surveys were conducted by H.T. Harvey & Associates on April 20, May 17, and June 14, 2005, for several special-status plant species, and for habitats capable of supporting these species. The surveys were conducted by H.T. Harvey & Associates plant ecologist Brian Cleary, M.S. A list of target special-status plant species with the potential to occur on site was generated by URS during February 2004. The list was developed as a result of a biological resources assessment of existing habitats on site, including a review of recent and historic populations of special-status plants known to occur in the vicinity of the project area. Special-status plant species identified by URS that may occur on site included Boggs's Lake hedge-hyssop (*Gratiola heterosepala*), slender orcutt grass (*Orcuttia tenuis*), Sacramento orcutt grass (*Orcuttia viscida*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), legenere (*Legenere limosa*), Sanford's arrowhead (*Sagittaria sanfordii*) and dwarf downingia (*Downingia pusilla*).

Prior to conducting surveys for the special-status plant species, H.T. Harvey & Associates completed an additional analysis of special-status plants that may occur on site. This involved a query of the California Natural Diversity Database (CNDDB, 2005) to identify all special-status plants known to exist in the vicinity of the project area. In addition, the CNPS's *Inventory of Rare and Endangered Plants of California* (2001) was used to identify and assess additional potential species occurring throughout Sacramento and Placer counties. Other sources of information reviewed included the Soil Survey of Placer County, California, Western Part (1994), and the U.S. Geological Survey 7.5 minute quadrangle maps and DOQQ aerial photographs of the project site and surrounding area.

A total of 43 special-status plant species was identified in these queries, of which the 7 plants listed above were initially addressed as potentially occurring on site. Information on each of these species, including the likelihood of potential occurrence on site, is presented in Table 1. Based on the presence of suitable non-native grassland and freshwater marsh habitats on site, complete plant-species descriptions are also provided for Ahart's dwarf rush, dwarf downingia, and Sanford's arrowhead, as these species have the greatest potential to occur on site. The remaining 36 plant species were considered but rejected due to a lack of suitable habitat requirements, including microhabitats such as alkaline soils or serpentine soils, other specific substrate requirements, and/or because some of the reported CNDDB special-status plant species occurrences are historic records of populations now believed extirpated. Several sensitive habitats, such as northern hardpan vernal pool and Great Valley oak woodland, were also identified in the CNDDB query.

Special-status Wildlife Species

Methods. A reconnaissance-level wildlife survey was conducted on April 26, 2005 by H.T. Harvey & Associates wildlife biologist John Sterling. A list of special-status wildlife species with the potential to occur on site (Table 1) was developed based upon field surveys and a review of records in the CNDDB and relevant literature by wildlife biologist John Sterling during his work for the Placer Legacy Phase 1 Project in 2002-2004. A total of 32 special-status wildlife species was identified in these queries. Information on each of these species including the likelihood of potential occurrence on site is presented in Table 1.

Results of Plant Surveys. No special-status plant species were encountered during any of the three rare plant surveys, all of which were conducted during the appropriate blooming periods for the target species. Each site visit focused on the wettest portions of non-native herbaceous grassland located in minor swales and drainages throughout the project area, and freshwater marsh habitat located in several locations on site as these habitats have the strongest potential to support the target suite of special-status plant species. One common species of downingia (*Downingia ornatissima* var. *ornatissima*) was identified in several locations within non-native grassland habitat on site however this plant is very distinct in appearance and was determined not to be one of the related special-status plants dwarf downingia. Other common, non-native and native grassland plants observed in this moderate-quality grassland habitat included Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena* sp.), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), ripgut grass (*Bromus diandrus*), annual beard grass (*Polypogon monspeliensis*), wild radish (*Raphanus sativus*), black mustard (*Brassica nigra*), vetch (*Vicia* sp.), English plantain (*Plantago lanceolata*), fireweed (*Amsinckia menziesii*) and elegant brodiaea (*Triteleia elegans*).

Common water-associated plant species observed in the somewhat limited and fragmented areas of freshwater-marsh habitat on site included narrow-leaved cattail (*Typha angustifolia*) acute bulrush (*Scirpus acutus* var. *occidentalis*), water smartweed (*Polypogon amphibium* var. *emersum*), willow herb (*Epilobium* sp.), annual beard grass, and common water plantain (*Alisma plantago-aquatia*). The freshwater-marsh habitat in the south-central section of the project site was of moderate quality due livestock and horse grazing.

As stated above, no special-status plants were identified on site. Although numerous vernal pools were observed along Elverta Road located approximately 5-10 miles southwest of the project area, no vernal-pool habitat capable of supporting special-status plant species, such as Boggs's Lake hedge-hyssop, slender orcutt grass, Sacramento orcutt grass and legenere was identified on site or in the immediate vicinity of the project area. Accordingly, no additional surveys for special-status plant species are required.

