## **CHAPTER 9: WILDLIFE RESOURCES**

#### Introduction

As urbanization and density of rural development increases in these watersheds, the importance of riparian habitats for wildlife increases exponentially. While development continues to consume upland habitats, riparian zones are often less likely to become targets of development because of the flood zoning and other regulatory restrictions and the number of special status species that occupy these areas. In addition, local officials are aware of the public's desire to protect stream corridors and use these areas for recreational activities and provide green belts between developments.

Four sources of information were used to develop the information on wildlife in this assessment: 1) eight environmental documents prepared for various projects in the watersheds, 2) California Natural Diversity Database records, 3) published literature, and 4) onsite data for most of the 23 representative locations visited. References are included at the end of this document and data sheets for individual locations are presented in Appendix C.

## **Habitat Types And Associated Wildlife**

This assessment focuses on three habitat types (mixed riparian forest, Great Valley willow scrub, Great Valley freshwater marsh), which are described in detail in Chapter 7: Plant Communities and Appendix C. For those locations that were assessed in person, habitat was evaluated in terms of structure; presence of fundamental habitat elements (i.e., cover, food, breeding/nesting sites); continuity with adjacent riparian and upland habitat; and adequacy of buffers in terms of width, distance, and area to protect the wildlife habitat value from development or encroachments, such as a road corridor built in the riparian zone. A brief description of the more common wildlife species expected to be associated with the habitat types identified and some of that habitat's functions are presented below.

#### Mixed Riparian Forest and Great Valley Willow Scrub

Mixed riparian forest and willow scrub, especially where well developed, are important habitats for wildlife in the study area. The structural complexity of the habitat provides a variety of foraging, resting, and nesting opportunities for many wildlife species, including a number of special status species. Many of the species found in oak woodlands also occur in the riparian forest. Common wildlife species include:

- Mammals (bats [e.g., western pipistrelle, California myotis], coyote, striped skunk, raccoon, gray squirrel, deer mouse);
- Birds (e.g., wood duck, green-backed heron, belted kingfisher, great horned owl, red-shouldered hawk, Cooper's hawk, Nuttall's woodpecker, acorn woodpecker, western bluebird, scrub jay, northern flicker, song sparrow, white crowned sparrow, bushtit, cliff swallow), and

• Reptiles (e.g., western terrestrial garter snake, racer).

The riparian communities provide relatively unobstructed wildlife corridors through the watersheds. These corridors are likely used by a number of wildlife species in crossing through the developed portions of the study area. The amount of use by wildlife species of riparian vegetation corridors to transit from point to point is undocumented, and the effectiveness of the bridges and culverts spanning major infrastructure crossings of allowing wildlife transit is unknown.

# **Great Valley Freshwater Marsh**

Freshwater marsh is also important habitat for many wildlife species, particularly waterfowl and shorebirds. Some of the more common bird species observed in this habitat type included: American widgeon, northern pintail, northern shoveler, green-winged teal, mallard, greater white-fronted goose, tundra swan, great blue heron, black-crowned night heron, great egret, snowy egret, black-necked stilt, herring gull, tree swallow, and double-crested cormorant. Freshwater marsh and flooded rice fields on the valley floor provide habitat for thousands of migrating waterfowl during the winter. Marsh areas also act as a nutrient sink using nutrients for growth and binding heavy metals from the water, thus improving overall water quality. However, these same areas allow water temperatures to warm in the summer and fall, and may have an adverse impact on stream channel water temperatures.

# **Special Status Wildlife Species**

Special status wildlife are those species formally listed as threatened, or endangered by the State or federal government, proposed for such listing, or otherwise recognized by the State or Federal government, local jurisdiction, or recognized conservation organization as a sensitive species. A relatively large number of special status wildlife species occurs or have the potential to occur within the riparian zones of these watersheds. These species and their status are briefly summarized in Table 9-1, below. More detailed life history and habitat information is included in Appendix E.

Table 9-1. Special Status Wildlife Species Occurring or Potentially Occurring in the Watersheds.

Common Name	Scientific Name	Status*	Documented Occurrences or Potential to Occur in the Watersheds
Mammals			
River otter	Lutra canadensis	Protected furbearer	Occurs in the western portion of study area. Also has been documented in the upper watersheds of both Coon and Auburn Ravine.
Greater	Eumops perotis	FSC; CSC	Potential to occur. Suitable roost trees in

Table 9-1. Special Status Wildlife Species Occurring or Potentially Occurring in the Watersheds.

