J. BIOLOGICAL RESOURCES

This section describes existing biological resources in Yolo County and the regulatory context for addressing biological resource issues. This section also evaluates potential impacts to biological resources that could result from implementing the County's 2030 Countywide General Plan (Draft General Plan) and recommends mitigation measures to avoid or minimize these potential impacts. The descriptions of existing biological resources in this section are primarily based on the Biological Resources section of the Yolo County General Plan Update Background Report (Background Report).[1] The following sources of information on biological resources in Yolo County were reviewed for the preparation of the Background Report and this EIR section:

- A record search of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB)[2] for Yolo County;
- A list of sensitive species provided by USFWS;[3]
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California;[4]
- Yolo County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) Ecological Baseline Report[5]
- Yolo County Open Space & Recreation Element and Background Report[6]
- Yolo County General Plan Open Space & Recreation Element Policy Document;[7]
- Yolo Bypass Management Strategy;[8]
- Final Report Inventory of the Wetlands and Riparian Habitats of Yolo County, California;[9]
- 1983 Yolo County General Plan;[10]
- Yolo County GIS Inventory;
- Yolo Bypass Wildlife Area Land Management Plan;[11] and

[1] Jones and Stokes, 2005. *Background Report for the Yolo County General Plan Update.* Prepared for Yolo County.

[2] California Department of Fish and Game (CDFG). 2008. California Natural Diversity Data Base (CNDDB) report for Yolo County occurrences. Information dated October 2008, updated January 4, 2009.

[3] U.S. Fish and Wildlife Service (USFWS). 2004. Federal endangered and threatened species that occur in or may be affected by projects in Yolo County. Document number 040804095633. Available at: http://sacramento.fws.gov/es/spp_lists/auto_list.cfm

[4] California Native Plant Society (CNPS). 2001. Inventory of rare and endangered plants of California (6th edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. Sacramento, CA.

[5] H.T. Harvey & Associates. 2005. Yolo County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) Ecological Baseline Report.

[6] Quad Knopf. 2000. Yolo County General Plan Open Space & Recreation Element Background Report. Roseville, CA.

[7] Quad Knopf. 2002. Yolo County General Plan Open Space & Recreation Element. Roseville, CA.

[8] Jones & Stokes (J&S). 2001. A Framework for the Future: Yolo Bypass Management Strategy: (J&S 99079.) August. Sacramento, CA. Prepared for Yolo Basin Foundation, Davis, CA.

[9] Jones & Stokes Associates, Inc. 1990. Final report, inventory of the wetlands and riparian habitats of Yolo County, California. Prepared for the Yolo County Community Development Agency. Sacramento, CA.

[10] Yolo County Community Development Agency. 1983. Yolo County General Plan.

- Yolo County Oak Woodland Conservation and Enhancement Plan[12].

Some of the text in the biology section of this EIR, such as the descriptions of the general setting and some of the information on existing plant communities, is taken directly from the Background Report and is supplemented with information from the Draft General Plan[13] and Ecological Baseline Report[14] For the special-status species section of this EIR, as described in more detail below, 2008 databases were also reviewed for updated records of special-status species that occur or potentially occur in Yolo County.

Plant taxonomy and nomenclature follows Hickman[15] and CNPS[16] for special-status plant nomenclature. Nomenclature for amphibians and reptiles conforms to Crother,[17] while nomenclature for mammals conforms to Baker et al.[18] Scientific names of bird species are not provided in the text since common names are standardized in the American Ornithologists' Union Check-list of North American Birds[19] and supplements.

1. Setting

Yolo County encompasses a portion of the Sacramento Valley and the eastern edge of the Inner North Coast Ranges.[20] These subregions vary in topography, climate, and plant communities. The eastern and southern portions of the County are located on the relatively level valley floor. The north-central County encompasses the Dunnigan Hills, and the western portion rises into the Blue Ridge and Rocky Ridge of the inner north Coast Ranges (see Figure IV.J-1). The Capay Valley lies between Blue Ridge and the Capay Hills. Little Blue Ridge, which has some of the highest elevations in the County, is in the northwestern corner of the County.

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[11] California Department of Fish and Game and Yolo Basin Foundation. 2008. Yolo Bypass Wildlife Area Land Management Plan. Prepared for California Department of Fish and Game Yolo Bypass Wildlife Area. Prepared by the California Department of Fish and Game and the Yolo Basin Foundation in association with EDAW. Sacramento, CA. Available online at http://www.yolobasin.org/management.cfm.

[12] Yolo County Parks and Natural Resources Management Division. 2007. Yolo County Oak Woodland Conservation and Enhancement Plan. Prepared by Yolo County Parks and Natural Resources Management Division, Yolo County Planning, Resources,and Public Works Department. 71 pp.

[13] County of Yolo. 2009. Draft County of Yolo 2030 Countywide General Plan. January 2009.

[14] H.T. Harvey & Associates. 2005. op. cit.

[15] Hickman, J. C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley, California.

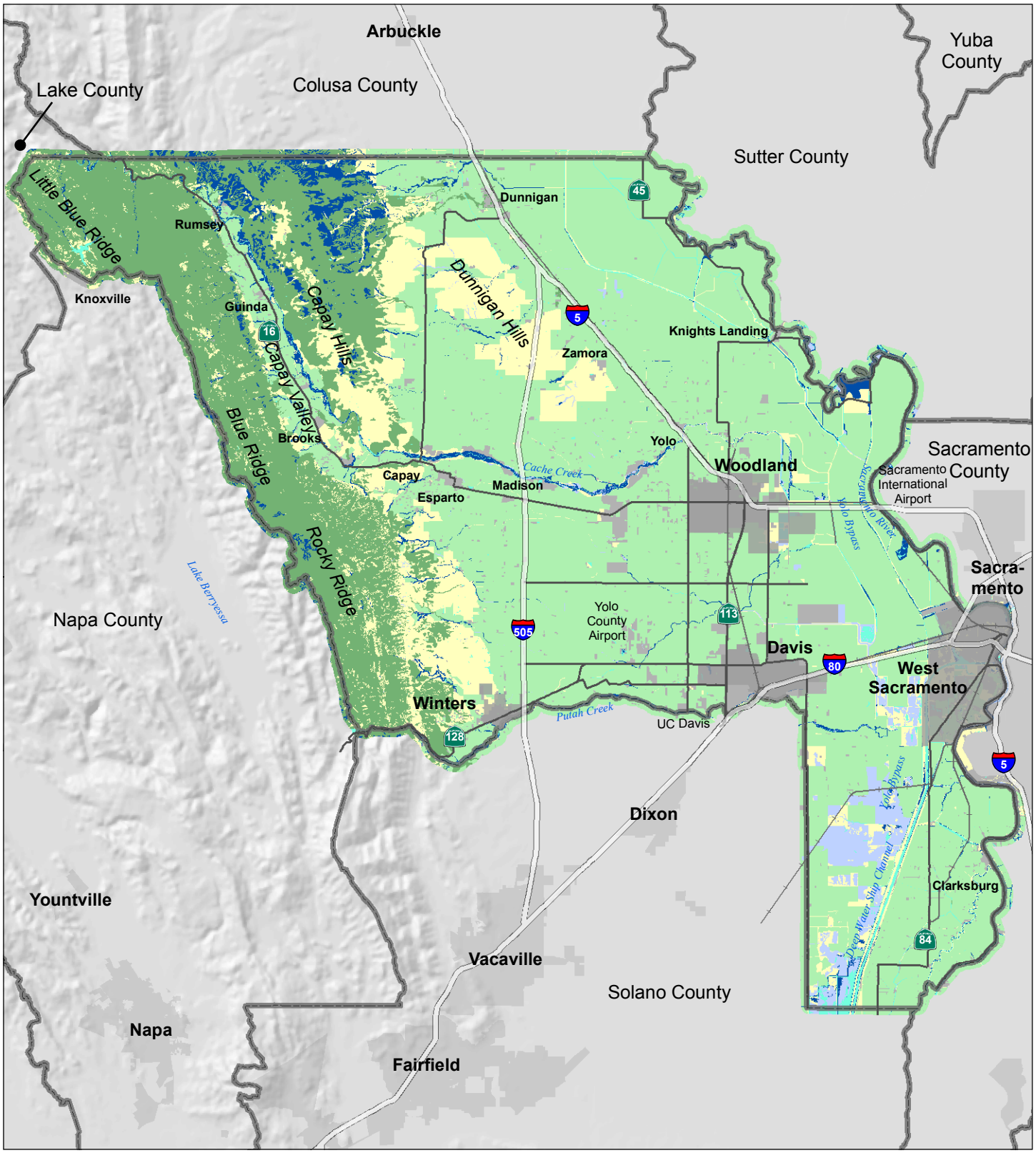
[16] Ibid.

[17] Crother, B. I. (ed). 2008. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, pp. 1-84. SSAR Herpetological Circular 37.

[18] Baker, R. J., L. C. Bradley, R .D. Bradley, J. W. Dragoo, M. D. Engstrom, R. S. Hoffmann, C. A. Jones, F. Reid, D. W. Rice, and C. Jones. 2003. Revised Checklist of North American Mammals North of Mexico, 2003. Museum of Texas Tech University Occasional Papers 229.

[19] American Ornithologists' Union (AOU). 1998. Check-list of North American Birds, Seventh Edition. American Ornithologists' Union, Washington, D.C.

[20] Hickman, J.C., ed., 1993. *The Jepson Manual: Higher Plants of California.* Third printing with corrections, 1996. University of California Press, Berkeley. 1400 pp.



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FEET

Grassland Prairie/Valley Oak Savannah

Urban/Built up/Barren

Oak Woodland/Chaparral

Agriculture

Riparian

Water

Wetland

Vegetation Types Remnant Oak Trees, Groves, and Tree Rows, are not mapped but occur on the valley floor primarily in agricultural areas

Source: County of Yolo GIS, 2006.

I:\CYK0701\GIS\Maps\EIR\Fig_IV.J-1_VegetationTypes.mxd (04/01/2009)

FIGURE IV.J-1

2030 Yolo County General Plan EIR Update

Vegetation Types in Yolo County

Yolo County has a Mediterranean climate characterized by hot, dry summers and temperate, wet winters. However, the County comprises two distinct climate zones. The northern and central areas of Yolo County experience hot summers and moderately cold winters, while the southeastern County receives marine air influence from the San Joaquin-Sacramento Delta regions to the south that reduces the temperature extremes of the valley. During the summer, temperatures generally average a high of 95º F and a low in the mid-50s. Winter temperatures average a high in the 50s, and low of 38 to 40º F. Average annual precipitation ranges from 17 inches in the northeast to 34 inches along the western part of the County. In spite of these distinctions, the biological communities in Yolo County are distributed primarily based on the location of water resources and agricultural development.

This section discusses the existing plant communities in Yolo County, the habitat these communities provide for fish and wildlife species, special-status plant and wildlife species, and the regulatory framework for biological resources.

a. Plant Communities. Plant communities in Yolo County became greatly altered beginning in the mid-1800s as the area was developed for agriculture, including growing crops and raising livestock. Water diversions from area streams were used to expand crop production, and grasslands were converted to agricultural use. Urban growth, dam construction, and highway construction in the 1950s further altered natural communities, particularly in stream and riparian, wetland, and grassland communities.

The Draft General Plan identified six main types of plant communities and habitats in Yolo County: 1) Agricultural, 2) Wetlands, 3) Riparian, 4) Oak Woodland/Chaparral, 5) Grassland Prairies/Valley Oak Savannah, and 6) Remnant Oak Trees, Groves, and Tree Rows. These six major plant communities/cover types represent aggregations of finer scale habitat mapping units contained in the GIS data set. The cover type map layers comprising the major plant communities are shown in Appendix G. These six plant communities and habitats along with Urban lands are shown in Figure IV.J-1.[21] The acreages in the following section for these six plant communities and habitats were derived from the vegetation mapping shown in Figure IV.J-1 based on the Ecological Baseline Report[22] and Yolo County Natural Heritage Program GIS shapefiles.[23]

The following descriptions of the six main plant communities and habitats and their distribution in Yolo County are derived from the Background Report[24] for information on existing plant communities. Biologists preparing the Background Report also conducted a reconnaissance-level survey of Yolo County in August 2004 to identify plant communities and habitats and their potential to support special-status plant and wildlife species. The Ecological Baseline Report[25] was also reviewed for this EIR for more detailed descriptions and subcategories of plant communities in Yolo County than were provided in the Background Report. Some of that information is included in this section and the special-status species section. Maps of the more detailed vegetation types from the

[21] County of Yolo. 2007. Yolo County Natural Heritage Program Regional Vegetation Dataset. Yolo County Regional Vegetation Geographical Information System (GIS) shapefile. Data prepared by Technology Associates.

[22] H.T. Harvey & Associates. 2005. op. cit.

[23] County of Yolo. 2007. op. cit.

[24] Jones & Stokes; Cotton Bridges Associates, Inc.; Fehr & Peer Associates, Inc,; House Agricultural Consultants, and Applied Development Economics. 2005. op. cit.

[25] H.T. Harvey & Associates. 2005. op. cit.

Yolo County Natural Heritage Program GIS shapefiles[26] were also reviewed for the special-status species analysis.

The distribution of plant communities in the County is closely associated with topography and hydrology. Much of the flat valley area in the eastern and central-eastern area of the County supports agricultural communities, the hilly western and central-western portions of the County support most of the remaining grassland and woodland communities, and stream corridors support riparian communities (Figure IV.J-1). The urban/built-up areas are concentrated in the flatter, eastern portion of the County.

(1) Agricultural Lands. Agricultural lands occur throughout Yolo County and are concentrated in the flatter eastern and central portions of the County and in the Capay Valley (Figure IV.J-1) as described in Section IV.B, Agricultural Resources. Agricultural lands as used in this section are both a land use designation and a plant community. Although the majority of the lands designated as agricultural lands are in intensive agriculture, about 30 percent of the designated agricultural lands support other plant communities including wetlands, riparian, oak woodland/chaparral, and grasslands. As a plant community (e.g., intensive agriculture of row crops, orchards, vineyards), agricultural lands were mapped in the Ecological Baseline Report at about 385,676 acres of the unincorporated County.[27] As a land use designation agricultural lands cover 544,723 acres within the unincorporated County.[28] In 2007, approximately 70 percent of the unincorporated County was under active cultivation (including grazing land).[29] In 2007, approximately 463,762 acres were used for various agricultural crops.[30] Agricultural lands within the County include a mix of large-scale and small-scale farms as well as livestock operations. This habitat type is the most abundant habitat type in Yolo County.

The following descriptions of planted acreages are based on 2007 data for the unincorporated County.[31] Dry pasture (primarily grazed annual grassland) was the dominant agricultural land use in the County, occurring mainly in the foothills along the western edge of the Central Valley and the Dunnigan Hills.[32] Non-native grasses and forbs dominate these dry pasture areas and include non-native wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), barleys (*Hordeum* spp.), and nonnative forbs. Dry pasture is used primarily to graze livestock.

Nearly all of the irrigated cropland acreage is found on the valley floor east of the inner north Coast Ranges extending into the southeast panhandle. The majority of the irrigated cropland acreage included six crop types: alfalfa, tomatoes, rice, wheat, orchards, and sunflower.[33] Rice fields occur primarily along the eastern portion of the County near the Sacramento River. This habitat supports rice during the growing months and open water during the flooding stage.

[26] County of Yolo. 2007. op. cit.

[27] [27] H.T. Harvey & Associates. 2005. op. cit.

[28] County of Yolo. 2009. op. cit.

[29] County of Yolo. 2009. op. cit.

[30] Ibid.

[31] Ibid.

[32] Ibid.

[33] Ibid.

The remaining agricultural land use was comprised of a wide variety of field and vegetable crop types, vineyards, seed crops, nursery products, and irrigated pasture. Vineyards are located in the three main viticulture areas of the County – Capay Valley, Dunnigan Hills, and Clarksburg. The majority of the vineyard acreage is found in the Clarksburg area (11,000 acres), followed by the Dunnigan Hills (3,000 acres), and the Capay Valley which has the least acreage planted in vines (25 acres).[34]

(2) Natural Lands. Natural lands in Yolo County account for approximately 21 percent of the unincorporated area of the County.[35] These lands include native oak woodlands, prairie grasslands, and chaparral communities in the western mountains and foothills, riparian woodlands, native and restored wetland communities, and remnant valley oak groves and valley oak trees on the valley floor. Each of the major vegetation types found in the natural lands of the County is described below. Subcomponents of the plant community/cover type are also discussed.

Wetlands. Significant areas of seasonal wetland and marsh communities are found primarily in the Yolo Basin, including the Yolo Bypass Wildlife Area, private lands in the southern panhandle, the Conaway Ranch north of Interstate 80, and the City of Davis Wetlands. Additional wetland habitats are found at the recently restored Roosevelt Ranch Preserve east of Zamora and in several other isolated locations throughout the central and eastern portions of the County.[36] Wetlands are shown on Figure IV.J-1. There are approximately 14,855 acres of wetlands in the unincorporated County.[37]

Marsh. Marshes primarily occur in the southern portion of the County in the Yolo Bypass and in association with ponds, wetlands, irrigation canals and streams. Typical plants in marshes include cattail (*Typha* spp.), tule (*Scirpus* spp.), verbena (*Verbena* spp.), smartweed (*Polygonum* spp.), swamp timothy (*Crypsis schoenoides*), watergrass (*Echinochloa* spp.), sedges (*Carex* spp.), rushes (*Juncus* spp.), and various grasses. Alkali bulrush (*Scirpus robustus*) wetlands occur in lowlands just west of the Sacramento River Deep Water Ship Channel in the Yolo Bypass.[38] Bulrush and cattail wetlands occur in the Willow Slough Bypass just east of Davis.[39] Wetlands dominated by sedges and rushes are located in canyons between Blue Ridge and Highway 16, between Rocky Ridge and Interstate 5, and in the Dunnigan Hills.[40]

Vernal Pool. Vernal pool plants are primarily native annual species adapted to the seasonally wet conditions of vernal pools. Common plants in vernal pools in Yolo County include downingia (*Downingia* spp.), vernal pool goldfields (*Lasthenia fremontii*), popcornflower (*Plagiobothrys stipitatus*), and wooly marbles (*Psilocarphus brevissimus*).[41] Vernal pools are rare in the County and are located primarily in the southern areas of the County, southeast of Davis.[42] A complex occurs

[34] Ibid.

[35] Ibid.

[36] County of Yolo. 2009. op. cit.

[37] H.T. Harvey & Associates. 2005. op. cit.

[38] County of Yolo. 2007. op. cit. and H.T. Harvey & Associates. 2005. op. cit.

[39] Ibid.

[40] Ibid.

[41] H.T. Harvey & Associates. 2005. op. cit.

[42] County of Yolo. 2007. op. cit. and H.T. Harvey & Associates. 2005. op. cit.

south of Davis at the Yolo County Grasslands Regional Park, which now includes the former Davis U.S. Air Force Communication Facility. The vernal pool complex at Yolo County Grasslands Regional Park supports two State and federal listed plant species, Colusa grass (*Neostapfia colusana*) and Solano grass (*Tuctoria mucronata*). Vernal pools are also located on the CDFG Tule Ranch Preserve, the grasslands north of Winters, and D-Q University.[43] There are also several vernal pools east of Rocky Ridge, which is along the southwestern border between Yolo and Napa Counties. Some fallow rice fields in the City of Woodland also support vernal pool species.

Alkali Sink. Alkaline sinks are mapped northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[44] Alkali sink is found adjacent to the CDFG Tule Ranch Preserve, in the basin below the CDFG Tule Ranch Preserve, and in the remnants of two alkali playas southeast of Woodland.[45] Alkali sinks typically support alkaline tolerant plant species and may support vernal pools and their associated species. Plant species in Yolo County alkali sink habitats include saltgrass, flat-face downingia (*Downingia pulchella*), curly dock (*Rumex crispus*), Great Valley gumplant (*Grindelia camporum*), alkali coyote thistle (*Eryngium aristulatum*), alkali heath (*Frankenia salina*), and hardstem bulrush (*Scirpus acutus*) and cattails in more perennial alkali sink areas.[46] Plant species in the remnants alkali playas include Parish's pickleweed (*Salicornia subterminalis*), bush seepweed (*Suaeda moquinii*), alkali heath, common spikeweed (*Centromadia pungens*), palmate-bracted bird's beak (*Cordylanthus palmatus*), and annual hairgrass (*Deschampsia danthonoides*).[47]

Pond/Lake/Open Water. In Yolo County, large open water habitats are primarily along the Sacramento River, in the Deep Water Ship Channel, and in Davis Creek Reservoir. Permanently ponded areas in the Yolo Bypass also provide open water habitat. Pond/Lake/Open Water habitats in the County are primarily unvegetated but may support floating or submergent aquatic species.

(3) Riparian. Riparian habitats occur along stream courses throughout the County. There are approximately 10,051 acres of riparian habitats in the unincorporated County (Figure IV.J-1).[48] The primary riparian corridors in the County occur along streams and include: Cache Creek, Buckeye Creek, Dunnigan Creek, Bird Creek, Oat Creek, Sycamore Slough, Colusa Basin Drain, Willow Slough/Willow Slough Bypass, Union School Slough, Dry Slough, Chickahominy Slough, Putah Creek, Yolo Bypass, and the Sacramento River. They also include created features, such as the Deep Water Ship Channel, Tule Canal, and Knights Landing Ridge Cut. Riparian habitats include the stream channels and associated emergent and submergent vegetation as well as the woody vegetation that occurs on the banks of the streams and rivers.

Riparian Forest. Riparian forests in the County develop on low terraces subject to more frequent and longer duration flooding than valley oak riparian forest. A dense riparian forest occurs at Elkhorn Park. Riparian forests also occur in the Yolo Bypass and along Cache Creek, Putah Creek,

[43] H.T. Harvey & Associates. 2005. op. cit.

[44] County of Yolo. 2007. op. cit. and H.T. Harvey & Associates. 2005. op. cit.

[45] Ibid.

[46] H.T. Harvey & Associates. 2005. op. cit.

[47] H.T. Harvey & Associates. 2005. op. cit.

[48] Ibid.

the Sacramento River, and other streams. Riparian forests include cottonwood forest, mixed riparian forest, and willow scrub communities. Dominant species include Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), willows (*Salix* spp.), Oregon ash (*Fraxinus latifolia*), valley oak (*Quercus lobata*), salt cedar (*Tamarix* sp.) (particularly along Cache Creek), and buttonwillow (*Cephalanthus occidentalis* var. *californicus*). Yolo Bypass riparian forests also include sycamore (*Platanus racemosa*) and black walnut in the overstory with saplings of black willow (*Salix laevigata*), box elder (*Acer negundo* var. *californicum*), wild grape (*Vitis californica*), blackberry (*Rubus* spp.), California rose (*Rosa californica*), and poison oak (*Toxicodendron diversilobum*) in the midstory.

Valley Oak Riparian. This habitat develops on high terraces with infrequent flooding. Valley oak riparian habitat occurs in the Yolo Bypass and at Helvetia Oaks Park. It also occurs along drainages and streams at Capay Valley, near the Davis Creek Reservoir on Little Blue Ridge, eastern side of Blue Ridge and eastern side of Capay Hills.[49] Typical plants species include valley oak, black walnut (*Juglans hindsii*), sycamore, wild grape, poison oak, blackberry (*Rubus* spp), grasses, and sedges (*Carex* sp.). Other associated trees include Oregon ash, Fremont cottonwood, and willows. Blue elderberry may also occur in the understory of this riparian community as isolated shrubs. Nearly all of the areas of elderberry savannah have been under cultivation for decades but one of the few areas that remain includes portions of the Putah Creek Reserve.

(4) Oak Woodland/Chaparral. There are approximately 128,939 acres of oak woodland/chaparral in the unincorporated County.[50] Oak woodland and chaparral communities occur in the higher elevations of the inner Coast Ranges.[51] These oak woodlands are dominated by blue oak and live oak, and include a variety of mid- and understory species such as California buckeye (*Aesculus californica*), western redbud (*Cercis occidentalis*), and deer brush (*Ceanothus integerrimus*). Interspersed within the oak woodland community are large and small patches of chaparral. In some areas, the chaparral community contains a variety of representative species, including manzanita (*Arctostaphylos* sp.), California buckeye, scrub oak (*Quercus berberidifolia*), chamise (*Adenostoma fasciculatum*), and toyon (*Heteromeles arbutifolia*), and supports abundant wildlife, some of which is found solely or predominantly in chaparral habitats. In other areas, the chaparral is dominated by dense chamise and is less productive. Oak woodland/chaparral habitats are shown in Figure IV.J-1.

Oak Woodlands. Oak woodlands in Yolo County occur primarily in the western and northwestern portion of Yolo County along Blue Ridge, Rocky Ridge, Little Blue Ridge, and Capay Hills.[52] This habitat typically consists of mature oak trees and varies from closed canopy to open woodland with 10-70 percent canopy cover. Many oak woodlands in Yolo County are dominated by blue oak (*Quercus douglasii*) and interior live oak (*Quercus wislizeni*).[53] Other oak woodlands in the County are dominated by black oak (*Quercus kelloggii*) and canyon live oak (*Quercus chrysolepis*). Other trees associated with oak woodlands in the County include valley oak, California bay, buckeye (*Aesculus californica*), and foothill pine (*Pinus sabiniana*). Understory shrubs include poison oak,

[49] County of Yolo. 2007. op. cit. and H.T. Harvey & Associates. 2005. op. cit.

[50] H.T. Harvey & Associates. 2005. op. cit.

[51] H.T. Harvey & Associates. 2005. op. cit.

[52] County of Yolo. 2009. op. cit.

[53] Ibid.

wedgeleaf ceanothus, whiteleaf manzanita, blue elderberry, redberry (*Rhamnus crocea*), silver bush lupine (*Lupinus albifrons*) and California yerba santa (*Eriodictyon californicum*).[54] In some areas in the northwestern portion of the County, especially at Blue Ridge, foothill pine is the dominant tree species. Oak woodlands in the County grade into chaparral habitat along Blue Ridge, Little Blue Ridge, and Capay Hills.

Chaparral. Little Blue Ridge supports chaparral habitats which intergrade with oak woodlands and grasslands and potentially supports special-status plants. Yolo County habitats that were categorized as serpentine mixed chaparral in the Ecological Baseline Report include: Leather Oak Chaparral Alliance; California Bay (*Umbellularia californica*)- Leather Oak (*Quercus durata*) - (*Rhamnus* spp.) Mesic Serpentine NFD Super Alliance; Whiteleaf Manzanita (*Arctostahphylos viscida*) - Leather Oak - (Chamise (*Adenostoma fasciculatum*)-*Ceanothus* spp.) Xeric Serpentine NFD Super Alliance; and Whiteleaf Manzanita Alliance. Non-serpentine mixed chaparral habitats in the 2005 NCCP/HCP Baseline Report include: Scrub Oak (*Quercus berberidifolia*),Chaparral Alliance; Evergreen Shrubland; Toyon (*Heteromeles arbutifolia*), (Foothill Pine (*Pinus sabiniana*)/Chamise/Annual Grasses Savanna Alliance; and Mixed Manzanita - (Interior Live Oak (*Quercus wislizenii*) -California Bay - Chamise) NFD Alliance). Mixed chaparral habitats in the County primarily occur in the northwestern portion of the County in Little Blue Ridge, Blue Ridge and the Capay Hills[55]**.** The Ecological Baseline Report also identifies the Chamise Alliance and Chamise-Wedgeleaf Ceanothus (*Ceanothus cuneatus*) Alliance which occur in this northwestern area and in the Dunnigan Hills in the north-central area of the County.

There are three other types of woodlands/forests identified in the Ecological Baseline Report as being scarce in Yolo County and include Knobcone pine (*Pinus attenuata*) alliance, MacNab cypress (*Cupressus macnabiana*) alliance, and California juniper (*Juniperus californica*) alliance. Knobcone Pine occurs on the north-facing slope of the Blue Ridge at the northern boundary of Yolo County immediately above Cache Creek. MacNab Cypress occurs adjacent to the University of California's McLaughlin Reserve in the Little Blue Ridge. In Yolo County California juniper is restricted to a very narrow band on the crest of the northern Blue Ridge.

