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21 November 2011

RE: Comment on City of Elk Grove Sphere of Influence EIR

Dear Mr. Lockhart,

Friends of the Swainson's Hawk asked me to comment on the City of Elk Grove Proposed Sphere of Influence Amendment Draft Environmental Impact Report (LAFC # 09-10) (Sacramento LAFCo 2011). My qualifications for preparing expert comments on this EIR are the following. I earned a Ph.D. degree in Ecology from the University of California at Davis in 1990, where I subsequently worked for 4 years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on the ecology of invading species, animal density and distribution, habitat selection, habitat restoration, interactions between wildlife and human infrastructure and activities, and on conservation of rare and endangered species. I have authored numerous papers on special-status species issues, including "Using the best scientific data for endangered species conservation," published in *Environmental Management* (Smallwood et al. 1999), and "Suggested standards for science applied to conservation issues" published in the *Transactions of the Western Section of The Wildlife Society* (Smallwood et al. 2001). I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and the Raptor Research Foundation, and I've been a part-time lecturer at California State University, Sacramento. I was also Associate Editor of wildlife biology's premier scientific journal, *The Journal of Wildlife Management*, as well as of *Biological Conservation*, and I was on the Editorial Board of *Environmental Management*.

I have performed avian surveys in California for twenty-two years (Smallwood et al. 1996, Smallwood and Nakamoto 2009). Over these years, I studied the impacts of human activities and human infrastructure on birds and other animals, including on Swainson's hawks (Smallwood 1995), burrowing owls (Smallwood et al. 2007), white-tailed kites (Erichsen et al. 1996, Smallwood and Nakamoto 2009), and other species. I studied fossorial animals (i.e., animals that burrow into soil, where they live much of their lives), including pocket gophers, ground squirrels, kangaroo rats, voles, harvester ants, and many other functionally similar groups. My qualifications are further summarized in my curriculum vitae, which is attached.

SITE VISITS

I visited the western aspect of the proposed City of Elk Grove Sphere of Influence for 65 minutes, 16:00-17:05 hours, on 9 November 2011 (Photos 1 and 2). I had also visited the Sunset Sky ranch Airport for 90 minutes on 12 August 1999. I observed 39 species of birds and mammals during my 2.5 hours on site, including two species listed as Threatened under the California Endangered Species Act (Table 1). From the roadway at Sky ranch Airport, I observed what appeared to be vernal pools and

wetland swales (Photos 1 and 2). I also observed inundated ponds and a riverine environment suitable for giant garter snakes nearby the runway (Photo 3).



Photo 1. Long-billed curlew covering an alfalfa field in the study area for the proposed City of Elk Grove Sphere of Influence Amendment, on 9 November 2011.



Photo 2. Pasture in the study area for the proposed City of Elk Grove Sphere of Influence Amendment, on 9 November 2011.

Table 1. Species observed by Smallwood in 65 minute visit to western aspect of proposed new Elk Grove Sphere of Influence, 16:00-17:05 hours, 9 November 2011, and during a 90 minute visit to SkyRanch Airport on 12 August 1999.

| Common name | Scientific name | Status ^a | Visit | Note(s) |
|------------------------------|------------------------------------|---------------------|---------|---------------------------|
| Great blue heron | <i>Ardea herodias</i> | | 11/9/11 | Several |
| Great egret | <i>Casmerodius albus</i> | | 8/12/99 | |
| Snowy egret | <i>Egretta thula</i> | | 8/12/99 | |
| Long-billed curlew | <i>Numenius americanus</i> | SSC | 11/9/11 | Hundreds |
| Sandhill crane | <i>Grus canadensis tabida</i> | CT | 11/9/11 | Several large flocks |
| Northern pintail | <i>Anus acuta</i> | | 8/12/99 | 18 birds |
| Willit | <i>Catoptrophorus semipalmatus</i> | | 8/12/99 | 25 birds |
| Killdeer | <i>Charadrius vociferus</i> | | 11/9/11 | Several |
| Turkey vulture | <i>Cathartes aura</i> | | 8/12/99 | |
| Cooper's hawk | <i>Accipiter cooperii</i> | SSC | 8/12/99 | |
| Swainson's hawk | <i>Buteo swainsoni</i> | CT | 8/12/99 | Several |
| Red-tailed hawk | <i>Buteo jamaicensis</i> | | 11/9/11 | Scattered over site |
| Northern harrier | <i>Circus cyaneus</i> | SSC | 11/9/11 | 3 birds |
| White-tailed kite | <i>Elanus leucurus</i> | CFP | 11/9/11 | 5 birds |
| American kestrel | <i>Falco sparverius</i> | | 11/9/11 | 2 birds; 1 captured mouse |
| Mourning dove | <i>Zenaida macroura</i> | | 11/9/11 | Multiple groups |
| California quail | <i>Callipepla californica</i> | | 11/9/11 | Large covey |
| Common raven | <i>Corvus corax</i> | | 11/9/11 | 1 bird |
| American crow | <i>Corvus brachyrhynchos</i> | | 11/9/11 | Some |
| Western scrub-jay | <i>Aphelocoma coerulescens</i> | | 11/9/11 | Few birds |
| Yellow-billed magpie | <i>Pica nuttalli</i> | | 11/9/11 | One bird |
| Northern mockingbird | <i>Mimus polyglottos</i> | | 11/9/11 | Few birds |
| Black phoebe | <i>Sayornis nigricans</i> | | 11/9/11 | 1 bird |
| Loggerhead shrike | <i>Lanius ludovicianus</i> | SSC | 11/9/11 | 1 bird |
| Song sparrow | <i>Melospiza melodia</i> | | 11/9/11 | 1 bird |
| White-crowned sparrow | <i>Zonotrichia leucophrys</i> | | 11/9/11 | Several |
| Golden-crowned sparrow | <i>Zonotrichia atricapilla</i> | | 11/9/11 | Several |
| Rufous-crowned sparrow | <i>Aimophila ruficeps</i> | | 11/9/11 | Many |
| Brewer's blackbird | <i>Euphagus cyanocephalus</i> | | 11/9/11 | Many |
| Red-winged blackbird | <i>Agelaius phoeniceus</i> | | 11/9/11 | Many |
| Western meadowlark | <i>Sturnella neglecta</i> | | 11/9/11 | Many |
| House finch | <i>Carpodacus mexicanus</i> | | 11/9/11 | Some |
| European starling | <i>Sturnus vulgaris</i> | | 11/9/11 | Many |
| Virginia opossum | <i>Didelphis virginianus</i> | | 8/12/99 | Tracks |
| Botta's pocket gopher | <i>Thomomys bottae</i> | | 11/9/11 | Burrow systems |
| Raccoon | <i>Procyon lotor</i> | | 11/9/11 | Road-killed (3) |
| Striped skunk | <i>Mephitis mephitis</i> | | 11/9/11 | Road-killed (1) |
| Black-tailed deer | <i>Odocoileus hemionus</i> | | 8/12/99 | Tracks |
| Northern Pacific rattlesnake | <i>Crotalus viridis oreganus</i> | | 8/12/99 | |

^a See Table 2 legend for a key to the acronyms indicating special status.



Photo 3. A wetland structure that looks like a vernal pool at Sunset Skyranch Airport, within the proposed Elk Grove Sphere of Influence Amendment study area, on 12 August 1999.



Photo 4. A wetland structure that looks like a vernal pool or swale at Sunset Skyranch Airport, within the proposed Elk Grove Sphere of Influence Amendment study area, on 12 August 1999.



Photo 5. A riverine environment at Sunset Skyranch Airport, within the proposed Elk Grove Sphere of Influence Amendment study area, on 12 August 1999.

SUFFICIENCY OF EIR AS AN INFORMATIVE DOCUMENT

Under CEQA,¹ “[A] paramount consideration is the right of the public to be informed in such a way that it can intelligently weigh the environmental consequences of any contemplated action and have an appropriate voice in the formulation of any decision.” The public needs information that is thorough, relevant, unbiased, and honest; the public needs full disclosure of the environmental setting and possible cumulative impacts. Documents presenting information from a biased perspective will tend to include omissions, logical fallacies, internal contradictions, and unfounded responses to substantial issues. In my review of the EIR, I found these types of problems, indicating that the EIR was insufficient in its provision of relevant information to the public.