Common Name	Scientific Name	Status*	Documented Occurrences or Potential to Occur in the Watersheds
western mastiff bat	californicus		watershed area. No sightings recorded.
Small-footed myotis bat	Myotis ciliolabrum	FSC	Potential to occur. Buildings in watershed area may provide roost sites. No sightings recorded.
Long-eared myotis bat	Myotis evotis	FSC	Potential to occur. Buildings in watershed area may provide nursery or roost sites. No sightings recorded.
Fringed myotis bat	Myotis thysanodes	FSC	Potential to occur. Buildings in watershed area may provide nursery or roost sites. No sightings recorded.
Yuma myotis bat	Myotis yumanensis	FSC; CSC	Potential to occur. Buildings in watershed area may provide roost sites. No sightings recorded.
Pale Townsend's big-eared bat	Corynorhinus townsendii pallescens	FSC; CSC	Potential to occur. Buildings in watershed area may provide roost sites. No sightings recorded.
Pacific western big- eared bat	Corynorhinus townsendii townsendii	FSC; CSC	Potential to occur. Buildings in watershed area may provide roost sites. No sightings recorded.
Birds	l	I	
Cooper's hawk	Accipiter cooperii	CSC	Observed foraging and nesting in the area.
Sharp-shinned hawk	Accipiter striatus	CSC	Observed foraging in the area. Nesting habitat also present,
Swainson's hawk	Buteo swainsoni	ST	Observed nesting and foraging in the western portion of the watersheds.
Tricolored blackbird	Agelaius tricolor	FSC; CSC; MNBMC	Observed foraging and nesting in the area.
Bank swallow	Riparia riparia	ST	Low potential to occur due to lack of suitable habitat; no confirmed records from the area.
Northern Harrier	Circus cyaneus	CSC	Observed foraging and nesting in the area.

Table 9-1. Special Status Wildlife Species Occurring or Potentially Occurring in the Watersheds.

Common Name	Scientific Name	Status*	Documented Occurrences or Potential to Occur in the Watersheds	
White-tailed kite	Elanus caeruleus	State Fully Protected; MNBMC	Observed foraging and nesting in the area.	
Double- crested cormorant	Phalacrocorax auritus	CSC	Observed in the area. Nesting habitat present.	
Ferruginous hawk	Buteo regalis	FSC; CSC; MNBMC	Potential foraging habitat in the area during winter. No sightings recorded.	
White-faced ibis	Plegadis chihi	FSC; CSC; MNBMC	Potential foraging and breeding habitat in the area. No sightings recorded.	
American Bittern	Botaurus lentiginosus	FSC; MNBMC	Observed in study area. Nesting habitat present. No nesting observed.	
Reptiles				
Northwestern pond turtle	Clemmys marmorata marmorata	FSC; CSC, State Fully Protected		
Giant garter snake	Thamnophis gigas	FT; ST; State Protected	Recorded in extreme western portion of the watersheds.	
Amphibians				
Foothill Yellow- legged frog	Rana boylii	FSC; CSC; State Protected	Potential to occur in foothill area. Thought to be extinct on the valley floor. No sightings recorded.	
California red-legged frog	Rana aurora draytonii	FT; CSC; State Protected	Potential to occur in foothill area. Thought to be extinct on the valley floor. No sightings recorded.	
Invertebrates	Invertebrates			
Valley elderberry longhorn beetle	Desmocerus californicus dimorphus	FT	Recorded in western portion the watersheds. Potential to occur elsewhere.	

\* FT = Federal Threatened

FSC = Federal Species of Concern

ST = State Threatened

CSC = California State Species of Concern

MNBMC = Federal Migratory Non-game Birds of Management Concern

# **Ecosystem Restoration Issues Regarding Special Status and Key Resource Wildlife Species**

There are a large number of special status wildlife species that are either known to occur, or have suitable habitat available, in the watershed area. For species with suitable habitat available, absence of records may simply be due to lack of surveys. It is important to understand the life history requirements of these species and identify ecosystem restoration actions that increase the quantity or improve the quality of habitats available. Table 9-2 presents a brief summary of the identified needs of these species. As noted in the table, some species are dependant on the riparian zone, while others may use the riparian areas as well as other suitable habitats. The primary focus of the ERP is on those Key Resource species most closely tied to riparian areas. The only Key Resource species that is not also a special status species is the American beaver, included at the end of Table 9-2.