(5) Grassland Prairie/Valley Oak Savannah. There are approximately 67,237 acres of grassland prairie/valley oak savannah in the unincorporated County (Figure IV.J-1).[56] Grasslands occur in ungrazed areas primarily on slopes greater than 2 percent. Grasslands are also associated with valley oak savannah, riparian, and occasionally with agriculture. Large intact grasslands occur in the central-western portion of the County in the Dunnigan Hills, in the western portion of the County in the Capay Hills and Blue Ridge, and in the Yolo Bypass (Figure IV.J-1). Grasslands are present at the Yolo County Grasslands Regional Park, which is south of the City of Davis. Typical plant species in grasslands in Yolo County are dominated by non-native grasses and forbs and include non-native wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), barleys (*Hordeum* spp.), and nonnative forbs.

[54] H.T. Harvey & Associates. 2005. op. cit.

[55] Ibid.

[56] H.T. Harvey & Associates. 2005. op. cit.

Most grasslands in the County are dominated by non-native vegetation, but this category also includes Serpentine Grasslands NFD Super Alliance and Serpentine Barrens.[57] Serpentine grasslands and barrens generally support more native grasses and forbs and special-status plants than non-native grasslands. Serpentine Grasslands NFD Super Alliance and Serpentine Barrens are rare in Yolo County and are restricted to detrital serpentine in Little Blue Ridge in the northwestern corner of the County.[58]

The Yolo County Grassland Regional Park in addition to supporting non-native grasses common in the rest of the County, also supports populations of two federally listed grasses: Colusa grass (*Neostapfia colusana*) and Solano grass (aka Crampton's tuctoria) (*Tuctoria mucronata*). These plant species grow in vernal pools and as such are also included in the Wetlands section below. The Yolo Grasslands Regional Park is the only documented occurrence of both Colusa grass and Solano grass in Yolo County.

(6) Remnant Oak Trees, Groves, and Tree Rows. Throughout the agricultural areas of the valley floor, isolated valley oaks, small groves of native and non-native trees, and tree rows of eucalyptus or other trees can be found growing. The oaks are typically remnants of once more extensive woodlands that were replaced by agriculture. These trees provide isolated or small patches of habitat within an otherwise intensively cultivated landscape.

(7) Developed Areas. There are approximately 52,000 acres of developed land countywide.[59] Approximately, 32,325 acres of the developed lands are contained within the four incorporated cities (Davis, Woodland, Winters, and West Sacramento)[60], leaving about 19,675 acres of developed lands in the unincorporated County. Development is concentrated around cities in the eastern and central areas of the County. The western and northwestern hilly regions of the County are generally less developed than other areas of the County.

b. Fish and Wildlife. This section describes the fish and wildlife species associated with each plant community/habitat in Yolo County. This information is primarily taken from the Background Report and is supplemented with additional information in some cases where noted.

(1) Agricultural Lands. Agricultural lands and the wildlife they support are described below.

Alfalfa and Pasture. The air space over alfalfa and irrigated pastures provide foraging habitat for aerial insectivores such as barn and cliff swallows. Raptors including the Swainson's hawk forage for mice and voles in alfalfa and irrigated pasture. California ground squirrels (*Spermophilus beecheyi*) often occur in agricultural landscapes and construct their burrows along the edges of pastures and on berms along the edges of fields. Burrowing owls use old ground squirrel burrows for shelter and as nesting sites and large raptors such as red-tailed hawks feed on the squirrels themselves.

[57] H.T. Harvey & Associates. 2005. op. cit.

[58] H.T. Harvey & Associates. 2005. op. cit.

[59] H.T. Harvey & Associates. 2005. op. cit.

[60] County of Yolo. 2009. op. cit.

Vineyards and Orchards. Vineyards and orchards are managed intensively and typically provide low wildlife value. The understory of vineyards and orchards are often devoid of vegetation and sprayed with herbicides or disked. Despite these conditions, some wildlife species have adapted to these settings. California ground squirrels feed on the abundant supply of nuts and fruits. Many common bird species such as the mourning dove (*Zenaida macroura*), yellow-billed magpie, Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Carpodacus mexicanus*) use orchard trees for nesting. The Swainson's hawk has also been reported to nest in large orchard trees that are located near open foraging areas.

Rice. Rice fields provide surrogate wetlands that have become essential for many shorebirds and other waterbirds. Rice fields provide important foraging and resting habitat for wintering and migratory waterfowl. Flooded rice fields also are important foraging and rearing habitat for giant garter snakes, in areas where they occur, as are the associated irrigation canals.

Annually Rotated/Cultivated Irrigated Cropland. Annual field crops occur in lowlands and valleys throughout Yolo County. Common field crops grown in the County include tomato, safflower, sunflower, grains, and corn

(2) Natural Lands. The natural lands in Yolo County provide habitat for a wide variety of native wildlife species that are either resident or seasonal migrants to the County.

Wetlands. Wetland types and habitats and the wildlife species they support are described in this section.

Marsh. Vegetation associated with marshes provides foraging, nesting, and refuge habitat for numerous wildlife species that may also occur in areas of adjacent open water or along the upland edge of the marsh. Where marsh fringes deeper open water, non-native game fish such as the largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*) are often present. Amphibians and reptiles that occur in marshes in Yolo County include the Sierran tree frog (*Pseudacris sierra*),[61] the nonnative American bullfrog (*Lithobates catesbeiana*),[62] western pond turtle (*Actinemys marmorata*), common garter snake (*Thamnophis sirtalis*), and giant garter snake (*Thamnophis gigas*).

Numerous bird species use marshes for nesting, wintering, and/or foraging. Examples of water birds that use this habitat in the County include gadwall, mallard, pied-billed grebe, Virginia rail, American coot, and Wilson's snipe. The northern harrier and short-eared owl are two raptor species that are often associated with drier marsh habitat; both of these special-status species are known to nest in the County.[63] Songbirds that are typical of freshwater marshes in the County include the marsh wren,

[61] This treefrog was formerly known as the Pacific treefrog *(Pseudacris regilla)*, but a recent taxonomic study split this species into multiple new species; the populations in the central California and the Bay Area are now named the Sierran treefrog *(P. sierra)* (see Crother 2008).

[62] The American bullfrog was formerly placed in the genus *Rana*, but a recent comprehensive taxonomic revision of amphibians resulted in this species being placed in the genus *Lithobates* and this is the name currently recognized by herpetologists (see Crother 2008)

[63] Shuford, W.D. and T. Gardali, editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of

common yellowthroat, song sparrow, red-winged blackbird, tri-colored black bird, and yellow-headed blackbird. Typical mammals of this habitat include common muskrat (*Ondatra zibethicus*) and American beaver (*Castor canadensis*).

Vernal Pool. Vernal pools provide aquatic habitat for common and special-status amphibians, including California tiger salamander (*Ambystoma californiense*), western toad (*Anaxyrus boreas*), Sierran tree frog, and western spadefoot (*Spea hammondii*). Insect larvae and invertebrate species that commonly occur in vernal pool systems, such as predacious diving beetles (Dytiscidae), water scavenger beetles (Hydrophilidae), back swimmers (Notonectidae), seed shrimp (Ostracoda), fairy shrimp (Anostraca), and tadpole shrimp (Notostraca), provide a valuable food source for amphibians as well the many birds that overwinter in or migrate through the County. Birds such as killdeer, greater yellow-legs, mallard, and great egret forage along the edges of or in vernal pools.

Open Water/Pond/Lake/Stream. Aquatic habitat in the County includes the mainstem of the Sacramento River, river backwaters, large tributary streams, small creek, and human constructed ponds, lakes, and ditches. The mainstem of the Sacramento provides passage for anadromous fish species such as Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) as they migrate from the ocean to spawning areas, upstream of the County, in the upper Sacramento, Yuba, and Feather Rivers and their tributaries. White sturgeon (*Acipsenser transmontanus*) also use the mainstem of the Sacramento River in the County as spawning habitat; the green sturgeon (*Acipsenser medirostris*) also occurs in this habitat, but is much less common and its status as a spawning species is less well known. Non-native game fish of the mainstem Sacramento include the striped bass (*Morone saxatilis*) and American shad (*Alosa sapidissima*).

Examples of other native fish species that occur in relatively natural stream habitats in the County include river lamprey (*Lampetra ayresii*), Pacific lamprey (*Lampetra tridentata*), Delta smelt (*Hypomesus transpacificus*), Sacramento sucker (*Catostomus occidentalis*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento splittail (*Pogonichthys macrolepidotus*), Sacramento blackfish, and California roach (*Lavinia symmetricus*).

Non-native fish such as largemouth bass, smallmouth bass (*Micropterus dolomieu*), bluegill, common carp (*Cyprinus carpio*), white catfish (*Ameiurus catus*), and channel catfish (*Ictalurus punctatus*), are also common in lakes, ponds, streams and/or rivers in the County. Perhaps the most common non-native fish in the County is the western mosquito fish (*Gambusia affinis*) which occurs in a variety of aquatic habitats including ditches, small ponds, and backwaters.

Aquatic habitat is also used by many bird species including waterfowl, waterbirds, and osprey.

Alkali Sink. Alkali sinks in Yolo County typically support wildlife species similar to those species described above for Vernal Pool and Grassland.

(3) Riparian Habitats. Riparian habitats and the wildlife species they support are described in this section.

Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Stream Channel. The air space over streams and the vegetation fringing stream courses provide foraging habitat for various bird species such as black phoebe, cliff swallow, barn swallow, and bats such as Yuma myotis (*Myotis yumanensis*) and western red bat (*Lasiurus blossevillii*). The osprey and belted kingfisher are aerial hunters that forage for fish along stream courses, and both these species occur in the County.

Riparian Forest. Riparian forest and associated streams are considered high quality habitat for wildlife and support the most diverse wildlife community in Yolo County. The mixture of plant species and the multi-layered vegetation (i.e., shrub layers, small tree layers, and large tree layers) provide a variety of foods and micro-habitat conditions for wildlife. Riparian forest is of particular importance to breeding songbirds including migrant species such as western wood-pewee, warbling vireo, tree swallow, Swainson's thrush, and black-headed grosbeak. Riparian forest is also important for many resident species such as downy woodpecker, Bewick's wren, and song sparrow. Mammals such as the Virginia opossum (*Didelphis virginianus*), raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), and mule deer (*Odocoileus hemionus*) also occur in riparian forest.

Valley Oak Riparian. Valley oak riparian habitat typically supports wildlife species similar to those species described above for Riparian Forest, but species that tend to be associated with oak such as the acorn woodpecker, Nuttall's woodpecker, yellow-billed magpie, and oak titmouse are often common. The large oaks in this habitat often have deep cavities that provide roost sites for bats and dens for raccoons and other mammals. Elderberry (*Sambucus* sp.) shrubs are a component of the riparian forest and are the host plant for the federally threatened valley elderberry longhorn beetle. These shrubs also provide foraging habitat for various species of birds which feed on the ripe fruit and insects.

(4) Oak Woodland/Chaparral. Oak woodland/chaparral in Yolo County provide habitat for a diverse wildlife assemblage in Yolo County.

Oak Woodland. This community type commonly is used by species that require both woodlands and adjacent open areas, such as annual grasslands or low intensity agriculture or pasture. Mammals such as mule deer, black bear (*Ursus americanus*), gray fox, and mountain lions (*Puma concolor*) occupy the western portion of the County that is dominated by large tracks of oak woodlands. Large trees with hollow cavities provide important habitat for tree-roosting bats such as pallid bat (*Antrozous pallidus*), and long-legged bat (*Myotis evotis*). Bats play an important role in pest management in agricultural areas and near large water bodies. A wide variety of bird species also inhabit these areas including such species as western scrub-jay, acorn woodpecker, mourning dove, tree swallow, violet-green swallow, California quail, red-tailed hawk, and wild turkey. Gopher snake (*Pituophis catenifer*), western pond turtle (*Actinemys marmorata*), Pacific treefrog (*Pseudacris sierra*), and California red-legged frogs (*Rana draytonii*) also may occur in use oak woodlands for foraging, breeding, and shelter.

Oak woodlands support a diversity of animal species as a result of the many resources that oaks in particular provide, including nesting sites and abundant food such as large acorn crops. Regeneration of oak woodlands throughout California has been reduced by disturbance from grazing by livestock and wildlife and increased seedling mortality from competition with nonnative grasses.

Chaparral. In the western part of the County, oak woodlands and chaparral intergade into one another and many of the species that occur in the woodlands also use the chaparral as habitat where they find suitable shelter, foraging areas, and breeding sites. Common wildlife of chaparral include western fence lizard (*Sceloporus occidentalis*), gopher snake, common kingsnake (*Lampropeltus getula*), western rattlesnake (*Crotalus viridis*), mule deer, coyote (*Canis latrans*), gray fox, California quail, mourning dove, Anna's hummingbird, western scrub-jay, oak titmouse, California thrasher, California towhee, spotted towhee, rufous-crowned sparrow, and sage sparrow.

(5) Grassland Prairie/Valley Oak Savannah. Non-native annual grassland in Yolo County, although dominated by non-native grasses, supports most of the wildlife species historically associated with native grassland habitats and provides foraging habitat and cover for many wildlife species. Wide-ranging birds such as turkey vultures, red-tailed hawks, and coyotes (*Canis latrans*) are common in County grasslands. Raptors including golden eagles, white-tailed kites, and in winter ferruginous hawks forage in the grasslands. California ground squirrels (*Spermophilus beecheyi*), California voles (*Microtus californicus*), Botta's pocket gophers (*Thomomys bottae*) are common rodents that forage in grasslands and also provide prey for raptors, coyotes, foxes, and snakes. The northernmost population of California tiger salamanders (*Ambystoma californiense*) occurs in the Dunnigan Hills area of the County. This federally listed amphibians breeds in vernal pools and stock ponds, but spends most of its life below ground in rodent burrows in grasslands.

Wooded savannahs in the County provide a similar habitat function as oak woodlands. The acorn woodpecker, western kingbird (*Tyrannus verticalis*), yellow-billed magpie, and western bluebird (*Sialia mexicana*) are typical and conspicuous bird species of this habitat. Large isolated oaks in savannah habitat provide excellent nesting sites for a variety of raptor species including white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and Swainson's hawk (*Buteo swainsoni*).

(6) Remnant Oak Trees, Groves, and Tree Rows. Because trees are a limited resource within large agricultural areas in the County, they provide important nesting and roosting habitat for birds and raptor that forage over agricultural lands. These areas are particularly important to Swainson's hawks as they use these trees as nest sites and forage in the adjacent agricultural fields.

(7) Developed Areas. Urban and built-up areas with landscaping support common wildlife species that are adapted to the disturbed urban environment such as American crow, western scrub-jay, American robin, house finch, and northern raccoon. Non-native species such as the rock pigeon, European starling, and house sparrow, house mouse (*Mus musculus*), brown rat (*Rattus norvegicus*), and roof rat (*Rattus rattus*). During winter various migratory birds such as the yellow-rumped warbler are often common in urban areas landscaped with trees. Bats and Swainson's hawks have been noted to roost and nest in urban areas around Davis and Woodland. Other developed areas such as the North Pond and West Pond in Davis also attract abundant wildlife.

c. Special-Status Plant and Wildlife Species. This section describes special-status plant and wildlife species that may occur in Yolo County. For the purposes of this EIR, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA).
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California ESA.

- Plant species on Lists 1A, 1B and 2 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants.[64] Wildlife species designated as Species of Special Concern or Fully Protected by the California Department of Fish and Game (CDFG).
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the California Environmental Quality Act (CEQA) guidelines.
- Considered to be a taxon of special concern by the relevant local agencies.

Lists of special-status plants and wildlife that are known to occur or potentially occur in Yolo County were reviewed from the following existing reports: 2005 Background Report, Draft General Plan, and Ecological Baseline Report.[65] The 2009 California Natural Diversity Database (CNDDB) was also reviewed for records of special-status species in Yolo County.[66] Figures IV.J-2 and IV.J-3 show the 2009 CNDDB occurrences of special-status plants and animals in Yolo County. The California Native Plant Society's on-line Inventory of Rare and Endangered Plants was also reviewed for special-status plant records in Yolo County.[67] Other sources of information on special-status species that potentially occur in Yolo County include:

- Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, Biology of Covered Species; [68]
- California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1;[69]
- National Oceanic and Atmospheric Administration (NOAA). Green Sturgeon (*Acipenser medirostris*) on-line information;[70]
- Fish Species of Special Concern in California, Second Edition.[71]

Based on the review of these existing sources and databases and LSA's local knowledge of Yolo County, lists of special-status plants and animals were compiled to evaluate their potential to occur in Yolo County and are shown in Tables IV.J-1 and IV.J-2. Tables IV.J-1 and IV.J-2 include all the plant and animals species that were addressed in the three reports described above with the exception

[64] California Native Plant Society (CNPS). 2008. Inventory of Rare and Endangered Plants (online edition, v7-08d 10-5-08). California Native Plant Society, Sacramento, California. http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi/Home

[65] H.T. Harvey & Associates. 2005. op. cit.

[66] California Department of Fish and Game (CDFG). 2009. California Natural Diversity Database (CNDDB). *Rarefind*. Version 3.1.0. Last updated January 4, 2009. Special-status species occurrences in Yolo County. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game, Sacramento, California.

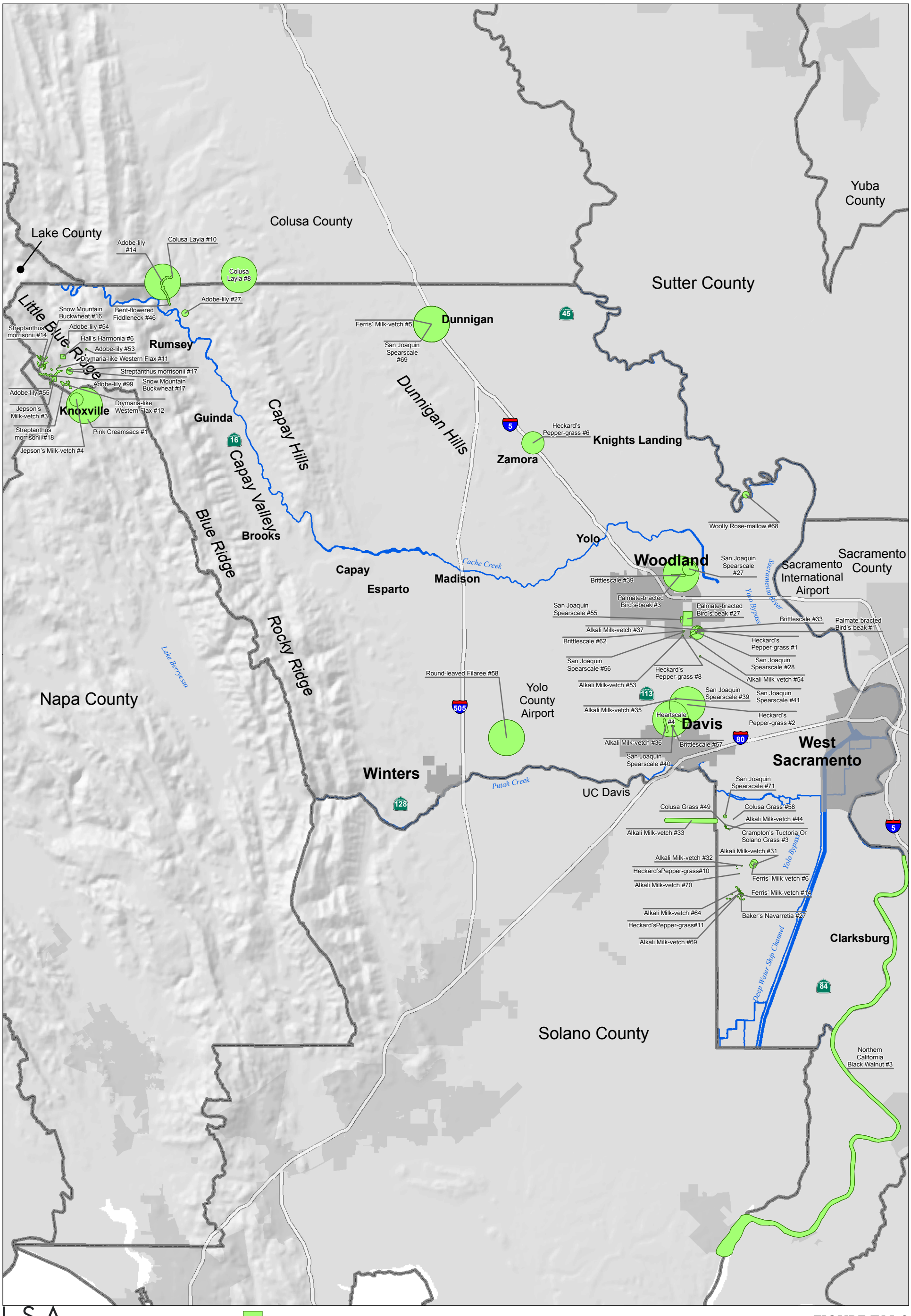
[67] California Native Plant Society (CNPS). 2008. op. cit.

[68] United States Fish and Wildlife Service (USFWS). 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, Biology of Covered Species. Portland, Oregon.

[69] Shuford, W.D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and game, Sacramento, California.

[70] National Oceanic and Atmospheric Administration (NOAA). Green Sturgeon (Acipenser medirostris). Accessed online at http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm on 1/8/2008.

[71] Moyle, P.B., Yoshiyama, R.M., Williams, J.E., and Wikramanayake, E.D. 1995. Fish Species of Special Concern in California, Second Edition. California Department of Fish and Game, Sacramento, California.



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Miles

Locations of Special-status Plants

Waterway

The sizes of the circles reflect the level of precision in mapping the location of the species occurrence. Smaller circles represent more precise locations; larger circles represent less precise locations. A non-circular location delineates the extent of an area that a species is known to occupy.

Source: County of Yolo GIS, 2006; Species information from the California Native Diversity Database (CNDDB, October 4, 2008)

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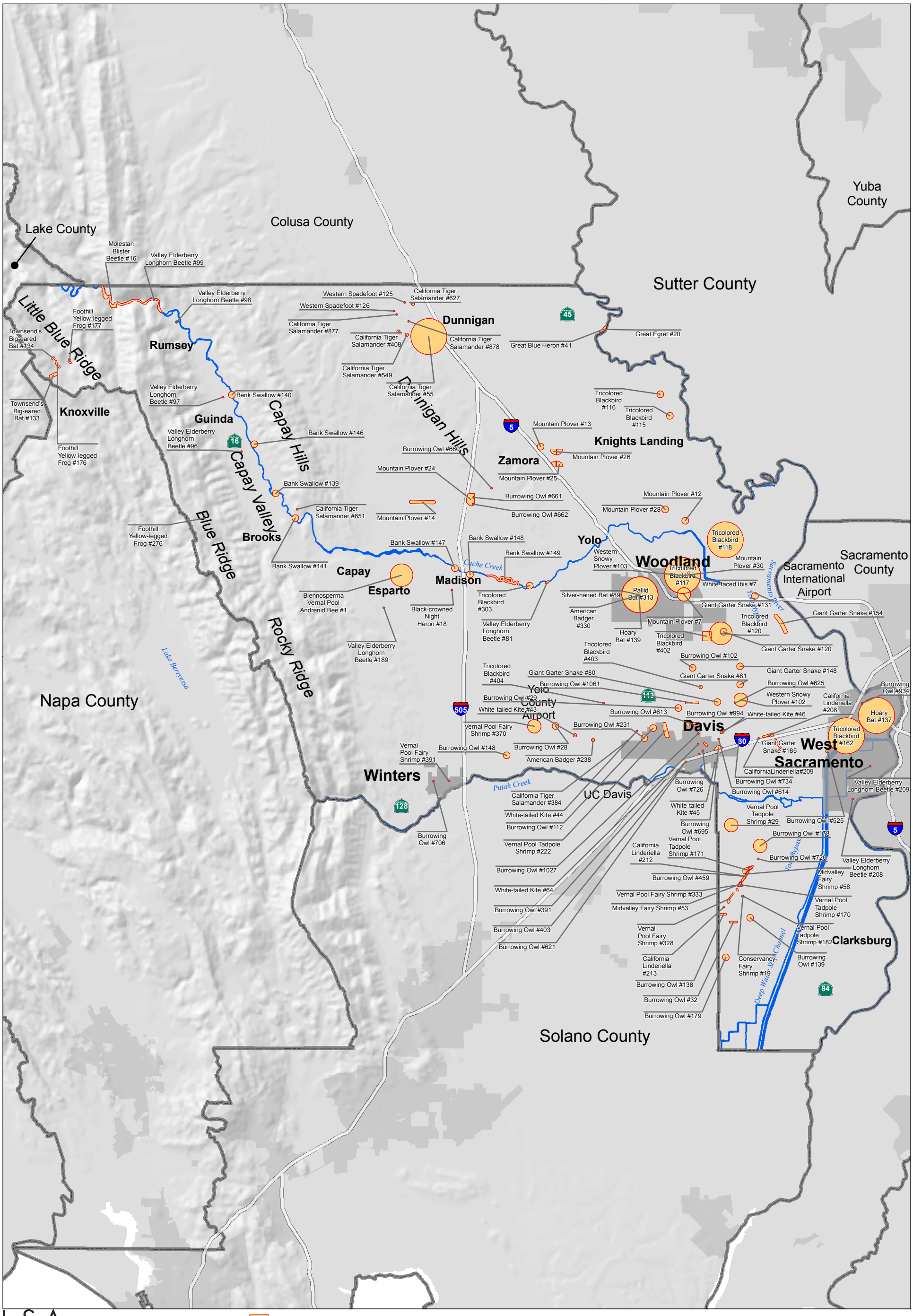
FIGURE IV.J-2

2030 Yolo County General Plan EIR Update

Special-status Plant Species Occurring in Yolo County



LSA

Locations of Special-status Animals

Waterway

The sizes of the circles reflect the level of precision in mapping the location of the species occurrence. Smaller circles represent more precise locations; larger circles represent less precise locations. A non-circular location delineates the extent of an area that a species is known to occupy.

Source: County of Yolo GIS, 2006; Species information from the California Native Diversity Database (CNDDB, October 4, 2008)

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FIGURE IV.J-3

2030 Yolo County General Plan EIR Update

Special-status Animal Species Occurring in Yolo County

Table IV.J-1: Special-status Plants Known to Occur or Potentially Occurring in Yolo County

Species	Status[a] (Federal/ State/ CNPS)	Habitat/Blooming Period	Potential to Occur in Yolo County
Bent-flowered fiddleneck *Amsinckia lunaris*	-/-/1B	Cismontane woodland and grassland. 50-500 meters. March-June	One CNDDB[b] record in the hills near Rumsey, north of Cache Creek. Potential to occur in suitable habitat in other areas of the County. Large tracts of grasslands and woodlands are primarily found in the western and northwestern portions of the County.
Jepson's milk-vetch *Astragalus rattanii* var. *jepsonianus*	-/-/1B	Cismontane woodland, grasslands, and chaparral. Often in serpentine soils. 320-700 meters. March-June	CNDDB[b] records in northwestern portion of County near Knoxville. Existing populations protected at the UC McLaughlin Reserve/Homestake Mine which is located in Yolo, Napa, and Lake Counties[c]. Potential to occur in other suitable habitat in other areas of the County. Serpentine soils occur primarily in the northwestern corner of the County on Little Blue Ridge.
Ferris' milk-vetch *Astragalus tener* var. *ferrisiae*	-/-/1B	Subalkaline flats on overflow land in meadows and valley and foothill grasslands. Usually seen in dry, adobe soil. 5-75 meters. April-May	CNDDB[b] record at DPR Tule Elk Reserve. There are CNDDB records that are possibly extirpated near Dunnigan and one at CDFG Glide Tule Ranch. Potential to occur in other suitable habitat in other areas of the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d]
Alkali milk-vetch *Astragalus tener* var. *tener*	-/-/1B	Low ground, alkali flats, and flooded lands in alkali playas, grasslands, and vernal pools. 1-170 meters. March-June	CNDDB[b] records in vernal pool complexes north of Davis and south and west of Sacramento. Potential to occur in other suitable alkaline habitat in the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d]
Heartscale *Atriplex cordulata*	-/-/1B	Alkaline flats and scalds within chenopod scrub, grassland, and meadows. Sandy soils. 1-150 (600) meters. April-October	One CNDDB[b] extirpated record north of Davis. Potential to occur in other suitable alkaline habitat in the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d]

Table IV.J-1 *Continued*

Species	Status[a] (Federal/ State/ CNPS)	Habitat/Blooming Period	Potential to Occur in Yolo County
Brittlescale *Atriplex depressa*	-/-/1B	Alkali scalds or alkaline clay meadows or annual grasslands in chenopod scrubs, playas, and valley and foothill grasslands, meadows and sometimes vernal pools. 1-320 meters. April-October	CNDDB[b] records around Woodland and Davis. Potential to occur in other suitable alkaline habitat in the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d]
San Joaquin spearscale *Atriplex joaquiniana*	-/-/1B	Seasonal alkali wetlands or alkali sink scrub in chenopod scrub, alkali meadow, and grasslands. 1-250 meters. April-October	CNDDB[b] records in the areas around Woodland and Davis. Potential to occur in other suitable alkaline habitat in the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d]
Round-leaved filaree *California macrophylla* [*Erodium macrophyllum*]	-/-/1B	Areas with clay soils in cismontane woodlands and grasslands. 15-1,200 meters. March-May	Single CNDDB[b] record west of Davis. Potential to occur in areas with suitable soils in the County.
Lagoon sedge *Carex lenticularis* var. *limnophila*	-/-/2	Lakeshores, beaches, bogs and fens, and marshes, and wetlands in north coast coniferous forest. 0-6 meters. June-August	CNPS[e] documents this species in Yolo County. No CNDDB[b] occurrences in Yolo County. Potential to occur in suitable wetlands throughout the County.
Pink creamsacs *Castilleja rubicundula* ssp. *rubicundula*	-/-/1B	Serpentine soils in chaparral, meadows and seeps, and grasslands. 20-900 meters. April-June	Single CNDDB[b] record near Knoxville. Existing populations protected at the UC McLaughlin Reserve/Homestake Mine which is located in Yolo, Napa, and Lake Counties[c]. Potential to occur in suitable habitat in other areas of the County. Serpentine soils occur primarily in the northwestern corner of the County on Little Blue Ridge.
Palmate-bracted bird's-beak *Cordylanthus palmatus*	FE/SE/1B	Alkaline soils in chenopod scrub and grassland. 5-155 meters. May-October	CNDDB[b] record near Woodland and record at Brauner Site. One extirpated CNDDB[b] record east of Woodland. Potential to occur in areas of suitable alkaline habitat in other areas of the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d]
Deep-scarred cryptantha *Cryptantha excavata*	-/-/1B	Cismontane woodland in sandy, gravelly, dry streambanks. 100-500 meters. April-May	CNPS[e] documents this species in Yolo County. No CNDDB[b] occurrences in Yolo County. Potential to occur in suitable habitat throughout the County.