The EIR was insufficiently informative about the biological resources occurring on the study area. It was insufficient because it relied on (1) a very cursory field survey performed by one person, and (2) a flawed use of the California Natural Diversity Data Base (CNDDDB) to identify biological resources likely occurring on the project area. It also made no effort to identify wildlife and fish movement corridors, nor did it use much of the available information on wildlife resources developed by professionals. Below I explain further.

Biological Resources Survey

On page 3.4-1, Dale Hameister performed reconnaissance survey on 11 October 2010. Thus, the most useful type of information on the biological resources occurring over 8,000 acres of project area was gathered by one person performing a single survey of unknown duration on one day in 2010. This level of effort gives new meaning to the term “reconnaissance” when applied to a professional survey of a proposed project site. However, not only was the survey much too cursory to be of much use, but the EIR did not even include a list of species detected by Mr. Hameister. I cannot see how the public can meaningfully participate with an environmental review if the review fails to report on the results of a biological survey.

LAFCo’s justification for performing an extremely cursory and ambiguous biological survey was the following: “Since no physical development is associated with the proposed project, a general biological resources assessment was conducted to document existing conditions” (page 3.4-1). This justification seems unsatisfactory, however, as LAFCo had earlier admitted that “The City’s available residential, industrial, and commercial land inventory is in the process of building out and may be unable to accommodate all anticipated urban growth within the city limits” (page ES-2). In other words, the City authorized the conversion of all lands within its current sphere of influence, so it is preparing to build out an expanded sphere of influence. The act of establishing the current Sphere of Influence resulted in the conversion of all available land to urban, commercial and industrial uses. Establishing an expanded Sphere of Influence would likely result in the same outcome, assuming the City of Elk Grove will stay consistent with its land-use decisions. It is reasonable to conclude that the proposed project is associated with physical development.

Even if one truly believes that the expansion of the Sphere of Influence would be an action that can be decoupled from physical development, then it would still be necessary to describe the state of biological resources in the project area. Decision-makers and the public need to be reasonably informed about the likely impacts and mitigation options that future development projects would need

¹ Environmental Planning and Information Council vs. County of El Dorado (1982) 131 Cal. App. 3d 350, 354.

to consider after the sphere of influence has been expanded in the manner proposed. For example, the City of Elk Grove's General Plan Policy CAQ-7, which encourages clustering of development to minimize impacts to wildlife habitat, would be much more effective if the clustering was planned out at the earliest stage, i.e., in a programmatic EIR, rather than on a project-by-project basis. Development clustering, if that is truly the style of development the City of Elk Grove intends, could be planned in a programmatic EIR to avoid wildlife and fish movement corridors and to minimize habitat fragmentation. Otherwise, those who prepare project-specific EIRs will cluster development (assuming they cluster at all) to suit their desired project outcomes without being informed of the intended clustering at other potential future project sites. Without landscape-level guidance, development clustering will be ineffective at strategically minimizing impacts to wildlife habitat and movement corridors

The most fundamental information needed in a programmatic EIR such as this one is a list of biological species likely to occur in the project area. A species list is needed to begin to understand the likely extent of the project's impacts and how those impacts might be mitigated. A species list is often developed from biological surveys performed in the project area, but they can also be developed from reports of other surveys in the area, from observations reported in CNDDDB, and from habitat relationships models, so long as the geographic ranges of the species also overlap the project area. However, CNDDDB records cannot be used to conclude a species' absence from a site, as was done repeatedly in this EIR (to be discussed later). The EIR did not include a comprehensive list of species documented in the project area, so it failed to provide readers with fundamental information. The EIR provide conclusions of the likelihood of occurrence of most special-status species, but I will also point out that the EIR's characterization of special-status was outdated (see Table 2).

In Table 2, I listed species of birds, mammals, amphibians, reptiles, and a few invertebrates potentially occurring on the project area. This list was derived from a query of the California Wildlife Habitat Relationships System (CWHHR), and amended by my observations of wildlife on site, and my review of CNDDDB and of geographic range maps. My review identified 235 species of terrestrial vertebrate species possibly, probably, or certainly occurring on the study area, indicating a biological richness that warrants a much more rigorous environmental review than was provided in the EIR.

Of the 235 species of terrestrial vertebrates at least possibly using the study area, 49 are special-status species (Table 2). That is, 21% of the species possibly occurring there are considered to be in trouble and in need of conservation actions, according to the California Department of Fish and Game and US Fish and Wildlife Service. The EIR should divulge this percentage of species with special-status, and it should closely examine the likely impacts to each species that would be caused by expanding the City of Elk Grove's Sphere of Influence.

My list of species potentially occurring on the project site is more comprehensive than what appears in the EIR, but it is also more accurate. In fact, the likelihoods of occurrence attributed to some species discussed in the EIR indicated the preparers of the EIR were relatively unfamiliar with wildlife in this part of California. For example, the EIR characterized the likelihood of white-tailed kites occurring on the site as "low" (Table 2), but I encountered the first of five individuals of this species within eight minutes of my arrival on site on 9 November 2011 (Photo 6). Based on what I know about the species (e.g., Erichsen et al. 1995, Smallwood et al. 1995), I never would have thought white-tailed kites would be absent from this project area.



Photo 6. White-tailed kite seen hovering over the study area of the proposed City of Elk Grove Sphere of Influence Amendment, 9 November 2011.

The EIR characterizes the likelihood of greater sandhill crane occurrence as “moderate” (EIR Table 3.4-2), though the EIR also states that sandhill crane has high potential to occur on the project site (page 3.4-36). Given the vegetation and soil conditions, and given the geographic range and habitat affinities of the species, I am confused why the preparer of the EIR would have thought that greater sandhill cranes would be attributed any other occurrence likelihood category than “high.” The only explanation provided was that no records appeared in CNDDDB, but this explanation was unsatisfactory (see discussion to follow). I saw multiple large flocks of this species flying across the project area, and some birds were on the ground.

The EIR characterized the likelihood of northern harrier occurrence as “moderate” (Table 2). Again, given the habitat and geographic range of the species, I am curious as to why the occurrence likelihood was not “high.” Furthermore, I observed multiple individuals of this species during both of my visits to the project area. The species’ occurrence in the project area is obvious. It appears, however, that the occurrence likelihood was downgraded due to lack of CNDDDB records. This explanation was flawed (see discussion to follow).

The EIR characterized the likelihood of burrowing owl occurrence as “moderate.” However, burrowing owls are known to occur in the project area (see EIR), so the occurrence likelihood is most certainly greater than moderate. The EIR also was inconsistent in its characterization of the likelihood of occurrence of this species. On page 3.4-37, the EIR states that burrowing owls have a high potential to occur on the project site, but in Table 3.4-2 it characterizes the potential as moderate.

The EIR attributed low likelihood of occurrence to sharp-shinned hawk, golden eagle, ferruginous hawk, prairie falcon, and merlin. However, the habitats of these species occur in the project area, and the geographic ranges of these species overlap the project area. Based on my experience with these species, I would be surprised if these species were truly unlikely to occur on the project site. The EIR implies that it is the agricultural setting of the project area that precludes golden eagles, but I have

observed golden eagles numerous times foraging in alfalfa fields and cattle range in the Central Valley (e.g., Smallwood and Geng 1993).

The EIR attributed no likelihood of occurrence on the project area by peregrine falcon and coast horned lizard. The EIR claims there is no foraging habitat available for peregrine falcons, but I have seen them multiple times in similar environmental settings. Coast horned lizards are claimed to be absent due to agricultural activity in the area. However, agriculture is not conflicting with coast horned lizards over much of the western aspect of the project area, or over multiple other parts of the project area, such as at Sunset Skyranch Airport.