Common to all of these species is that surveys completed to date by all entities combined are inadequate to accurately describe the current population distribution and habitat use. More detailed life history, distribution, and habitat requirements and threats are presented in Appendix E.

Table 9-2. Summary of Ecological Needs for Key Resource and Other Special Status Wildlife Species.

Species	Key Resource	Ecological Needs or Issues	
River otter	Yes	Water dependent. Riparian and freshwater marsh dependent. Requires permanent water for reproduction, cover, and food. May travel up to 15 miles, following stream or lake margins, and movements of 50 to 60 miles in a year are not uncommon.	
Greater western mastiff bat	No	Not riparian plant community dependent. Could use roost trees in riparian mixed forest habitat type. Bats often forage for insects in riparian areas and over water.	
Small-footed myotis bat	No	Not riparian plant community dependent. Uses buildings as roost sites. Potential to occur in the area. Bats often forage for insects in riparian areas and over water.	

Table 9-2. Summary of Ecological Needs for Key Resource and Other Special Status Wildlife Species.

Species	Key Resource	Ecological Needs or Issues	
Long-eared myotis bat	No	Not riparian plant community dependent. May utilize buildings for nursery or roost sites. May occur in the watershed area. Bats often forage for insects in riparian areas and over water.	
Fringed myotis bat	No	Not riparian plant community dependent. Uses a variety of habitats. May utilize buildings for nursery or roost sites. May occur in the watershed area. Bats often forage for insects in riparian areas and over water.	
Yuma myotis bat	No	Not riparian plant community dependent, although distribution tied to water sources. Habitats include open forests and woodlands. Buildings in the area may provide roost or nursery sites. Bats often forage for insects in riparian areas and over water.	
Pale big-eared bat	No	Not riparian plant community dependent. Occurs in a variety of habitats. May occur in the area. Existing buildings could be utilized as roost sites. Bats often forage for insects in riparian areas and over water.	
Townsend's western big- eared bat	No	Not riparian plant community dependent. Existing buildings could be utilized as roost sites. Bats often forage for insects in riparian areas and over water.	
Cooper's hawk	Yes	Closely tied to riparian zone. Typically nests in dense riparian areas, near streams, and forages near open water or riparian vegetation. Primary threats include loss and degradation of riparian habitat.	
Sharp-shinned hawk	No	Breeds in coniferous and riparian deciduous forests; prefers riparian areas.	
Swainson's hawk	Yes	Nesting habitat generally consists of more or less open riparian habitat and oak savannah at lower elevations. Requires fields or grasslands for foraging. Threats include loss of both nesting habitat and foraging areas.	
Bank swallow	Yes	Neotropical migrant. In summer, resides exclusively in riparian and lacustrine areas with vertical banks, bluffs, and cliffs comprised of fine-textured or sandy soils, into which colonies of swallows dig nesting holes.	

Table 9-2. Summary of Ecological Needs for Key Resource and Other Special Status Wildlife Species.

Species	Key Resource	Ecological Needs or Issues	
Tricolored blackbird	Yes	Generally associated with freshwater marsh; nests in large colonies, usually in cattail and tule marshes, but also known to nest in thistle and blackberry patches and other dense vegetation.	
Northern harrier	No	Not limited to riparian zone. Habitats include freshwater marsh and open grassland for foraging and nesting.	
White-tailed kite	No	Not limited to riparian zone. Occurs in open groves, river valleys, marshes, and grasslands.	
Double- crested cormorant	No	Closely associated with riparian areas. Nests colonially, usually along lake margins.	
White-faced ibis	No	Occurs in freshwater marsh habitats. Could utilize marsh habitat in watershed areas for breeding and/or foraging.	
American bittern	No	Occurs in freshwater and slightly brackish marsh habitat, as well as coastal salt marsh.	
Northwestern pond turtle	Yes	Occurs in permanent or nearly permanent bodies of water in a variety of habitats. Primary threats include loss of suitable habitat and introduction of nonnative predators (e.g., bullfrogs, catfish). Disturbance of upland nesting locations during incubation/overwintering may also threaten turtle populations.	
Giant garter snake	Yes	Occurs in freshwater marsh, low gradient streams, canals, and irrigation ditches. Closely associated with rice growing areas. Needs grassy areas near water and higher terrain to withstand flood inundations. Primary threat is habitat loss; other threats include water quality degradation and predators.	
Foothill yellow-legged frog	Yes	Occurs in shallow, partly shaded streams and riffles with rocky substrates. Prefers substrates that are at least cobble-sized and requires open areas where it can bask on rocks. Thought to be extinct in the Sacramento Valley, but suitable habitat occurs in the foothill area and could potentially occur. Threats include habitat loss, water quality degradation, and predators.	