Table IV.J-1 *Continued*

Species	Status[a] (Federal/ State/ CNPS)	Habitat/Blooming Period	Potential to Occur in Yolo County
Snow mountain buckwheat *Eriogonum nervulosum*	-/-/1B	Serpentine outcrops, balds and barrens in chaparral habitat. 300-2,105 meters. June-September	CNDDB[b] record near Knoxville and another record in Morgan Valley, but both are undated records. Existing populations protected at the UC McLaughlin Reserve/Homestake Mine which is located in Yolo, Napa, and Lake Counties[c]. Potential to occur in suitable serpentine habitat in other areas of the County. Serpentine soils occur primarily in the northwestern corner of the County on Little Blue Ridge. Chaparral occurs on Little Blue Ridge and in the other western portions of the County.
Adobe lily *Fritillaria pluriflora*	-/-/1B	Clay or serpentine soils in chaparral, cismontane woodland, and grassland. 60-705 meters. February-April	CNDDB[b] records in northwestern area of the County near Knoxville and Rumsey. Potential to occur in suitable habitat throughout the County.
Hall's harmonia *Harmonia hallii*	-/-/1B	Serpentine hills and ridges in open, rocky areas in chaparral habitat. 500-900 meters. April-June	CNDDB[b] records on Little Blue Ridge, north of Knoxville. Existing populations protected at the UC McLaughlin Reserve/Homestake Mine which is located in Yolo, Napa, and Lake Counties[c]. Potential to occur in suitable serpentine habitat in the County. Serpentine soils occur primarily in the northwestern corner of the County on Little Blue Ridge. Chaparral occurs on Little Blue Ridge and in the other western portions of the County.
Brewer's western flax *Hesperolinon breweri*	-/-/1B	Chaparral, cismontane woodland, and grassland. Often in rocky serpentine soil. 30-885 meters. May-July	No CNPS[e] or CNDDB[b] records in Yolo County but there are CNPS[e] and CNDDB[b] records in Solano County and this species could potentially occur in Yolo County. Its range appears to extend into Yolo County on unprotected private rangeland.

Table IV.J-1 *Continued*

Species	Status[a] (Federal/ State/ CNPS)	Habitat/Blooming Period	Potential to Occur in Yolo County
Drymaria-like western flax *Hesperolinon drymarioides*	-/-/1B	Serpentine soils, primarily in chaparral habitat but also in coniferous forests, cismontane woodland, and grassland. 390-1,000 meters. May-August	CNDDB[b] records near Knoxville. Existing populations protected at the UC McLaughlin Reserve/Homestake Mine which is located in Yolo, Napa, and Lake Counties[c]. Potential to occur in suitable habitat in other areas of the County. Serpentine soils occur primarily in the northwestern corner of the County on Little Blue Ridge. Chaparral occurs on Little Blue Ridge and in the other western portions of the County.
Woolly rose-mallow *Hibiscus lasiocarpus*	-/-/2	Freshwater marshes along river banks and islands in sloughs. Moist, freshwater-soaked river banks & low peat islands in sloughs. In California, known from the Delta watershed. 0-150 meters. June-September	CNPS[e] record in Yolo County. CNDDB[b] record in Sutter County in the Yolo Bypass, north of Sutter and Yolo County boundary. Potential wetland habitat occurs primarily in the southernmost portions of Yolo County.
Northern California black walnut *Juglans hindsii*	-/-/1B	Riparian forest and woodlands with deep alluvial soils. Few extant native stands remain; widely naturalized. 0-440 meters. April-May	One CNDDB[b] extirpated record along the Sacramento River, concentrated around Walnut Grove. Potential habitat occurs along riparian corridors, especially Cache Creek, Putah Creeks and the Sacramento River.
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	-/-/1B	Freshwater and brackish marshes. Usually on marsh and slough edges. 0-4 meters. May-July (September)	No CNPS[e] or CNDDB[b] records in Yolo County but there are CNPS[d] and CNDDB[b] records in surrounding counties and this species could potentially occur in suitable wetland habitats in Yolo County.
Colusa layia *Layia septentrionalis*	-/-/1B	Sandy or serpentine soil in chaparral, cismontane woodland, and grassland. 100-1,095 meters. April-May	CNDDB[b] records from the hills north of Rumsey and west of Winters. Potential to occur in suitable habitat in other areas of the County. Serpentine soils occur primarily in the northwestern corner of the County on Little Blue Ridge.
Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	-/-/1B	Grasslands and vernal pools; prefers alkaline soils. 2-200 meters. March-May	CNDDB[b] records between Davis and Woodland and near Zamora. Potential to occur in areas of suitable habitat in other areas of the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d] Vernal pool areas are located primarily in the southern areas of the County.

Table IV.J-1 *Continued*

Species	Status[a] (Federal/ State/ CNPS)	Habitat/Blooming Period	Potential to Occur in Yolo County
Mason's lilaeopsis *Lilaeopsis masonii*	-/-/1B	Freshwater and brackish marshes, riparian scrub in tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. 0-10 meters. April-November	No CNPS[e] or CNDDB[b] records in Yolo County but there are CNPS and CNDDB[b]records in surrounding counties and this species could potentially occur in suitable wetland habitats in Yolo County.
Baker's navarretia *Navarretia leucocephala* ssp. *bakeri*	-/-/1B	Vernal pools and swales within cismontane woodland, meadows and seeps, vernal pools, grassland, and lower montane coniferous forest. Adobe or alkaline soils. 5-1,740 meters. April-June	One CNDDB[b] record at Glide Tule Ecological Reserve near the western edge of the Yolo Bypass. Protected population occurs at Yolo County Grasslands Regional Park[c]. Potential to occur in areas of suitable habitat in other areas of the County. Alkaline areas are recorded northeast of Zamora, southeast of Woodland and in the Yolo Bypass south of West Sacramento.[c, d] Vernal pool areas are located primarily in the southern areas of the County, southeast of David.[c, d]
Colusa grass *Neostapfia colusana*	FT/SE/1B	Large or deep vernal pool bottoms with adobe soils. 5-200 meters. May-August	Two CNDDB[b] records at Davis Air Force Communication Facility, which is now part of the adjacent Yolo County Grasslands Regional Park; this location is designated as Critical Habitat. Potential to occur in areas of suitable habitat in other areas of the County. Vernal pool areas are located primarily in the southern areas of the County, southeast of David.[c, d]
Sanford's arrowhead *Sagittaria sanfordii*	-/-/1B	Standing or slow-moving freshwater ponds, marshes, and ditches. 0-610 meters. May-October	No CNPS[e] or CNDDB[b] records in Yolo County but there are CNPS[e] and CNDDB[b] records in Sacramento County and this species could potentially occur in suitable wetland habitats in Yolo County.
Green jewelflower *Streptanthus breweri* var. *hesperidis*	-/-/1B	Serpentine, rocky sites in openings in chaparral and cismontane woodland. 130-760 meters. May-July	No CNDDB[b] or CNPS[d] records in Yolo County. Existing populations protected at the UC McLaughlin Reserve/Homestake Mine which is located in Yolo, Napa, and Lake Counties[c].
Morrison's jewelflower *Streptanthus morrisonii* ssp. *kruckebergii*	-/-/1B	Chaparral and cismontane woodland in scattered serpentine outcrops. Near the Lake/Napa County line. 215-1,035 meters. April-July	Three CNDDB[b] records near Knoxville and east of Morgan Valley; subspecies believed to be *kruckebergii* but not confirmed. Potential to occur in suitable habitat in other areas of the County. Serpentine soils occur primarily in the northwestern corner of the County on Little Blue Ridge.

Table IV.J-1 *Continued*

Species	Status[a] (Federal/ State/ CNPS)	Habitat/Blooming Period	Potential to Occur in Yolo County
Solano grass (Crampton's tuctoria) *Tuctoria mucronata*	FE/SE/1B	Clay bottoms of vernal pools and lakes in grasslands. 5-10 meters. April-August	Single CNDDB[b] record at Davis Air Force Communication Facility, which is now part of the adjacent Yolo County Grasslands Regional Park; this location is designated as Critical Habitat. Vernal pool areas are located primarily in the southern areas of the County, southeast of David.[c, d]

[a] Status Codes
Federal
FE = Federally-listed as endangered
FT = Federally-listed as threatened
State
SE = State-listed as endangered
ST = State-listed as threatened
SR = State-listed as rare
CNPS (California Native Plant Society) List
1A = Presumed extinct in California
1B = Rare, threatened or endangered in California and elsewhere.
2 = Rare, threatened or endangered in California but common elsewhere.

References

[b] California Department of Fish and Game (CDFG). 2009. California Natural Diversity Database (CNDDB). *Rarefind*. Version 3.1.0. Last updated January 4, 2009. Special-status species occurrences in Yolo County. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game, Sacramento, California.

[c] H.T. Harvey & Associates. 2005. Yolo County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) Ecological Baseline Report. [d] County of Yolo. 2007. Yolo County Natural Heritage Program Regional Vegetation Dataset. Yolo County Regional Vegetation Geographical Information System (GIS) shapefile. Data prepared by Technology Associates.

[e] California Native Plant Society (CNPS). 2008. Inventory of Rare and Endangered Plants (online edition, v7-08d 10-5-08). California Native Plant Society, Sacramento, California. http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi/Home

Source: LSA Associates, Inc., 2009.

of species that are not generally addressed under CEQA such as CNPS List 3 and 4 plants and animals listed only as federal species of concern or only as a State watch list species. Tables IV.J-1 and IV.J-2 also include several new species not addressed in the previous reports, such as two plants that were in the 2008 CNPS database and animal species addressed in the Ecological Baseline Report. The tables includes the species' status, habitat, blooming period, information on known records in Yolo County, and the potential for the species to occur in Yolo County. The determination of whether a species could occur within Yolo County was based on the availability of suitable habitat within the County, the proximity of known species occurrences, and professional knowledge of the species' range and/or mobility.

Several regional parks and other protected public and private lands in Yolo County that support sensitive habitats and special-status species include the Vic Fazio Yolo Wildlife Area in the Yolo Bypass floodway, Helvetia Oaks Park and Elkhorn Park along the Sacramento River, Yolo County Grasslands Regional Park south of Davis, UC Davis, McLaughlin Reserve in northwestern Yolo County, Bobcat Ranch on the Blue Ridge, Elkhorn Basin Ranch along the Sacramento River,

Roosevelt Ranch near Zamora, several mitigation banks owned by Wildlands Inc., CDFG Glide Tule Ranch, DPR Tule Elk Reserve, Cache Creek Canyon Regional Park and Otis Ranch Open Space Area along Cache Creek at the northeastern boundary of Yolo County, Davis Wetlands, Cache Creek Nature Preserve in the lower Cache Creek corridor, future development of the Capay Open Space Park near the community of Capay in Western Yolo County, Clarksburg Boat Launch Facility south of the town of Clarksburg, Putah Creek Fishing Access Areas along Highway 128 west of Winters, the Knights Landing Boat Launch Facility along Highway 45 in the community of Knights Landing, and additional public open space lands and reserves managed by the U.S. Department of Interior's Bureau of Land Management (BLM), CDFG, and UC Davis.[72]

The following sections describe the occurrences of special-status plants and animals in Yolo County and includes species accounts for the federal and State listed plants and animals that are known to occur or likely to occur in Yolo County.

(1) Special-status Plants. Twenty-eight special-status plants were evaluated for their potential to occur in Yolo County (Table IV.J-1). Twenty-four of these species were historically or currently recorded in Yolo County and four of these species are not currently known to occur in Yolo County but could potentially occur there. Species accounts for federal and State listed plants that are known to occur or likely to occur in Yolo County are provided below. Information on the species' status and the potential to occur in Yolo County is summarized in Table IV.J-1 and is not repeated in the species accounts below.

Palmate-bracted Bird's Beak (*Cordylanthus palmatus*). Palmate bracted bird's-beak grows in saline-alkali soils in seasonally flooded lowland areas at elevations of approximately 20-900 meters. Like other members of the *Cordylanthus* genus, it is partially parasitic on the roots of host plants. This parasite-host relationship is often carried out with salt grass (*Distichlis spicata*). These highly specific habitat requirements, combined with the historically rare occurrence of saline-alkali environments in California, have made palmate bracted bird's beak highly susceptible to habitat destruction. The greatest threats to this species result from habitat degradation, resulting from drainage of seasonal wetlands, conversion of land to agricultural and urban uses, livestock grazing, and off-road vehicle use.[73] No critical habitat has been designated for this species.

Colusa Grass (*Neostapfia colusana*). Colusa grass grows in large and deep vernal pools, often with high mud content. It is restricted exclusively to the Sacramento and San Joaquin Valleys, and has no more than 45 occurrences in the entirety of its range.[74] The majority of vernal pool habitat in California has been destroyed or altered through drainage, invasive species, overgrazing, urban and agricultural expansion, and contamination; habitat loss and fragmentation that are the primary threats to the survival of this species. Critical Habitat has been designated for this species in Yolo, Merced, Tuolumne, and Stanislaus Counties. In Yolo County, there is a single area of Critical Habitat, Unit 1

[72] Jones & Stokes; Cotton Bridges Associates, Inc.; Fehr & Peer Associates, Inc,; House Agricultural Consultants, and Applied Development Economics. 2005. op. cit.

[73] United States Fish and Wildlife Service (USFWS). 1986. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for *Cordylanthus palmatus* (Palmate-Bracted Bird's-Beak). Federal Register 51:126. Washington, D.C.

[74] United States Fish and Wildlife Service (USFWS). 2005a. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. United States Fish and Wildlife Service, Portland, Oregon.

Table IV.J-2: Special-status Wildlife Known to Occur or Potentially Occurring in Yolo County

Species	Status [a] (Federal/ State)	Habitat	Potential to Occur in Yolo County
INVERTEBRATES			
Conservancy fairy shrimp *Branchinecta conservatio*	FE/-	Vernal pools in the grasslands of the Central Valley	One CNDDB[b] record in the extreme southern area of the County near Yolano. Suitable habitat in vernal pool complexes north of Davis and south and west of Sacramento.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/-	Vernal pools in the grasslands of the Central Valley, central coast mountains, and south coast mountains.	CNDDB[b] records in the southern portions of the County (primarily Yolo Bypass area) and DQ University[c]. Suitable habitat in vernal pool complexes north of Davis and south and west of Sacramento.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/-	Vernal pools and flooded swales containing clear to highly turbid water.	CNDDB[b] records in the far southern areas of the County in the Yolo Bypass area and at Grasslands Regional Park[c]. Suitable habitat occurs primarily in this region of the County.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/-	Endemic to the Central Valley of California, in association with blue elderberry (*Sambucus mexicana*) shrubs.	CNDDB[b] records from riparian corridors of the Sacramento River, Cache Creek, and Putah Creek. These are probably the areas with the most Suitable elderberry habitat in the County, although other riparian areas may be used if elderberry shrubs are present.
FISH			
Green sturgeon *Acipenser medirostris*	FT/-	Adults spend the majority of their lives in saltwater environments, but spawn in deep pools in freshwater rivers. Juveniles migrate back to the ocean.	Known to occur in the Yolo Bypass area[d] and to spawn in the Sacramento River[e]. Juveniles return to sea via the Sacramento River and estuary.
Delta smelt *Hypomesus transpacificus*	FT/ST	Inhabits estuarine environments with salinities between 2 parts per thousand and 14 parts per thousand. Spawns in freshwater.	CNDDB[b] records from the Sacramento River as far upstream as the confluence with the American River.
Steelhead – Central Valley ESU *Oncorhynchus mykiss*	FT/-	Deepwater river channel for upstream adult spawning migration; shallow streams with gravels and cold water for spawning and rearing habitat; rivers with complex edge habitats and vegetation for cover for downstream-migrating juveniles.	Central Valley steelhead use the Sacramento River as migratory habitat while they migrate to upstream tributaries to spawn[b], and also when juveniles migrate downstream to the ocean[f], making occurrence very likely.

Table IV.J-2 *Continued*

Species	Status [a] (Federal/ State)	Habitat	Potential to Occur in Yolo County
Chinook salmon- Central Valley spring run ESU *Oncorhynchus tshawytscha*	FT/ST	Cool, deep water pools for adult summer holding habitat; shallow streams with gravels and cold water for spawning and rearing habitat; rivers with complex edge habitats and vegetation for cover for downstream-migrating juveniles.	Spring-run chinook salmon use the Sacramento River as summer holding habitat while they migrate to upstream tributaries to spawn, and also when juveniles migrate downstream to the ocean[b,f], making occurrence very likely.
Chinook salmon- Sacramento River winter run *Oncorhynchus tshawytscha*	FE/SE	Deepwater river channel for upstream adult spawning migration December-August; shallow streams with gravels and cold water for spawning and rearing habitat; rivers with complex edge habitats and vegetation for cover for downstream-migrating juveniles during July-March.	Winter-run chinook salmon use the Sacramento River as habitat while they migrate to upstream tributaries to spawn, and also when juveniles migrate downstream to the ocean[b,f], making occurrence very likely.
Sacramento splittail *Pogonichthys macrolepidotus*	-/SSC	Slow moving rivers and sloughs with seasonal flooding for spawning.	CNDDB[b] records from the lower sections of the Sacramento and Feather rivers. This is likely the only suitable habitat in the County.
AMPHIBIANS			
California tiger salamander *Ambystoma californiense*	FT/SSC	Vernal pools, seasonal wetlands and stock ponds for breeding with underground refuges, often ground squirrel burrows nearby.	CNDDB[b] records in the Dunnigan Hills, the Capay Hills, and in Davis. Potential to occur in other areas of the County where there is suitable habitat, although not recorded.
Foothill yellow-legged frog *Rana boylei*	-/SSC	Shallow streams with rocky substrates and partial shade.	CNDDB[b] records from Cache and Davis Creeks in the western portion of the County. Suitable habitat may also be found in larger tributaries to Cache Creek and Putah Creek with year-round water, most likely in this western region.
California red-legged frog *Rana draytonii*	FT/SSC	Lowlands and foothills in or near permanent sources of deep water (generally 20 inches or deeper) with dense, shrubby or emergent riparian vegetation.	There are no known records of this species in Yolo County, but suitable habitat exists in ponds, lakes and reservoirs, permanent wetlands, and deep pools in streams in the western portions of the County. This could include foothill stock ponds, reservoirs such as the Davis reservoir, and riparian corridors along upper Cache and Putah Creeks and their tributaries.

Table IV.J-2 *Continued*

Species	Status [a] (Federal/ State)	Habitat	Potential to Occur in Yolo County
Western spadefoot toad *Scaphiopus hammondii*	-/SSC	Grasslands and open woodlands, with vernal pools, stock ponds, or other seasonal waterbodies for breeding. When not breeding lives underground in self-constructed and/or small mammal burrows.	CNDDB[b] records from the Buckeye Creek area near Dunnigan. Suitable habitat in vernal pool complexes north of Davis and south and west of Sacramento.
REPTILES			
Western pond turtle *Actinemys marmorata*	-/SSC	Completely aquatic, lives in ponds, marshes, rivers, streams, and irrigation ditches with deep pools (about 2 feet or greater); also requires accessible upland habitat for egg laying.	CNDDB[b] records in waterways near Davis. Suitable habitat in man-made ditches throughout the County, in creeks including Davis, Fisk, and Cache Creeks, the Sacramento River, and numerous ponds and reservoirs throughout the County.
Blainville's horned lizard[f] *Phrynosoma blainvillii*	-/SSC	Most common in lowlands along sandy washes with scattered low bushes.	This species is not known to occur in Yolo County[d]. Suitable habitat may be present in dry ephemeral drainages with sandy soils in low-elevation portions of the County.
Giant garter snake *Thamnophis gigas*	FT/ST	Freshwater marsh, low-gradient streams, drainage canals, and irrigation ditches.	CNDDB[b] records are concentrated in the area between Davis, Woodland, and the Sacramento River. Suitable habitat is present along lower Cache Creek, in irrigation ditches in the eastern portion of the County, the Yolo Bypass, and in the wetland areas in the southern portions of the County.
BIRDS			
Tricolored blackbird *Agelaius tricolor*	-/SSC (nesting colony)	Open water with emergent aquatic vegetation and abundant insect prey, also in milk thistle and Himalayan blackberry thickets.	CNDDB[b] records in marshes near Verona and Knight's Landing, in a reservoir near Woodland, along Cache Creek and the Sacramento River, at Conaway Ranch in the Yolo Bypass, Dunnigan Hills, Hungry Hollow, and near small ponds in various locations. Suitable habitat for nesting in other wetland, marsh, pond, stream, river, and reservoir areas of the County.
Grasshopper sparrow *Ammodramus savannarum*	-/SSC (nesting)	Dense grasslands (preferably native) on rolling hills, lowland plains and valleys, and on lower mountain slopes.	Several breeding records from annual grasslands in the Dunnigan Hills, Yolo Bypass area, and areas south of Davis[d]. Suitable habitat found in many areas of the County, with the majority of open grasslands occurring in the central and northern areas of the County.

Table IV.J-2 *Continued*

Species	Status [a] (Federal/ State)	Habitat	Potential to Occur in Yolo County
Golden eagle Aquila chrysaetos	-/CFP	Rolling foothills, with cliff-walled canyons or large trees for nesting.	Rare breeder in western Yolo County, and a winter resident of the Dunnigan Hills area.[d] Suitable habitat exists primarily in the western areas of the County.
Short-eared owl *Asio flammmeus*	-/SSC (nesting)	Nests in tall grass, emergent vegetation in swamps, lowland meadows, or irrigated alfalfa fields.	Suitable habitat located primarily in the agricultural areas of the central County, and the marshlands of the south County.
Long-eared owl *Asio otus*	-/SSC (nesting)	Riparian woodlands, with adjacent open land for hunting.	Few breeding records in the County[d]. Potential to occur in suitable habitat along many creeks and the Sacramento River.
Burrowing owl *Athene cunicularia*	-/SSC (nesting and wintering)	Open, dry grasslands, pasture lands,deserts and scrublands with low-growing vegetation and mammal burrows. Also along the edges of agricultural fields and levees.	CNDDB[b] records from numerous locations, primarily in the low-elevation grassland areas of the County. Significant breeding sites include the Yolo Bypass and areas east of Davis[c]. Potential to occur in suitable habitat throughout the County.
Swainson's hawk *Buteo swainsoni*	-/ST (nesting)	Nests in riparian, oak woodland,, roadside trees, and isolated trees in agricultural areas and to a lesser extent in grasslands.	CNDDB[b] records throughout much of the County. Suitable habitat occurs throughout most of the lowland in many areas of the County.
Western snowy plover *Charadrius alexandrinus nivosus (inland population)*	-/SCC	Sandy beaches, salt pond levees, and shores of large alkali lakes. Nests in sandy, gravelly or loose soils.	This is an uncommon winter visitor and does not breed in Yolo County. CNDDB[b] records near Davis and Woodland. Potential to occur in suitable habitat near water bodies in other parts of the County.
Mountain plover *Charadrius montanus*	-/SSC	Areas with short vegetation and bare ground in grasslands and agricultural areas.	CNDDB[b] records in agricultural areas throughout the County, with the exception of hilly areas to the northwest. Most sightings occur between Davis and Woodland and in the Yolo Bypass.[c] Potential to occur in suitable habitat in many areas.
Black tern *Chlidonias niger*	-/SSC (nesting colony)	Freshwater lakes, ponds, marshes, and flooded agricultural fields for nesting sites; coastal lagoons and estuaries during migration.	Several nesting in Yolo County, and small breeding populations in neighboring counties. Migratory records from wastewater treatment ponds in Woodland and Davis, and wetlands and flooded rice fields in the Yolo Bypass and the Colusa Bypass.[c,d]
Northern harrier *Circus cyaneaus*	-/SSC (nesting)	Salt and freshwater marshes, seasonal wetlands, pasture lands, agricultural fields, and nearby grasslands.	Occurs in wetlands, grasslands, and agricultural fields.[c] Suitable habitat located primarily in the agricultural areas of the central County, and the marshlands of the Yolo Bypass area.