Ahart's Dwarf Rush (*Juncus leiospermus* var. *ahartii*). Federal listing status: None: State listing status: Nome; CNPS List 2. Ahart's dwarf rush is a small perennial herb in the rush family (Juncaceae) that blooms from March through May. This plant is associated with wet valley and foothill grassland habitat in Butte, Calaveras, Placer, Sacramento and Yuba counties (CNPS 2001). Several recent occurrences in Sacramento County are

Table 1. Special-status Plant and Animal Species, Their Status, and Potential Occurrence at the Riolo Vineyards Project Site.			
NAME	***STATUS**	**HABITAT**	**POTENTIAL FOR OCCURRENCE ON SITE**
Federal or State Endangered Species			
Vernal pool tadpole shrimp *Lepidurus packardi*	FE	Grass or mud-bottomed swales in grasslands on old alluvial soils underlain by hardpan.	**Absent:** potential suitable habitat does not exist on site.
California tiger salamander *Ambystoma californiense*	CSSC	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	**Absent:** out of species' range.
Bald Eagle *Haliaeetus leucocephalus* (nesting and wintering)	SE, FT	Requires large bodies of water, or free-flowing rivers with abundant fish and adjacent snags and large trees for perching and nesting.	**Low:** no breeding records from western Placer County; Central Valley breeding population is expanding southward from Shasta to Butte counties; breeding habitat along Dry Creek is suitable.
Willow Flycatcher *Empidonax traillii*	SE	Breeds locally in riparian habitats in mountains and southern deserts.	**Absent:** out of species' breeding range.
Yellow-billed Cuckoo *Coccyzus americanus* (nesting)	SE	Valley foothill and desert riparian habitats in scattered locations in California; requires densely foliaged, deciduous trees and shrubs, especially willows, for roosting and nesting.	**Low:** extirpated from western Placer and Sacramento counties; historical record from Auburn Ravine; habitat along Dry Creek is marginal.
American Peregrine Falcon *Falco peregrinus anatum* (nesting)	SE	Forages in many habitats; requires cliffs for nesting.	**Low:** no breeding records in western Placer County; no suitable breeding habitat in or near project area; foraging habitat for migrating or wintering falcons is marginal; there are documented records of migrating and wintering Peregrine Falcons in western Placer County.
Bogg's Lake hedge-hyssop (*Gratiola hetersopala*)	SE, CNPS 1B	Vernal pools	**Absent:** potential suitable habitat does not exist on site; Bogg's Lake hedge-hyssop was not detected on site during protocol surveys; additional surveys are not warranted.
Slender orcutt grass (*Orcuttia tenuis*)	FE, SE, CNPS 1B	Vernal pools	**Absent:** potential suitable habitat does not exist on site; slender orcutt grass was not detected on site during protocol surveys; additional surveys

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NAME	***STATUS**	**HABITAT**	**POTENTIAL FOR OCCURRENCE ON SITE**
			are not warranted.
Sacramento orcutt grass (*Orcuttia viscida*)	FE, SE, CNPS 1B	Vernal pools	**Absent:** potential suitable habitat does not exist on site; Sacramento orcutt grass was not detected on site during protocol surveys; additional surveys are not warranted.
Federal or State Threatened Species			
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Grass or mud-bottomed swales, earth slump or basalt-flow depression pools in grasslands.	**Absent:** potential suitable habitat does not exist on site.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Elderberry shrubs in the Central Valley.	**Moderate:** within species' range; one elderberry shrub was detected within 100 feet of the southwestern portion of the survey area.
California red-legged frog *Rana aurora draytonii*	FT	Streams, freshwater pools and ponds with overhanging vegetation.	**Absent:** out of species' range.
Giant garter snake *Thamnophis gigas*	FT, ST	Freshwater marshes and low gradient streams with emergent vegetation; adapted to drainage canals and irrigation ditches with mud substrate.	**Absent:** out of species' range.
Swainson's Hawk *Buteo swainsoni*	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.	**Present:** foraging and aerial courtship displays documented during field survey on project area.
Bank Swallow *Paria riparia* (nesting)	ST	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	**Low:** no breeding records for western Placer County; no suitable breeding habitat, but there is suitable foraging habitat in project area.
Species of Special Concern			
Western spadefoot *Scaphiopus hammondii*	CSSC	Grasslands and occasionally valley-foothill hardwood woodlands; vernal pools or similar ephemeral pools required for breeding.	**Low:** no vernal pool within project area.
Western pond turtle *Clemmys marmorata*	CSSC	Permanent or nearly permanent water in a variety of habitats.	**Moderate:** suitable habitat occurs on Dry Creek and within project area; there are many documented records from western Placer County.