The EIR attributed low likelihood of occurrence and no likelihood of occurrence to multiple species of special-status bats. I wonder how the preparers of the EIR could have come to the conclusion that these bat species were unlikely to occur in the study area? The preparers did not rely on any acoustic surveys or any bat surveys of any kind. A more appropriate conclusion in the face of uncertainty would be to err on the side of caution (National Research Council 1986, Shrader-Frechette and McCoy 1992, Smallwood et al. 1999, 2001), and to conclude the bats possibly or probably occur in the project area.

Overall, the EIR too often attributed occurrence likelihoods to special-status species that were lower than they should have been, and some special-status species were not considered in the EIR at all.

In characterizing vegetation cover types and habitat types, the EIR was also unsatisfactory. For example, LAFCo wrote, "There is very little riparian habitat within the project area" (page 3.4-1). The EIR could have clarified that the abundance of riparian habitat lies just beyond the boundary of the proposed Sphere of Influence amendment. By converting the land within the proposed amended Sphere of Influence, the project would most certainly have profound adverse impacts on riparian habitat.

Similarly, the EIR was inadequate in its portrayal of wetland habitat on the proposed study area. The EIR relied on the National Wetlands Inventory to conclude that there are 162.4 acres of freshwater emergent wetlands and 44.61 acres of freshwater ponds in the study area (page 3.4-5). However, the maps of wetland areas in the EIR appear incomplete (EIR Exhibit 3.4-1). I have seen what appear to me to be additional wetlands that are not mapped. For example, I saw swales and possible vernal pools at Sunset Skyranch Airport.

California Natural Diversity Data Base

It appears that lack of records in the CNDDDB served as the foundation for many of the conclusions that special-status species were unlikely to occur in the study area. LAFCo has made a fundamental error in its use of CNDDDB. CNDDDB records are voluntarily reported and many are not derived from scientific sampling, which means that lack of CNDDDB records does not equal species absence. CNDDDB records cannot be relied upon to determine the extent of habitat. To help get this message across, the California Department of Fish and Game posts a disclaimer on its California Natural Diversity Data Base web site: "*We work very hard to keep the CNDDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers.*" Similarly, the California Native Plant Society's Inventory of Rare and Endangered Species states the following: "*A reminder: Species not recorded*

for a given area may nonetheless be present, especially where favorable conditions occur.” All of LAFCo’s conclusions of species’ likelihood of occurrence based on CNDDDB records are invalid.

Wildlife Movement Corridors

The EIR made no attempt to identify or characterize wildlife movement corridors in the study area. Its justification for this neglected topic was that no wildlife movements had been identified by anyone else prior to the preparation of the EIR. The implication was that the preparer of the EIR is not responsible for performing any original analysis of potential biological impacts. I do not believe this justification is valid under CEQA.

Wildlife movement corridors can be routes used for migration, dispersal, home range patrol, or other types of movements, and they can include various vegetation cover types and terrain, depending on local conditions. A significant effect under CEQA, as I understand it, is whether the project will “interfere substantially with the movement of any resident or migratory fish or wildlife species.” Converting nearly eight thousand acres of wildlife habitat to houses will indeed interfere with the movement of wildlife between the undeveloped areas to the east, west, and south of the study area.

Wildlife movement patterns can be characterized to identify movement corridors. There is an established literature for addressing this issue. For example, Beier and Loe (1992) presented corridor functionality criteria. A little time on the site, which would be warranted by the size of the proposed project, could document wildlife movement patterns, leading to recognition of movement corridors.

Stop-over Habitat for Migrating Birds

The EIR does not discuss or even mention the use of the study area by migrating birds. Habitat patches are often critical for the persistence of special-status species, including for willow flycatcher, yellow warbler, white-faced ibis, and sandhill crane, among others. In fact, stop-over habitat is no less critical to bird species than is nesting habitat, the latter of which appears to have been the sole type of habitat assessed by the preparers of the EIR. Without considering the project’s impacts on stop-over habitat, the EIR is incomplete.

Table 2. Species of terrestrial vertebrates and select invertebrates potentially occurring and known to occur within the Elk Grove Sphere of Influence project site. Under **Status**, species are listed as FE = federal endangered, FT = threatened, BCC = federal bird species of conservation concern, CE = California endangered, CT = California threatened, SSC = California species of special concern (not threatened with extinction), but rare, very restricted in range, declining throughout range, peripheral portion of species' range, associated with habitat that is declining in extent), CFP = California Fully Protected, CSA = California Special Animal, CDFS = California Department of Forestry sensitive, and CNPS = California Native Plant Society listing. Recent listings were taken from CDFG (2011). Birds were assigned the new special status developed by Shuford and Gardali (2008): BSSC = Bird Species of Special Concern, BSSC1 = BSSC species with first priority special concern, BSSC2 = second priority, and BSSC3 = third priority; BCC = Birds of conservation concern, CBRL = California Bird Responsibility List. Under **CWHR ratings**, L, M, and H represent California Wildlife Habitat Relationships ratings of Low, Medium, and High for the habitats' fulfillment of the species need to reproduce, find cover and forage. The input parameters used in the CWHR analysis included the following: Sacramento County, annual grassland, fresh emergent wetland, riverine, vineyards, orchards, annual field crops, oak woodland (dense small trees, and sparse large trees), and Eucalyptus. The ratings used in the table were the highest ratings associated with habitat cover types used in the analysis. I excluded a few of the species that were listed in the CWHR output file based on my knowledge of the species regarding the likelihood of their occurrence at the project site.

| Common name | Species name | Status ^a | EIR rating of occurrence potential | CWHR ratings ^b | Smallwood assessment | Documented on site? |
|-----------------------------------|--|---------------------|------------------------------------|---------------------------|----------------------|---------------------|
| Arthropods | | | | | | |
| Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | FT, CE | Moderate | | Probable | |
| Vernal pool fairy shrimp | <i>Branchinecta lynchi</i> | FT | Moderate | | Probable | |
| Vernal pool tadpole shrimp | <i>Lepidurus packardii</i> | FE | Moderate | | Probable | |
| Conservancy fairy shrimp | <i>Branchinecta conservatio</i> | FE | Moderate | | Probable | |
| California linderiella | <i>Linderiella occidentalis</i> | | | | Probable | |
| Birds | | | | | | |
| Pied-billed grebe | <i>Podilymbus podiceps</i> | | | HHH | Probable | |
| Eared grebe | <i>Podiceps nigricollis</i> | | | HHH | Probable | |
| American white pelican | <i>Pelecanus erythrorhynchos</i> | BSSC1 | | MM | Possible | |
| Double-crested cormorant | <i>Phalacrocorax auritus</i> | SSC | | LLM | Probable | |
| Black-crowned Night Heron | <i>Nycticorax nycticorax</i> | CSA | | HHH | Probable | |
| Green heron | <i>Butorides striatus</i> | | | MHH | Probable | |
| Cattle egret | <i>Bubulcus ibis</i> | | | LHH | Certain | |