Table IV.J-2 *Continued*

Species	Status [a] (Federal/ State)	Habitat	Potential to Occur in Yolo County
Western yellow-billed cuckoo *Coccyzus americanus occidenalis*	-/SE (nesting)	Nests in riparian forests along broad, flood-bottoms of large river systems.	This species once occurred in the area, as document by a single CNDDB[b] record near Clarksburg in 1896. Marginally suitable along portions of the Sacramento River Cache Creek, and Putah Creek, but probably not sufficiently large areas of habitat for breeding.[c]
Yellow warbler *Dendroica petechia brewsteri*	-/SSC (nesting)	Riparian forests, occasionally montane shrubbery in open conifer forests.	Breeding has not been documented in over three decades in Yolo County[c]. Observed primarily during migration[c]. Suitable habitat occurs primarily along the Sacramento River, and Cache and Putah Creeks. Some coniferous habitat occurs in the western foothill regions of the County.
White-tailed kite *Elanus leucurus*	-/CFP (nesting)	Open grasslands, meadows or marshes , and agricultural lands for foraging, and riparian woodlands, groves, and isolated trees for nesting and perching.	CNDDB[b] records primarily in the southeastern areas of the County near Davis and Woodland in agricultural areas. Suitable habitat exists in many other areas of the County. 2007 baseline surveys recorded 13 active nests.[c]
American peregrine falcon *Falco peregrinus anatum*	-/SE (nesting)	Near wetlands, lakes, rivers or other water; Nests on cliffs, banks, mounds, and human-made structures.	A rare breeder in western areas of the County, and an uncommon migrant and winter visitor in the lowland central and eastern regions[c]. Suitable habitat exists near Lake Berryessa and Davis Creek Reservoirs, and in the foothills of the western portions of the County. Occasionally observed in the Yolo Bypass during winter.[c]
Greater sandhill crane *Grus canadensis tabida*	-/ST	Winters in the Central Valley, using grain fields near shallow bodies of water as habitat.	Yolo County is outside the important Central Valley wintering habitat for this species, although they rarely stop at the Yolo Bypass area[c]. Suitable habitat in flooded rice field, fallow agricultural fields, and wetlands, primarily located in the eastern and southern portions of the County.
Bald eagle *Haliaeetus leucocephalus*	-/SE (nesting and wintering)	Ocean shore, lake margins, and rivers with large trees for nesting nearby.	One extant breeding site in Yolo County near Davis Creek Reservoir. Other potential breeding habitat exists in the Cache Creek watershed. Cache Creek Canyon is an important wintering area for bald eagles.[c]

Table IV.J-2 *Continued*

Species	Status [a] (Federal/ State)	Habitat	Potential to Occur in Yolo County
Yellow-breasted chat *Icteria virens*	-/SSC (nesting)	Dense riparian thickets with willow near waterways for nesting.	Summer resident; a small population persists along Putah Creek, downstream from Monticello Dam.[c, d] Suitable habitat exists along Cache Creek, the Sacramento River, and other riparian areas in the County.
California black rail *Laterallus jamaicensis coturniculus*	–/ST	Salt marshes bordering larger bays, also found in brackish and freshwater marshes.	No CNDDB records of this species, but small populations occur in Sacramento, Solano, and San Joaquin Counties. Breeding and/or wintering populations may exist in wetlands in the Yolo Bypass.[d]
Least bittern *Ixobrychius exilis*	-/SSC (nesting)	Wetlands and marshes with tall emergent vegetation.	Recent records from the Yolo Basin Wildlife Refuge and the Conaway Ranch. Potential to occur in others portions of the southern panhandle, Davis Wetlands, and the Roosevelt Ranch.[c]
Loggerhead shrike *Lanius ludovicianus*	-/SSC (nesting)	Shrubs and low trees in grasslands, savannas, pasturelands, and farmlands. Avoids continuous riparian or hedge row habitat, but suitable if intermittent. Requires perches including fence rows, posts, shrubs, etc.	Widespread, but under-reported throughout much of the County. Suitable habitat occurs throughout the lowland portions of the County and in open areas in the higher elevations.[c]
American white pelican *Pelecanus erythrorhynus*	-/SSC (nesting colony)	Wetland, marshes, lakes, rivers and estuaries.	This species does not breed in Yolo County.[d] Occurs as a winter visitor, most likely in the southern portions of the County.
Purple martin *Progne subis*	-/SSC (nesting)	Woodlands and low elevation coniferous forests, with tall trees with woodpecker cavities or human-made structures for nesting.	No Yolo County breeding records for many decades except at a bridge in Davis in 2003, which was not occupied thereafter.[c] Nearest other breeding records from Old Town Sacramento along the Sacramento River, and from Davis[d]. Suitable habitat exists in many other areas of the County.
Bank swallow *Riparia riparia*	-/ST (nesting)	Nests colonially in banks and cliffs near streams, rivers, lakes or ocean.	Recent breeding records include four sites along the Sacramento River in Yolo County in 2000, Other relatively recent records occur on Cache Creek (1987 and 2001).[c] CNDDB[b] records from the Sacramento River and lower Cache Creek. Suitable habitat may exist along Putah Creek and middle Cache Creek, and near lakes or ponds.

Table IV.J-2 *Continued*

Species	Status [a] (Federal/ State)	Habitat	Potential to Occur in Yolo County
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	-/SSC (nesting)	Freshwater wetlands with emergent vegetation and abundant invertebrate prey, including lakes and ponds.	Intermittent records from the Trestle Ponds east of Woodland and the City of Davis Wastewater Treatment Facility.[c] Other potential breeding habitat at restored sites at the Yolo Basin Wildlife Area and the Roosevelt Ranch[c].
Redhead *Aytha americana*	-/SSC (nesting)	Large, deep bodies of water; nests in freshwater emergent wetlands	Known to breed near Woodland and in the Yolo Bypass area.[h]
MAMMALS			
Pallid bat *Antrozous pallidus*	-/SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Man-made roosts are also used.	CNDDB[b] records in the vicinity of Woodland and Davis. Potential to occur in many other areas of the County with suitable habitat.
Ringtail *Bassariscus astutus*	-/CFP	Rock outcrops, large hollow trees, in scrub and riparian areas.	Suitable habitat occurs in the rocky, montane areas in the western portions of the County, and in dense foothill riparian areas along Putah and upper Cache Creeks and their tributaries.
Townsend's big-eared bat *Corynorhinus townsendii*	-/SSC	Caves, tunnels, mines and bridges, most commonly near mesic sites.	CNDDB[b] records from mines northwest of Knoxville. Potential to occur in suitable habitat in caves, mines, bridges or abandoned buildings throughout the County.
Western mastiff bat *Eumops perotis*	-/SSC	Conifer and deciduous woodlands, grasslands, chaparral, and other arid and semi-arid habitats. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	There are no Yolo County roosting records or high, rocky cliff areas in the County.[d] Potential to occur in suitable roosting sites in more the more arid northern and western areas of the County.
Western red bat *Lasiurus blossevillii*	-/SSC	Occurs in riparian woodland and forages over water and riparian vegetation. Roosts in foliage, does not form colonies.	Yolo County is within this species geographic range and it is expected to occur in high quality riparian habitats such as along Putah Creek.
American badger *Taxidea taxus*	-/SSC	Dry, open shrublands, forest, and grasslands with friable soils.	Potential to occur in suitable habitat in open-space grassland areas, especially in low-elevation central areas of the County.

[a] Status Codes
FE = Federally listed as endangered
FT = Federally listed as threatened
SE = State-listed as endangered
ST = State-listed as threatened
SSC = California Species of Special Concern
CFP = California Fully Protected Species

Table notes continued on next page.

References:

[b] California Department of Fish and Game (CDFG). 2009. California Natural Diversity Database (CNDDB). *Rarefind*. Version 3.1.0. Last updated January 4, 2009. Special-status species occurrences in Yolo County. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game, Sacramento, California.

[c] Estep, Jim, Principal Estep Environmental Consulting. Personal communication with LSA Associates, Inc., 2009.

[d] H.T. Harvey & Associates. 2005. Yolo County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) Ecological Baseline Report.

[e] National Oceanic and Atmospheric Administration (NOAA). Green Sturgeon (Acipenser medirostris). Accessed online at http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm on 1/8/2008.

[f] Moyle, P.B., Yoshiyama, R.M., Williams, J.E., and Wikramanayake, E.D. 1995. Fish Species of Special Concern in California, Second Edition. California Department of Fish and Game, Sacramento, California.

[g] Blainville's horned lizard was formerly named the coast horned lizard (*Phrynosoma coronatum*), but a recent taxonomic revision of this species provides evidence that the coast horned lizard is composed of four distinct species one of which, Blainville's horned lizard, is found in the United States (see Crother, 2008).

[h] Shufford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Source: LSA Associates, Inc., 2009.

(Figure IV.J-4). Unit 1 occurs southeast of the City of Davis and south of the South Fork of Putah Creek. The western boundary coincides with the Solano/Yolo County line, and the site includes the former Davis Air Force Communication Facility (Davis Communications Annex) population of this species, which was recently added to the adjacent Yolo County Grasslands Regional Park.[75]

Solano Grass (*Tuctoria mucronata*). Solano grass is found growing in the clay bottoms of drying vernal pools and lakes in valley grassland. It is known from only Solano and Yolo County, and has only two total recorded occurrences in those counties.[76] The primary threats to this species are habitat loss and fragmentation due to alteration of hydrology/draining, overgrazing, off-road vehicle use, and competition with non-native invasive plants. As an endemic species with a small natural range, this species is particularly vulnerable to extinction. Critical Habitat has been designated for this species, and is restricted to a single site in Davis, Unit 1 (Figure IV.J-4). Unit 1 occurs southeast of the City of Davis and south of the South Fork of Putah Creek. The western boundary coincides with the Solano and Yolo County line, and the site includes the Davis Air Force Communication Facility (Davis Communications Annex) population of Solano grass, which was recently added to the adjacent Yolo County Grasslands Regional Park.[77]

(2) Special-status Wildlife. Fifty-one special-status animals were evaluated for their potential to occur in Yolo County as listed in Table IV.J-2. These species were historically or currently recorded in Yolo County. Species accounts for federal and State listed animals that are known to occur or likely to occur in Yolo County are provided below. Information on the species' status and the potential to occur in Yolo County is summarized in Table IV.J-2 and is not repeated in the species accounts below.

[75] United States Fish and Wildlife Service (USFWS). 2006a. Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for Four Vernal pool Crustaceans and Eleven Vernal Pool Plants; Final Rule. Federal Register 71:28. Washington, D.C.

[76] USFWS. 2005a. op. cit.

[77] USFWS. 2006a. op. cit.

Conservancy Fairy Shrimp (*Branchinecta conservatio*). Habitat for conservancy fairy shrimp consists of large, clear to turbid vernal pools. The shrimp are active from early November through early April, during which time they lay their eggs. These vernal pools are ephemeral in nature, and dry out during the summer months. The eggs (cysts) are highly resistant to heat, cold, and desiccation, and remain in the pool soil until water accumulates during the rainy season. Because of their complete dependence on intact vernal pools for their lifecycle, conservancy fairy shrimp are extremely vulnerable to habitat degradation and fragmentation effects, as discussed for vernal pool plants, above. Critical Habitat has been designated for this species in California in Butte, Colusa, Mariposa, Merced, Solano, Stanislaus, Tehama, and Ventura Counties. The Critical Habitat unit nearest to Yolo County is Unit 3, located near Travis Air Force Base in Solano County.[78]

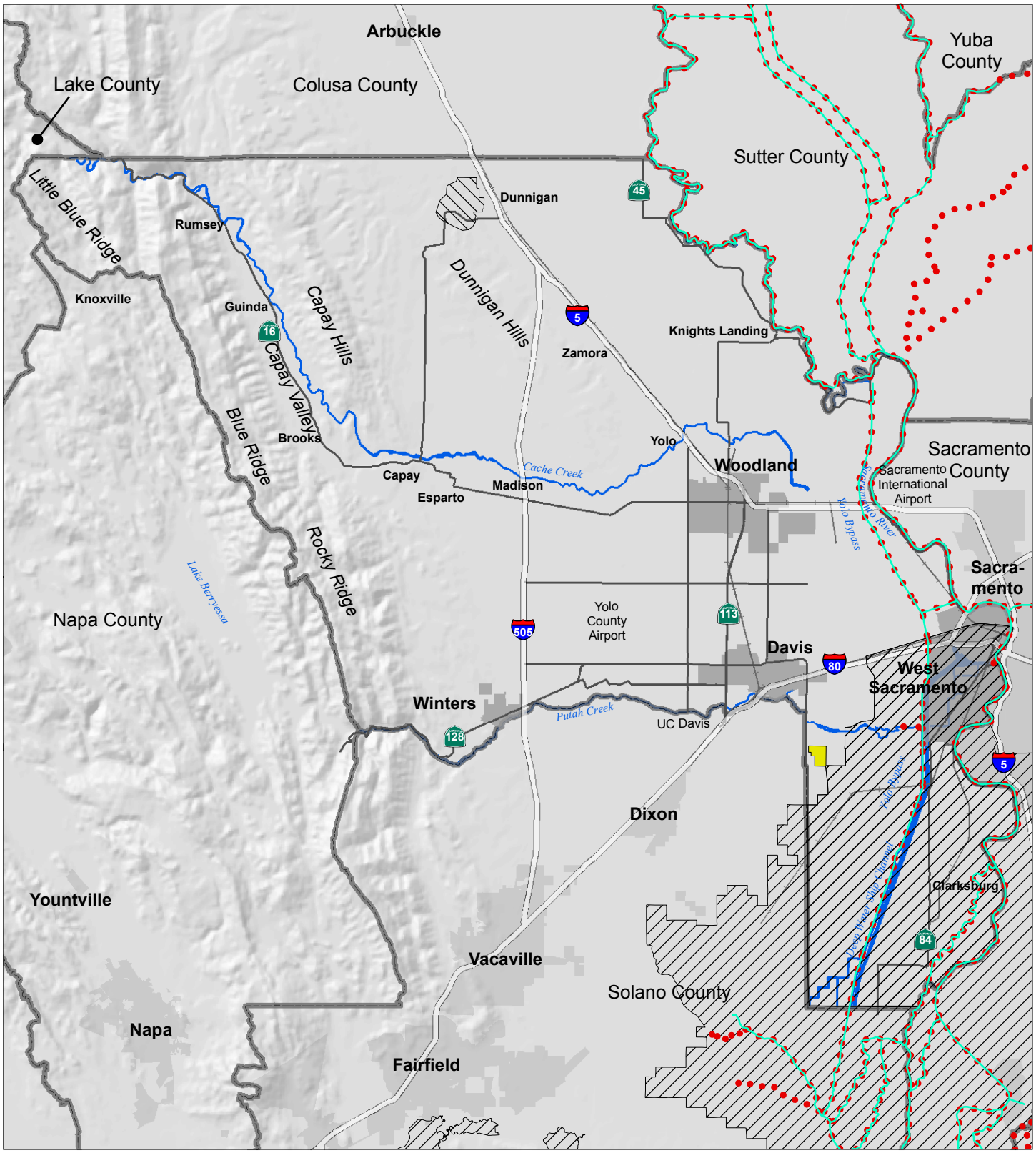
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*). Vernal pool fairy shrimp requires vernal pool habitats, and are tolerant of a wide range of vernal pool types, from small, clear and rocky pools to large, turbid playa-type pools. The species appears to prefer smaller pools, however, usually of less than 0.5 acre in size. Vernal pool fairy shrimp are found in 28 counties of California, including the coast range, southern areas, and Central Valley. While this species' distribution is fairly wide relative to other vernal pool crustaceans, it is generally uncommon throughout its range and not abundant where it does occur. Critical Habitat for this species in California has been designated in Alameda, Amador, Butte, Contra Costa, Fresno, Kings, Madera, Mariposa, Merced, Monterey, Napa, Placer, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Shasta, Solano, Stanislaus, Tehama, Tulare, Venture, and Yuba Counties. The Critical Habitat unit that occurs closest to Yolo County is Unit 7, located near Marysville in Yuba County.[79]

Vernal Pool Tadpole Shrimp (*Lepidurus packardi*). Vernal pool tadpole shrimp prefer large, turbid, playa-type vernal pool habitat. Their life history pattern is similar to that of other vernal pool crustaceans, with an adult water-dwelling phase and a summer cyst/egg phase adapted to ephemeral wetlands. This species is found only in the Central Valley and San Francisco Bay Area of California, and is not abundant (often found in less than 20 percent of vernal pools surveyed) even in vernal pool areas. Critical Habitat has been designated for this species in Alameda, Amador, Butte, Colusa, Fresno, Kings, Madera, Merced, Sacramento, Shasta, Solano, Stanislaus, Tehama, Tulare, Yolo, and Yuba Counties, California. Critical Habitat in Yolo County consists of Unit 10, located southeast of the City of Davis and south of the South Fork of Putah Creek (coincides with Colusa and Solano Grass Unit 1) (Figure IV.J-4). The western boundary coincides with the Solano and Yolo County line, and includes the former Davis Air Force Communication Facility (Davis Communications Annex), which was recently added to the adjacent Yolo County Grasslands Regional Park .[80]

[78] Ibid.

[79] Ibid.

[80] Ibid.



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Source: County of Yolo GIS, 2006.

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California Tiger Salamander

Delta Smelt

Central Valley Steelhead

Central Valley Spring-run Chinook

Vernal Pool Tadpole Shrimp, Colusa Grass (Neostapfia colusana), & Solano Grass (Tuctoria mucronata)

FIGURE IV.J-4

2030 Yolo County General Plan EIR Update

Critical Habitats Designated in Yolo County

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). The habitat for valley elderberry longhorn beetles consists of blue elderberry shrubs (*Sambucus mexicana*), often in association with riparian woodland and forest. The valley elderberry longhorn beetle carries out its life cycle in association with the elderberry shrubs. The adults lay their eggs within the pith of the elderberry stems, where the larvae grow and feed, and eventually emerge as adults. The primary threat to the species is habitat loss, as elderberries grow primarily in riparian areas, which have been heavily impacted by anthropogenic activities such as urbanization, river channelization and drainage, and agriculture. Critical Habitat has been designated for this species in Sacramento County is along the American River and is comprised of 3 units.[81]

Green Sturgeon (*Acipenser medirostris*). Green sturgeon spend the majority of their lives in nearshore oceanic environments such as bays and estuaries. Adults use freshwater spawning areas in deep riverine habitats. This species is long-lived and slow-growing, with spawning beginning at approximately 15 years of age at 2-5 year intervals. Green sturgeon are found from Mexico to Alaska, although they are believed to spawn primarily in the Rogue, Klamath, and Sacramento Rivers due to anthropogenic modification of spawning habitat. Threats to the species primarily center on reductions to spawning area. Insufficient freshwater flow, contaminants, poaching, bycatch and entrainment, impassable barriers, and elevated water temperatures all contribute to this reduction in spawning potential. In addition, the current small population size and the species' long life history cycle further inhibit green sturgeon's reproductive success. The National Marine Fisheries Service (NMFS) and the National Oceanic and Atmospheric Administration (NOAA) proposed Critical Habitat for green sturgeon in November 2008 in California coastal waters from less than 110 meters deep from Monterey Bay, California, northwards; the Sacramento River, lower Feather River, and lower Yuba River; the Sacramento-San Joaquin Delta and Suisun, San Pablo, and San Francisco Bays; and Humboldt Bay. Proposed Critical Habitat for this species in Yolo County occurs in the Yolo Bypass Area and in the Sacramento River.[82]

Delta Smelt (*Hypomesus transpacificus*). Delta smelt utilize brackish estuarine habitats exclusively in the Sacramento-San Joaquin Estuary, downstream to San Pablo Bay and upstream to the Sacramento River's confluence with the American River and the San Joaquin River's confluence with the Mossdale River. This species is anadromous and adults travel to freshwater to spawn from late winter to early summer and the majority of them die shortly thereafter. Their one year life cycle, unusually low fecundity (1,000-2,600 eggs per female), and limited range make this species highly vulnerable to environmental fluctuations. Historically, the delta smelt was extremely common. However, the population has decreased dramatically in recent years. The primary threats to the species are reductions in outflow from the estuary, entrainment during water diversion, extremely high outflow, changes in food organisms, toxic substances, disease, competition, predation, and loss of genetic diversity. Critical Habitat for this species has been designated, and is comprised of the waters contained in Suisun Bay; Goodyear, Suisun, Cutoff, First mallard, and Montezuma sloughs; and the Sacramento-San Joaquin Delta. This Critical Habitat extends into Yolo County, including the

[81] United States Fish and Wildlife Service (USFWS). 1980. Listing the Valley Elderberry Longhorn Beetle as a Threatened Species with Critical Habitat. Federal Register 45:155. Washington, D.C.

[82] National Oceanic and Atmospheric Administration (NOAA). 2008. Endangered and Threatened Wildlife and Plants: Proposed Rulemaking to Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon. Federal Register 73:213. Washington, D.C.

Sacramento Deepwater Channel, the Sacramento River, and the Yolo Bypass Area as shown in Figure IV.J-4.[83]

Steelhead (*Onchorhynchus mykiss*) – Central Valley ESU. Central Valley steelhead are anadromous trout that historically ranged throughout the Sacramento and San Joaquin River drainages. Their current range still encompasses these two river systems, but with less continuity and far fewer numbers. They have a polymorphic life history, whereby juvenile fish with either the anadromous steelhead trout or the coastal rainbow trout life history pattern can assume a life history different from their parents. This may be important in allowing them to survive fluctuating conditions in the Central Valley.[84] Primary threats to the species include introduction of hatchery stock/loss of genetic integrity, a substantial loss of habitat for spawning and rearing due to dam construction, and water temperature and volume fluctuations. Critical Habitat has been designated for this species in 67 watersheds in California. In Yolo County, Critical Habitat is found in the Sacramento Delta watershed, excluding the Deep Water Ship Channel as shown in Figure IV.J-4. [85]

Chinook Salmon (*Oncorhynchus tshawytscha*) - Central Valley Spring Run, Sacramento River Winter Run, and Central Valley Fall and Late-fall Run ESUs. Chinook salmon are anadromous fish that require both oceanic habitat for the majority of their adult lives and freshwater riverine and stream habitat for migration, spawning, and juvenile rearing. The Central Valley of California has three distinct Evolutionarily Significant Units (ESUs), each with unique genetics and life history patterns, which are designated by the season that they migrate to spawn.

Central Valley spring run chinook salmon migrate upstream in the spring, where they then hold in deepwater pools during the summer months, finally traveling upstream to spawn during the fall. Although this ESU was once widely distributed in the Sacramento-San Joaquin River system, its current spawning range consists only of Butte, Mill, Deer, Antelope, and Beegum Creeks, tributaries to the Sacramento River. Threats to this ESU include loss of genetic integrity through hybridization with fall-run salmon, small non-hybridized population size, and loss of habitat through damming activities. Critical Habitat has been designated for this ESU, and is comprised of 37 watersheds in California. In Yolo County, Critical Habitat is found in the Sacramento Delta Watershed, excluding the Deep Water Ship Channel as shown in Figure IV.J-4. [86]

Central Valley fall and late fall-run chinook salmon migrate upstream in late summer and fall, and spawn in the late fall, with variations from stream to stream. This ESU is currently the most abundant in the Central Valley, and many smolts are released from hatchery programs each year. The influence of hatcheries on the genetics of this ESU is of concern, as is the general population size, which has

[83] United States Fish and Wildlife Service (USFWS). 1994. Endangered and Threatened Wildlife and Plants; Critical Habitat Determination for the Delta Smelt. Federal Register 59:242. Washington, D.C.

[84] Moyle, P.B., Yoshiyama, R.M., Williams, J.E., and Wikramanayake, E.D. 1995. Fish Species of Special Concern in California. California Department of Fish and Game, Rancho Cordova, California.

[85] United States Fish and Wildlife Service (USFWS). 2006b. Endangered and Threatened Species; Designation of critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California; Final Rule. Federal Register 70:170. Washington, D.C.

[86] Ibid.

decreased from its historic levels. Loss of habitat to damming activity is also a concern for this ESU. No Critical Habitat has been designated for this ESU.[87]

Sacramento River winter run chinook salmon migrate upstream in the Sacramento River during winter and spring, and spawn spring through late summer. Historically, winter run Chinook spawned high upstream in Sacramento River tributaries, including the Pit, McCloud, and upper Sacramento Rivers. These areas are now inaccessible due to dams, which has negatively affected the population. Critical Habitat has been designated for this ESU, and is comprised of the Sacramento River from Keswick Dam (River Mile 302) to the margin of the Sacramento-San Joaquin Delta (River Mile 0) and all waters from Chipps Island westward to the Golden Gate Bridge. In Yolo County, Critical Habitat is located in the Sacramento River.[88]

California Tiger Salamander (*Ambystoma californiense*). California tiger salamanders utilize grasslands and oak woodlands below 1,500 feet in elevation with ponds, intermittent streams, or vernal pools nearby. During the dry season, adults aestivate in abandoned ground squirrel and pocket gopher burrows. Large, turbid vernal pools provide ideal habitat for tiger salamander breeding and for the development of the aquatic larvae. This species has declined significantly, due primarily to loss of habitat due to increased urbanization and loss of wetlands and native grasslands to agriculture. Other significant threats include predation of larvae by introduced predatory fishes and bullfrogs, reduced numbers of rodent burrows due to rodent control efforts, increased death by automobiles on roads, and introduction of other tiger salamander species which may hybridize with California tiger salamanders. Critical Habitat has been designated for this Central California population. Critical Habitat in Yolo County consists of a single unit, Unit 1, located near the Colusa-Yolo County line just west of Interstate 5 as shown in Figure IV.J-4. [89]

California Red-legged Frog (*Rana draytonii*). There are no records of this species in Yolo County, but potential habitat is located in the extreme western portion of the County (e.g., Blue Ridge, Little Blue Ridge, Rocky Ridge, and Capay Hills.) Habitat for California red-legged frog consists of ponds, streams and wetlands with emergent vegetation and open water, typically of a meter or more in depth. This species requires permanent or semi-permanent water sources, as the adults breed during the winter and spring months, after which the aquatic tadpoles require up to 20 months to mature. Adults use rodent burrows as shelters and hibernacula. This species' range is found almost entirely in California, and has been considerably reduced through habitat destruction and competition/ predation by non-native bullfrogs and fish. It is currently found in 23 California counties, primarily in the Coast Ranges but with small populations found in the Sierras. Critical Habitat for this species is currently under review, with new Critical Habitat proposed. Designated Critical Habitat occurs in California in Alameda, Butte, Contra Costa, El Dorado Kern, Los Angeles, Marin, Merced, Monterey, Napa, Nevada, San Benito, San Luis Obispo, San Mateo, Santa Barbara,

[87] National Oceanic and Atmospheric Administration (NOAA). 2004. Endangered and Threatened Species; Establishment of Species of Concern List, Addition of Species to Species of Concern List, Description of Factors for Identifying Species of Concern, and Revision of Candidate Species List Under the Endangered Species Act. Federal Register 69:73. Washington, D.C

[88] National Oceanic and Atmospheric Administration (NOAA). 1993. Designated Critical Habitat; Sacramento River Winter-Run Chinook Salmon. Federal Register 58:114. Washington, D.C.

[89] United States Fish and Wildlife Service (USFWS). 2005b. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population; Final Rule. Federal Register 70:162. Washington, D.C.

Santa Clara, Santa Cruz, Solano, Ventura and Yuba Counties. Proposed habitat expands this existing critical habitat. The nearest Critical Habitat Units to Yolo County are located in Napa County, near the Napa-Solano border near the intersection of Route 121 and 128, and in Solano County, between Interstate 80 and Highway 680 east of the cities of American Canyon and Vallejo.[90]

Giant Garter Snake (*Thamnophis gigas*). Giant garter snakes inhabit wetlands, lowland streams, sloughs, ponds, flooded rice fields, irrigation ditches, and drainage canals during their active season in early spring through mid-fall. Giant garter snake habitat consists of aquatic water habitat such as wetlands, streams, sloughs, ponds, and irrigation and drainage canals during their active season in early spring through mid fall. During their active period they require emergent vegetation for cover during escape and foraging and open grassy banks for basking. During their fall and winter dormant period, they require upland areas for refugia. Giant garter snakes are found only in the Central Valley of California. They have declined significantly due to habitat loss and fragmentation, which has been caused by flood control activities, expanding urbanization, changing agricultural and land management practices, predation by introduced species, parasites, and water pollution. Critical Habitat has not been designated for this species.[91]

Swainson's Hawk (*Buteo swainsoni*). Swainson's hawks use a variety of habitats for nesting, including riparian woodland, roadside trees, windbreaks, oak groves, isolated trees, farmyards, and rural residences. The majority of California's Swainson's hawks are migratory, wintering from Mexico to South America and breeding during the summer in the Central Valley, northeastern California, and the Owens Valley. Their historical high abundance has declined dramatically. Threats to the species relate to loss of nesting and foraging habitat. Loss of suitable nesting trees and loss of riparian habitat through flood control and bank stabilization programs, and expanding agricultural and urban areas have all contributed to this species' decline.[92] Swainson's hawk observations are shown in Figure IV.J-5.