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NAME	***STATUS**	**HABITAT**	**POTENTIAL FOR OCCURRENCE ON SITE**
California horned lizard *Phrynosoma coronatum frontale*	CSSC	Frequents a wide variety of habitats; most common in lowlands along sandy washes with scattered low bushes.	**Low:** potentially-suitable habitat occurs on Dry Creek and within project area; considered extirpated from western Placer County lowlands (Jennings and Hayes 1994).
White-faced Ibis *Plegadis chihi* (rookery site)	CSSC	Nest in dense marsh vegetation near foraging areas in shallow water or muddy fields.	**Low:** marginal breeding habitat.
Western Least Bittern *Ixobrychus exilis hesperis* (nesting)	CSSC	Freshwater marshes.	**Low:** out of species' breeding habitat.
Western Burrowing Owl *Athene cunicularia hypugea* (burrow sites)	CSSC	Grasslands and ruderal habitats.	**Moderate:** many documented winter records but few remaining potential breeding pairs left in western Placer County; project area has ground squirrel burrows that could be used by the Burrowing Owl for nesting.
Short-eared Owl *Asio flammeus* (nesting)	CSSC	Breeds in dense vegetation in open grassland and marshes.	**Low:** may forage in area during the winter; many documented winter records from western Placer County; project area habitat is too fragmented to be optimal for nesting.
Long-eared Owl *Asio otus* (nesting)	CSSC	Dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats; also found in dense conifer stands at higher elevations.	**Moderate:** no nesting records for area; nesting habitat along Dry Creek is suitable; foraging habitat on project area is suitable.
Ferruginous Hawk *Buteo regalis* (wintering)	CSSC	Forages in grasslands and occasionally in other open habitats during migration and winter.	**Low:** may forage in area during the winter; many documented winter records from western Placer County; project area habitat is too fragmented to be optimal.
Northern Harrier *Circus cyaneus* (nesting)	CSSC	Forages in marshes, grasslands, and ruderal habitats; nests in extensive marshes and wet fields.	**Moderate:** may forage in area during the winter; many documented winter records from western Placer County; project area habitat may be too fragmented to be optimal for nesting.

Table 1. Special-status Plant and Animal Species, Their Status, and Potential Occurrence at the Riolo Vineyards Project Site.			
NAME	***STATUS**	**HABITAT**	**POTENTIAL FOR OCCURRENCE ON SITE**
Prairie Falcon *Falco mexicanus* (nesting)	CSSC	Occurs in open habitats such as grasslands, desert scrub, rangelands, and croplands.	**Low:** may forage in area during the winter; many documented winter records from western Placer County; project area habitat is too fragmented to be optimal.
Vaux's Swift *Chaetura vauxi* (nesting)	CSSC	Nests in snags in coastal and montane coniferous forests or, occasionally, in chimneys; forages aerially.	**Low:** out of species breeding range and habitat; regular but uncommon migrant through the area.
Loggerhead Shrike *Lanius ludovicianus*	CSSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	**Moderate:** common in western Placer County; project area habitat is suitable but may be too fragmented to be optimal.
Yellow Warbler *Dendroica petechia brewsteri* (nesting)	CSSC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	**Low:** extirpated as a breeding species from lowlands of Placer County, but suitable breeding and migratory stopover habitat present along Dry Creek.
Yellow-breasted Chat *Icteria virens* (nesting)	CSSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	**Low:** extirpated as a breeding species from lowlands of Placer County, but suitable breeding and migratory stopover habitat present along Dry Creek.
Purple Martin *Progne subis* (nesting)	CSSC	Breeding habitat includes old-growth, multi-layered, open forest and woodland with snags; forages over riparian areas, forest, and woodlands.	**Low:** no documented breeding records from Placer County; but documented records from adjacent Sacramento County.
Tricolored Blackbird *Agelaius tricolor* (nesting colony)	CSSC	Breeds near fresh water in dense emergent vegetation.	**Moderate:** documented breeding records from western Placer and Sacramento counties; breeding habitat is suitable.
Pallid bat *Antrozous pallidus*	CSSC	Forages over many habitats; roosts in buildings, rocky outcrops and rocky crevices in mines and caves.	**High**: high quality habitat exists; no available records for area, but expected to occur on project site.
State Protected Plant Species or CNPS Species			
Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*)	CNPS 1B	Wet valley and foothill grasslands and vernal pools.	**Moderate**: moderate quality wet valley and foothill grassland habitat exists on site; populations recorded in Butte, Calavaras, Placer,

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NAME	***STATUS**	**HABITAT**	**POTENTIAL FOR OCCURRENCE ON SITE**
			Yuba and Sacramento counties; Ahart's dwarf rush was not detected on site during protocol surveys; additional surveys are not warranted.
Legenere (*Legenere limosa*)	CNPS 1B	Vernal pools	**Absent:** potential suitable habitat does not exist on site; legenere was not detected on site during protocol surveys; additional surveys are not warranted.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B	Shallow, freshwater marshes and swamps.	**Moderate**: moderate quality freshwater marsh habitat exists on site; populations recorded in Butte, Calavaras, Placer, Yuba and Sacramento counties; two populations are located within 5 miles of the project site; Sanford's arrowhead was not detected on site during protocol surveys; additional surveys are not warranted.
Dwarf downingia (*Downingia pusilla*)	CNPS List 2	Wet valley and foothill grasslands and vernal pools.	**Moderate**: moderate quality wet valley and foothill grassland habitat exists on site; populations recorded in Merced, Mariposa, Napa, Placer, Solano, Sonoma, Stanislaus, Tehama, Yuba and Sacramento counties; dwarf downingia was not detected on site during protocol surveys; additional surveys are not warranted.
State Protected Wildlife Species			
Golden Eagle *Aquila chrysaetos*	Fully protected	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	**Low:** may forage in area during the winter; many documented winter records from western Placer County; project area habitat is too fragmented to be optimal for nesting.
White-tailed kite *Elanus leucurus* (nesting)	Fully protected	Nests in tall shrubs and trees, forages in grasslands, agricultural fields, and marshes.	**Present:** documented foraging and aerial courtship displays during field survey on project area.