Table 9-2. Summary of Ecological Needs for Key Resource and Other Special Status Wildlife Species.

Species	Key Resource	Ecological Needs or Issues
California red- legged frog	Yes	Inhabits lowlands and foothills in or near permanent sources of deep water. Prefers ponds or creeks with extensive shoreline vegetation but will disperse 1 mile or more during and after rain events. Not observed in the area. Suitable habitat present. Needs emergent vegetation for reproduction. Threats are habitat loss, water quality degradation, and predators.
Valley elderberry longhorn beetle	Yes	Occurs in the western foothills of the Sierra Nevada. Larvae of the beetle feed and mature within the stems of elderberry plants with a diameter of one inch or greater. Observed in the western portion of the area and could occur elsewhere. Needs older, often decadent elderberry plants to reproduce. Primary threat is loss of suitable host plants
American beaver	Yes	Riparian and water dependent species. Concern regarding the impacts beaver activities have on stream channels, flood potential, and removal of riparian vegetation.

# **Management Concerns**

Given the information summarized in Table 9-2 above and the more detailed information presented in Appendix E a number of management concerns have been identified. The riparian corridors of the watershed are in a highly altered and moderately to severely degraded condition. Virtually all of the drainages have been negatively affected to some degree, from an ecological perspective, by anthropogenic influences including: placer mining, tree removal, water diversion and conveyance, agricultural practices, flood control, and/or development. The original plant communities have largely been replaced with communities that are, in most areas, less extensive, and less diverse both in terms of species richness and structural complexity. The natural dynamics (flooding and drought) that are characteristic of natural riparian corridors have been buffered both by channelization and other flood control practices and through addition of artificial summer flows to supply downstream irrigation water. More specific discussion of the management concerns and findings with respect to plant communities is presented in Chapter 7: Plant Communities and Appendix C.

Despite the altered and degraded condition of the riparian corridors, they remain one of the most important and productive habitats for wildlife. Not only do riparian areas provide fundamental habitat elements (food, water, cover, breeding areas) required by all wildlife, they also provide linkages between different habitat types and corridors for movement and dispersal.

Table 9-3 below summarizes the management concerns and ecological and social aspects with respect to wildlife resources in the area:

Table 9-3. Management Issues Associated with Wildlife Species in the Watersheds

Management Issue	Negative Ecological and Social Impacts	Positive Ecological and Social Impacts
WRM 1. Effects of the spread of Himalayan blackberry on wildlife habitats in the watersheds.	WRN 1.1. Reduces or eliminates reproduction of native plant species through competition or elimination of suitable seedbeds.  WRN 1.2. Reduces wildlife habitat diversity, structure, and complexity by creating a near monoculture understory in certain areas.	WRP 1.1. Provides high quality habitat for certain wildlife species.  WRP 1.2. Blackberry thickets provide increased bank stability because of their extensive root systems.
WRM 2. Narrowing or elimination of riparian vegetation corridors.	WRN 2.1. Negative impacts on a variety of wildlife species.	WRP 2.1. Maximizes adjacent land use for more intensive development or agricultural uses.
WRM 3. Inadequate buffers between riparian areas and detrimental development or infrastructure that reduces habitat use or quality.  Examples include road or housing encroachment.	WRN 3.1. Elimination or degradation of open space upland areas adjacent to riparian zone adversely affects many wildlife species (e.g., Swainson's hawk, pond turtle, CA red-legged frog).  WRN 3.2. Indirect adverse effects (e.g., noise, physical activity) on riparian zone may make areas unsuitable for sensitive species.	WRP 3.1. Maximizes adjacent land use for more intensive development or agricultural uses.
WRM 4. Grazing management practices have reduced or eliminated many riparian plant communities in the watersheds.	WRN 4.1. Excessive grazing in riparian zones generally results in degradation of plant communities. This in turn reduces the value of the area as wildlife habitat and generally changes the wildlife species composition. This is particularly true in Mediterranean climates where rainfall is highly seasonal and forage tends to dry out in summer, leaving riparian vegetation as the only alternative forage. Livestock eat and trample plants so that reproduction is limited or eliminated. Eventually, the riparian community may disappear	WRP 4.1. Reduction or elimination of the tree/shrub community and replacing it with grass increases the area available for livestock grazing.