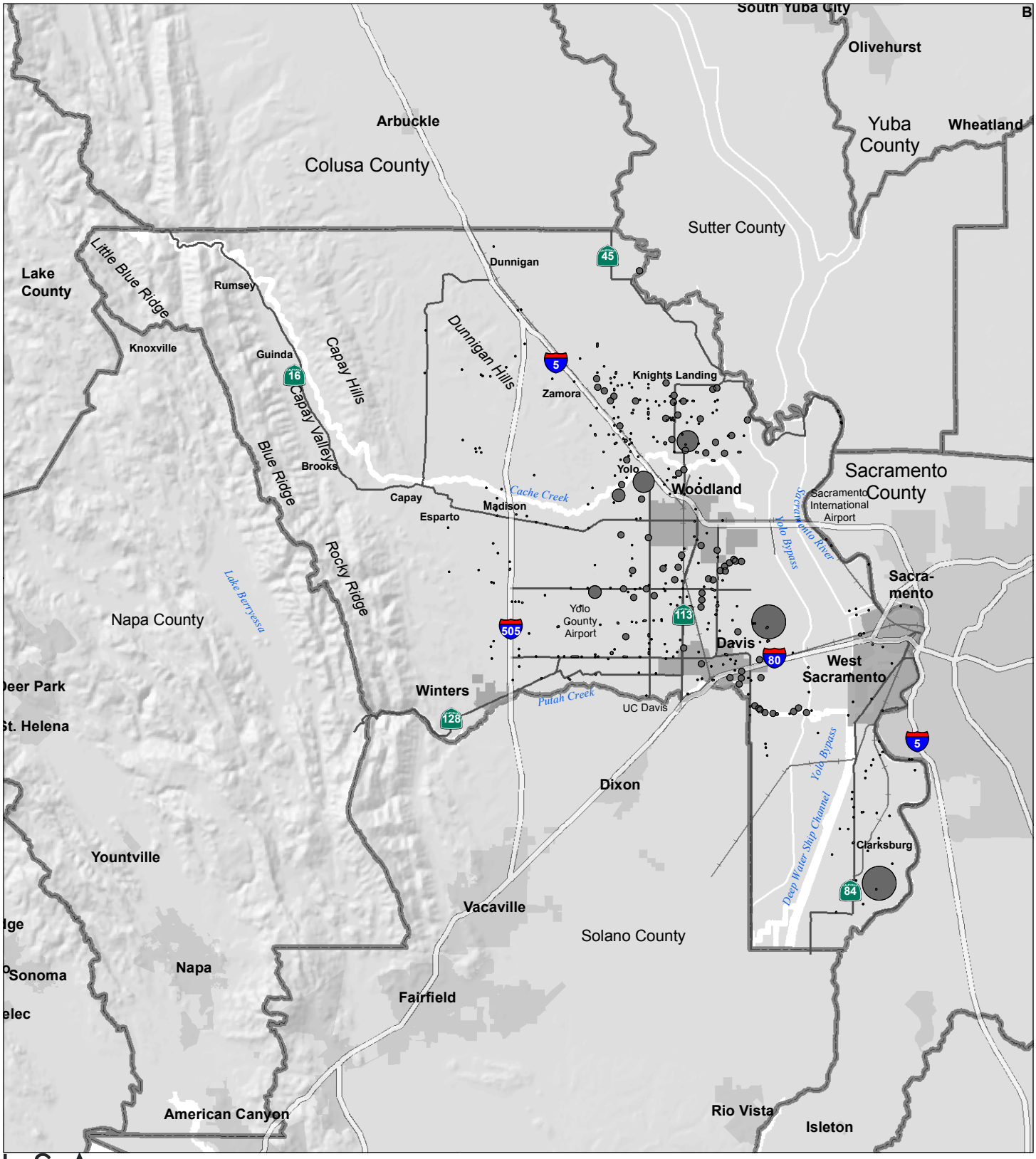
Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*). Habitat requirements for western yellow-billed cuckoos include extensive deciduous riparian forests (often with a dominant willow (*Salix* spp.) component) or thickets near slow-moving water courses, ponds, or springs. This species is a summer resident of California, arriving from its wintering grounds in South America in early summer. This species is extremely rare, with fewer than 50 pairs nesting in California.[93] The primary threat to this species is habitat destruction due to flood control and channelization activities and urban and agricultural expansion. No Critical Habitat has been designated for this species.

[90] United States Fish and Wildlife Service (USFWS). 2005c. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Red-legged Frog, and Special Rule Exemption Associated With Final Listing for Existing routine Ranching Activities; Final Rule. Federal Registor 71:71. Washington, D.C.

[91] United States Fish and Wildlife Service (USFWS). 2007. Species Account: Giant Garter Snake (*Thamnophis gigas*). Sacramento Fish and Wildlife Office, Sacramento, California.

[92] Anderson, R.L., Dinsdale, J.L., Schlorff, R. 2007. California Swainson's Hawk Inventory: 2005-2006. UC Davis Wildlife Health Center, Department of Fish and Game Resource Assessment Program. Davis, California.

[93] Laymon, S. A. 1998. Yellow-billed Cuckoo (*Coccycus americanus*). *In* The Riparian Bird Conservation Plan:a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. Accessed online at http://www.prbo.org/calpif/htmldocs/riparian_v-2.html on 1/9/2009.



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Swainson's Hawk Observation

Waterway

The sizes of the circles reflect the level of precision in mapping the location of the species occurrence. Smaller circles represent more precise locations; larger circles represent less precise locations. A non-circular location delineates the extent of an area that a species is known to occupy.

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Source: County of Yolo GIS, 2006; Species information from the California Native Diversity Database (CNDDB, October 4, 2008)

I:\CYK0701\GIS\Maps\EIR\Fig_IV.J-5_CNDDB_SwainsonsHawk.mxd (04/01/2009)

FIGURE IV.J-5

2030 Yolo County General Plan EIR Update

Swainson's Hawk Observations in Yolo County

American Peregrine Falcon (*Falco peregrinus anatum*). American peregrine falcons nest on ledges, large cliff faces, city buildings and bridges. Nesting and wintering sites may be located in a variety of habitats, including woodlands, forests, wetlands, cities, coastal areas, and agricultural areas. They are migratory, although many winter in California. This species is increasing and has been delisted at the federal level, although populations are still at low levels in some areas. Continuing threats to the species include poaching, human disturbance of nest sites, and poor nest productivity in urban areas.

Greater Sandhill Crane (*Grus canadensis tabida*). Greater sandhill cranes are migratory birds. They breed and spend their summers from Alaska and northern Canada south to northeastern California. The California Central Valley provides winter habitat in the form of fallow agricultural fields and grasslands for foraging, and flooded agricultural fields and marshes for roosting. Threats to this species in the Central Valley are primarily due to habitat loss through wetland draining and modification.[94]

Bald Eagle (*Haliaeetus leucocephalus*). Bald eagles utilize rivers, lakes and estuaries with large fish populations as foraging habitat. This species nests during the winter months and has been known to breed in northeastern California. However, in the Central Valley, bald eagles are uncommon migrants. Bald eagles have recovered sufficiently to have been delisted under the federal Endangered Species Act. The species continues to receive protection under the State Endangered Species Act. Threats to this species include contamination with pesticides, poaching, habitat loss, and human disturbance.[95]

Bank Swallow (*Riparia riparia*). Bank swallows are a colonial nester that require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, and the ocean for nesting. This species feeds primarily over grassland, shrubland, savannah, and open riparian areas during breeding season and over grassland, brushland, wetlands, and cropland during migration. Bank swallows are migrants that start arriving in California from South America in early March.[96] Colonies are vacant by late July or early August, and migrants are observed usually through early or mid-September.[97] Channelization and stabilization of banks of nesting rivers, and other destruction and disturbance of nesting areas, are major factors causing the marked decline in numbers in recent decades.[98]

[94] Tacha, T. C., S. A. Nesbitt and P. A. Vohs. 1992. Sandhill Crane (*Grus canadensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/031 on 1/9/2009.

[95] Buehler, David A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/506 on 1/9/2009.

[96] Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California. Account updated 1999. Account available online at http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx

[97] Ibid.

[98] California Department of Fish and Game. 1989. 1988 annual report on the status of California's state listed threatened and endangered plants and animals. Sacramento. 129pp.

d. Regulatory Framework. The regulatory framework associated with biological resources is described below.

(1) Federal Regulations. Federal regulations are described below.

Section 404 of the Clean Water Act. In 1972, Congress passed the Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), with the goal of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters."[99] In furtherance of this goal, the CWA prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under certain sections of the CWA.[100] Specifically, Section 404 authorizes the U.S. Army Corps of Engineers (Corps) to issue permits for and regulate the discharge of dredged or fill[101] materials into wetlands or other "waters of the United States." Under the CWA and its implementing regulations, "waters of the United States" are broadly defined to consist of rivers, creeks, streams, and lakes extending to their headwaters, including adjacent wetlands.

Activities that would result in the discharge of dredged or fill materials into "waters of the U.S." must obtain authorization from the Corps. Authorization to conduct activities generally prohibited by Section 404 can take the form of either a General Permit or an Individual Permit. Typically, General Permits, which include Nationwide Permits, Regional General Permits, and Programmatic General Permits, apply to specific classes of activities that have been determined to be capable of causing no more than minimal impact to the aquatic environment (e.g., construction of road crossings, installation of utility lines, and operations and maintenance activities), set out specific project conditions and other requirements.[102] Individual Permits are designed for activities that have the potential to have more than a minimal effect on jurisdictional waters or that otherwise do not qualify to proceed under a General Permit. Individual Permit applications are evaluated on a case-by-case basis and are made available for public review and comment through the publication of Public Notices, and are evaluated pursuant to the Section 404(b)(1) Guidelines[103] and the Corps' regulations.[104] The Guidelines and regulations contain a prohibition against projects that would result in significant degradation of water quality (which typically equates with compliance with state water quality standards pursuant to Section 401 of the CWA); and the requirement for "no net loss" of wetland functions and values, taking into account appropriate compensatory mitigation.

Section 10 of the Rivers and Harbors Act of 1899. Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403; Chapter 425, March 3, 1899; 30 Stat. 1151) requires authorization from the Secretary of the Army, acting through the Corps, for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course,

[99] 33 U.S.C. Section 1251(a).

[100] See 33 U.S.C. Sections 1311, 1342, and 1344.

[101] Fill material is defined as "any material used for the primary purpose of replacing an aquatic area with dry land or changing the outline elevation of a waterbody." This definition has been expanded to include mechanized land clearing or grading activities that result in the deposit of material subject to Section 404. 64 Fed. Reg. 25120 (1999).

[102] 33 C.F.R. Section 325.5(c).

[103] 40 C.F.R. Part 230.

[104] 33 C.F.R. Section Part 325.

location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, rechannelization, or any other modification of a navigable water of the United States, and applies to all structures, from the smallest floating dock to the largest commercial undertaking. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g. riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction.

In general, activities regulated under Section 10 of the Rivers and Harbors Act are similar to Section 404 of the CWA, but the geographic extent of jurisdiction is more restricted and is limited to traditionally navigable waters of the United States, such as the Sacramento River.

Federal Endangered Species Act. The United States Congress passed the Endangered Species Act (ESA) in 1973 to protect various species of plants, invertebrates, fish, and other wildlife from extinction. Section 9 of the ESA prohibits the taking of a listed fish or wildlife species. "Take" has been defined broadly to mean harass, harm, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct (16 U.S.C. section 1532(18) (1988)). "Harm" has been interpreted to mean an act which actually kills or injures wildlife, including those activities that cause significant habitat modification or degradation resulting in the killing or injuring of wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering (50 CFR 17.3). The day to day implementation of the ESA is done by the United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration – Fisheries (NOAA Fisheries). (7 U.S.C. Section 136; 16 U.S.C. Section 460 et seq.). Project-related impacts to federally-listed, proposed, and candidate species or their habitats are considered potentially "significant" under the *CEQA Guidelines* (discussed below).

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) (16 U.S.C., Section 703, Supp. I, 1989) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act.

Magnuson-Stevens Fishery Conservation Act. The Magnuson-Stevens Act (16 U.S.C., Sections 1801-1884) mandates federal agencies which fund, permit or carry out activities that may adversely impact the Essential Fish Habitat (EFH) of federally managed fish species to consult with NOAA Fisheries regarding the potential adverse affects of their actions on EFH. EFH is broadly defined by the Act to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." In this region, EFH waters essentially include the substrates and associated biological communities within bays and estuaries of the coasts of Washington, Oregon, and California, seaward from the high tide line (MHHW) or extent of upriver saltwater intrusion, including the Delta.

(2) State Regulations. State regulations are described below.

Section 401 Water Quality Certification. Pursuant to Section 401 of the CWA, states can certify or deny federal permits or licenses that might result in a discharge to State waters, including wetlands. 33 U.S.C. Section 1341. Section 404 permit applicants must obtain a "water quality certification" from the state water quality agency indicating that the proposed activity complies with all applicable state water quality standards, limitations, and restrictions. In California, the Regional Water Quality Control Boards (RWQCB) issue water quality certifications within their jurisdictions. Yolo County is within the jurisdiction of Central Valley RWQCB.

Porter-Cologne Water Quality Act. The Porter-Cologne Water Quality Act (Act) (California Water Code Section 13000–14920) regulates the discharge of waste that could affect the quality of the State's waters. Day to day implementation of the Act's waste discharge regulations are administered by the RWQCBs. Therefore, even if a project does not require a federal permit, it may still require a waster discharge requirement (WDR) from the RWQCB (e.g., for impacts to isolated wetlands and other waters). When reviewing WDR applications, the RWQCB focuses on ensuring the discharge will not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of construction and post-construction Best Management Practices (BMPs).

California Endangered Species Act. The California Endangered Species Act (CESA) (Fish & Game Code Sections 2050, et seq.) generally parallels the main provisions of the federal ESA and is administered by the California Department of Fish and Game (DFG). The CESA states that all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. Under the CESA, the term "endangered species" is defined as a species of plant, fish, or wildlife which is "in serious danger of becoming extinct throughout all, or a significant portion of its range." "'Threatened species'" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts."

The CESA prohibits "take" of any species that the Fish and Game Commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The Natural Community Conservation Planning Act (NCCP Act) was added to the CESA in 1991. (Fish & Game Code Sections 2800-2840). These provisions provide for voluntary cooperation among DFG, landowners, and other interested parties to develop natural community conservation plans which provide for early coordination of efforts to protect listed species or species that are not yet listed. The primary purpose of the NCCP Act is to preserve species and their habitats, while allowing reasonable and appropriate development to occur on affected lands.

Other Species Regulations. The Fish and Game Code also lists animal species designated as Fully Protected, which may not be taken or possessed. Fully Protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while Protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42.

Section 3503 of the Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders Falconiformes (hawks and eagles) or Strigiformes (owls) and their nests. These provisions, along with the federal MBTA, essentially serve to protect nesting native birds. Non-native species, including European starling, house sparrow, and rock pigeon, are not afforded any protection under the MBTA or California Fish and Game Code.

California Fish and Game Code Section 1600. Section 1602 of the California Fish and Game Code requires any person, state or local governmental agency to provide advance written notification to CDFG prior to initiating any activity that would: (1) divert or obstruct the natural flow of, or substantially change or remove material from the bed, channel, or bank of any river, stream, or lake; (2) result in the disposal or deposition of debris, waste, or other material into any river, stream, or lake.[105] The State definition of "lake, rivers, and streams" includes all rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life, and watercourses with surface or subsurface flows that support or have supported riparian vegetation.[106]

Under the Section 1602 Streambed Alteration Agreement process, applicants provide written notification to CDFG of a potential streambed alteration, and CDFG determines within 30 days if the notification is complete. Once a notification is deemed complete, CDFG reviews the proposed project's impacts on the existing fish and wildlife resources that are directly dependent on the waterway. If CDFG determines that the proposed activity will not substantially adversely affect an existing fish and wildlife resource, it notifies the applicant that no Streambed Alteration Agreement is required and the project may proceed.[107] If CDFG determines that the project may substantially adversely affect an existing fish and wildlife resource, it will require, as part of a Streambed Alteration Agreement, reasonable measures necessary to protect the fish and wildlife resource.[108]

Oak Woodlands Conservation Act. Under this code (Fish and Game Code Sections 1360-1372), a County shall make a determination about whether or not a project under its jurisdiction will result in a significant conversion of oak woodlands. If the County determines the effect is significant it may require compensatory mitigation. Options for compensatory mitigation include tree plantings, oak woodland conservation easements, restoration of former oak woodlands, or contributing to the Oak Woodlands Conservation Fund as established by CDFG for the purpose of purchasing oak woodlands conservation easements.

California Native Plant Society. California Native Plant Society (CNPS), a non-governmental conservation organization, has developed lists of plants of special concern in California. A CNPS List 1A plant is a species, subspecies, or variety that is considered to be extinct. A List 1B plant is considered rare, threatened, or endangered in California and elsewhere. A List 2 plant is considered rare, threatened, or endangered in California but is more common elsewhere. A List 3 plant is a

[105] Fish & Game Code Section 1602.

[106] 14 C.C.R. Section 1.72.

[107] Fish & Game Code Section 1602(a)(4)(A)(i).

[108] Fish & Game Code Section 1603(a).

species for which CNPS lacks necessary information to determine if it should be assigned to a list or not. A List 4 plant has a limited distribution in California.

All of the plant species on List 1 and List 2 meet the requirements of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and are eligible for State listing. Therefore, plants appearing on Lists 1 or 2 are considered to meet the *CEQA Guidelines'* Section 15380 criteria.

(3) Regional and Local Regulations. Regional and local regulations are described below.

Yolo County Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP). The Yolo County NCCP/HCP Joint Powers Agency (JPA) is currently preparing the Yolo County Natural Heritage Program (NHP Plan), which is a county-wide conservation planning effort designed to serve as an effective comprehensive Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) for a 653,820 acre planning area. The NHP Plan will establish a mechanism for conserving the natural open space and agricultural landscapes that provide habitat for many species protected by the FESA and CESA, and at-risk species found within the habitats and natural communities in the County.

Although the Yolo NHP Plan is still in the planning and preparation stage, it will likely include a broad conservation strategy that promotes a diverse array of agricultural crop types and preserves riparian and upland areas that provide suitable habitat for a variety of species. This would include preservation of large blocks of contiguous habitat that provide linkages between species' habitats and buffers from less desirable areas. The NHP also will likely include opportunities to enhance riparian and upland habitats as part of the conservation program.

Yolo County Oak Woodland Conservation and Enhancement Plan. The Yolo County Oak Woodland Conservation and Enhancement Plan was prepared in 2007 by the Yolo County Parks and Natural Resource Division to promote the conservation and enhancement of the County oak woodlands through the voluntary efforts of private landowners and public agencies.[109] The plan will help identify and coordinate voluntary oak woodland conservation and enhancement efforts opportunities in high-priority areas and provide funding and technical assistance for oak woodland conservation and enhancement projects. It also includes oak woodland conservation policy recommendations for the 2030 General Plan, guidance on oak woodland mitigation.

Swainson's Hawk Mitigation Program. The Yolo County NCCP/HCP Joint Powers Agency (JPA) administers a program for the County, and the cities of Davis, Woodland, Winters, and West Sacramento, to implement the agreement with the California Department of Fish and Game regarding impacts to Swainson's hawk foraging habitat. The JPA reviews applications for development of open land within the NCCP/HCP planning area and collects acreage-based mitigation fees for development of the lands. The mitigation fees are to be sufficient to fund the acquisition, enhancement, and long-term management of one acre of Swainson's hawk foraging habitat for every one acre of foraging habitat that is lost to urban development. The fee is currently $8,660 per acre. The interim program,

[109] Yolo County Parks and Natural Resource Division, Yolo County Planning, Resources and Public Works Department. 2007. The Yolo County Oak Woodland Conservation and Enhancement. January 16, 2007.

which is dependent on completion of the Yolo County NCCP/HCP, is limited to providing mitigation for impacts to foraging habitat and does not authorize incidental take of Swainson's hawks.

Delta Protection Commission Land Use and Resource Management Plan for the Primary Zone of the Delta. Recognizing the threats to the Primary Zone of the Delta from potential urban and suburban encroachment and the need to protect the area for agriculture, wildlife habitat, and recreation uses, the California Legislature passed and the Governor signed into law on September 23, 1992, the Delta Protection Act of 1992 (Public Resources Code **Section** 29760 et. seq). The Act directs the Delta Protection Commission to prepare a comprehensive resource management plan for land uses within the Primary Zone of the Delta. The planning conducted by the Delta Protection Commission involved preparation and public review of nine background reports: Environment; Utilities and Infrastructure; Land Use and Development; Water; Levees; Agriculture; Recreation and Access; Marine Patrol, Boater Education, and Safety Programs; and Implementation. These reports provided the information base for the Land Use and Resource Management Plan (LURMP) findings and policies, as well as allowing opportunities for public review and comment through circulation and public hearings before the Commission. The LURMP was adopted by the State in 1995 and adopted by Yolo County as a General Plan amendment on March 18, 1997 by Resolution No. 97-34.

The goals of the Plan as set out in the Act are to "protect, maintain, and where possible, enhance and restore the overall quality of the Delta environment, including but not limited to agriculture, wildlife habitat, and recreational activities; assure orderly, balanced conservation and development of Delta land resources and improve flood protection by structural and nonstructural means to ensure an increased level of public health and safety." Also pursuant to the Act, to the extent that any of the requirements specified in the LURMP are in conflict, nothing in the LURMP shall deny the right of the landowner to continue the agricultural use of the land.

The LURMP contains the following goals and policies concerning biological resources in the Primary Zone of the Delta:

Goals: Preserve and protect the natural resources of the Delta, including soils. Promote protection of remnants of riparian habitat. Promote seasonal flooding and agriculture practices on agricultural lands to maximize wildlife use of the hundreds of thousands of acres of lands in the Delta. Promote levee maintenance and rehabilitation to preserve the land areas and channel configurations in the Delta.

Environment Policies

- Policy P-3: Lands managed primarily for wildlife habitat shall be managed to provide several inter-related habitats. Deltawide habitat needs should be addressed in development of any wildlife habitat plan. Appropriate programs, such as "Coordinated Resource Management and Planning" (Public Resources Code Section 9408(c)) and "Natural Community Conservation Planning" (Fish and Game Code Section 2800 et seq.) should ensure full participation by local government and property owner representatives.

Land Use Policies

- Policy P-8: Local government policies regarding mitigation of adverse environmental impacts under the California Environmental Quality Act may allow mitigation beyond County boundaries, if acceptable to reviewing fish and wildlife agencies, for example in approved mitigation banks. Mitigation in the Primary Zone for loss of agricultural lands in the Secondary Zone may be appropriate if the mitigation program supports continued farming in the Primary Zone.

Agriculture Policies

- Policy P-8: Local governments shall encourage management of agricultural lands which maximize wildlife habitat seasonally and year-round, through techniques such as sequential flooding in fall and winter, leaving crop residue, creation of mosaic of small grains and flooded areas, controlling predators, controlling poaching, controlling public access, and others.

Water Policies

- Policy P-1: Local governments shall ensure that salinity in Delta waters allows full agricultural use of Delta agricultural lands, provide habitat for aquatic life, and meet requirements for drinking water and industrial uses.
- Policy P-2: Local governments shall ensure that design, construction, and management of any flooding program to provide seasonal wildlife habitat on agricultural lands shall incorporate "best management practices" to minimize mosquito breeding opportunities and shall be coordinated with the local vector control districts. (Each of the four vector control districts in the Delta provides specific wetland/mosquito management criteria to landowners within their district.)

Recreation and Access Policies

- Policy P-2: To minimize impacts to agriculture and to wildlife habitat, local governments shall encourage expansion of existing private water-oriented commercial recreational facilities over construction of new facilities. Local governments shall ensure any new recreational facilities will be adequately supervised and maintained.

Levees Policies

- Policy P-1: Local governments shall ensure that Delta levees are maintained to protect human life, to provide flood protection, to protect private and public property, to protect historic structures and communities, to protect riparian and upland habitat, to promote interstate and intrastate commerce, to protect water quality in the State and federal water projects, and to protect recreational use of the Delta area. Delta levee maintenance and rehabilitation shall be given priority over other uses of the levee areas. To the extent levee integrity is not jeopardized, other uses, including support of vegetation for wildlife habitat, shall be allowed.

2. Draft 2030 Countywide General Plan for Yolo County

The Draft General Plan contains numerous goals, policies and actions to protect biological resources. Policies that directly relate to biological resources protection are listed below. In addition to the policies that directly relate to the protection of biological resources, there are numerous goals, policies and actions that indirectly may help to protect biological resources, including: smart growth policies; policies to reduce air, water and soil pollution; policies to reduce the impacts of global climate change; green building policies; energy conservation, recycling and waste reduction policies; policies that favor pedestrian, bicycle and transit facilities; noise reduction policies; and hazardous waste control policies.

Land Use and Community Character Element

- Policy LU-3.8: Prohibit the designation of new urban development in places with one or more of the following characteristics:
    - Areas without adequate emergency services and utility capacity and where there are no capital improvement plans to pay for and construct new facilities that can accommodate the proposed development.

  - Areas where there are significant hazards and where there are no plans to adequately mitigate the risk (e.g. floodplains, high fire hazard areas, unstable soils, known seismic faults, etc.).
  - Areas where there are significant natural resources (e.g. groundwater recharge, wildlife habitat, mineral or timber resources, scenic areas, etc.).
  - Areas not contiguous to existing urban development.
- Policy LU-7.2: Support and participate in Countywide, regional and other multi-agency planning efforts related to housing, tourism, air quality, open space, green infrastructure, recreation, agriculture, habitat conservation, energy, emergency preparedness and flood protection.
- Policy LU-7.3: Coordinate with other stakeholder agencies and entities to continue local and regional planning efforts to preserve agriculture, open space and natural resources while meeting housing needs, basic infrastructure and service levels, County economic development goals and County fiscal objectives.
- Policy LU-7.4 :Work with SACOG and its other member jurisdictions to develop a mutually-acceptable plan for open space conservation, habitat protection and mitigation banking, to ensure that Yolo County is appropriately compensated when its land is used to achieve regionwide environmental benefits.
- Policy LU-7.5: Support efforts to adopt a regional tax measure that would fund agricultural and open space acquisition, protection and maintenance.
- Policy CC-1.5: Significant site features, such as trees, water courses, rock outcroppings, historic structures and scenic views shall be used to guide site planning and design in new development. Where possible, these features shall become focal points of the development.
- Policy CC-1.7: Reinforce the growth boundaries for each community through appropriate mechanisms including greenbelts, buffers, conservation easements and other community separators.
- Policy CC-1.11: Require the development of open space corridors, bicycle paths and trails integrating waterways, scenic areas and County parks where appropriate, in collaboration with affected land owners as a part of project approval . The intent is to connect each community and city and other special places and corridors, throughout the County.
- Policy CC-1.15: The following features shall be protected and preserved along designated scenic roadways and routes except where there are health and safety concerns:
    - Trees and other natural or unique vegetation
    - Landforms and natural or unique features
    - Views and vistas
    - Historic structures (where feasible), including buildings, bridges and signs
- Policy CC-1.17: Existing trees and vegetation and natural landforms along scenic roadways and routes shall be retained to the greatest feasible extent. Landscaping shall be required to enhance scenic qualities and/or screen unsightly views and shall emphasize the use of native plants and habitat restoration to the extent possible. Removal of trees, particularly those with scenic and/or historic value, shall be generally prohibited along the roadway or route.
- Policy CC-2.15: Develop all services, parks, buffers and infrastructure within identified community growth boundaries. Mitigation lands for the loss of agricultural land and wildlife habitat are the only component of community development that are allowed to be located outside of the growth boundaries.
- Policy CC-2.16: Require the following sustainable design standards as appropriate for projects located within the growth boundaries of the unincorporated communities:

  X. Protect and preserve to the greatest feasible extent creeks, riparian areas and other biological values within or adjoining an area.

- Policy CC-3.5: In addition to Table LU-10, achieve the following within the Dunnigan Specific Plan growth boundary:

  F. Avoid biological impacts to sensitive species and habitats, to the greatest feasible extent and fully mitigated where they occur, particularly inside designated critical habitat for the California tiger salamander.

- Policy CC-4.3: Reduce activities that encroach upon nature, through:
  - Reuse of existing buildings and sites for development.
  - Compact and clustered residential development, including reduced minimum lot sizes.
  - Reduction or elimination of impervious paving materials.
  - Development patterns that respect natural systems such as watersheds and wildlife corridors.
- Policy CC-4.11: Require site specific information appropriate to each application to enable informed decision-making, including but not limited to the following: biological resources assessment, noise analysis, traffic and circulation assessment, air quality calculations (including greenhouse gases), cultural resources assessment, geotechnical study, Phase One environmental site assessment, title report, storm drainage analysis, flood risk analysis, water supply assessment, sewer/septic capacity and service analysis and fiscal impact analysis.
- Policy CC-4.28: Design highway service commercial uses at identified rural interchanges to preserve surrounding agriculture, rural character, scenic quality and the natural environment.
- Action CC-A12: Seek voter approval of an intra-County and/or regional fee or tax for the preservation of agricultural, habitat, or open space land in Yolo County.

Public Facilities and Services Element

- Policy PF-1.2: Streamline the permitting process for the production of biofuels, biomass, and other energy alternatives to reduce dependency on fossil fuels.
- Policy PF-1.3: Provide financial and regulatory incentives for the installation of alternative energy and alternative energy conservation measures in all development approvals.
- Policy PF-1.4: Provide financial and regulatory incentives for the installation of alternate energy and other alternate energy conservation measures for agriculture.