SPECIAL STATUS SPECIES CODE DESIGNATIONS

FE =	Federally listed Endangered
FT =	Federally listed Threatened
FC =	Federal Candidate. Sufficient biological information to support a proposal to list the species as Endangered or Threatened
SE =	State listed Endangered
CSSC =	California Species of Special Concern
SP =	State Protected Species
CNPS 1B =	Plants considered by CNPS to be rare, threatened, or endangered in California, and elsewhere.
List 2 =	Plants rare, threatened, or endangered in California, but more common elsewhere.

documented in shallow vernal pools at Mather Air Force Base and in Rancho Cordova and Roseville (CNDDB 2005). Suitable habitat exists in wet grassland areas that occupy low, topographic depressions on site. This plant species was not detected during protocol-level surveys and is presumed absent.

Dwarf Downingia (*Downingia pusilla*). Federal listing status: None; State listing status: None; CNPS List 2. Dwarf downingia is a small, annual herb in the harebell family (Campanulaceae) that blooms from March through May. This plant is associated with wet valley and foothill grassland and vernal pool habitats in Merced, Mariposa, Napa, Placer, Sacramento, Solano, Sonoma, Stanislaus, Tehama and Yuba counties (CNPS 2001). Numerous historic and recent reports for this species occur in the vicinity of the project site including a single population located 800 feet south of the west end of Delano Road between Rio Linda and Elverta roads approximately 2.5 air-miles southwest of the project site (CNDDB 2005). This population occurs in grassland, seasonal-wetland and vernal-pool habitats. Suitable habitat exists throughout the site in wet grassland areas and freshwater-marsh community located along the north side of Pacific Fruit Express Road in the south central and eastern sections of the project site. This plant species was not detected during protocol-level surveys and is presumed absent.

Sanford's Arrowhead (*Sagittaria sanfordii*). Federal listing status: None; State listing status: None; CNPS 1B. Sanford's arrowhead is a herbaceous perennial plant in the water-plantain family (Alismataceae) that blooms from May through October. This plant is associated with freshwater-marsh and swamp habitats in Butte, Del Norte, Fresno, Kern, Merced, Sacramento, Shasta, San Joaquin, and Tehama counties (CNPS 2001). Numerous recent occurrences for this species in Sacramento County are documented in freshwater marsh and ditch habitats located within the City limits of Sacramento and Rancho Cordova (CNDDB 2005). Suitable habitat exists throughout the site in wet grassland areas and the freshwater-marsh community located along the north side of Pacific Fruit Express Road in the south-central and eastern sections of the project site. This plant species was not detected during protocol-level surveys and is presumed absent.