| | | | | | | | |
|-----------------------------|-----------------------------------|--|-----------|----------|-----|----------|-----|
| Snowy egret | <i>Egretta thula</i> | | CSA, CDFS | | HHH | Certain | Yes |
| Great egret | <i>Ardea alba</i> | | CSA, CDFS | | MHH | Certain | Yes |
| Great blue heron | <i>Ardea herodias</i> | | CSA, CDFS | | HHH | Certain | Yes |
| White-faced ibis | <i>Plegadis chihi</i> | | SSC | | | Certain | |
| Greater sandhill crane | <i>Grus canadensis tabida</i> | | CT, CFP | Moderate | | Certain | Yes |
| Lesser sandhill crane | <i>Grus Canadensis canadensis</i> | | BSSC3 | | | Probably | |
| Greater white-fronted goose | <i>Anser albifrons</i> | | | | HH | Probable | |
| Snow goose | <i>Chen caerulescens</i> | | | | HH | Possible | |
| Ross's goose | <i>Chen rossii</i> | | | | HH | Possible | |
| Canada goose | <i>Branta Canadensis</i> | | | | HHH | Probable | |
| Mallard | <i>Anas platyrhynchos</i> | | | | HHH | Certain | |
| Northern pintail | <i>Anas acuta</i> | | | | HHH | Probable | Yes |
| Northern shoveler | <i>Anas clypeata</i> | | | | HHH | Possible | |
| Green-winged teal | <i>Anas crecca</i> | | | | HHH | Probable | |
| Blue-winged teal | <i>Anas discors</i> | | | | HHM | Probable | |
| Eurasian wigeon | <i>Anas Penelope</i> | | | | HH | Possible | |
| American wigeon | <i>Anas Americana</i> | | | | HHH | Probable | |
| Wood duck | <i>Aix sponsa</i> | | | | HH | Unlikely | |
| Lesser scaup | <i>Aythya affinis</i> | | | | HHH | Possible | |
| Common goldeneye | <i>Bucephala clangula</i> | | | | HH | Possible | |
| Barrow's goldeneye | <i>Bucephala islandica</i> | | BSSC | | MM | Unlikely | |
| Bufflehead | <i>Bucephala albeola</i> | | | | LL | Certain | |
| Hooded merganser | <i>Lophodytes cucullatus</i> | | | | HH | Possible | |
| Common merganser | <i>Mergus merganser</i> | | | | HH | Possible | |
| Virginia rail | <i>Rallus limicola</i> | | | | | | |
| Sora | <i>Porzana Carolina</i> | | | | | Probable | |
| Common moorhen | <i>Gallinula chloropus</i> | | | | | Probable | |
| American coot | <i>Fulica Americana</i> | | | | | Probable | |
| Spotted sandpiper | <i>Actitis macularia</i> | | | | LMH | Probable | |
| Whimbrel | <i>Numenius phaeopus</i> | | BCC | | HH | Possible | |
| Western sandpiper | <i>Calidris mauri</i> | | | | HH | Possible | |
| Least sandpiper | <i>Calidris minutilla</i> | | | | HH | Possible | |
| Baird's sandpiper | <i>Calidris bairdii</i> | | | | HH | Possible | |
| Common snipe | <i>Gallinago gallinago</i> | | | | HHH | Certain | |

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|-----------------------|------------------------------------|------------|----------|--|-----|----------|
| Wilson's phalarope | <i>Phalaropus tricolor</i> | | | | HHH | Probable |
| Greater yellowlegs | <i>Tringa melanoleuca</i> | | | | HH | Certain |
| Lesser yellowlegs | <i>Tringa flaviceps</i> | | | | HH | Possible |
| Willet | <i>Catoptrophorus semipalmatus</i> | | | | HH | Probable |
| Long-billed curlew | <i>Numenius americanus</i> | BCC, SSC | | | HHH | Certain |
| Dunlin | <i>Calidris alpina</i> | | | | HH | Certain |
| Long-billed dowitcher | <i>Limnodromus scolopaceus</i> | | | | HH | Possible |
| Black-bellied plover | <i>Pluvialis squatarola</i> | | | | HH | Possible |
| Semi-palmated plover | <i>Charadrius semipalmatus</i> | | | | LL | Unlikely |
| Killdeer | <i>Charadrius vociferus</i> | | | | HHH | Certain |
| Mountain plover | <i>Charadrius montanus</i> | BCC, BSSC2 | | | HH | Probable |
| Black-necked stilt | <i>Himantopus mexicanus</i> | | | | MMH | Certain |
| American avocet | <i>Recurvirostra Americana</i> | | | | MMH | Certain |
| Bonaparte's gull | <i>Larus philadelphia</i> | | | | LL | Possible |
| Mew gull | <i>Larus canus</i> | | | | LL | Possible |
| Ring-billed gull | <i>Larus delawarensis</i> | | | | HH | Probable |
| California gull | <i>Larus californicus</i> | SSC | | | HH | Certain |
| Herring gull | <i>Larus argentatus</i> | | | | MM | Probable |
| Glaucous-winged gull | <i>Larus glaucescens</i> | | | | LL | Unlikely |
| Black tern | <i>Chlidonias niger</i> | BSSC2 | | | HHH | Possible |
| Caspian tern | <i>Sterna caspia</i> | | | | MH | Possible |
| Forster's tern | <i>Sterna forsteri</i> | | | | LMH | Possible |
| Turkey vulture | <i>Cathartes aura teter</i> | | | | HHH | Certain |
| Osprey | <i>Pandion haliaetus</i> | SSC | | | LLH | Unlikely |
| Bald eagle | <i>Haliaeetus leucocephalus</i> | FT, CE | None | | LLH | Unlikely |
| Golden eagle | <i>Aquila chysaetos</i> | CFP | Low | | HHH | Certain |
| Cooper's hawk | <i>Accipiter cooperii</i> | SSC | | | HHH | Certain |
| Sharp-shinned hawk | <i>Accipiter striatus velox</i> | SSC | Low | | MHH | Probable |
| Northern harrier | <i>Circus cyaneus</i> | BSSC3 | Moderate | | HHH | Certain |
| White-tailed kite | <i>Elanus leucurus</i> | CFP | Low | | HHH | Certain |
| Red-tailed hawk | <i>Buteo jamaicensis</i> | | | | HHH | Certain |
| Ferruginous hawk | <i>Buteo regalis</i> | SSC | Low | | HH | Certain |
| Swainson's hawk | <i>Buteo swainsoni</i> | BCC, CT | High | | MMH | Certain |
| Red-shouldered hawk | <i>Buteo lineatus</i> | | | | HHH | Certain |

| | | | | | | |
|---------------------------|-----------------------------------|------------|----------|--|-----|-----------------|
| Rough-legged hawk | <i>Buteo lagopus</i> | | | | MH | Probable |
| Peregrine falcon | <i>Falco peregrinus anatum</i> | BCC, CE | None | | HHH | Probable |
| Prairie falcon | <i>Falco mexicanus</i> | BCC, SSC | Low | | HHH | Probable |
| American kestrel | <i>Falco sparverius</i> | | | | HHH | Certain Yes |
| Merlin | <i>Falco columbarius</i> | SSC | Low | | MH | Certain |
| Wild turkey | <i>Melagris gallopavo</i> | | | | HHH | Probable |
| California quail | <i>Callipepla californica</i> | | | | HHH | Probable Yes |
| Ring-necked pheasant | <i>Phasianus colchicus</i> | | | | HHH | Certain |
| Mourning dove | <i>Zenaida macroura</i> | | | | HHH | Certain Yes |
| Rock dove | <i>Columba livea</i> | | | | HHH | Certain |
| Band-tailed pigeon | <i>Columba fasciata</i> | | | | MMH | Possible |
| Greater roadrunner | <i>Geococcyx californicus</i> | | | | LLL | Unlikely |
| Barn owl | <i>Tyto alba</i> | | | | HHH | Certain |
| Western screech owl | <i>Otus kennicottii</i> | | | | HHH | Probable |
| Great horned owl | <i>Bubo virginianus pacificus</i> | | | | HHH | Certain |
| Northern pygmy owl | <i>Glaucidium gnoma</i> | | | | HHH | Possible |
| Western burrowing owl | <i>Athene cunicularia hypugea</i> | BCC, BSSC2 | Moderate | | HHH | Certain Yes |
| Short-eared owl | <i>Asio flammeus</i> | BSSC3 | | | HHH | Probable |
| Lesser nighthawk | <i>Chordeiles acutipennis</i> | | | | MMH | Possible |
| Common poorwill | <i>Phalaenoptilus nuttallii</i> | | | | HHH | Possible |
| White-throated swift | <i>Aeronautes saxatalis</i> | | | | HHH | Unlikely |
| Black-chinned hummingbird | <i>Archilochus alexandri</i> | | | | HHH | Possible |
| Anna's hummingbird | <i>Calypte anna</i> | | | | HHH | Certain |
| Calliope hummingbird | <i>Stellula calliope</i> | | | | MM | Unlikely |
| Rufous hummingbird | <i>Selasphorus rufus</i> | | | | MM | Unlikely |
| Allen's hummingbird | <i>Selasphorus sasin</i> | CBRL | | | HHH | Certain |
| Belted kingfisher | <i>Ceryle alcyon</i> | | | | HHH | Certain |
| Lewis' woodpecker | <i>Melanerpes lewis</i> | BCC | | | HHH | Probable |
| Downy woodpecker | <i>Picoides pubescens</i> | | | | HHH | Certain |
| Red-breasted sapsucker | <i>Sphyrapicus ruber</i> | | | | HH | Unlikely |
| Nuttall's woodpecker | <i>Picoides nuttalli</i> | CBRL | | | HHH | Possible |
| Northern flicker | <i>Colaptes auratus cafer</i> | | | | HHH | Certain |
| Western wood-pewee | <i>Contopus sordidulus</i> | | | | HHH | Probable |
| Hammond's flycatcher | <i>Empidonax hammondi</i> | | | | LL | Unlikely |