Agriculture and Economic Development Element

- Policy AG-2.8: Facilitate partnerships between agricultural operations and habitat conservation efforts to create mutually beneficial outcomes.
- Policy AG-2.10: Encourage habitat protection and management that does not preclude or unreasonably restrict on-site agricultural production.
- Policy AG-2.13: Promote wildlife friendly farm practices, such as tailwater ponds, native species/grasslands restoration in field margins, hedgerows, ditch management for riparian habitat, restoration of riparian areas in a manner consistent with ongoing water delivery systems, reduction of pesticides, incorporating winter stubble and summer fallow, etc.
- Action AG-A29: Work with local agencies and non-profit organizations to develop best practices and incentives that support wildlife-friendly agriculture. (Policy AG-2.14)

Conservation and Open Space Element

- GOAL CO-1: Natural Open Space. Provide a diverse, connected and accessible network of open space, to enhance natural resources and their appropriate use.
- Policy CO-1.1: Expand and enhance an integrated network of open space to support, recreation, natural resources, historic and tribal resources, habitat, water management, aesthetics, and other beneficial uses.
- Policy CO-1.3: Create a network of regional parks and open space corridors that highlight unique natural resources and recreational opportunities for a variety of users.
- Policy CO-1.13: Within the Delta Primary Zone, ensure compatibility of permitted land use activities with applicable, natural open space policies of the Land Use and Resource Management Plan of the Delta Protection Commission.
- Policy CO-1.14: Support the preservation of open space consistent with this General Plan, via acquisition of fee title or easement interest by land trusts, government agencies, and conservanciesfrom willing landowners .
- Policy CO-1.15: Support efforts to acquire either fee title or easements on additional open space areas adjoining existing protected natural resource areas to increase the size, connectivity, and buffering of existing habitat.
- Policy CO-1.16: Coordinate open space acquisition with habitat acquisition that occurs pursuant to the Yolo Natural Heritage Program.
- Policy CO-1.17: Out-of-County mitigation easements in Yolo County for the loss of open space, agriculture, or habitat in other jurisdictions, and flood easements in Yolo County are generally acceptable, provided the easements meet the following criteria:
    - Prior notification to Yolo County;
    - Consistency with the goals and policies of the Yolo County General Plan, particularly as related to planned growth, infrastructure, and agricultural districts;
    - Secured water rights and infrastructure to economically maintain the proposed mitigation use;
    - Requirements that existing agricultural operations continue to be farmed for commercial gain;
    - Prohibitions on residential use;
    - Mandatory wildlife friendly strategies and practices;
    - Compensation to Yolo County for all lost direct and indirect revenue. Where proposed easements meet the identified criteria, no further approval is needed. Where one or more criteria are not met, discretionary approval is required; and
    - Accommodation of recreational uses, such as hunting, fishing, bird-watching, hiking, etc.

  Where proposed easements meet the identified criteria, no further approval is needed. Where one or more criteria are not met, discretionary approval is required.
- Policy CO-1.22: Emphasize the use of native grasses, shrubs and trees as the primary focus of landscaping work within resource parks and other open spaces.
- Policy CO-1.25: Allow for specified areas of resource parks to be preserved, enhanced and/or restored as mitigation sites for public agencies only, consistent with the requirements of appropriate regulatory and funding agencies, provided that adequate compensation, including funding for operations and maintenance of the mitigation, is provided.
- Policy CO-1.29: Balance the needs of agriculture with recreation, flood management, and habitat, within the Yolo Bypass.

- Policy CO-1.30: Require clustering and creative site planning in new development areas to preserve and enhance areas of contiguous open space to the extent feasible.
- Action CO-A3: Seek to acquire voluntary easements to ensure connectivity with the conservation areas established through the Blue Ridge Berryessa Natural Area Conservation Partnership.(Policy CO-1.1, Policy CO-1.3, Policy CO-1.8, Policy CO-1.16, Policy CO- 1.19)
- Action CO-A12: Cluster recreational improvements at various locations along Cache Creek, Lower Putah Creek, and the Sacramento River, to reduce habitat disturbance and provide efficient and cost-effective management by the County. (Policy CO-1.10)
- Action CO-A19: Allow public agencies to establish protect, and/or enhance habitat for mitigation purposes within specific areas of resource parks, consistent with the requirements of appropriate regulatory agencies, where an endowment is created to fund the monitoring and maintenance of the habitat. Allow non-profit organizations to manage such areas where appropriate. (Policy CO-1.1, Policy CO-1.15, Policy CO-1.26)
- Goal CO-2: Biological Resources. Protect and enhance biological resources through the conservation, maintenance, and restoration of key habitat areas and corresponding connections that represent the diverse geography, topography, biological communities, and ecological integrity of the landscape.
- Policy CO-2.1: Consider and maintain the ecological function of landscapes, connecting features, watersheds, and wildlife movement corridors.
- Policy CO-2.2: Focus conservation efforts on high priority conservation areas (core reserves) that consider and promote the protection and enhancement of species diversity and habitat values, and that contribute to sustainable landscapes connected to each other and to regional resources.
- Policy CO-2.3: Preserve and enhance those biological communities that contribute to the County's rich biodiversity including blue oak and mixed oak wood-lands, native grassland prairies, wetlands, riparian areas , aquatic habitat, agricultural lands, heritage valley oak trees, remnant valley oak groves, and roadside tree rows.
- Policy CO-2.4: Coordinate with other regional efforts (e.g., Yolo County HCP/NCCP) to sustain or recover special-status species populations by preserving and enhancing habitats for special-status species.
- Policy CO-2.5: Protect, restore and enhance habitat for sensitive fish species, so long as it does not result in the large-scale conversion of existing agricultural resources.
- Policy CO-2.6: Cooperate with the Department of Fish and Game in inventorying streams with spawning and rearing habitat, evaluating those streams' existing and potential habitat value, and determining current and potential fish population levels.
- Policy CO-2.7: Encourage streamside property owners and appropriate public agencies to participate in fishery enhancement projects.
- Policy CO-2.8: Encourage all public land management agencies to protect, restore, and enhance the fish habitat within their jurisdiction.
- Policy CO-2.9: Protect riparian areas to maintain and balance wildlife values.
- Policy CO-2.10: Encourage the restoration of native habitat.
- Policy CO-2.11: Ensure that open space buffers are provided between sensitive habitat and planned development.
- Policy CO-2.12: Support the use of controlled fire management where feasible and appropriate, to reduce the threat of catastrophic wildfire, to encourage oak recruitment, and to meet other resource management objectives in higher elevation woodland and chaparral communities.

- Policy CO-2.13: Promote the use of oak woodlands conservation banks to mitigate for both development impacts and greenhouse gas emissions under the proposed State carbon credit program.
- Policy CO-2.14: Ensure no net loss of oak woodlands, alkali sinks, rare soils, vernal pools or geological substrates that support rare endemic species. The limited loss of blue oak woodland and grasslands may be acceptable, where the fragmentation of large forests exceeding 10 acres is avoided and losses are mitigated to the extent feasible.
- Policy CO-2.15: Encourage the use of mosquito abatement methods that are compatible with protecting fish and wildlife, including native insect pollinators.
- Policy CO-2.16: Existing native vegetation shall be conserved where possible and integrated into new development if appropriate.
- Policy CO-2.17: Emphasize and encourage the use of wildlife-friendly farming practices within the County's Agricultural Districts and with private landowners, including:
    - Establishing native shrub hedgerows and/or tree rows along field borders.
    - Protecting remnant valley oak trees.
    - Planting tree rows along roadsides, field borders, and rural driveways.
    - Creating and/or maintaining berms.
    - Winter flooding of fields.
    - Restoring field margins (filter strips), ponds, and woodlands in non-farmed areas.
    - Using native species and grassland restoration in marginal areas.
    - Managing and maintaining irrigation and drainage canals to provide habitat, support native species, and serve as wildlife movement corridors.
    - Managing winter stubble to provide foraging habitat.
    - Discouraging the conversion of open ditches to underground pipes, which could adversely affect giant garter snakes and other wildlife that rely on open waters.
    - Widening the watercourse, including the use of setback levees.
- Policy CO-2.18: Coordinate with the Yolo County Resource Conservation District, Natural Resource Conservation Service, UC Cooperative Extension, and other farm organizations to encourage farming practices and the management of private agricultural land that is supportive of wildlife habitat values.
- Policy CO-2.19: Support the use of sustainable farming methods that minimize the use of products such as pesticides, fuels and petroleum-based fertilizers .
- Policy CO-2.20: Encourage the use of wildlife-friendly Best Management Practices to minimize unintentional killing of wildlife such as restricting mowing during nesting season for ground-nesting birds or draining of flooded fields before fledging of wetland species.
- Policy CO-2.21: Promote wildlife-friendly farming through mechanisms such as farmland trusts, conservation easements and safe harbor-type agreements.
- Policy CO-2.22: Prohibit development within a minimum of 100 feet from the top of banks for all lakes, perennial ponds, rivers, creeks, sloughs, and perennial streams. The setback will allow for fire and flood protection, a natural riparian corridor (or wetland vegetation), a planned recreational trail where applicable, and vegetated landscape for stormwater to pass through before it enters the water body. Exceptions to this action include irrigation pumps, roads and bridges, levees, docks, boat ramps, and similar uses, so long as these uses are sited and operated in a manner that minimizes impacts to aquatic and riparian features.

- Policy CO-2.23: Support efforts to coordinate the removal of non-native, invasive vegetation within watersheds and replacement with native plants.
- Policy CO-2.24: Promote floodplain management techniques that increase the area of naturally inundated floodplains and the frequency of inundated floodplain habitat, restore some natural flooding processes, river meanders, and widen riparian vegetation, where feasible.
- Policy CO-2.25: Support efforts to reduce water temperatures in streams for fish via habitat restoration (e.g. increase shading vegetation) and water management (e.g. control of flows) that are compatible with the Integrated Regional Water Management Plan.
- Policy CO-2.26: Coordinate with local watershed stewardship groups to identify opportunities for restoring or enhancing watershed, instream, and riparian biodiversity.
- Policy CO-2.27: Evaluate the need for additional water to support future riparian enhancement efforts, including the benefits of conjunctive management of groundwater and surface water resources.
- Policy CO-2.28: Balance the needs of aquatic and riparian ecosystem enhancement efforts with flood management objectives.
- Policy CO-2.30: Promote native perennial grass habitat restoration and controlled fire management in grazing lands to reduce invasive species cover and enhance rangeland forage.
- Policy CO-2.31: Protect and enhance streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools in land planning and community design.
- Policy CO-2.32: Protect wetland ecosystems by minimizing erosion and pollution from grading, especially during grading and construction projects.
- Policy CO-2.34: Create partnerships with landowners, non-government organizations, and other public agencies to implement the Yolo County Oak Woodland Conservation and Enhancement Plan.
- Policy CO-2.35: Recognize, protect and enhance the habitat value and role of wildlife migration corridors for the Sacramento River, Putah Creek, Willow Slough, the Blue Ridge, the Capay Hills, the Dunnigan Hills and Cache Creek.
- Policy CO-2.36: Consider potential effects of climate change on the locations and con-nections between wildlife migration routes.
- Action CO-A25: Develop a conservation strategy that considers the preservation and protection of intact functioning landscapes, watersheds, and landscape corridors. The approach should be based on the initial identification of high value habitat areas (core areas) and how these areas could be physically linked across the landscape. Coordinate with the NHP to ensure that the basic landscape-level conservation concepts are incorporated into the HCP/NCCP. (Policy CO-2.1 through 2.4, Policy CO-2.14, Policy CO-2.19 through CO-2.24, Policy CO-2.27, Policy CO-2.29, Policy CO-2.30, Policy CO-2.31, Policy CO-2.33, Policy CO-2.34)
- Action CO-A26: Adopt and implement the Habitat Conservation Plan/Natural Communities Conservation Plan developed through the Yolo Natural Heritage Program. Integrate the HCP/NCCP (Natural Heritage Program) into the General Plan as appropriate. Direct habitat mitigation to strategic areas that implement the Yolo Natural Heritage Program and are consistent with the County's conservation strategy . Avoid the conversion of agricultural areas and focus on lands where wildlife values and farming practices are complementary. (Policy CO-2.1 through CO-2.4, Policy CO-2.14)
- Action CO-A27: Protect the habitat value and biological function of oak woodlands, grasslands, riparian areas, and wetland habitats. Avoid activities that remove or degrade these habitats and establishment buffers to avoid encroachment into sensitive areas. (Policy CO-2.4, Policy CO-2.14, Policy CO-2.15, Policy CO-2.18, Policy CO-2.19, Policy CO-2.20 through CO-2.24)

- Action CO-A28: Create a program to encourage the planting of new oak seedlings in appropriate locations and the protection of plantings from damage by animals and people until seedlings are of sufficient size. (Policy CO-2.13, Policy CO-2.16, Policy CO-2.17)
- Action CO-A29: Adopt a heritage tree preservation ordinance.(Policy CO-2.17, Policy CO-2.37)
- Action CO-A30: Develop a program to encourage landowners to restore degraded creek resources by:
  - Removing exotic species and establishing native riparian vegetation.
  - Managing the upland area of watersheds to control erosion and overgrazing.
  - Adding exclusionary fencing to keep livestock out of streams and stream bank areas. (Policy CO-2.12, Policy CO-2.20 through CO-2.24, Policy CO-2.25)
- Action CO-A31: Establish criteria for the preservation of vernal pools that include the following:
  - unusual features;
  - habitat quality;
  - watershed integrity;
  - defensibility and buffering;
  - size;
  - plant and animal species variety; and
  - presence of special-status species. (Policy CO-2.20 through CO-2.24)
- Action CO-A32: Prepare a complete inventory of identified streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools for use in community plans, area plans and specific plans. (Policy CO-2.25, Policy CO-2.34, Policy CO-2.35)
- Action CO-A33: Coordinate with State and Federal agencies to rehabilitate and/or improve watersheds for the benefit of salmon and steelhead by encouraging landowner cooperation and participation and involving agencies and local groups. (Policy CO-2.5 through CO-2.11, Policy CO-2.26, Policy CO- 2.28)
- Action CO-A34: Identify stream sections with important fish and riparian habitat restoration needs. Seek funding and participate in programs to address needs. (Policy CO-2.5 through Policy CO-2.11, Policy CO-2.25, Policy CO-2.26, Policy CO-2.28)
- Policy CO-3.1: Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.
- Action CO-A42: Implement the Cache Creek Area Plan to ensure the carefully managed use and conservation of sand and gravel resources, riparian habitat, ground and surface water, and recreational opportunities. (Policy CO-3.1)
- Action CO-A47: Ensure that mined areas are reclaimed to a usable condition that is readily adaptable for alternative land uses, such as agriculture, wildlife habitat, recreation, and groundwater management facilities. (Policy CO-3.1)
- Policy CO-5.7: Support mercury regulations that are based on good science and reflect an appropriate balancing of sometimes competing public values including health, food chain, reclamation and restoration of Cache Creek, sustainable and economically viable Delta agriculture, necessary mineral extraction, flood control, erosion control, water quality, and habitat restoration.

- Policy CO-9.17: Support the establishment of a Delta Conservancy to provide funding and work with federal, State and local governments, local Habitat Conservation Programs, nonprofit organizations, and landowners on improvements to Delta management.
- Policy CO-9.18: Work to ensure recognition by the Central Valley Regional Water Quality Control Board (CVRWQCB) of the economic, habitat, water resources, and flood management impacts associated with developing Total Maximum Daily Loads (TMDLs) for mercury within the Delta.
- Policy CO-9.21: Work to ensure that State and federal habitat restoration efforts recognize and support the Yolo Natural Heritage Program.

Housing Element

- Policy HO-6.1: Encourage site and building design that conserves natural resources.

3. Impacts and Mitigation Measures

The following section discusses potential effects related to the biological resources of Yolo County that could result from implementation of the Draft General Plan. The section begins with the criteria of significance, establishing the thresholds to determine whether an impact is potentially significant. The latter part of this section presents the impacts and recommends mitigation measures, if required.

a. Significance Criteria. Implementation of the Draft General Plan would have a significant adverse impact on biological resources if it would:

- Have a substantial adverse effect on any riparian habitat, or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act or waters of the State through direct removal, filling, hydrological interruption, or other means;
- Result in a substantial cumulative or individual adverse effect on oak woodlands;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species to drop below self-sustaining levels, or threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare, or threatened species;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan;
- Substantially conflict with applicable plans, policies and regulations of other agencies where such conflict would result in an adverse physical change in the environment; or
- Result in new policies that would result in significant adverse physical impacts as compared to the 1983 General Plan policies.

b. Impacts Analysis. This section discusses potential impacts to biological resources that could result from implementation of the Draft General Plan and recommends mitigation measures, if appropriate.

The analysis of the effects of implementing the Draft General Plan on biological resources was based on the information collected from the Biological Resources section of the Background Report for the Yolo County General Plan Update (Background Report);[110] documented occurrences of listed and other special-status species in the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB)[111] for Yolo County; a search of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California.[112] and Ecological Baseline Report.[113]

The potential effects related to growth occurring at build-out of the Draft General Plan were compared to environmental baseline conditions (i.e., existing conditions) to determine impacts; these baseline conditions were determined using the countywide GIS vegetation data overlain on vacant lands designated for new growth. However, additional development that is allowed in support of and related to agriculture is expected to take place on agricultural and open space land outside of the growth boundaries, and this development may cause additional impacts to biological resources. At build-out of the Draft General Plan, as described in Chapter III, Project Description, these uses could include agricultural industrial activities (e.g., agricultural processing), agricultural commercial activities (e.g., agricultural-tourism, wineries), and new farm dwellings. The Draft General Plan specifically targets four agricultural commercial and/or agricultural industrial sites totaling 259 acres, plus another 595 acres are assumed elsewhere, for a total of 854 acres through build-out of the Plan. This EIR also assumes that 1,932 farm dwellings may be constructed on another 4,830 acres throughout the unincorporated County. The total assumed area of impact on AG designated lands is 5,684 acres. However, new agricultural commercial and industrial facilities and farm dwellings would be accommodated generally anywhere on AG designated land. Other development that is expected at build-out and may impact biological resources includes 4,103 acres of open space acquisitions for community and resource parks and 162 acres for trails.

(1) Adverse Effect on Riparian Habitats. Riparian habitats are considered sensitive habitat areas and are identified as special natural communities by California Department of Fish and Game (CDFG).[114] Actions potentially affecting lakes or streambeds, which may include adjacent riparian areas, are regulated by the CDFG through a streambed alteration agreement under Section 1602 of the California Fish and Game Code; they may also be regulated by U.S. Army Corps of Engineers

[110] Jones & Stokes; Cotton Bridges Associates, Inc.; Fehr & Peer Associates, Inc,; House Agricultural Consultants, and Applied Development Economics. 2005. Background Report for the Yolo County General Plan Update: Biological Resources. Prepared for Yolo County. January 2005.

[111] California Department of Fish and Game (CDFG). 2008. op. cit .

[112] California Native Plant Society (CNPS). 2001. Inventory of rare and endangered plants of California (6th edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. Sacramento, CA.

[113] H.T. Harvey & Associates. 2005. op. cit.

[114] California Natural Diversity Data Base. 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Data Base. Report No.: September 2003 Edition Prepared by California Department of Fish and Game, Vegetation Classification and Mapping Program, Sacramento, CA. 77 pp.

(Corps) and the Regional Water Quality Control Board. Compliance with required National Pollutant Discharge Elimination System permit requirements and implementation of site-specific stormwater control plans would generally mitigate impacts on water quality. Discharges to stream channels and open-water habitat (i.e., ponds or reservoirs) also may be regulated by the Corps or State. Discharge of fill into waters of the United States, including realignment of stream channels or placement of a stream channel into a pipeline, could have a significant impact.

Approximately 10,051 acres of riparian habitat occur within the unincorporated County.[115] The primary riparian habitats in the County include Cache Creek, the Yolo Bypass, Putah Creek, and the Sacramento River corridor, but smaller creeks and drainages supporting riparian vegetation occur throughout the County. Development activities, infrastructure improvements, mining activities, agricultural improvements and water diversions, and park and recreation development as identified in the Draft General Plan may lead to direct and indirect impacts on these habitats.

The Draft General Plan contains numerous goals, policies, and actions that would result in the protection and enhancement of riparian habitats within the County. In general, the Draft General Plan focuses on preserving functional, ecologically viable landscapes through the protection of key habitat areas, through connection of those areas to other natural areas in the County and through the preservation of agriculture. Policies LU-3.8 and CC-2.16 require that development be prohibited in areas with significant natural resources (including wildlife habitat) and that creeks are protected and preserved to the greatest extent feasible when occurring within the growth boundary of the unincorporated communities. These two policies establish the County's intent to preserve riparian habitats. Further establishing the County's intent to protect riparian areas are those policies, and actions that specifically address protection and enhancement of riparian and other natural habitats and biological resources; such policies and actions include CO-2.1, CO-2.3, CO-2.9, CO-2.11, CO-2.27, CO-2.31, CO-2.35, CO-A25, CO-A27, CO-A30, CO-A32, and CO-A33. These policies and actions require protection of streams and riparian habitats, conservation of native vegetation, evaluation of water needs for riparian enhancement, and protection and enhancement of habitat values along corridors. The policies listed above emphasize protection of biological resources through the concept of "landscape level" conservation policies that focus on corridors, connectivity, and wildlife-friendly practices outside of habitat areas as a part of an overall conservation strategy that is integrated with the County's overall land use strategy and decision-making to support preservation of agricultural land. This strategy has the added benefit of providing protection for significant amounts of habitat area. The County's land use approach and overall land conservation ethic has been and continues to be to limit areas of urban growth within the unincorporated area. Most growth is encouraged to locate in the incorporated cities. Where growth in the unincorporated area is allowed it has generally been directed to the existing historic rural towns. This strategy also serves to protect and conserve biological resources.

This approach has successfully resulted in "conservation by design" of 98.4 percent of the County's unincorporated area, as presently only 10,093 acres of the 621,223 acre total are developed.[116]

[115] County of Yolo, 2007. op. cit.

[115] Comprised of 2660.5 acres of existing residential, 431.3 acres of existing commercial and industrial, and 7001.1 acres of existing public/quasi-public.

Assuming all of the land designated for urban uses under the Draft General Plan is fully built out, 96.2 percent of the unincorporated area remains in agriculture and open space uses.

Other Draft General Plan policies that would result in the protection of riparian habitat include Policy 2.1 that requires that actions taken by the County consider and maintain the ecological function of landscapes, connecting features, watersheds and movement corridors. On the valley floor, maintenance of the movement corridors largely entails maintenance of the riparian areas that offer natural habitat corridors linking natural lands and foraging areas on the valley floor with the more extensive natural lands in the western part of the County. Policy CO-2.3 specifically calls out riparian areas as one of the biological communities to be preserved and enhanced. Growth that may be allowed by the County in the future therefore would have to be consistent with this policy of preserving and enhancing riparian areas and in conjunction with policy CO-2.9 would have to protect the riparian areas to maintain and balance wildlife values. Wildlife values that would be maintained would include preservation of foraging and breeding areas and preserving of movement corridors and shelter. Policies CO-2.11 and CO-2.22 address of buffers. Specifically, CO-2.22 prohibits development within 100 feet of the top of bank of lakes, ponds, rivers, creeks to allow for a natural riparian corridor. While CO-2.11 provides for open space buffers between development and sensitive habitat which would typically include riparian areas. Policies CC-1.5 and CC-1.17 establish that significant trees should be incorporated into the development plans and that removal of trees with scenic value along roads is generally prohibited. Although these policies are not specific to riparian areas, they do give added protection to trees in riparian areas that typically have high habitat value. Policies AG-28, AG-2.10, AG-2.13, and CO-2.1 are focused on promoting habitat protection in agricultural areas. These policies would give protection to riparian habitats as they occur in agricultural areas. Policy CO-1.30 and Action CO-A12 require clustering of new development, particularly along Cache Creek, Lower Putah Creek, and the Sacramento River in part to minimize habitat disturbance. Such clustering, although not completely avoiding impacts to the riparian habitat, is expected to have the desired effect of minimizing the areas of riparian habitat that are disturbed. Policies CO-2.5, CO-2.6, CO-A34, CO-2.7, and CO-2.25 all relate to protection, restoration, or enhancement of sensitive fish habitat. In Yolo County, sensitive fish species are associated with the rivers and creeks and riparian habitats along the creeks and rivers are an essential part of the fish habitat. Protecting, restoring, and enhancing habitat for fish, consequently results in those actions being taken not just in stream, but also in the riparian zone. Policy CO-2.23 supports the removal of non-native plants, some of which invade riparian areas. Policies CO-1.29, CO-2.24 and CO-2.28 promote flood management practices that encourage and support riparian habitats. Finally, the Draft General Plan promotes coordination among agencies regarding work in and protection of streams. Draft General Plan policies that promote such cooperation between the County and State and federal agencies include Policies CO-1.13, CO-2.4, CO-2.6, CO-A33, CO-9.17, and CO-9.21.

Agriculture is a plant community/cover type, but it is also a land use designation. In the unincorporated County, approximately 5,195.2 acres of riparian vegetation area located within land designated as Agriculture under the Draft General Plan. Because agricultural activities are strongly promoted and encouraged in the Draft General Plan and because new operations may not require discretionary approvals there may be impacts to habitat on agriculturally designated land as a result of agricultural operations and practices . Policies AG-2.8, AG-2.10, AG2.13, CO-2.17 and Action AG-A29 encourage use of wildlife friendly farming practices and partnerships with private landowners to minimize impacts to natural lands, but impacts from typical agricultural activities may still occur.

Extraction of mineral resources can result in potential impacts to riparian habitats in the County, particularly along the lower Cache Creek. Draft General Plan Policy CO-2.1 and Actions CO-A42 and CO-A47 specifically address these issues. Under these policies and actions, mineral resource production is to be balanced with consideration of wildlife and other resource issues, riparian habitats are to be conserved and managed as part the Cache Creek Area Plan (CCAP), and mined areas are to be reclaimed to a usable condition that is readily adaptable to among other uses such as wildlife habitat. In the Cache Creek corridor, native wildlife is most likely to be associated with riparian habitats that are either preserved or restored.

Along a 13.5 mile segment of Cache Creek, the Off Channel mining Plan (OCMP) applies to 23,174 acres adjoining the creek and the Cache Creek Resources Management Plan (CCRMP) applies to 2,324 acres within the creek channel. These two plans comprise the Cache Creek Area Plan (CCAP). Implementation of the CCAP has prior CEQA clearance that accompanied approvals in 1996. Specific mining project and creek restoration projects proceed under a variety of in-place permits from the County, and regional, State, and federal agencies that are based on detailed site specific conditions and requirements.

Even though there are numerous policies and programs in the Draft General Plan that promote avoidance and minimization of impacts on riparian, stream, and open-water habitats, these policies may not prevent all impacts to riparian areas and the wildlife and plant habitats that they provide.

Impact BIO-1: Build-out of the Draft General Plan may result in loss or destruction of riparian habitats and the wildlife and plants that depend on those habitats. (S)

Using the GIS database to overlay the vacant lands expected to be developed by 2030 under the Draft General Plan over the existing plant communities, the impact to riparian habitats in the unincorporated was estimated at 217.1 acres. Vacant lands are shown in Figure IV.J-6. Impacts to riparian areas would occur as a result of conversion of 167.5 acres of riparian habitats to agriculture, 3.1 acres to general commercial land use, 11.8 acres to industrial land use, 10.2 acres to open space (parks and recreation), 0.9 acres to public and quasi public land uses, and 4.2 acres to residential land use. Riparian areas within the designated Specific Plan areas amount to 19.5 acres. Impacts to riparian habitats are located in the Capay Valley (10.7 acres), Clarksburg (15.5 acres), Dunnigan (0.3 acres), Esparto (0.0 acres), and Knights Landing (4.8 acres). Impacts to riparian habitats would also occur on 185.8 acres of agricultural areas within the unincorporated of the County.