Table 9-3. Management Issues Associated with Wildlife Species in the Watersheds

Management Issue	Negative Ecological and Social Impacts	Positive Ecological and Social Impacts
	WRN 4.2. Excessive grazing in riparian areas reduces or eliminates the value of these areas as wildlife habitat and generally changes the wildlife species composition.	
WRM 5. Artificially high summer flow volumes have changed the natural hydrologic regime in the channel and adjacent riparian corridor.	WRN 5.1. High summer flows can increase the spread and resilience of Himalayan blackberry and other noxious plant species.  WRN 5.2. Enhances habitats for non-native predators (e.g. bullfrog).  WRN 5.3. May result in increased populations of American beaver leading to other adverse effects.	WRP 5.1. Summer water generally encourages the growth of riparian vegetation and may enhance habitat for river otter, beaver, and other wildlife.
WRM 6. Presence of a variety of non-native predators is a major source of mortality for numerous wildlife species.	WRN 6.1. Nonnative aquatic predators include bullfrogs, bass, catfish, mosquitofish, and crayfish. Bullfrogs, which eat virtually anything they can catch, can wreak havoc on populations of California red-legged frogs, foothill yellow-legged frogs, and northwestern pond turtles by consuming frog tadpoles and young turtles.	WRP 6.1. None identified.
	WRN 6.2. Feral domestic cats can have a major impact on reproduction of wildlife species, particularly birds, small mammals, reptiles, and amphibians.	
WRM 7. Loss of freshwater marsh habitat.	WRN 7.1. Loss of this habitat type has a negative impact on species such as giant garter snake, tricolored blackbird, and northwestern pond turtle.	WRP 7.1. Maximizes adjacent land use for more intensive development or agricultural uses.
WRM 8. Loss of bluff or high bank habitat (generally due to levee construction) for bank	WRN 8.1. Loss of this habitat type potentially has a negative impact on this species, if its presence is confirmed in the watersheds.	WRP 8.1. Armored streambanks provide additional flood control, allowing development of

Table 9-3. Management Issues Associated with Wildlife Species in the Watersheds

Management Issue	Negative Ecological and Social Impacts	Positive Ecological and Social Impacts
swallows, if present.		adjacent floodplains
WRM 9. ERP needs to develop a riparian protection and restoration strategy that incorporates the needs of fish; wildlife; flood management; and plant community reproduction, structure, diversity, buffer width, distribution, and area considerations. This strategy must incorporate the water management and geomorphology considerations in this assessment.	WRN 9.1. Lack of an integrated resource approach to riparian corridor management will likely result in land use and resource management conflicts, and ultimately negative impacts to a variety of natural resources. Results in a piece meal approach to riparian management with resultant negative impacts to a variety of natural resources.  WRN 9.2. Independent decisions may have a number of unintended consequences for other natural resources.	WRP 9.1. Minimizes time spent on coordination among entities.
WRM 10. The lack of biological surveys for some species or groups of species will foster a conservative approach to habitat preservation in the HCP/NCCP.	WRN 10.1. Lack of basic information on the distribution of habitats and actual habitat use by species of concern forces agencies to adopt a biologically conservative approach to habitat conservation. This could result in larger habitat conservation areas than would be required if more extensive habitat and use data were available.	WRP 10.1. Costs to obtain specific habitat data and habitat use information are avoided.
WRM 11. The American beaver is having both positive and negative impacts on the channels and riparian plant communities in the watershedswhat actions, if any, should be taken to address the beaver situation.	WRN 11.1. Impoundments behind beaver dams may cause breaks in levees, flooding of roads or other structures, or interruption of irrigation supplies.  WRN 11.2. Beaver dams, under certain flow conditions, may create a migration or emigration barrier to anadromous and resident fish species in the stream.  WRN 11.3. Impoundments created by beaver activity can provide a place where sediment transport is interrupted and sediment deposition occurs. Thus disrupting the normal sediment transport of	WRP 11.1. Flooding caused by beaver dams may help curtail the spread of Himalayan blackberry within the riparian zone.  WRP 11.2. Beaver activities enhance stream and wetland functions by introducing additional habitat diversity, expanding adjacent wetland areas, and trapping storm runoff, thereby extending stream flows during summer.