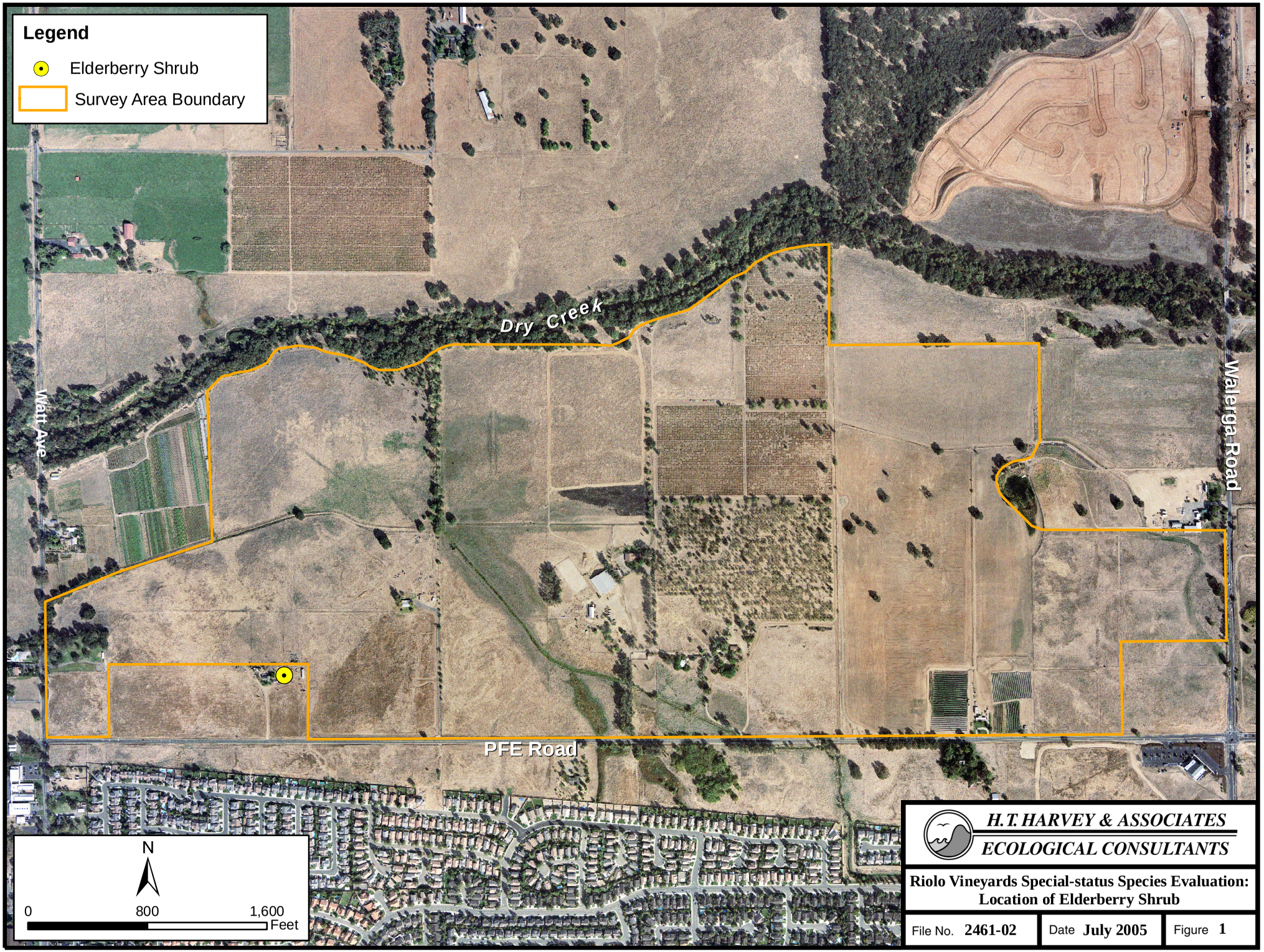
Results of Wildlife Surveys. Many wildlife species were detected during the reconnaissance-level survey conducted during the peak of spring bird migration including: 62 species of birds, 2 species of amphibians, 1 reptile, 4 species of mammals, and 10 species of Odonata (dragonflies and damselflies) (Appendix B). Among these were several special-status wildlife species including: Swainson's Hawk, White-tailed Kite, Olive-sided Flycatcher, Yellow Warbler, and habitat for the valley elderberry longhorn beetle. Pairs of Swainson's Hawks and White-tailed Kites were on breeding territories and exhibited courtship and nesting behavior on and adjacent to the project site. Because the flycatcher and warbler do not breed on the valley floor in western Placer County, they were classified as migrants using the riparian vegetation as stopover habitat for foraging and resting. The habitat for the beetle consisted of a single elderberry shrub (*Sambucus mexicana*) next to a house on the project site (see Figure 1). In addition, suitable habitat for western pond turtle, Northern Harrier, Long-eared Owl, Burrowing Owl, Loggerhead Shrike, Tricolored Blackbird and pallid bat was identified on the project site. Their habitats and diet are described in the following species accounts.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Federal Listing Status: Threatened; State Listing Status: None. The bodies of valley elderberry longhorn beetles range in size from 13 to 25 mm with males typically being shorter and stouter than females. The beetles have long antenna, often in excess of two-thirds the length of their body. Adult beetles feed upon the leaves of elderberry (*Sambucus spp*.) shrubs and lay their eggs within crevices of the bark on the stems of the plant (Arnold et al. 1994). After about ten days, the eggs hatch and the larvae bore into the pitch. The larvae and pupae of the beetle live within the stem of the shrub for up to two years before they pupate. Upon pupation, the adults chew through the bark leaving a distinctive exit hole that can be used to confirm the presence of the species without direct observation of individuals.

The valley elderberry longhorn beetle historically ranged throughout the Central Valley, from Shasta County south into Kern County (Arnold et al. 1994). In contrast, surveys conducted between 1984 and 1991 detected valley elderberry longhorn beetles in only 12 patches of natural riparian vegetation along the Sacramento, American, and San Joaquin rivers and their tributaries (Arnold et al. 1994). Loss of habitat is the single greatest factor contributing to the decline of this species. Riparian forests throughout the Central Valley have been altered as a result of human activities associated with urban development, agriculture, and water diversions and conveyance. Conservation efforts aimed at the species' recovery have included protecting existing elderberry thickets, replanting elderberry shrubs, and transplanting elderberry shrubs inhabited by beetle larvae to new sites. One elderberry shrub was detected adjacent to a residence within 100 feet of the southwestern portion of the survey area (Figure 1). Thus, potential habitat for this species is within 100 feet of the survey area.

Western Pond Turtle (*Emys marmorata*). Federal Status: None; State Status: Species of Special Concern. The western pond turtle is a medium-sized brown or olive-colored aquatic turtle found throughout the lowland and mid-elevation areas of California, except in desert regions. Pond turtles are normally found in and along riparian areas, although gravid females have been reported up to a mile away from water in search of appropriate nest sites. Their preferred habitat includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons, introduced fishes, and bullfrogs). Juvenile and adult turtles are commonly seen basking in the sun at appropriate sites, although they are extremely wary animals and often dive into the water at any perception of danger. This species was not observed during field survey, but may occur on the pond and in upland habitat adjacent to Dry Creek.

White-tailed Kite (*Elanus leucurus*). Federal Status: None; State Status: Fully Protected Species. White-tailed Kites inhabit open grasslands, oak savanna, agricultural fields and marshes. They are common throughout the year, but during the breeding season, they tend to avoid areas that lack suitable trees for nesting. Kites build their nests near the tops of oaks, willows, or other dense broad-leafed deciduous tress in or adjacent to foraging areas. They prey upon small rodents (especially the California vole), but also feed



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ECOLOGICAL CONSULTANTS

Riolo Vineyards Special-status Species Evaluation: Location of Elderberry Shrub

File No. 2461-02	Date July 2005	Figure 1

on birds, insects, reptiles, and amphibians. Once in severe decline, the White-tailed Kite is now fairly common. One pair of kite was observed and presumed to be breeding on the project site.