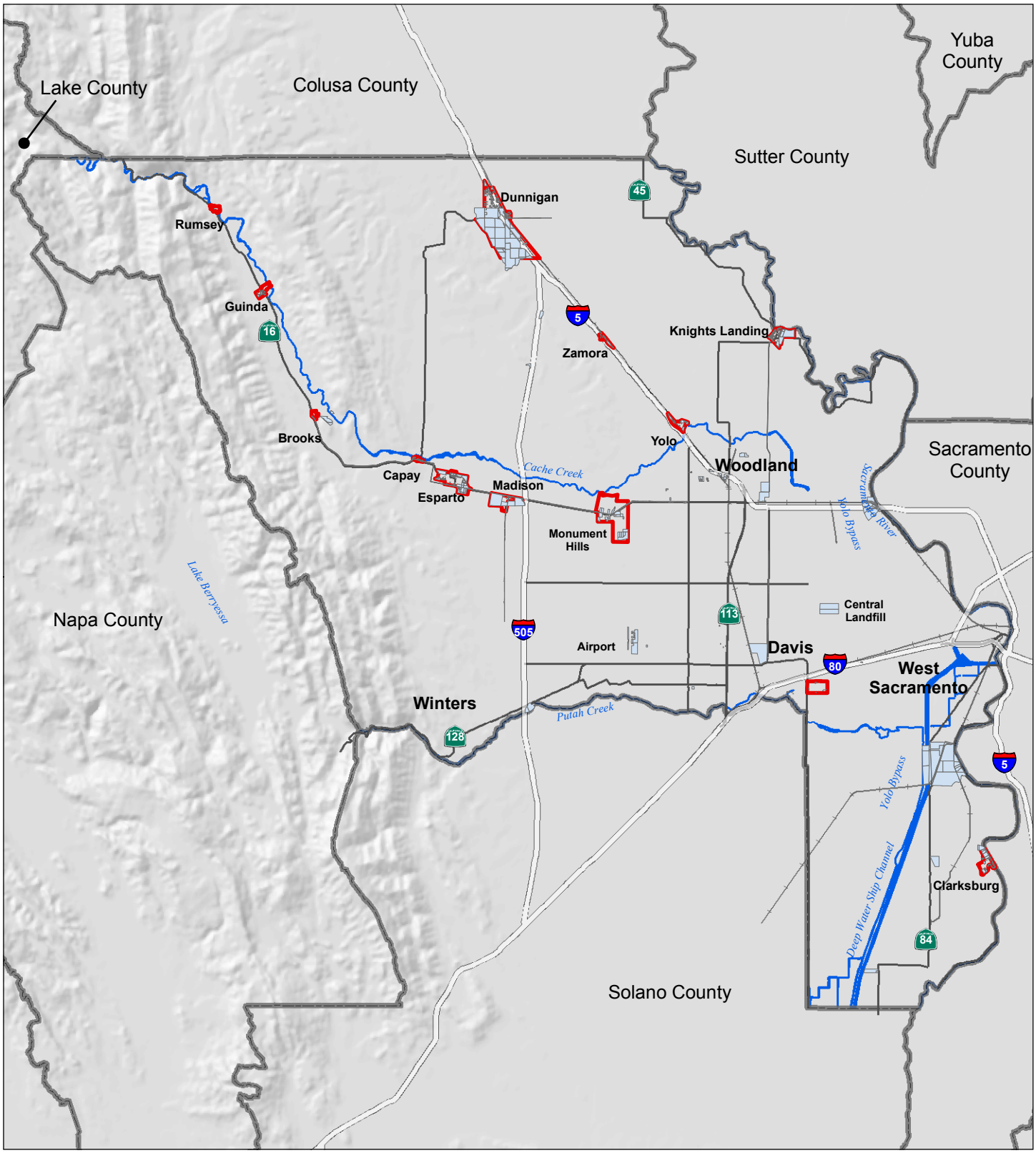
Build-out of the Draft General Plan also may result in unspecified impacts to riparian areas throughout the County due agricultural related to farm dwellings and commercial and industrial uses, as well as, infrastructure, and recreational development. Approximately 5,195.2 acres of riparian habitat lie within the unincorporated areas designated for agricultural land use. The impacts to riparian areas may result from activities such as unanticipated road widening, bridge repairs, or emergency levee repairs. Unplanned construction activities may be necessary to improve public services or respond to emergency conditions. Trail construction may also impact riparian habitats. Riparian areas are the primary natural land connectors between communities and are often the location for placement of recreational trails. The location and therefore potential impacts of trails has not been quantified.

As required by Policy CC-4.11, a biological resources assessment shall be prepared for development that may impact natural lands, subject to site conditions and available technical information as determined by the County lead department. A biological resources assessment could include the following as appropriate:

- An inventory of biological resources on the project site including a description of the plant communities and habitats on the site.
- Preconstruction surveys, conducted by a qualified biologist, during the nesting season (February through August) to identify nest sites on or adjacent to project sites where ground disturbing activities or vegetation removal will occur. If active nests are identified, exclusion zones of a size sufficient to avoid disturbing the nest occupant will be established and maintained until the young have left the nest and are foraging independently or construction has been completed.
- Results of appropriately timed surveys for special-status plants and animals using methods that are consistent with the existing State and Federal resource agency protocols and that are conducted by qualified biologists familiar with the biological resources of Yolo County.
- An analysis of wildlife movement corridors on or adjacent to the project site. The movement corridor study will identify species that potentially use the site as a movement corridor, the time of year that the corridor is used, potential impacts to the corridor from the proposed activity, and recommendations to avoid or mitigate the effects of the project or activity.
- An analysis of wildlife and/or fish nursery sites (e.g., nest sites, dens, spawning areas) on the site. This analysis should consider not only the seasonal occurrence of species on the site but also the nest site fidelity which may be exhibited by past occupants of the site.
- Avoidance measures to be implemented before during and after project/activity implementation to avoid impacting sensitive communities, and special-status plants, animals and their habitats.
- Where avoidance is not possible, the applicant will provide a mitigation and monitoring plan that fully compensates for the habitat functions and values lost due to the action. The plan will specify the compensatory mitigation for lost habitat that is consistent with the Yolo County NCCP/HCP and existing State and federal mitigation standards. The plan will specify monitoring activities that are adequate to assess the success of the mitigation.

Implementation of the following mitigation measures would reduce impacts to riparian habitats but not to a less than significant level.

Mitigation Measure BIO-1a: Implement Mitigation Measure LU-2b that revises Policy CC-4.11 of the Draft General Plan.



LSA

Vacant Lands

Urban Growth Boundaries

N

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FEET

FIGURE IV.J-6

2030 Yolo County General Plan EIR Update

Vacant Lands to be Built Out Under 2030 General Plan

Source: County of Yolo GIS, 2006.

I:\CYK0701\GIS\Maps\EIR\Fig_IV.J-6_Vacant Lands to be Built Out.mxd (04/01/2009)

Mitigation Measure BIO-1b: Amend Policy CO-2.22 of the Draft General Plan as follows:

Policy CO-2.22: Prohibit development within a minimum of 100 feet from the top of banks for all lakes, perennial ponds, rivers, creeks, sloughs, and perennial streams. The setback will allow for fire and flood protection, a natural riparian corridor (or wetland vegetation), a planned recreational trail where applicable, and vegetated landscape for storm water to pass through before it enters the water body. Recreational trails and other features established in the setback should be unpaved and located along the outside of the riparian corridors whenever possible to minimize intrusions and maintain the integrity of the riparian habitat. Exceptions to this action include irrigation pumps, roads and bridges, levees, docks, public boat ramps, and similar uses. In all cases where intrusions into the riparian buffer are made, only the minimum amount of riparian vegetation necessary to construct the feature shall be removed.

Mitigation Measure BIO-1c: The Draft General Plan shall be amended to include the following new policy in the Conservation and Open Space Element.

Policy CO-#: Require that all mitigation and monitoring activities be fully funded with a secure funding source prior to implementation of habitat or species mitigation and monitoring plans. Habitat preserved as part of any mitigation and monitoring plan should be preserved in perpetuity through a conservation easement, deed restriction, or other method to ensure that the habitat remains protected.

Mitigation Measure BIO-1d: The Draft General Plan shall be amended to include the following new action in the Conservation and Open Space Element.

Action CO-A#: Where applicable, in riparian areas, ensure that required state and federal permits/approvals are secured prior to implementation.

Implementation of these mitigation measures, in addition to the policies and actions contained in the Draft General Plan, would reduce potential adverse effects on riparian habitats but not to a less than significant level. Therefore, impacts to riparian habitats would remain significant and unavoidable. (SU)

(2) Impacts to Wetlands and Vernal Pools. Seasonal wetlands and vernal pools provide valuable habitat to native plant and wildlife species and contribute to the maintenance of water quality. Seasonal wetlands occur throughout the County but are concentrated in the Yolo Bypass area in the southeast portion of the County. Vernal pool complexes are also concentrated in the southeast portion of the County in the vicinity of the Yolo County Grasslands Regional Park and also occur in the annual grasslands in the Winters area. Alkali sink, another seasonal wetland habitat, occurs between Davis and Woodland. Build-out of the Draft General Plan could result in both direct and indirect impacts on seasonal wetlands.

The Draft General Plan contains a variety of goals, policies, and actions that would protect, restore, and enhance wetland and vernal pools and the plants and wildlife that live in these habitats. Policies CO-2.1, CO-2.2 and CO-2.3 call for the protection and enhancement of biological resources through the conservation, maintenance, and restoration of high potential biological resources (which would include wetland and vernal pools) and the connections between them. Policies CO-2.1 and CO-2.2 seek to promote a landscape-level approach to conservation of plants, animals, and their habitats on a County-wide basis and provide habitat connectors for movement of species between key areas as well as other preserved lands. These key areas are intended to support self-sustaining populations of plants and animals that can serve as source populations for maintaining species in non-key areas and habitat linkages. Policy CO-2.3 requires preservation of those resources that contribute to the biodiversity of the County. Policy CO-2.14 ensures that there is no net loss of vernal pools or alkali sink habitats that support endemic species. A policy of "no net loss "does not provide absolute protection for such habitats, but instead allows for loss of individual wetlands or vernal pool as long as the loss is fully mitigated.

Other Draft General Plan policies that require basic protection for wetlands and vernal pools include Policy CO-2.31, which requires the protection of wetlands in land planning and community design, and Policy CO-2.32, which requires protection of wetland ecosystems from the effects of grading. Actions CO-A27 requires the protection of the habitat value and biological function of a number of habitats including wetlands. This protection is particularly important for wetlands and vernal pools whose contributing watersheds are an important component in the function of the habitats and under this action would be protected. Action CO-A31 requires establishment of criteria for preservation of vernal pools, which like Action CO-A27 would make the protection of the vernal pool system (i.e., pool, contributing watershed, plants and animals inhabiting the pool, buffer areas) a requirement of the Draft General Plan, not just preservation of the inundated area. Along similar lines, Policy CO-2.1 focuses on the maintenance of ecological function of landscapes, connecting features, watersheds, and wildlife movement corridors. Further protection of wetland and vernal pool systems is provided by Policy CO-2.15, which encourages the use of mosquito abatement methods compatible with protecting fish and wildlife. This policy would serve to protect the invertebrate species living in the pools (i.e., vernal pool crustaceans) and species that are important food items for common and special-status fish and wildlife. Overall, policies provided in the Draft General Plan establish a high degree of protection for wetland and vernal pools.

In the unincorporated County, approximately 3,946.5 acres of wetland and vernal pool vegetation are located within land designated as Agriculture. However, much of this acreage is on refuge lands such as the Yolo Basin Wildlife Area or on mitigation lands and other preserves such as Roosevelt Ranch and Davis Wetlands, that occur within the agricultural landscape. Many of the County's vernal pool lands are protected already. For example, the largest intact vernal pool landscapes, including the Grasslands Regional Park and the Department of Fish and Games Tule ranch unit in the Yolo Basin Wildlife Area, are protected currently. Agricultural operations and development that occurs to support agriculture could impact wetland habitats. Policies AG-2.8, AG-2.10, AG-2.13, CO-2.17 and Action AG-A29 encourages use of wildlife friendly farming practices and partnerships with private landowners to minimize impacts to natural lands, but impacts associated with agriculture-related development and normal agricultural activities could still occur.

Policies in the Draft General Plan provide a high level of protection for wetlands and vernal pools, but impacts to these habitats may still occur associated with increasing agricultural intensity under the Draft General Plan.

Impact BIO-2: Build-out of the Draft General Plan may result in loss or destruction of wetlands and vernal pools and the wildlife and plants that depend on those habitats. (S)

Using the GIS database to overlay the vacant lands expected to be developed in the Draft General Plan over the existing plant communities, the impact to wetland and vernal pool habitats in the unincorporated County was estimated at 48.9 acres. Impacts to wetlands and vernal pools would occur as a result of conversion of 38.0 acres of wetlands and vernal pools to agriculture, 1.6 acres to general commercial land use, 1.3 acres to industrial land use, 2.0 acres to open space, 0.5 acres to public and quasi-public land uses, and 0.6 acres to residential land use. Wetland and vernal pool areas within the designated Specific Plan areas amount to 5.0 acres. Impacts to wetlands and vernal pools are distributed in Clarksburg (2.8 acres), Dunnigan (1.6 acres), and Esparto (2.96 acres). Impacts to wetland and vernal pool habitats would also occur on 42.7 acres in agricultural areas not within any of the growth boundaries.

As described previously, build-out of the Draft General Plan also may result in impacts to wetlands and vernal pools in agricultural areas due to: agricultural-related residential and commercial/industrial uses; infrastructure, and recreational development. Although vernal pool areas form in particular soils, seasonal wetlands may occur in a wide variety of habitats including grasslands, woodlands, riparian areas, and urban areas. Approximately 3,946.5 acres of wetland and vernal pool habitat lie within the unincorporated area designated for agricultural land use, and these areas may be impacted by agricultural activities. The wetlands in these areas may have lower habitat value than natural wetlands but still may provide foraging, breeding, and water sources for wildlife. Additionally, native wetland plants may become established even in lower quality seasonal wetlands including ditches.

Mitigation Measure BIO-2: Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d.

Implementation of these mitigation measures, in addition to the policies and actions contained in the Draft General Plan, would reduce potential adverse effects to wetlands and vernal pools but not to a less than significant level. Therefore, impacts to wetlands or vernal pool habitats would remain significant and unavoidable. (SU)

(3) Impacts to Oak Woodlands. Oak woodlands in the County are protected under the Oak Woodland Conservation Act (Fish and Game Code Sections 1360-1372). Actions potentially affecting the significant conversion of oak woodlands are generally regulated by the County. Significant conversions generally require compensatory mitigation such as tree plantings, oak woodland conservation easements, restoration of former oak woodlands, or contributing to the Oak Woodlands Conservation Fund as established by CDFG for the purpose of purchasing oak woodlands conservation easements. Oak woodland associated with rivers, streams, or other drainages may also be regulated by the CDFG through a streambed alteration agreement under Section 1602 of the California Fish and Game Code.

Approximately 128,939 acres of oak woodland/chaparral occurs in the unincorporated County and most of the area consists of oak woodlands or woodlands that include oak trees. Development

activities, infrastructure improvements, mining activities, agricultural improvements and water diversions, and park and recreation development may lead to direct and indirect impacts on oak woodland/chaparral habitats.

Draft General Plan policies that are relevant to the protection of oak woodlands are numerous. Like riparian habitats, wetlands, and vernal pools, oak woodlands are generally protected by Goal CO-2 which calls for the protection and enhancement of biological resources through the conservation, maintenance, and restoration of key habitat areas. Policy CO-2.2 states that conservation efforts should be focused on high priority conservation areas or core areas. This goal and policy promote a landscape-level approach to conservation of biological resources including oak woodlands and will result in the protection of key areas that are interconnected by habitat linkages. Policy CO-2.3 addresses the issue of remnant oaks by requiring preservation and enhancement of the oak woodlands as well as heritage valley oaks and remnant valley oak groves. Remnant oak groves and isolated trees in agricultural areas are particularly important habitat for species such as Swainson's hawks and other raptors that nest in the trees and forage in the adjacent agricultural areas.

Other policies that provide protection to oak woodlands include Policy LU-3.8 which prohibits new urban development in areas with significant natural resources (a category that would include oak woodlands) and Policy CO-2.16 which encourages conservation of native vegetation in new development. Policy CO-2.16 encourages preservation of oaks and oak woodlands within developed areas but does not make such preservation mandatory. Given that the proposed development areas within the unincorporated County where oaks or oak woodlands would be preserved are limited, such conservation of native vegetation in development areas is not expected to play a significant role in the overall preservation of oak woodlands as a habitat type within the County. Voluntary incorporation of oaks into developments may, however, have an important benefit for Swainson's hawks that rely on isolated trees and remnant groves in developed and agricultural areas for nest sites. These nest site locations provide access to the foraging habitat in the agricultural areas of the County and preservation of such trees contributes to the overall conservation of this species.

In general, Policies CC-1.5, CC-1.15, and CC-1.17 seek to preserve oaks as does Policy CO-2.16 in that they maintain trees in developed environments. For larger tracts of oak woodland where preservation of ecological function is a consideration, Actions CO-A25, CO-A26, and CO-A27 would afford more protection to the woodlands as these actions require preservation of functioning landscapes, protect habitat values, and require adoption of the Yolo County NCCP/HCP. Finally, Policy CO-2.14 seeks to ensure that there is "no net loss" of oak woodlands and other sensitive communities under the Draft General Plan, but allowing an exception for small losses of oak woodlands and grasslands so long as fragmentation of large forests (greater than 10 acres is avoided.[117] The exception is Policy CO-2.14 which generally preserves oak forest areas, however impacts to smaller remnants (10 acres and less) could occur. Also, although the loss of oak woodlands allowed by this policy may be limited, the cumulative effect could be significant if numerous small areas were impacted.

Draft General Plan policies that address issues of integrating agricultural practices and conserving oak woodland and other habitats include AG-2.8, AG-2,10, AG-2.13, CO-2.17, and CO-2.18. These

[117] Morrison, David. Assistant Planning Director, 2009. Personal communication to LSA Associates, Inc. County staff clarified that the reference to "blue" oak woodland in this policy is an error that is being corrected.

policies emphasize and encourage developing partnerships between agricultural interests and habitat conservation, promote and encourage wildlife friendly farm practices, and require coordination between agricultural interests and wildlife habitat values. Given the predominance of agriculture in the County, these policies help to protect oak woodlands in agricultural settings as well as their habitat values. Additionally, the adoption of the Yolo County NCCP/HCP required by Action CO-A26 will provide a comprehensive framework for conservation of natural communities and native species in the County.

A number of policies and actions in the Draft General Plan would affect oak woodlands and development around the oak woodlands. Policies CC-4.3, CO-1.30, and CO-A12 encourage clustering of development and other approaches to limit intrusions into natural areas. These policies and action would have the effect of minimizing intrusions into oak woodlands and minimizing edge effects which may adversely affect the ecological function of the woodlands. By minimizing fragmentation of large tracts of forest or woodland, the boundary or edge of the forest is minimized with respect to the area covered by the forest. Invasive plants and animals that are not typically found in continuous forest habitats may find suitable habitat at the edge of the forest where it comes in contact with grassland or developed areas (e.g., roads). These edges therefore, provide a pathway for the invasive species to enter the otherwise unsuitable forest habitat and potentially degrade the quality of the habitat. Policies CO-2.1, CO-2.35, and CO-2.36 also seek to maintain the ecological function of native habitats by promoting the maintenance of corridors that link habitats. Linking oak woodland habitats through corridors would allow movement of wildlife between preserved woodlands and between woodlands and potential foraging areas in the agricultural areas of the County. These linkages may also allow the movement of plants and their seeds. Policy CO-2.11 ensures that there are open space buffers between sensitive habitats and planned development. These buffers would help to maintain the ecological function of the preserved woodlands.

A number of policies would preserve and expand open space areas in the County. Policies CO-1.1, CO-1.3, CO-1.14, and CO-1.15 all concern open space preservation and acquisition which would result in direct benefits to oak woodland conservation as oak woodlands constitute a significant portion of the native vegetation in the County where open space preserves could be established or expanded.

Restoration and management activities are also envisioned under the Draft General Plan in Policies CO-2.10, CO-2.23, and CO-2.12; and Actions CO-A28, and CO-A29. The policies encourage restoration of native habitats, removal of non-native invasive plants, and support for controlled fire management in oak woodlands while the actions would create a planting program for oak seedlings, and preserve heritage trees. These policies and actions would promote restoration activities in degraded woodlands and implementation of management activities that would help to restore ecological function to the woodlands. Policy CO-2.13 also promotes the use of oak woodland conservation banks in the County to mitigate for development projects and greenhouse gas emissions. Support for development of the oak woodland conservation banks would assist in maintaining ecological values through maintenance of larger intact habitats as opposed to individual, isolated groves of trees.

Finally, a number of policies are included in the Draft General Plan that would support or require coordination with the various local, State, federal, and private agencies and organizations that have responsibility for natural open space and habitat areas in the County. Policies LU-7.2, CO-1.16, CO-

2.18, and CO2.34; and Action AG-A29 all encourage and support coordination between agencies that would lead to better management of oak woodland resources.

Even though there are numerous policies in the Draft General Plan that promote avoidance and minimization of impacts on oak woodlands and encourage broad based planning to preserve large tracts of oak woodlands, agricultural activities, related operations, and other by-right uses may result in impacts to oak woodlands.

Impact BIO-3: Build-out of the Draft General Plan may result in loss or destruction of oak woodlands and the wildlife and plants that depend on those habitats. (S)

Using the GIS database to overlay the vacant lands expected to be developed under the Draft General Plan over the existing plant communities, the impact to oak woodlands in the unincorporated County was estimated at 99.5 acres. Impacts to oak woodlands would occur as a result of conversion 0.8 acres of oak woodlands to agriculture, 45.0 acres to open space (parks and recreation), and 53.0 acres to residential land use. Oak woodlands within the designated Specific Plan areas amount to 0.8 acres. Impacts to oak woodland are distributed in Capay Valley (41.4 acres) and Dunnigan (53.5 acres). Impacts to oak woodland habitats would also occur on 4.6 acres in agricultural areas not within any of the designated community area growth boundaries of the County.

Build-out of the Draft General Plan also may result in unspecified impacts to oak woodlands throughout the County due agricultural-related residential commercial/industrial; infrastructure, and recreational development. Approximately 76,982.1 acres of oak woodlands lie within the areas designated for agricultural land use, and these areas may be impacted by agricultural activities. Construction activities to improve public services or respond to emergency conditions, and trail construction may also impact oak woodlands.

Mitigation Measure BIO-3a: Amend Policy CO-2.14 of the Draft General Plan as follows:

Policy CO-2.14: Ensure no net loss of oak woodlands, alkali sinks, rare soils, vernal pools, or geological substrates that support rare endemic species, with the following exception. The limited loss of ~~blue~~ oak woodland and grasslands may be acceptable, where the fragmentation of large forests exceeding 10 acres is avoided, and where losses are mitigated ~~to the extent feasible.~~

Mitigation Measure BIO-3b: Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d.

Implementation of these mitigation measures, in addition to the policies and actions contained in the Draft General Plan, would reduce potential adverse effects to oak woodlands but not to a less than significant level. Therefore, impacts to oak woodlands would remain significant and unavoidable. (SU)

(4) Impacts to Wildlife Movement Corridors or Nursery Sites. Implementation of the Draft General Plan has the potential to impact wildlife movement corridors and nursery sites in the County. Disruptions of movement corridors can be on a local level where a road may prevent a species from reaching a breeding pond that is a few thousand feet away to a regional level where a dam may block all access to a river or stream system.

Species occurring in Yolo County that are particularly susceptible to such disruptions include California tiger salamanders that move between upland habitats and aquatic breeding sites. Isolation of breeding ponds from upland habitats can severely reduce the population of salamanders at a breeding pond and eventually can result in the extirpation of the population. Barriers to movement in such cases can include moderately to heavily traveled roads, sound walls and roadside barriers, as well as curbs and gutters that can trap moving salamanders in roadways where they are crushed by vehicle traffic or washed into storm drains. Other species susceptible to disruption of movement corridors are fish. Activities or structures that block fish passage or that isolate the upper reaches of streams could impact movement corridors and block access to nursery sites where the spawning areas are located in the upper reaches of the stream or river system.

Common wildlife species can also be impacted on a local level by disruption of movement corridors and nursery sites. Riparian corridors provide the primary movement corridors between the valley floor and western hills[118] and may provide cover as well as food and water for wide ranging animal species moving through otherwise unsuitable habitats. For example, deer and small mammals may use riparian corridors to move through agricultural areas or between the western hills and lowlands of the County. These corridors allow wildlife to access food resources and foraging areas that may be unavailable to them without the cover and security provided in the corridor. Corridors that link oak woodlands can make seasonal food resources available to wildlife such as mast (acorn) crops in oak woodlands in the fall. Mammals and birds make use of these seasonally available resources and may use corridors to reach such resources.

Development and agricultural activities may disrupt breeding of wildlife depending on the time of year. Removal of vegetation, ground disturbance, pond draining and other intrusions into wildlife breeding or rearing areas can result in mortality of young through abandonment of nests, loss of den sites, or loss of essential habitat.

Disruption of riparian corridors by removal of vegetation or placement of permanent structures or active recreational facilities within the corridors; blockage of rivers and streams temporarily, seasonally, or permanently; or isolation of a species' essential habitat through the construction of impassable barriers would result in a significant impact to wildlife movement corridors or nursery sites.

The Draft General Plan includes a number of policies and actions that promote the establishment and protection of movement corridors and the protection of nursery sites for wildlife. Policies CO-2.1 would consider and maintain connections between conservation areas. Protection of the connections is essential to ensure that preserved habitat areas maintain their ecological value and are viable preserves over time. The landscape approach to conservation that the County has fostered through its Draft General Plan ensures that such core areas and connections are maintained. Policies CC-1.11 and CC-2.16 are primarily focused on providing open space connections among communities and along riparian areas. These corridors would be used by people, but such corridors would also provide movement corridors and possible nesting and breeding areas for common wildlife that are tolerant of human disturbance.

[118] M. Wong. 2009. pers. comm. March 16, 2009.

The Draft General Plan includes a number of policies that specifically address acquisition, preservation, and expansion of open space networks and their connections, including Policies CO-1.1, CO-1.3, CO-1.15, and CO-1.16. These policies seek to establish open space and habitat preserves and to expand and connect the preserves on the landscape level. The intent to interconnect the open space areas to maintain ecological function, landscape connections, and wildlife movement corridors is specifically stated in Policies CO-2.1, CO-2.2, and CO-A23. Riparian corridors are natural corridors that due to their linear nature connect a variety of habitats as they cross the landscape. Policies CO-2.4, CO-2.9, CO-2.31, and CO-2.35 require protection of riparian corridors and wildlife values, protection in planning and design, and protection and enhancement of the habitat value and wildlife movement corridors along the major waterways in the County. These policies document the intent of the County to preserve these areas and their habitat value as movement corridors. Policy CO-2.36 also addresses corridors, but in this case, it requires that corridors be considered in light of climate change, as rising water levels associated with sea level rise could make a marginal corridor or low-lying corridor unusable in the future.

Other policies in the Draft General Plan that address the issue of wildlife corridors focus on the protection of functional landscapes and corridors and the habitat value of native habitats (Policies CO-A25 and CO-A27). Policy CC-3.5F specifically addresses habitat value in the Dunnigan area where California tiger salamanders occur and critical habitat for this species has been designated. The Dunnigan Specific Plan area has been defined such that the growth boundary is adjacent to the land designated for critical habitat for this species but avoids the designated critical habitat. However, California tiger salamanders may occur elsewhere in the Dunnigan Hills area[119] and could be impacted by agricultural activities in the region, particularly changes in agricultural land use such as conversion of grazing lands to vineyards. Areas to be avoided to protect the California tiger salamander also include aquatic breeding sites as well as the uplands through which the animals move as they travel back and forth between breeding sites and their terrestrial upland habitat. California tiger salamanders move up to 1.3 miles from breeding ponds to upland grasslands where they spend most of the year underground in burrows. Although this species has been documented to travel up to 1.3 miles from breeding sites, approximately 95 percent of the adults and sub-adults occur within about 2,100 feet of their breeding pond.[120] If barriers are placed between the breeding site (typically stock ponds or vernal pools) and the upland site, the salamanders can be blocked from using essential components of their habitat. Urban development and moderately to heavily traveled roads are typical barriers to movement for this species, but conversion of grasslands to other vegetation types such as vineyards may also present a barrier to movement.

In preserving corridors and habitat areas as envisioned in the policies of the Draft General Plan, nursery sites for native wildlife would also be preserved. Policy CC-3.5F specifically addresses avoidance of impacts to sensitive species including California tiger salamanders in the critical habitat, and this would include avoidance of breeding sites that are designated as essential to the recovery of the species in the critical habitat area. A number of policies protect spawning areas for fish and fish habitat in general (Policies CO-2.6, CO-2.25, and CO-A34).