| | | | | | | | |
|-------------------------------|-------------------------------------|--|--|-------|-----|----------|-----|
| Dusky flycatcher | <i>Empidonax oberholseri</i> | | | | LL | Unlikely | |
| Gray flycatcher | <i>Empidonax wrightii</i> | | | | LL | Unlikely | |
| Pacific-slope flycatcher | <i>Empidonax difficilis</i> | | | | HH | Unlikely | |
| Black phoebe | <i>Sayornis nigricans semiatra</i> | | | | | Certain | Yes |
| Say's phoebe | <i>Sayornis saya</i> | | | | HH | Probable | |
| Ash-throated flycatcher | <i>Myiarchus cinerascens</i> | | | | HHH | Probable | |
| Western kingbird | <i>Tyrannus verticalis</i> | | | | MMH | Certain | |
| California horned lark | <i>Eremophila alpestris actia</i> | | | CBRL | HHH | Probable | |
| Purple martin | <i>Progne subis</i> | | | BSSC2 | MH | Unlikely | |
| Tree swallow | <i>Tachycineta bicolor</i> | | | | MHH | Probable | |
| Violet-green swallow | <i>Tachycineta thalassina</i> | | | | HHH | Probable | |
| Northern rough-winged swallow | <i>Stelgidopteryx serripennis</i> | | | | HHH | Probable | |
| Bank swallow | <i>Riparia riparia</i> | | | CT | HHH | Possible | |
| Cliff swallow | <i>Hirundo pyrrhonota</i> | | | | HHH | Certain | |
| Barn swallow | <i>Hirundo rustica</i> | | | | HHH | Certain | |
| Western scrub-jay | <i>Aphelocoma coerulescens</i> | | | | | Certain | Yes |
| Yellow-billed magpie | <i>Pica nuttalli</i> | | | CBRL | HHH | Certain | Yes |
| Common raven | <i>Corvus corax</i> | | | | | Certain | Yes |
| American crow | <i>Corvus brachyrhynchos</i> | | | | HHH | Certain | Yes |
| Oak titmouse | <i>Parus inornatus</i> | | | CBRL | HHH | Probable | |
| Bushtit | <i>Psaltriparus minimus</i> | | | | HHH | Certain | |
| Red-breasted nuthatch | <i>Siitta canadensis</i> | | | | MM | Unlikely | |
| White-breasted nuthatch | <i>Siitta carolinensis aculeata</i> | | | | HHH | Probable | |
| Brown creeper | <i>Certhia americana</i> | | | | LL | Unlikely | |
| Rock wren | <i>Salpinctes obsoletus</i> | | | | HHL | Unlikely | |
| Bewick's wren | <i>Thryomanes bewickii</i> | | | | HHH | Probable | |
| House wren | <i>Troglodytes aedon</i> | | | | HHH | Probable | |
| Winter wren | <i>Cistothorus</i> | | | | LLL | Possible | |
| American dipper | <i>Cinclus mexicanus</i> | | | | HMM | Unlikely | |
| Golden-crowned kinglet | <i>Regulus satrapa</i> | | | | MM | Unlikely | |
| Ruby-crowned kinglet | <i>Regulus calendula</i> | | | | HH | Probable | |
| Blue-gray gnatcatcher | <i>Polioptila caerulea</i> | | | | HHH | Possible | |
| Western bluebird | <i>Sialia mexicana</i> | | | | HHH | Certain | |
| Mountain bluebird | <i>Sialia currucoides</i> | | | | MH | Possible | |

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|-----------------------------|-------------------------------------|------------|-----|--|-----|----------|
| Swainson's thrush | <i>Catharus ustulatus</i> | | | | LMM | Possible |
| Hermit thrush | <i>Catharus guttatus</i> | | | | MM | Possible |
| American robin | <i>Turdus migratorius</i> | | | | MHH | Certain |
| Varied thrush | <i>Ixoreus naevius</i> | | | | MM | Possible |
| Wrentit | <i>Chamaea fasciata</i> | CBRL | | | LLL | Unlikely |
| Loggerhead shrike | <i>Lanius ludovicianus</i> | BCC, BSSC2 | | | HHH | Certain |
| Northern mockingbird | <i>Mimus polyglottos</i> | | | | HHH | Certain |
| California thrasher | <i>Toxostoma redivivum</i> | CBRL | | | LLL | Unlikely |
| American pipit | <i>Anthus rubescens</i> | | | | HH | Possible |
| Cedar waxwing | <i>Bombycilla cedrorum</i> | | | | HH | Possible |
| Phainopepla | <i>Phainopepla nitens</i> | | | | MMH | Possible |
| European starling | <i>Sturnus vulgaris</i> | | | | HHH | Certain |
| Hutton's vireo | <i>Vireo huttoni</i> | | | | HHH | Possible |
| Warbling vireo | <i>Vireo gilvus</i> | | | | HHH | Probable |
| Orange-crowned warbler | <i>Vermivora celata</i> | | | | HHH | Probable |
| Nashville warbler | <i>Vermivora ruficapilla</i> | | | | MM | Unlikely |
| Yellow-rumped warbler | <i>Dendroica coronata</i> | | | | LHH | Certain |
| Yellow warbler | <i>Dendroica petachia brewsteri</i> | BSSC2 | Low | | LHH | Possible |
| Black-throated gray warbler | <i>Dendroica nigrescens</i> | | | | MH | Unlikely |
| Townsend's warbler | <i>Dendroica townsendi</i> | | | | HH | Possible |
| Hermit warbler | <i>Dendroic occidentalis</i> | | | | MM | Possible |
| MacGillivray's warbler | <i>Oporonis tolmiei</i> | | | | LL | Unlikely |
| Common yellowthroat | <i>Geothlypis trichas</i> | | | | HHH | Probable |
| Wilson's warbler | <i>Wilsonia pusilla</i> | | | | HH | Possible |
| Black-headed grosbeak | <i>Pheucticus melanocephalus</i> | | | | MMM | Probable |
| Blue grosbeak | <i>Guiraca caerulea</i> | | | | MH | Probable |
| Lazuli bunting | <i>Passerina amoena</i> | | | | HHH | Possible |
| California towhee | <i>Pipilo fuscus</i> | CBRL | | | LMM | Probable |
| Sacramento spotted towhee | <i>Pipilo erythrophthalmus</i> | CBRL | | | LHH | Probable |
| Chipping sparrow | <i>Spizella passerina</i> | | | | HHH | Probable |
| Grasshopper sparrow | <i>Ammodramus savannarum</i> | BSSC2 | | | HHH | Probable |
| Vesper sparrow | <i>Pooecetes gramineus</i> | | | | LHH | Possible |
| Modesto song sparrow | <i>Melospiza melodia malliardi</i> | BSSC3 | | | HHH | Certain |
| Lincoln's sparrow | <i>Melospiza lincolni</i> | | | | MM | Possible |