Northern Harrier (*Circus cyaneus*). Federal Status: None; State Status: Species of Special Concern. Northern Harriers inhabit open grasslands, agricultural fields, and marshes. In the Central Valley, they are very common during winter, but fewer remain to breed. Nests are built on the ground in areas where long grasses or marsh plants provide cover and protection. Harriers hunt for a variety of prey, including rodents, birds, frogs, reptiles, and insects by flying low and slow in a traversing manner utilizing both sight and sound to detect prey items. This species was not observed during the field survey, but is likely to occur, especially during migration and winter.

Swainson's Hawk (*Buteo swainsoni*). Federal Status: None; State Status: Threatened. Swainson's Hawks are migratory raptors that nest in riparian trees in the Central Valley (Bloom 1980) and migrate in the fall to parts of western Mexico, Central America or southern South America. They were once one of the most common birds of prey in the native grasslands of California, but have declined in much of the state. Swainson's Hawks require large amounts of foraging habitat that includes pastures, grasslands and agricultural fields, especially alfalfa, but also hay, grain, tomatoes, beets and other row crops (Estep 1989). They prey upon voles (*Microtus* sp), gophers, birds, and insects such as grasshoppers (Estep 1989). Crops such as cotton, corn, rice, orchards, and vineyards are not suitable since they either lack suitable prey or the prey is unavailable to the Swainson's Hawks due to the height of the vegetation. Two pairs were observed on the project site where they presumably nested in the Dry Creek riparian woodland.

Long-eared Owl (*Asio otus*). Federal listing status: None; State listing status; Species of Special Concern. Long-eared Owls hunt in open areas but nest in riparian areas or other thickets with small, densely canopied trees (Grinnell and Miller 1944). They prey primarily upon voles (*Microtus* sp) but also other small rodents and birds. Long-eared Owls nest nearby in the foothills of the Sierra Nevada and are found on the Central Valley floor occasionally in winter. There are few breeding records from riparian areas in the Central Valley, but systematic surveys have not been conducted to determine the species abundance status as a breeding bird in that region. This species was not observed during the field survey, but may potentially occur.

Burrowing Owl (*Athene cunicularia*). Federal listing status: None; State listing status: Species of Special Concern. Burrowing Owls are small, terrestrial birds of open country that are unique among owls in that they nest and roost in burrows. They favor flat, terrain of annual and perennial grasslands, typically with sparse, or nonexistent, tree or shrub canopies. In California, Burrowing Owls are found in close association with California ground squirrels. Owls use ground squirrel burrows for shelter and nesting. Ground squirrels provide nesting and refuge burrows, and maintain areas of short vegetation height, which provide foraging habitat and allow the owls to see potential predators. In the absence of ground squirrel populations, habitats soon become unsuitable for occupancy by owls. Burrowing Owls are semi-colonial nesters, and group size is one of

the most significant factors contributing to site constancy by breeding Burrowing Owls. The nesting season, as recognized by the California Department of Fish and Game, runs from February 1 through August 31. This species was not observed during the field survey, but may potentially occur.

Loggerhead Shrike (*Lanius ludovicianus*). Federal listing status: Species of Conservation Concern; State listing status; Species of Special Concern. Loggerhead Shrikes prefer open habitats interspersed with shrubs, trees, poles, fences or other perches from which they can hunt insects, small rodents and birds. Though their populations have declined significantly over the last 20 years, Loggerhead Shrikes are still considered a fairly common species in the Central Valley. They are primarily monogamous and are highly territorial throughout the year. Nests are built in isolated shrubs or trees, often containing thorns, which offer protection from predators. This species was not observed during the field survey, but may potentially occur.

Tricolored Blackbird (*Agelaius tricolor*). Federal listing status: None; State Listing Status: Species of Special Concern. The bulk of the Tricolored Blackbird population is found in the Central Valley, with a few colonies scattered elsewhere the central and southern coastal areas of California as well as in Oregon and Washington. Tricolored Blackbirds are highly colonial in their nesting habits and form dense breeding colonies of up to tens of thousands of pairs. They primarily nest in tall, dense, stands of cattails or tules, or near freshwater in blackberry brambles, wild rose bushes and tall herbaceous plants, especially thistles (*Cirsium*). Tricolored Blackbirds form large flocks, sometimes with other blackbird species, during the non-breeding period and range widely to forage on seeds, grain and invertebrates in agricultural fields, pastures and grasslands. This species was not observed during the field survey, but may occur, especially during the non-breeding season.

Pallid Bat (*Antrozous pallidus*). Federal listing status: None; State listing status: Species of Special Concern. This medium-sized bat occurs throughout much of California. The pallid bat is usually found in open lowlands were it preys upon flightless insects. It prefers roosting in caves and mine tunnels but buildings and trees may also be used. Pallid bats are pale to light brown in color, and, at about 24 grams, the Pacific race is one of the state's largest bats. Coastal colonies commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in hollow trees. Colonies can range from a few individuals to over a hundred and are non-migratory (Barbour and Davis 1969). Some female/young colonies (typically the coastal subspecies) use their day roost for their nursery as well as hibernacula, while other colonies (typically those in the desert) migrate locally on a seasonal basis (Johnston 1997). Although crevices are important for day roosts, night roosts often include open buildings, porches, garages, highway bridges, and mines. Pallid bats may travel up to several miles for water or foraging sites if roosting sites are limited. This bat prefers foraging on terrestrial arthropods in dry open grasslands near water and rocky outcroppings or old structures. They may also occur in oak woodlands. Pallid bats are sensitive to human disturbances at roost sites. This species was not observed during the field survey, but is expected to occur, especially in and near the farm outbuildings and wood piles.