[119] M. Wong. 2009. pers. comm. March 16, 2009.

[120] Trenham, P. C. and H. B. Shaffer. 2005. Amphibian Upland Habitat Use and its Consequences for Population Viability. Ecological Applications. 15 (4): 1158-1168.

Finally, a number of policies promote wildlife friendly agriculture and attempt to balance habitat value in agricultural lands with agricultural practices. These include Policies AG-2.10, AG-2.13, and CO-2.17.

Impact BIO-4: Build-out of the Draft General Plan may result in the disruption of movement corridors and nursery sites on which local wildlife depend. (S)

Disruption of habitats, removal of riparian vegetation, and work within riparian corridors would result in significant impacts to movement corridors and nursery sites within the County. These corridors are the primary movement corridors that connect the western hills to the valley floor. As described in Impact BIO-1, the impact to riparian habitats from the build-out of the Draft General Plan was estimated at 217.1 acres in the unincorporated County. This represents about 2 percent of the total riparian habitat in the County. Provided that corridors and nursery site remain intact, the absolute magnitude of the impact can be less important than the timing of the impact and the location of the impact. For nursery sites, the most critical periods are when the animals are present and attempting to breed or rear young at the site. Disruption of Swainson's hawk nests during the nesting period, or removal of a nest tree during the fall or winter could result in nest failure for a pair of birds. Such a loss may reduce the chances for species recovery. For tiger salamanders, drawing down of a pond during the early spring may result the mortality of all the salamander larvae in the pond that year. For fish in the creeks, work within a creek may result in mortality to eggs or young.

For movement corridors, disruptions that interfere with seasonal movements (such as spawning runs in the Sacramento River) or that disrupt a key portion of the corridor can compromise the function of the corridor and prevent the animals from moving to their breeding or foraging habitat. Placement of barriers within the corridor, such as placement of a temporary or permanent dam in a creek, may completely close the corridor to movement, may limit wildlife movements to only a portion of the corridor, or may expose animals moving along the corridor to increased stress due to contact with humans and pets, or increased predation due to reduced corridor width or reduced cover. These same barriers may prevent wildlife species from accessing foraging areas that are essential for survival or reproduction. Development, infrastructure, and agricultural activities at the nursery sites or in the corridors may significantly impact the function of these sites and adversely affect the wildlife species that rely upon them.

Implementation of mitigation measures BIO-1a, BIO-1b, BIO-1c and BIO-1d and the following mitigation measure, along with the goals, policies, and actions in the Draft General Plan, would reduce the impact of the build-out of the Draft General Plan on movement corridors and nursery sites.

Mitigation Measure BIO-4a: The Draft General Plan shall be amended to include the following new policy in the Conservation and Open Space Element:

Policy CO-#: Avoid adverse impacts to wildlife movement corridors and nursery sites (e.g., nest sites, dens, spawning areas, breeding ponds). Preserve the functional value of movement corridors to ensure that essential habitat areas do not become isolated from one another due to the placement of either temporary or permanent barriers within the corridors. Encourage avoidance of nursery sites (e.g., nest sites, dens, spawning areas, breeding ponds) during periods when the sites are actively used and that nursery

sites which are used repeatedly over time are preserved to the greatest feasible extent or fully mitigated if they cannot be avoided.

Mitigation Measure BIO-4b: The Draft General Plan shall be amended to include the following new action in the Conservation and Open Space Element:

Action CO-#: Require new or retrofitted bridges, and new or expanded roads to incorporate design and construction measures to maintain the functional value of wildlife movement corridors.

Mitigation Measure BIO-4c: The Draft General Plan shall be amended to include the following new action in the Conservation and Open Space Element:

Action CO-#: Preserve grassland habitat within 2,100 feet of California tiger salamander breeding ponds and require that unavoidable impacts be fully mitigated consistent with local, State, and Federal requirements.

Mitigation Measure BIO-4d: Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d.

Implementation of these mitigation measures, in addition to the policies and actions contained in the Draft General Plan, would reduce potential adverse effects to movement corridors and nursery sites but not to a less than significant level. Therefore, impacts to movement corridors and nursery sites would remain significant and unavoidable. (SU)

(5) Impacts to Special-Status Species. Twenty-eight special-status plants and 50 special-status animals are known to occur or may potentially occur in Yolo County. These species can occur in many of the habitats in Yolo County and could be impacted by the implementation of the Draft General Plan by the direct loss of these species or the loss of their habitat. Critical habitat for seven species (Colusa grass, Solano grass, vernal pool tadpole shrimp, delta smelt, chinook salmon, steelhead, California tiger salamander) has been designated in the County (see Figure IV.J-3). These areas have been identified as being essential to the recovery of the federally listed species and may be impacted by development activities, infrastructure improvements, and agricultural activities. Although special-status plant and animal species typically are associated with natural, undeveloped lands where ecological functions and values are preserved and where such functions and values support the maintenance of viable, self-sustaining populations, some species occur in close proximity to human dominated environments. In Yolo County, an example of such a species is the Swainson's hawk. Swainson's hawks forage in agricultural fields and nest in individual remnant oaks, riparian areas, and other large trees sometimes in adjacent to roads or residences.

The Draft General Plan contains many policies that that contribute to the protection of special-status plants and animals. The majority of the policies, and actions are related to habitat protection, preservation, and enhancement. Policies, and actions that require, promote, or ensure the protection of habitats on which special-status species depend include LU-3.8, CC-1.5, CC-1.7, CC-1.15, CC-1,17, CC-2.15, CC-2.16, CC-4.3, CO-1.1, CO-1.3, CO-2.3, CO-2.14, CO-2.16, CO-2.21, CO-2.23, CO-2.31, CO-A30, and CO-A31. These policies and actions seek to promote a landscape-level approach

to conservation of plants, animals, and their habitats on a County-wide basis and provide habitat connectors for movement of species between the core areas as well as other preserved natural lands. Agricultural lands account for 88 percent of the County landscape and therefore agricultural activities and operations may have significant effects on natural lands that provide habitat for special-status plants and animals. Because agricultural operations require few if any permits to operate the potential exists for these operations to adversely affect habitats and species that may occur on or adjacent to agricultural lands. Therefore, some level of impact to these species is expected. Policies that focus on the issues of preserving ecological functions and values include CO-2.1, CO-2.2, CO-A25, and CO-A27. Another component essential to preserving and maintaining special-status species populations is the maintenance of corridors and connectivity between habitat areas. As described previously, the Draft General Plan contains policies and actions that specifically address the connectivity of open space areas (Policies CO-1.1, CO-1.3, and CO-2.36 and Action CO-A3).

In addition to the general habitat protections that would preserve special-status species habitat as well as common species in the County, the Draft General Plan also includes a number of policies that are specific to particular species or groups of species. Avoidance of impacts to California tiger salamanders are specifically called out in Policy CC-3.5F within the Dunnigan Specific Plan growth boundary. The policy requires avoidance of impacts to sensitive species (i.e., tiger salamanders) to the greatest extent feasible and requires that impacts be fully mitigated where they occur in the designated critical habitat area of the Dunnigan Hills Specific Plan growth boundary. Policy CO-2.4 requires that the County coordinate their efforts with other regional efforts to sustain or recover special-status species through habitat preservation and enhancement. This policy shows the intent of the County to work with resource agencies to preserve special-status species. A number of the policies and actions in the Draft General Plan address issues related to fish, and steelhead and salmon in particular (Policies CO-2.5, CO-2.6, and CO2.25, and Actions CO-A32, CO-A33, and CO-A34).

The state-listed Swainson's hawk nests and forages primarily in the agricultural areas of the County. In order to support these populations as well as other special status species such as burrowing owls, the Draft General Plan contains a number of policies that promote a balanced approach to preservation of wildlife habitat values in agricultural areas with farming practices and methods. These policies and action are not mandatory, but seek to promote wildlife friendly agriculture. Policies and actions in the Draft General Plan that promote habitat protection and wildlife friendly farm practices include Policies AG-2.10, AG-2.13, AG-A29, CO-1.29, CO-2.17, CO-2.18, CO-2.20, and CO-2.21.

Numerous State, federal and local agencies have responsibilities for special-status species and the Draft General Plan includes a number of policies that promote coordination among the agencies in order to preserve habitat that can support both common and special-status species in the County (Policies CO-1.16, CO-2.4, CO-2.34, CO-9.21). The Draft General Plan also requires that the Yolo County NCCP/HCP be adopted (Actions CO-A26, CO-A27). This plan will allow for the coordinated preservation of habitat for both special-status and common species. The Draft General Plan also includes policies and actions that promote specific management activities that would protect special-status plants, wildlife, and their habitats. Policies CO-2.15 and CO-2.30 support fire management in oak woodlands and perennial grassland, respectively for management of these habitats that can support special-status species. Policy CO-2.15 promotes mosquito abatement methods that are compatible with the protection of fish and wildlife. This policy would benefit special-status fish as well as wildlife such as vernal pool crustaceans. Policies CO-2.24 and CO-2.28 promote flood plain management that balances wildlife and habitat issues with the flood management. Consideration of

these issues in flood management decisions would result in protection of special-status species that occur in the managed floodplains of the Yolo Bypass.

Finally, policies LU-7.4, CO-1.25, CO-2.13, and Action CO-A19 promote the development of mitigation banks. Establishment of such banks in the resource parks anticipates some impacts to species and habitats form public agency actions, and provides for mitigation of those activities.

While implementation of these policies and actions would reduce impacts to special-status plants and animals, significant impacts related to growth allowed under the Draft General Plan would still occur.

Impact BIO-5: Build-out of the Draft General Plan may result in the loss or destruction of special-status plants and their habitats, and/or to special-status fish and wildlife and their habitats. (S)

Impacts to Special-status Plants. Twenty-eight special-status plants are known to occur or potentially in Yolo County. Twenty-four of these species were historically or currently recorded in Yolo County and four of these species are not currently known to occur in Yolo County but could potentially occur there. Impacts to special-status plants may result from residential and commercial development, agricultural activity, development of recreational facilities, infrastructure improvements, and other activities.

Special-status species (both plants and animals) potentially occur in the County in grasslands, woodlands, chaparral, vernal pools, wetlands, and riparian habitats. Using the GIS database to overlay the vacant lands in the unincorporated County expected to be developed under the Draft General Plan over the existing plant communities, it was determined that growth would impact 654.3 acres of grasslands, 99.5 acres of oak woodland/chaparral, 48.9 acres of wetlands and vernal pools, and 217.1 acres of riparian habitats which may support one or more special-status plant species. As noted previously, agricultural-related development (residential and commercial/industrial), activities and operations that take place in these habitats also may result in unquantified impacts to special-status species.

Implementation of mitigation measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d and the policies and action of the Draft General Plan will reduce the impact of growth to special-status plants under build-out of the Draft General Plan, but will not to a less than significant level. Therefore this impact is considered significant and unavoidable.

Impacts to Special-status Animals. Fifty special-status wildlife species are known to occur or potentially occur in the County. Impacts to special-status plants may result from residential and commercial development, agricultural activity, development of recreational facilities, infrastructure improvements, and other activities. Build-out of the Draft General Plan may also result in the loss or destruction of special-status fish and wildlife and their habitats resulting in a significant impact. Impacts to special-status wildlife species are described below.

Swainson's Hawk. Swainson's hawks are migrants and spend the spring and summer in the County where they breed and rear young, primarily in the agricultural regions. Swainson's hawks nest in oaks, riparian areas, and agricultural areas. This species forages in grasslands and open crop lands where vertebrate and invertebrate prey is abundant. Potential impacts to this species include loss of

nesting trees and disruption of nesting habitat, as well as loss of foraging habitat through various development activities and by changes in agricultural crops from types that are suitable for Swainson's hawk foraging such as row crops or alfalfa to those that are unsuitable such as vineyards.

The Yolo County NCCP/HCP Joint Powers Agency (JPA) administers a program for the County, and the cities of Davis, Woodland, Winters, and West Sacramento, to implement the Agreement Regarding Mitigation for Impacts to Swainson's Hawk Foraging Habitat in Yolo County with the California Department of Fish and Game (CDFG) regarding impacts to Swainson's hawk foraging habitat. The JPA reviews applications for development of open land within the NCCP/HCP planning area and collects acreage-based mitigation fees for development of the lands. The mitigation fees are to be sufficient to fund the acquisition, enhancement, and long-term management of one acre of Swainson's hawk foraging habitat for every one acre of foraging habitat that is lost to urban development. The interim program, which is dependent of completion of the Yolo County NCCP/HCP, is limited to providing mitigation for impacts to foraging habitat and does not authorize incidental take of Swainson's hawks. Impacts to Swainson's hawk foraging habitat would be considered significant.

California Tiger Salamander. In Yolo County, California tiger salamanders are known to occur in the Dunnigan Hills area west of Interstate 5. Critical habitat for the Central California Distinct Population Segment (DSP) has been designated in an area north and west of the town of Dunnigan but has a more expansive range and is known to occur throughout the grasslands of the Dunnigan Hills.[121] Grazing is typically compatible with habitat for California tiger salamanders, however, many development activities and some agricultural activities such as development of vineyards, would result in significant impacts to this species and their habitat.

California Red-Legged Frog. Though not known to occur in Yolo County, this species could occur in the western portions of the County such as the Blue Ridge and Little Blue Ridge. There are records of California red-legged frogs in adjacent areas of Solano and Napa counties and the range of this species could extend into western Yolo County. Several policies and actions (e.g., Policies CO-2.9 and CO-2.22; Actions CO-A32, CO-A33, and CO-A34) in the Conservation and Open Space Element would contribute to the conservation of California red-legged frog habitat in the County. Public works projects such as road improvements, bridge repairs, and drainage improvements, and agriculture activities may impact creeks, wetlands, or uplands that are inhabited by this species. If the species is detected in the County, then impacts to occupied sites would be considered significant.

Giant Garter Snake. Occurrences of this species are concentrated in lowland aquatic habitats between Davis, Woodland, and the Sacramento Rivers. A number of goals, policies, and actions in the Land Use and Community Character, Agricultural and Economic Development, and Conservation and Open Space Elements contribute either directly or indirectly to the conservation of potential Giant garter snake habitat. However, public works projects such as road improvements, bridge repairs, and drainage improvements, and agriculture activities may impacts creeks, wetlands, or uplands that are inhabited by this species. Impacts to giant garter snakes or their habitat would be considered significant.

[121] M. Wong. Executive Director, Yolo County Natural Heritage Program. March 16, 2009. Pers. comm.

Vernal Pool Crustaceans. The occurrence of listed vernal pool crustaceans, Conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp is restricted to the vernal pool areas of the County. Conservation of these species is directly or indirectly facilitated by various policies and actions (e.g., Policy CO-2.14) in the Conservation and Open Space Element. Build-out of the Draft General Plan will impact about 48.9 acres of wetlands and vernal pools in the unincorporated area that may provide habitat for one or more of these species. Public works projects such as road improvements, bridge repairs, and drainage improvements, and agriculture activities also may impact habitat for this species. Impacts to listed vernal pool crustaceans would be considered significant.

Valley Elderberry Longhorn Beetle. This insect occurs in stands of blue elderberry along riparian corridors (e.g. Cache and Putah Creeks) and uplands areas in the County. Many of the goals, policies, and actions in the Land Use and Community Character, Agricultural and Economic Development, and Conservation and Open Space Elements contribute either directly or indirectly to the conservation of the valley elderberry longhorn beetle and implementation of standard USFWS protocols is required as standard mitigation. Growth under build-out of the Draft General Plan will impact 217.1 acres of riparian habitat in the unincorporated County, some of which may support valley elderberry longhorn beetles. Agricultural activities in riparian areas or along ditches or in uplands where the plants occur may also impact this species. Impacts to valley elderberry longhorn beetle and their habitat would be considered significant.

Bank Swallow. Bank swallows have been documented breeding along the Sacramento River in Yolo County and along Cache Creek. Impacts to 217.1 acres of riparian area in the unincorporated County may adversely affect habitat for this species. Restoration activities along Cache Creek and agricultural activities may also impact this species or its habitat. Impacts to bank swallows would be considered significant.

Burrowing Owl. In Yolo County, burrowing owls are found at widely scattered localities in the valley floor and in the Dunnigan Hills. These owls occur in a variety of open habitat types ranging from relatively undisturbed grasslands to active agricultural areas and vacant land on the urban fringe. Various policies in the Agricultural and Economic Element and Conservation and Open Space Element directly or indirectly contribute to the preservation of burrowing owl habitat. Growth at build-out of the Draft General Plan would impact 654.3 acres of grasslands in the unincorporated area that may provide habitat for this species. This species may also occur throughout the agricultural areas along vacant fields, ditches, levees, or roadsides. Agricultural activities in and around burrowing owl burrows could result in impacts to this species. Impacts to burrowing owls would be considered significant.

Implementation of mitigation measures BIO-1a, BIO-1b, BIO-1c and BIO-1d as well as mitigation measure BIO-4a, BIO-4b and BIO-4c, along with the policies and actions in the Draft General Plan, would reduce the impact of the build-out of the Draft General Plan on special-status species.

Mitigation Measure BIO-5a: The Draft General Plan shall be amended to include the following new policy in the Conservation and Open Space Element:

Policy CO-#: Require that impacts to species listed under the State or federal Endangered Species Acts, or species identified as special-status by the resource agencies, be avoided to the greatest feasible extent. If avoidance is not

possible, fully mitigate impacts consistent with applicable local, State, and Federal requirements .

Mitigation Measure BIO-5b: The Draft General Plan shall be amended to include the following new policy in the Conservation and Open Space Element:

Action CO-#: Projects with the potential to impact Swainson's hawk foraging habitat shall follow the Agreement Regarding Mitigation for Impacts to Swainson's Hawk Foraging Habitat in Yolo County entered into by the CDFG and the Yolo County HIP/NCCP Joint Powers Agency.

Mitigation Measure BIO-5c: The Draft General Plan shall be amended to include the following new action in the Conservation and Open Space Element:

Action CO-#: For all projects that would impact potential California tiger salamander breeding or terrestrial habitat in the Dunnigan Hills area, require an assessment be conducted to determine the potential of development projects (such as roads, structures) to impact California tiger salamander upland or breeding habitat (if such assessment has not already been done as part of an approved HCP/NCCP). Such an assessment will be required for all projects located within 1.3 miles of a known or potential breeding site. Development activities that would result in isolation of the breeding or upland habitat will be required to mitigate for such impacts. Mitigation shall consist of two components: 1) habitat preservation and enhancement of suitable upland habitat, and 2) preservation and construction of new breeding habitat. CTS upland habitat will be mitigated at a ratio of 3:1 (preserved:impacted). Preserved upland habitat must be located within 2,100 feet of an occupied habitat and must have at least one suitable breeding pond.

Mitigation Measure BIO-5d: Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-4a, BIO-4b, and BIO-4c.

Implementation of these mitigation measures, in addition to the policies and actions contained in the Draft General Plan, would reduce potential adverse effects to special-status plant and animal species but not to a less than significant level. Therefore, impacts to special-status plant and animal species would remain significant and unavoidable. (SU)

(6) Reduce Wildlife Habitat. Implementation of the Draft General Plan will result in a loss of habitat within the County due to a conversion of agricultural and open space lands to new residential, commercial, industrial uses, and other uses. In the lowlands of the County, agricultural lands provide important habitat for a variety of special-status and common plants and animal species. Natural lands that provide habitat for native species may also be lost due to the conversion of such lands for agriculture such as the Dunnigan Hills area to vineyards.

Impact BIO-6: Build-out of the Draft General Plan would result in a general loss of habitat in natural and agricultural areas. (S)

Under build-out of the Draft General Plan 14,756 acres of land are assumed to be built out as follows: 4,738 acres of agricultural land for urban uses, 69 acres for roadway improvements, 4,103 acres preserved as open space, 162 acres for trails between towns and other places, and 5,684 acres for agricultural support services including farm dwelling and out-buildings, agricultural industrial plants, and agricultural commercial facilities. Not including the opens space lands the remaining total of 10,653 acres represents assumed potential loss of habitat as a result of build-out of the Draft General Plan. While the majority of the land in the County designated as agricultural lands are dedicated to intensive agricultural uses, this land use category also includes areas that are dominated by native plant communities. Most of the development proposed under the Draft General Plan will occur around existing historic towns in the eastern part of the County where the agricultural lands are dominated by intensive agriculture, resulting in about 72 percent of the proposed habitat reduction occurring on lands that are dedicated to intensive agricultural uses rather than on natural lands. With an additional 13 percent of the development centered in urban areas, only about 15 percent of the development proposed under the Draft General Plan would result in impacts to native plant communities including grasslands, oak woodlands, riparian areas, and wetlands.

The County has fostered a land conservation strategy and approach, as described previously, to preserve agricultural lands and develop agricultural practices that facilitate and promote habitat conservation efforts and that are wildlife friendly (Policies AG-2.8, AG-2.10, AG-2.13, and Action AG-A29). The County's practice of preserving and protecting agriculture has a significant beneficial effect for species in that agricultural land typically provide valuable habitat. Agricultural practices however can also result in impacts to wildlife.

In order to minimize the loss of habitat, the County has directed growth to the incorporated cities and the historic towns within growth boundary areas. The majority of new growth would take place in the four Specific Plan areas (Dunnigan, Knights Landing, Madison and Elkhorn) which would receive subsequent review and analysis under CEQA. This strategy results in the majority of growth being concentrated within the growth boundary areas thus maintaining the habitat values for native species on the remaining land.

Because of Yolo's conservation ethic, the County is rich with biological resources and there are few restrictions on range. While some land is lost to development, the approach the County is taking to urban development ensures high density, self-sustainability, small carbon footprints, hard urban edges, avoidance of important resources and many other benefits.

No feasible mitigation exists for the reduction in habitat within the County. New land cannot be created and reclaiming previously developed lands as habitat on a large scale is neither practical nor feasible. Habitat values can be increased on mitigation lands through implementation of appropriate management techniques, but the amount of land will not increase. For this reason, the reduction of habitat in the County remains significant and unavoidable.

Mitigation Measure BIO-6: None available.

Implementation of the policies and actions contained in the Draft General Plan would reduce impacts associated with general loss of habitat, natural and agricultural areas; however not to a less than significant level. Therefore, the reduction of habitat associated with build-out of the Draft General Plan in the County remains significant and unavoidable. (SU)

(7) Conflict with Plans and Policies of Other Agencies. Development of the Draft General Plan has been a coordinated effort with the Yolo County NCCP/HCP Joint Powers Agency to create a document that will provide the policy framework for preservation of the many native wildlife and plants that inhabit the County. The NCCP/HCP is anticipated to be completed and adopted in 2010[122] at which time the NCCP/HCP will become the overall framework detailing specific measures for conservation, restoration, enhancement, and recovery of listed species and their habitats in the County. The Draft General Plan contains a number of specific policies and actions that promote the coordination of the two efforts including Policy CO-1.16 that seeks to coordinate open space acquisitions with habitats acquisitions that are made by the Yolo Natural Heritage Program, while Policy CO-2.4 requires the County to coordinate with other regional efforts such as the Yolo County NCCP.HCP to sustain special-status species populations by preserving and enhancing their habitat, and Policy CO-9.21 says that the County will work to ensure that State and Federal habitat restoration efforts recognize and support the Yolo Natural Heritage Program. These three policies show the intention of the County to work with and promote the Yolo Natural Heritage Program in order to advance species and habitat conservation and recovery. Actions CO-A25 and CO-A26 provide more specific language on actual measures to be implemented in order to work cooperatively with the Natural Heritage Program. CO-A25 seeks to develop a conservation strategy that focuses on preservation and protection of functioning landscapes, watershed, and landscape corridors and to coordinate these efforts with the Natural Heritage program to ensure that this landscape approach to conservation that the County promotes is incorporated in to the NCCP/HCP. Action CO-A26 specifically requires the adoption and implementation of the NCCP/HCP by the County and its integration into the General Plan as appropriate. These Draft General Plan policies and actions demonstrate that the County is working with the Natural Heritage Program to create complementary documents that ultimately implement a comprehensive conservation plan for the County, and no potential policy conflicts would result.

With the inclusion of Policy CO-1.13 that states that the County will ensure compatibility of permitted land use activities with applicable, natural open space policies of the Land Use and Resource Management Plan of the Delta Protection Commission within the Delta Primary Zone, the Draft General Plan would not conflict with the Land Use and Resource Management Plan. Development proposed in the Draft General Plan could result in a winery and grape crushing facility on 103-acres on one of three sites in Clarksburg. Two of the sites are within the Primary Zone and under the jurisdiction of the Delta Protection Commission. However, this targeted future project would not conflict with the Draft General Plan policies and actions described in this section regarding open space or the management of lands used primarily as wildlife habitat.

The Draft General Plan does not conflict with the plans or policies of other agencies with respect to biological resource issues and potential impacts would be less-than-significant.

(8) Result in Adverse Impacts from Draft General Plan Policies Compared to 1983 General Plan Policies. The Draft General Plan represents a substantial revision from the 1983 General Plan with regard to the policy framework for biological resources.

A number of new or expanded goals and their supporting policies and actions have beneficial physical impacts as compared to the 1983 General Plan policies. These include new or expanded goals and

[122] M. Wong. Executive Director, Yolo County Natural Heritage Program. March 16, 2009. Personal communication.

supporting policies and actions that: 1) protect biological resources through open space conservation, buffers, habitat corridors, protection of trees and vegetation, protection of special status species, and habitat restoration (Goals LU-7, CC-1, CC-2, CO-2, and associated policies and actions); 2) protect habitat quality by protecting surface and ground water supply and quality, protecting air quality and reducing waste (Goals PF-1, PF-2, PF-9, CO-5, CO-6, HS-4, and associated policies and actions); 3) reduce the amount of land used for urban development, reduce the use of energy, water and other natural resources, and reduce pollution through smart growth, sustainable development, alternative energy sources, and green building (Goals LU-3, CC-4, PF-10, ED-3, ED-5, CO-7, and associated policies and actions); 4) reduce the impacts to biological resources from agriculture and resource extraction (Goals AG-2, AG-5, CO-3, and associated policies and actions); 5) promote a sense of public environmental stewardship, reduce vandalism of natural resources, and increase the amount of open space by promoting outdoor recreation and provision of parks and recreational facilities (Goals PF-3, PF-4, CO-1, and associated policies and actions).

Some of the new or modified goals in the Draft General Plan are similar to the 1983 General Plan goals and policies and have the same physical impacts. These include new or modified goals and supporting policies and actions that: 1) support a variety of land uses and protect agricultural land and support agricultural activities in the County (Goals LU-1, LU-2, CI-7, AG-1, AG-3, AG-4, AG-6); 2) administer the General Plan (Goal IN-1 and associated policies and actions).
Some of the new or modified goals in the Draft General Plan have both negative and positive physical impacts on biological resources, that overall, would result in less-than-significant impacts. These include new or modified goals and supporting policies and actions that: 1) protect and restore habitat but also increase water use and flood control in the Delta region (Goals LU-4, CO-9 and associated policies and actions); 2) promote a mixture of sustainable new development and preservation of open space in areas where Specific Plans are required (Goal CC-3, and associated policies and actions); 3) maintain transport of goods and facilitate dredging at the Port of Sacramento (Goal CI-8, and associated policies and actions); and 4) increase tourism that could increase physical impacts to biological resources but also increase County revenue needed to protect biological resources (Goal ED-4, and associated policies and actions).

A few of the new or modified goals in the Draft General Plan could have adverse physical impacts on biological resources. These include new or modified goals and supporting policies and actions that: 1) expand utilities infrastructure and housing production (Goals PF-11, HO-3, and associated policies and actions); 2) encourage commercial, industrial and agricultural growth, growth of communications, mining and tourism industries, and the expansion of businesses (Goals ED-1, ED-2, and associated policies and actions).

The goals and supporting policies in the Draft General Plan that support urban and economic growth could result in a variety of physical impacts to biological resources, including habitat loss, fragmentation and degradation, impacts to special status species, impacts to wetlands and riparian habitats, and others. However, the numerous new goals and supporting policies and actions designed to protect biological and other natural resources through smart growth, green building, sustainable design, protection of open spaces, reduction in use of natural resources, protection of air and water quality, and others, ensure that the Draft General Plan has a net positive physical impact to biological resources as compared to the 1983 General Plan.

Overall, implementation of the Draft General Plan Policies related to biological resources would not result in significant adverse physical impacts on biological resources as compared to the 1983 General Plan policies.