| | | | | | | | |
|--------------------------|--------------------------------------|------------|--|----------|-----|----------|-----|
| Savannah sparrow | <i>Passerculus sandwichensis</i> | | | | HHH | Probable | |
| Rufous-crowned sparrow | <i>Aimophila ruficeps</i> | | | | HHH | Certain | Yes |
| Lark sparrow | <i>Chondestes grammacus</i> | | | | HHH | Probable | |
| Fox sparrow | <i>Passerella iliaca</i> | | | | MM | Possible | |
| White-crowned sparrow | <i>Zonotrichia leucophrys</i> | | | | LMM | Certain | Yes |
| Golden-crowned sparrow | <i>Zonotrichia atricapilla</i> | | | | HH | Probable | Yes |
| Dark-eyed junco | <i>Junco hyemalis</i> | | | | HHH | Certain | |
| Western meadowlark | <i>Sturnella neglecta</i> | | | | HHH | Certain | Yes |
| Tricolored blackbird | <i>Agelaius tricolor</i> | BCC, BSSC1 | | Moderate | HHH | Probable | |
| Red-winged blackbird | <i>Agelaius phoeniceus</i> | | | | HHH | Certain | Yes |
| Yellow-headed blackbird | <i>Xanthocephalus xanthocephalus</i> | BSSC3 | | Moderate | HHH | Probable | |
| Brewer's blackbird | <i>Euphagus cyanocephalus</i> | | | | HHH | Certain | Yes |
| Brown-headed cowbird | <i>Molothrus ater</i> | | | | MHH | Certain | |
| Hooded oriole | <i>Icterus cucullatus</i> | | | | MMM | Possible | |
| Bullock's oriole | <i>Icterus galbula</i> | | | | HHH | Probable | |
| Western tanager | <i>Piranga ludoviciana</i> | | | | HH | Possible | |
| Pine siskin | <i>Carduelis pinus</i> | | | | LMH | Possible | |
| American goldfinch | <i>Carduelis tristis</i> | | | | LMH | Certain | |
| Lesser goldfinch | <i>Carduelis psaltria</i> | | | | HHH | Probable | |
| Lawrence's goldfinch | <i>Carduelis lawrencei</i> | BCC, CBRL | | | HHH | Possible | |
| Purple finch | <i>Carpodacus purpureus</i> | | | | LLL | Probable | |
| House finch | <i>Carpodacus mexicanus</i> | | | | HHH | Certain | Yes |
| House sparrow | <i>Passer domesticus</i> | | | | MMH | Certain | |
| Mammals | | | | | | | |
| Virginia opossum | <i>Didelphis virginianus</i> | | | | MMM | Certain | Yes |
| Ornate shrew | <i>Sorex ornatus</i> | SSC | | | MMM | Possible | |
| Trowbridge shrew | <i>Sorex trowbridgei</i> | | | | LLL | Unlikely | |
| Broad-footed mole | <i>Scapanus latimanus</i> | | | | HHH | Unlikely | |
| Pallid bat | <i>Antrozous pallidus pacificus</i> | SSC | | Low | MMH | Probable | |
| Spotted bat | <i>Euderma maculatum</i> | SSC | | Low | L | Possible | |
| Townsend's big-eared bat | <i>Plecotus townsendii</i> | SSC | | Low | MMM | Possible | |
| Western mastiff bat | <i>Eumops perotis</i> | SSC | | None | MMH | Possible | |
| Yuma myotis | <i>Myotis yumanensis saturatus</i> | | | | HHH | Possible | |
| California myotis | <i>Myotis californicus</i> | | | | MMM | Probable | |

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|----------------------------|---------------------------------------|-----|----------|--|-----|----------|
| Silver-haired bat | <i>Lasionycteris noctivagans</i> | | | | MMM | Unlikely |
| Western pipistrelle | <i>Pipistrellus Hesperus merriami</i> | | | | MMM | Probable |
| Big brown bat | <i>Eptesicus fuscus bernardinus</i> | | | | HHH | Probable |
| Western red bat | <i>Lasiurus borealis teleotis</i> | SSC | Low | | MMM | Probable |
| Hoary bat | <i>Lasiurus cinereus cinereus</i> | | | | HHH | Probable |
| Brazilian free-tailed bat | <i>Tadarida brasiliensis muscula</i> | | | | MMM | Possible |
| Brush rabbit | <i>Sylvilagus bachmani</i> | | | | MMH | Unlikely |
| Desert cottontail | <i>Sylvilagus audubonii</i> | | | | MMH | Certain |
| Black-tailed jackrabbit | <i>Lepus californicus</i> | | | | MMH | Certain |
| California ground squirrel | <i>Spermophilus beecheyi</i> | | | | HHH | Certain |
| Eastern gray squirrel | <i>Sciurus carolinensis</i> | | | | LLL | Probable |
| Western gray squirrel | <i>Sciurus griseus</i> | | | | HHH | Probable |
| Eastern fox squirrel | <i>Sciurus niger</i> | | | | MMM | Possible |
| Botta's pocket gopher | <i>Thomomys bottae</i> | | | | HHH | Certain |
| Heerman's kangaroo rat | <i>Dipodomys heermanni</i> | | | | MMM | Possible |
| California kangaroo rat | <i>Dipodomys californicus</i> | SSC | | | HHH | Possible |
| San Joaquin pocket mouse | <i>Perognathus inornatus</i> | | | | HHH | Probable |
| California pocket mouse | <i>Chaetodipus californicus</i> | | | | HHH | Possible |
| Western harvest mouse | <i>Reithrodontomys megalotis</i> | | | | HHH | Probable |
| Deer mouse | <i>Peromyscus maniculatus</i> | | | | MMM | Certain |
| Brush mouse | <i>Peromyscus boylei</i> | | | | LLL | Unlikely |
| Pinon mouse | <i>Peromyscus truei</i> | | | | LLH | Unlikely |
| Dusky-footed woodrat | <i>Neotoma fuscipes</i> | | | | MMM | Unlikely |
| California vole | <i>Microtis californicus</i> | | | | HHH | Certain |
| House mouse | <i>Mus musculus</i> | | | | HHH | Certain |
| Norway rat | <i>Rattus norvegicus</i> | | | | MMM | Certain |
| Black rat | <i>Rattus rattus</i> | | | | MMM | Certain |
| Common porcupine | <i>Erethizon dorsatum</i> | | | | LLH | Unlikely |
| American badger | <i>Taxidea taxus</i> | SSC | Moderate | | HHH | Probable |
| Long-tailed weasel | <i>Mustela frenata</i> | | | | MMH | Possible |
| Western spotted skunk | <i>Spilogale gracilis</i> | | | | MMM | Probable |
| Striped skunk | <i>Mephitis mephitis</i> | | | | MMH | Certain |
| Ringtail | <i>Bassariscus astutus</i> | CFP | | | LLH | Unlikely |
| Raccoon | <i>Procyon lotor</i> | | | | MMH | Certain |
| | | | | | | Yes |