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Appendix A.
Environmental Laws and Regulations
Regarding Special Status Species

SPECIAL STATUS SPECIES

Federal and state endangered species legislation gives several plant and animal species known to occur in the vicinity of the project site special status. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies when reviewing environmental documents, have identified as sensitive some species occurring in the vicinity of the project site. Such species are referred to collectively as "species of special status."

Federal Endangered Species Act

Provisions of the federal Endangered Species Act (FESA), as amended (16 USC 1531) protect federally listed threatened and endangered species and their habitats from unlawful take. "Take" under FESA includes activities such as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The U.S. Fish and Wildlife Service's (USFWS) regulations define harm to include some types of "significant habitat modification or degradation." The U.S. Supreme Court ruled on June 29, 1995, that "harm" may include habitat modification "...where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."

California Endangered Species Act

Provisions of California's Endangered Species Act (Fish and Game Code of California, Chapter 1.5, Sections 2050-2116) protect state-listed threatened and endangered species. The CDFG regulates activities that may result in "take" of individuals. Take is defined as, "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill".

California Species of Special Concern

The CDFG has also produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists." Species on these lists either are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review, but do not have statutory protection.

California Native Plant Society

Vascular plants listed as rare or endangered by the California Native Plant Society (CNPS), and which may or may not have designated status under state endangered species legislation, are defined as follows:

List 1B. Plants rare, threatened, or endangered in California and elsewhere

List 2. Plants rare, threatened, or endangered in California, but more numerous elsewhere

List 3. Plants about which we need more information - A review list

List 4. Plants of limited distribution - A watch list

MIGRATORY BIRDS AND RAPTORS

The Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

California State Fish and Game Code

Migratory birds are also protected in California. The State Fish and Game Code §3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

Raptors

Raptors (*e.g.*, eagles, hawks, and owls) and their nests are protected under both federal and state regulations. In addition to the MBTA, birds of prey are specifically protected in California under State Fish and Game Code section 3503.5 (1992). Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 89 of the Fish and Game code defines "Take." "Take means hunt, pursue, capture, or kill, or attempt to hunt, pursue, catch, capture or kill."

Bald Eagle Protection Act

In addition, the Golden Eagle is federally protected under the Bald Eagle Protection Act (16 U.S.C. 668-668c) and is a California Species of Special Concern. It is illegal to disturb, molest, collect, or destroy Golden Eagles, and violations are subject to fines and/or imprisonment for up to one year. Active nest sites are protected from disturbance during the breeding season.

U. S. ARMY CORPS OF ENGINEERS, WATERS OF THE UNITED STATES

Areas meeting the regulatory definition of "Waters of the United States" are subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (ACOE). The ACOE, under provisions of Section 404 of the Clean Water Act (1972), has jurisdiction over "Waters of the United States" (jurisdictional waters). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats,

sand flats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U. S.," tributaries of waters otherwise defined as "Waters of the U. S.," the territorial seas, and wetlands adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3).

Construction activities within jurisdictional waters are regulated by the ACOE. The placement of fill material into such waters must be in compliance with permit requirements of the ACOE. No ACOE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency charged with implementing water quality certification in California.

CALIFORNIA DEPARTMENT OF FISH AND GAME STREAMBED ALTERATION AGREEMENT

California Department of Fish and Game (CDFG) jurisdiction generally extends to the "hinge points" on the top-of-bank of opposing channel banks and/or the full lateral extent of riparian vegetation beyond the top-of-bank. Definitions used in the identification of CDFG jurisdiction are contained in various documents including the Fish and Game Code, Title 14 of the California Code of Regulations (Hernandez 1999), and *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code* (1994). These areas generally include rivers, streams, creeks, or lakes. In addition, canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

Appendix B.
Wildlife Species Observed During Field Survey

Appendix B. Wildlife Species Observed at the Riolo Vinyards Project site during April 26, 2005 field survey