Table 9-3. Management Issues Associated with Wildlife Species in the Watersheds

Management Issue	Negative Ecological and Social Impacts	Positive Ecological and Social Impacts
	the channel.  WRN 11.4. Removal of streamside vegetation may result in a destabilization of stream banks, resulting in accelerated erosion and changes in the normal channel geomorphology and hydrodynamics.  WRN 11.5. Presence of beaver dams may increase the frequency of localized flooding.	WRP 11.3. Impoundments created by beaver activity can provide a variety of habitats for several wildlife and fish species. These species may be either beneficial or detrimental to native populations.  WRP 11.4. Impoundments created by beaver activity can provide a place where sediment transport is interrupted and sediment deposition occurs.  WRP 11.5. Removal of streamside vegetation may result in better reproduction of certain plant species, with a resultant increase in plant community species composition, structure, and overall diversity.
WRM 12. Spatial distribution of foraging habitat for certain raptor species (e.g., Swainson's hawk) in relation to suitable riparian mixed forest habitat.	WRN 12.1. Lack of suitable foraging area in relation to nearby mixed riparian forest habitat types has a negative impact on certain raptor species. For example, intensive rice farming immediately adjacent to suitable mixed riparian forest habitat may limit the use of these areas by Swainson's hawks.	WRP 12.1. Farming right to the edge of the stream maximizes the use of suitable lands.
WRM 13. Potential loss of Giant garter snake habitat through lank use conversion to crops other than rice, urban development, or changes in flood management practices.	WRN13.1. Giant garter snakes have adapted to rice farming and associated irrigation practices, which have provide alternate habitat to the once extensive marshlands on the valley floor. Loss of this habitat may result in the demise of this State and federally threatened species	WRP13.1. More flexible land uses and ability to adapt to changing economies.

Table 9-3. Management Issues Associated with Wildlife Species in the Watersheds

Management Issue	Negative Ecological and Social Impacts	Positive Ecological and Social Impacts
WRM 14. Potential loss of yellow and red-legged frog habitat through increased development in foothill region (likely the only portion of the watersheds where these species may still exist).	WRN 14.1. Additional development may result in the complete loss of these species from the watersheds (if still present). Riparian zones as well as associated upland buffers must be preserved and managed to provide adequate habitat.	WRP 14.1. More flexible land uses and ability to adapt to changing economies.
WRM 15. Potential loss of elderberry plants and associated habitat suitable for Valley elderberry longhorn beetle.	WRN 15.1. Distribution of VELB is generally associated with larger colonies of mixed age plants, including decadent plants more prone to beetle infestations. Floodplain fringes, best suited to these elderberry colonies, are subjected to greater land use pressures than more flood prone areas.	WRP 15.1. More flexible land uses and ability to adapt to changing economies. Farming of less flood prone areas.

## **Summary of Findings**

The following is a list of the major findings and issues regarding wildlife resources in the watersheds:

- Channelization of drainages in the lower watersheds and loss of riparian habitat has adversely affected the American beaver;
- Beaver and river otter may have benefited from additional summer flows;
- Riparian corridors in the watersheds are generally in a degraded condition. These
  degraded habitats support a smaller and less diverse wildlife community. Concerns
  include plant species composition, diversity, structure, width of the vegetation, linear
  extent of the riparian vegetation, areal extent of riparian areas, and adjacent land uses;
- Some areas of the watershed lack raptor foraging areas adjacent to the riparian corridor;
- Lack of and potential loss of the three riparian plant communities has and has the potential to have major impacts on a variety of species of concern;
- Lack of more complete biological and habitat use surveys limits the ability to assess

ecosystem restoration needs and if habitats for species of concern are actually occupied;

- Flood management and bank protection may adversely impact certain wildlife species;
- Conversion of farms to less water intensive uses could impact a number of wildlife species associated with wetland and agricultural induced defacto wetland habitats;
- Grazing practices in some portions of the watersheds have had a negative impact on a
  variety of wildlife resources, soil productivity, vertical bank stability, and riparian
  vegetation communities;
- Elderberry plants tend to grow in the outer fringes of the riparian zone, where flooding is less frequent, suitable habitat for VELB has often been converted to other uses;
- Amphibian species (e.g., California red-legged frog and foothill yellow-legged frog) are especially sensitive to pollutants, even at very low levels. Runoff from developed areas and roadways and discharges of treated sewage effluent into the streams further reduce the potential for these species to occur, and
- On balance, Himalayan blackberry has a negative impact on a variety of wildlife species and on the riparian plant community.

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