| | | | CFP | | LLL | Unlikely |
|----------------------------------|---------------------------------|--|---------|----------|-----|----------|
| Mountain lion | <i>Puma concolor</i> | | | | LLL | Unlikely |
| Bobcat | <i>Felis rufus</i> | | | | MMM | Possible |
| Coyote | <i>Canis latrans lestes</i> | | | | LMH | Certain |
| San Joaquin kit fox | <i>Vulpes macrotis mutica</i> | | None | | HHH | Unlikely |
| Gray fox | <i>Urocyon cinereoargenteus</i> | | | | MMH | Probable |
| Red fox | <i>Vulpes vulpes</i> | | | | LMH | Possible |
| Reptiles | | | | | | |
| Western skink | <i>Eumeces skiltonianus</i> | | | | MMM | Probable |
| Gilbert's skink | <i>Eumeces gilberti</i> | | | | MMM | Probable |
| Western fence lizard | <i>Sceloporus occidentalis</i> | | | | HHH | Certain |
| Western whiptail | <i>Aspidoscelis tigris</i> | | | | MMM | Possible |
| Northern alligator lizard | <i>Gerrhonotus coeruleus</i> | | | | MMM | Probable |
| Coast horned lizard | <i>Phrynosoma coronatum</i> | | SSC | None | MMM | Possible |
| Slider | <i>Pseudemys scripta</i> | | | | LLL | Probable |
| Western pond turtle | <i>Clemmys m. marmorata</i> | | SSC | Moderate | HHH | Probable |
| Ringneck snake | <i>Diadophis punctatus</i> | | | | MMM | Unlikely |
| Sharp-tailed snake | <i>Contia tenuis</i> | | | | MMM | Unlikely |
| Racer | <i>Coluber constrictor</i> | | | | HHH | Probable |
| Striped racer | <i>Masticophis lateralis</i> | | | | LLL | Unlikely |
| Common garter snake | <i>Thamnophis sirtalis</i> | | | | HHH | Certain |
| Western terrestrial garter snake | <i>Thamnophis elegans</i> | | | | HHH | Probable |
| Giant garter snake | <i>Thamnophis gigas</i> | | FT, CT | Moderate | HHH | Probable |
| Night snake | <i>Hypsiglena torquata</i> | | | | MMM | Possible |
| Common kingsnake | <i>Lampropeltis getulus</i> | | | | MMM | Probable |
| California mountain kingsnake | <i>Lampropeltis zonata</i> | | | | LLL | Possible |
| Gopher snake | <i>Pituophis melanoleucus</i> | | | | HHH | Certain |
| Western rattlesnake | <i>Crotalus viridis</i> | | | | MMM | Probable |
| Amphibians | | | | | | Yes |
| California newt | <i>Taricha torosa sierrae</i> | | | | HHH | Unlikely |
| California slender salamander | <i>Batrachoseps attenuatus</i> | | | | MMM | Unlikely |
| Long-toed salamander | <i>Ambystoma macrodactylum</i> | | | | HHH | Unlikely |
| California tiger salamander | <i>Ambystoma californiense</i> | | FT, SSC | Low | HHH | Possible |
| Ensatina | <i>Ensatina eschscholtzii</i> | | | | LLL | Unlikely |
| Arboreal salamander | <i>Aneides lugubris</i> | | | | MMM | Possible |

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|-----------------------------|------------------------------|---------|------|------|-----|----------|
| Pacific chorus frog | <i>Hyla regilla</i> | | | | HHH | Certain |
| Foothill yellow-legged frog | <i>Rana boylei</i> | SSC | None | None | LLL | Unlikely |
| California red-legged frog | <i>Rana aurora draytonii</i> | FT, SSC | None | None | HHH | Unlikely |
| Bullfrog | <i>Rana catesbeiana</i> | | | | MHH | Probable |
| Western spadefoot | <i>Scaphiopus hammondi</i> | SSC | Low | | HHH | Probable |
| Western toad | <i>Bufo boreas</i> | | | | MMM | Certain |

IMPACT ASSESSMENT

The EIR relied on CNDDDB to conclude presence or absence of special-status species. CNDDDB records can only be used to conclude presence, but they cannot be used to conclude absence (see earlier discussion on this topic). The impacts assessment was therefore fundamentally flawed, and many impact conclusions were unfounded.

On page 3.4-36 the EIR discusses project impacts on special-status species. It discusses Swainson's hawks, sandhill cranes and burrowing owls, but did not address impacts to giant garter snake or multiple other species.

Even though the EIR mentions Swainson's hawk, the EIR does not disclose that the study area occurs within the high density zone of the Central Valley, and that the Central Valley is where 95% of the remaining nesting pairs of Swainson's hawks reside (Anderson et al. 2007). It also does not disclose that the Swainson's hawks nesting within the current Sphere of Influence of the City of Elk Grove (Estep 2009) would likely lose their nest sites as foraging areas in the proposed amended Sphere of Influence are converted to residential, commercial, and industrial uses (England et al. 1995).

The EIR appropriately describes habitat fragmentation as a threat to the conservation of Swainson's hawk (pages 3.4-36 and 3.4-37). It then describes the methodology that Sacramento County uses to assess habitat fragmentation, comparing the final habitat area to the pre-project habitat acreage. However, this before and after comparison, or net habitat acreage removed and net remaining, incompletely characterizes the effects of habitat fragmentation. Habitat fragmentation not only reduces the habitat area of a species and of its food and nesting resources, but it also impedes access of the species or its food resources to habitat patches surrounded by the barriers creating the fragmentation (e.g., non-habitat). Habitat patches that are smaller than a certain size threshold or isolated by a certain distance threshold to other habitat patches are no longer able to support the species. Habitat fragmentation results in the reduction of a net larger habitat area than can be measured by summing the remaining, apparent habitat patches (Wilcox and Murphy 1985, Saunders et al. 1991, Hall et al. 1997). The Sacramento County methodology, as described in the EIR, appears to be inconsistent with the scientific concept of habitat fragmentation, and therefore is a flawed methodology.

All in all, the EIR (pages 3.4-36 to 3.4-37) devotes 47 lines of text to discussing the project's potential impacts to biological resources resulting from the desired conversion of nearly 8,000 acres of wildlife habitat to residential, commercial, and industrial uses. The impacts discussion made no mention of the project's impacts on wildlife movement corridors, even though the EIR later recognized that the development of the Sphere of Influence will adversely affect wildlife movement (Measure BIO-1a (D), page 3.4-38).

The EIR made no mention of the likely adverse edge effects created by habitat fragmentation and the interface of remaining habitat patches and urban, commercial, and industrial uses. Changes in species occurrence and distribution can and should be predicted based on the change in distribution of habitat edges (Askins et al. 1987, Laurence and Yensen 1990, McCollin 1993) and based on changes to hydrology (Moyle et al. 1986). Also, no mention was made of the

impacts likely to be caused to wildlife due to artificial lights and noise, and the introduction of exotic pets that accompany residential, commercial, and industrial development.

CUMULATIVE IMPACTS ANALYSIS

The cumulative impacts analysis was limited to the study area and within a two mile buffer around the study area boundary. There was no real basis for the two mile buffer, other than the claim that biological impacts will be local. This claim contradicts many years of data and theory developed in the scientific discipline of wildlife ecology, which understands that wildlife populations are necessarily connected via dispersal and migration, and that the more significant demographic unit is the metapopulation (Hanski and Gilpin 1997, Smallwood 2001, 2002). A two mile buffer around the study area boundary is arbitrary and has nothing to do with the scale or reach of project impacts on wildlife. A two mile buffer is a grossly inadequate basis for a cumulative effects analysis of a project that would change the development status of nearly 8,000 acres of habitat used by up to 49 special-status species of terrestrial vertebrates.

Other than claiming that a two mile buffer would suffice as a basis for a cumulative effects analysis, the second and only other paragraph of the analysis in fact did not address cumulative effects. It merely claimed that measures are adequate for mitigating project-specific impacts. The EIR did not present an analysis of cumulative impacts to biological resources.

To perform an adequate cumulative impact assessment for each species, the thresholds of significance need to be established, along with margins of safety around these significance thresholds (MacDonald 2000). In the scoping phase of cumulative effects analysis, the EIR needs to identify the temporal and spatial scales of the assessment, i.e., a much larger scale than a two mile buffer. The temporal scale should be set by the recovery time of the species or other environmental resources at issue (e.g., resources upon which the special-status species depend). According to Smallwood et al. (1999), the cumulative effects analysis should extend over the amortized life of the project or the permit duration, and should consider how long the types of project impacts generally last. They argued that the effects of housing developments are permanent, so the cumulative effects analysis should extend to the time when all land in the region has been converted to houses. The spatial scale should be set by the ecological process that is most critical to the species or resource at issue. For setting the spatial scale, the countable ecosystem approach (Cousins 1990) might be most appropriate, thus requiring estimates of the adult male home range size of the largest carnivore in the project area. However, the size of the area normally occupied by a species' population might be more appropriate as the basis for setting the spatial scale of the analysis (Smallwood 2001). The most common method for establishing the minimum spatial scale for cumulative effects assessment is to identify and delineate the watershed as the area within which to consider cumulative impacts (Bedford and Preston 1988, Reid 1998a,b). The City of Elk Grove Sphere of Influence Amendment EIR performed none of these steps.