Common Name	Scientific Name	Status	wetlands	riparian	fields	orchard	flying over	oaks
Western Toad	*Bufo boreas*	R	tadpoles					
Bullfrog	*Rana catesbeiana*	R	adults					
Western Fence Lizard	*Sceloporus occidentalis*	R				1		
Great Blue Heron	*Ardea herodias*	R					1	
Turkey Vulture	*Cathartes aura*	R			1			
Mallard	*Anas platyrhynchos*	R	3	4	1			
White-tailed Kite	*Elanus leucurus*	R			2	1		
Red-shouldered Hawk	*Buteo lineatus*	R		2				
Swainson's Hawk	*Buteo swainsoni*	S		4	same 4		same 4	
Red-tailed Hawk	*Buteo jamaicensis*	R			3			
Ring-necked Pheasant	*Phasianus colchicus*	R		3	3	1		
Wild Turkey	*Meleagris gallopavo*	R			1			
California Quail	*Callipepla californica*	R		4		2		
Killdeer	*Charadrius vociferus*	R				1		
Greater Yellowlegs	*Tringa melanoleuca*	M	1				1	
Whimbrel	*Numenius phaeopus*	M					1	
Rock Dove	*Columba livia*	R					6	
Mourning Dove	*Zenaida macroura*	R	2	4	2	4		
Black-chinned Hummingbird	*Archilochus alexandri*	S			2	2		
Anna's Hummingbird	*Calypte anna*	R		6		2		
Belted Kingfisher	*Megaceryle alcyon*	R		1				
Acorn Woodpecker	*Melanerpes formicivorus*	R		4				
Nuttall's Woodpecker	*Picoides nuttallii*	R						1
Downy Woodpecker	*Picoides pubescens*	R		1				1
Olive-sided Flycatcher	*Contopus cooperi*	M		1				
Gray Flycatcher	*Empidonax wrightii*	M		1				
Black Phoebe	*Sayornis nigricans*	R	1	1	4			
Ash-throated Flycatcher	*Myiarchus cinerascens*	S		8		4		4
Western Kingbird	*Tyrannus verticalis*	S	2		8	6		2
Warbling Vireo	*Vireo gilvus*	M		6				
Western Scrub-Jay	*Aphelocoma californica*	R		12		8		2
Yellow-billed Magpie	*Pica nuttalli*	R				2		4
Tree Swallow	*Tachycineta bicolor*	S		10		4		
Barn Swallow	*Hirundo rustica*	S	1		4			
Oak Titmouse	*Baeolophus inornatus*	R		6				2
Bushtit	*Psaltriparus minimus*	R		12		4		
White-breasted Nuthatch	*Sitta carolinensis*	R		2		1		
Bewick's Wren	*Thryomanes bewickii*	R		8		2		
House Wren	*Troglodytes aedon*	S		10		2		
Western Bluebird	*Sialia mexicana*	R		2	2	6		
American Robin	*Turdus migratorius*	R		8		2		
Northern Mockingbird	*Mimus polyglottos*	R		2	6	6		2
European Starling	*Sturnus vulgaris*	R		18		10		

Common Name	Scientific Name	Status	wetlands	riparian	fields	orchard	flying over	oaks
American Pipit	*Anthus rubescens*	W			2			
Orange-crowned Warbler	*Vermivora celata*	M		2				
Nashville Warbler	*Vermivora ruficapilla*	M		1				
Yellow Warbler	*Dendroica petechia*	M		1				
Yellow-rumped Warbler	*Dendroica coronata*	W			2	4		
Black-throated Gray Warbler	*Dendroica nigrescens*	M		1				
Wilson's Warbler	*Wilsonia pusilla*	M		2				
Western Tanager	*Piranga ludoviciana*	M		2				
Spotted Towhee	*Pipilo maculatus*	R		2				
California Towhee	*Pipilo crissalis*	R		4				
Song Sparrow	*Melospiza melodia*	R		2				
Golden-crowned Sparrow	*Zonotrichia atricapilla*	W		1				
White-crowned Sparrow	*Zonotrichia leucophrys*	W			2			
Black-headed Grosbeak	*Pheucticus melanocephalus*	S				1		
Lazuli Bunting	*Passerina amoena*	S		2				
Red-winged Blackbird	*Agelaius phoeniceus*	R			30			
Western Meadowlark	*Sturnella neglecta*	R			10	2		
Brewer's Blackbird	*Euphagus cyanocephalus*	R			6			
Brown-headed Cowbird	*Molothrus ater*	R		4				
Bullock's Oriole	*Icterus bullockii*	S		6				
House Finch	*Carpodacus mexicanus*	R		10	6	12		6
Lesser Goldfinch	*Carduelis psaltria*	R		4	6	6		2
Black-tailed Jackrabbit	*Lepus californicus*	R			4	2		
California Ground Squirrel	*Spermophilus beecheyi*	R			6	4		
California Vole	*Microtus californicus*	R			1			
Striped Skunk	*Mephitis mephitis*	R		1				

Italicized common name = non-native species
Bold-faced common name = special-status species

Status
R = Resident Breeding Species
S = Summer only Breeding Species
M = Migrant only
W = Winter only

Odonata (Dragonflies and Damselflies)

		pond	riparian edge	open field				
American Rubyspot	*Hetaerina americana*		1					
Vivid Dancer	*Argia vivida*	6	12					
Exclamation Damsel	*Zoniagrion exclamationis*	1						
Blue-eyed Darner	*Aeshna multicolor*	2						
Common Green Darner	*Anax junius*			1				
Pacific Clubtail	*Gomphus kurilis*		2					
Sinuous Snaketail	*Ophiogomphus occidentis*		30					

		pond	riparian edge	open field				
Twelve-spotted Skimmer	*Libellula pulchella*		1					
Widow Skimmer	*Libellula luctuosa*		1					
Spot-winged Glider	*Pantala hymenaea*	1						

Survey information
Date: 4/26/2005
John Sterling
8am - 2 pm
55 - 75^0 F
light overcast
occasional light breeze