MITIGATION

Mitigation Measure BIO-1 defers the formulation of mitigation measure LU-3 -- participation with the South Sacramento Habitat Conservation Plan (SSHCP) -- to an unspecified, later date.

The SSHCP has not been certified, so the environmental review for that plan is unfinished and its final mitigation measures unknown. Should the Elk Grove Sphere of Influence project participate with the SSHCP, then I will be unable to provide meaningful comments or to participate with the formulation of what appears to be the EIR's central mitigation measure.

Mitigation Measure BIO-1a (A) defers the performance of reconnaissance-level surveys to an unstated, later date. Reconnaissance surveys needed to have been performed prior to this EIR, because it is this EIR which needs to inform decision-makers and the public of potential regional impacts to special-status species. Waiting for some unstated later date will preclude me and the decision-makers from adequately understanding regional impacts.

According to Mitigation Measure BIO-1a (B), avoidance of all special-status species or their habitats shall be attempted during project design. This measure might look nice to someone unfamiliar with how wildlife use the project area, but special-status species are so pervasive on the project area that avoidance will be impossible. Swainson's hawks use the entirety of the project area, as do white-tailed kites and golden eagles. Many bird species protected by the Migratory Bird Treaty Act use the entirety of the site. Burrowing owls use portions of the site during any given year, and their centers of activity will shift from year to year. Giant garter snakes likely use the western area, and sandhill cranes likely use the western and middle areas. There is simply no avoiding special-status species and their habitats in the project area.

Mitigation Measure BIO-1a (C) promises to develop a Habitat Conservation Management Plan (HCMP) at some unspecified, later date. The EIR effectively defers the formulation of this measure to some unspecified, later date, thereby denying me and the public from participating meaningfully with the environmental review of this project.

Mitigation Measure BIO-1a (D) provides some examples of what the HCMP might include, but the details in these examples are insufficient. Any of these measures might be dropped or changed substantially between this EIR and project-specific EIRs.

Mitigation Measure BIO-1b promises pre-construction surveys for Swainson's hawks and other raptors prior to construction of specific projects. However, surveys performed by qualified biologists are needed prior to the certification of this EIR, not afterwards. Decision-makers and the public need to be aware of where Swainson's hawks and other raptors nest, forage, and find cover within the entirety of the project area. These surveys are not difficult to perform, as has been amply demonstrated in Yolo County (Estep 2008) and elsewhere.

According to Mitigation Measure BIO-1b, if no Swainson's hawks are found during pre-construction surveys, no further mitigation will be needed. This measure is obviously directed at nesting habitat, but in reality the entirety of the study area is used by foraging Swainson's hawks, including by Swainson's hawks that are nesting during the nesting season.

Mitigation Measure BIO-1b concludes that impacts would be less than significant after mitigation. Given the impacts analysis performed in this EIR, this conclusion lacks foundation. The impacts analysis was too cursory to be of any use, and it was based on a flawed methodology used to describe the environmental setting.

The impacts analysis for Mitigation Measure BIO-2 (page 3.4-39) incorrectly associates giant garter snakes with riparian habitat. Giant garter snakes utilize riverine and fresh water marsh, and not riparian areas. The EIR appears to lump riverine and riparian cover types, which can mislead the public and decision-makers about which species are likely to occur on the project site.

Mitigation Measure BIO-2 promises that “wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to...” the regulatory agencies. This measure defers the formulation of the mitigation measure(s) to an unspecified, later date, effectively preventing me and the public from participating meaningfully with the formulation of the measure directed towards the project’s impacts on wetland areas.

Furthermore, the measure gives the public the false notion that wetlands can be replaced. It gives the impression that the quality and value of wetlands can be measured in terms of acreage. However, every wetland is uniquely composed of constituent biology, soils, water, and location, and the complexity of each is beyond the capabilities of environmental consultants to replace them. That wetlands can be replaced is an unscientific, ridiculous notion.

Wetlands can be restored or enhanced, so long as the restoration and enhancement actions are directed toward specific success criteria. Again, wetlands are so complex that “restoration” and “enhancement” are meaningless terms without specifying success criteria. Often, achieving specific success criteria may benefit some species to the detriment of others.

Habitat restoration could adversely affect plants and wildlife. The Wildlife Society (Hammer et al. 1994) accepted wetland creation as a form of mitigation only if the following conditions apply: (1) Creation of similar types of wetland in the region has been successful and documented; (2) The project proponent funds research on other similar wetlands in the region in order to learn how to most effectively create wetlands; (3) Only competent biologists are used; (4) The project proponent funds long-term monitoring to ensure that the created wetland is functioning properly and is self-perpetuating; and (5) The project proponent provides an irrevocable trust for long-term funding of management of the wetland. The EIR offered no evidence that creation of similar types of wetlands or upland habitats have been successful in the region. Neither did the EIR commit to any of the other four conditions expected by The Wildlife Society.

Habitat restoration as a mitigation measure is the type of measure that requires rigorous standards, given its poor track record. CNPS (1998) and CDFG (1997) insist that the mitigation design, implementation measures, and reporting methods be clearly documented, along with who or which agencies will be responsible for achieving clearly defined success criteria. Assurances must be provided in writing that certain performance criteria of the mitigation plan will be realized, and guaranteed by a negotiable performance security large enough to complete the mitigation and to pursue alternative mitigation measures should the implementation be incomplete or the objectives fail to be achieved. Not only did the EIR fail to address any of these specific standards, but it did not even identify where restoration would be attempted.

Mitigation Measure BIO-3 concludes that impacts to wetlands would be less than significant after mitigation. The mitigation consists of City of Elk Grove General Plan Policy CAQ-21, which requires 50-foot stream buffer zones. However, much of the wetlands affected by the project would be pond and marsh environments, not just streams. For example, I observed what appeared to be vernal pools and wetland swales at Sunset SkyRanch Airport – these were not streams (Photos 3 and 4).

Furthermore, Policy CAQ-21 assumes that the only upland area needed to maintain the integrity of biological resources within a stream environment is 50 feet to either side of the stream. This assumption is incorrect, as many species that use stream environments also require much more expansive areas of upland environments for finding refuge, food resources, and nesting opportunities.

Mitigation Measure BIO-4 concludes that impacts to wildlife movement corridors would be less than significant after mitigation. It claims that there are no formerly identified fish or wildlife movement corridors in the project area, but that if there are any, then impacts to them would be mitigated by a 50 foot stream buffer required under City of Elk Grove's General Plan Policy CAQ-21, and by the City's encouragement to cluster development under its General Plan Policy CAQ-7. The EIR failed to demonstrate, however, that General Plan Policy CAQ-7 resulted in the preservation of any fish or wildlife movement corridors in the current Sphere of Influence. In fact, examining Google Earth imagery dated 13 June 2011, I was unable to identify a single reach of undeveloped land extending north-south, east-west, or in any other direction through Elk Grove. One stream channel extends through Elk Grove, but development has extended to the stream's banks along much of the stream's reach. Before claiming that Policies CAQ-7 and CAQ-21 will minimize impacts to wildlife and fish movement corridors to less than significant impacts within the City of Elk Grove's proposed amended Sphere of Influence, LAFCo should demonstrate where and to what extent these policies were effective within the current Sphere of Influence.

Mitigation Measure BIO-6 concludes that impacts to existing Habitat Conservation Plans would be less than significant after mitigation. LAFCo claims that any conflicts with the South Sacramento Habitat Conservation Plan (SSHCP) will be remedied through CEQA review of specific projects falling within the expanded City of Elk Grove Sphere of Influence. However, it is unknown when or if the SSHCP will be certified. As a case example, development of the Yolo County HCP was begun in 1990, but it still remains uncertified. Until the SSHCP is certified, it will remain unknown whether conflicts will exist or whether the conflicts can be mitigated.

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