Appendix J

Special-Status Wildlife Descriptions

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Wildlife surveys were performed in the Battle Creek Salmon and Steelhead Resotration Project (Restoration Project) area in 2000 and 2001. Detailed biological survey results are discussed in Volumes I and II of the *Biological Survey Summary Report for the Battle Creek Salmon and Steelhead Restoration Project* (Summary Report) (Jones & Stokes 2001a, 2001b). The following 13 special-status animals or their potential habitats were documented during field surveys:

- Valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*)
- Northwestern pond turtle (*Clemmys marmorata marmorata*)
- Foothill yellow-legged frog (*Rana boylii*)
- Osprey (*Pandion haliaetus*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Sharp-shinned hawk (*Accipiter striatus*)
- Cooper's hawk (*Accipter cooperii*)
- Golden eagle (*Aquila chrysaetos*)
- American peregrine falcon (*Falco peregrinus anatum*)
- California spotted owl (*Strix occidentalis occidentalis*)
- Vaux's swift (*Chaetura vauxi*)
- Willow flycatcher (*Empidonax traillii*)
- Yellow-breasted chat (*Icteria virens*)

The legal status for each species is provided in Table J-1. The occurrences of special-status wildlife documented during field surveys are recorded in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b) and their locations are shown in Maps WL-1 through WL-9 in Volume II of the Summary Report (Jones & Stokes 2001b). A description of each special-status species follows, with information on its legal status, distribution, habitat association, reasons for decline, and occurrence in the Restoration Project area.

Table J-1. Special-Status Wildlife Species Detected in the Restoration Project Area

Common Name	Scientific Name	Legal Status
Listed Species		
Valley elderberry longhorn beetle[1]	*Desmocerus californicus dimorphus*	Federally listed threatened species
Bald eagle	*Haliaeetus leucocephalus*	Federally listed threatened species State-listed endangered species
American peregrine falcon	*Falco peregrinus anatum*	State fully protected
Willow flycatcher (nesting)	*Empidonax traillii*	State-listed endangered species (all subspecies)
Little willow flycatcher	*Empidonax traillii brewsteri*	Federal species of concern
Sensitive Species and Species of Special Concern		
Amphibians and Reptiles		
Foothill yellow-legged frog	*Rana boylii*	Federal species of concern, State species of special concern
Northwestern pond turtle	*Clemmys marmorata marmorata*	Federal species of concern; State species of special concern
Birds		
Osprey[2]	*Pandion haliaetus*	State species of special concern
Sharp-shinned hawk[2]	*Accipiter striatus*	State species of special concern
Cooper's hawk[2]	*Accipiter cooperii*	State species of special concern
Golden eagle	*Aquila chrysaetos*	State species of special concern State fully protected
California spotted owl	*Strix occidentalis occidentalis*	Federal species of concern, State species of special concern
Vaux's swift	*Chaetura vauxi*	State species of special concern
Yellow-breasted chat	*Icteria virens*	State species of special concern
Bats[3]		
Fringed myotis	*Myotis thysanodes*	Federal species of concern
Long-eared myotis	*Myotis evotis*	Federal species of concern
Small-footed myotis	*Myotis ciliolabrum*	Federal species of concern
Long-legged myotis	*Myotis volans*	Federal species of concern
Yuma myotis	*Myotis yumanensis*	Federal species of concern

Common Name	Scientific Name	Legal Status
Pallid bat	*Antrozous pallidus*	State species of special concern
Townsend's big-eared bat	*Plecotus townsendii*	Federal species of concern State species of special concern

[1] The valley elderberry longhorn beetle is Federally listed as threatened. Although the species was not observed, blue elderberry shrubs that provide potential habitat for the beetle were identified during the field investigations.

[2] This species is not considered to be a state species of special concern in the Draft List of California Bird Species of Special Concern (CDFG and Point Reyes Bird Observatory 2001). This list is currently under review by the California Department of Fish and Game and the Point Reyes Bird Observatory Advisory Committee.

[3] Many unidentified bats were seen at dusk during the wildlife surveys. The species listed here could potentially occur in the Restoration Project area.

Valley Elderberry Longhorn Beetle

Legal Status

The VELB is Federally listed as threatened (45 FR 52803, August 8, 1980); it is not listed by the state. The U.S. Fish and Wildlife Service (USFWS) developed a recovery plan in 1984 (U.S. Fish and Wildlife Service 1984a) with the interim objectives of protecting three known localities, surveying riparian areas in the Central Valley to detect other VELB populations, and protecting the riparian habitats within the VELB's historical distribution. As more information becomes available, USFWS will determine the number of sites and populations of VELB required before it considers delisting the species (U.S. Fish and Wildlife Service 1984a).

Description

The VELB is a medium-sized beetle (0.8 inch long) in the long-horned wood-boring family Cerambycidae. The Latin term *dimorphus* in the beetle's scientific name (*Desmocerus californicus dimorphus*) refers to differences in appearance by gender. The forewings of the female are dark metallic green with red margins, whereas those of the male are primarily red with dark green spots.

The VELB's life history characteristics are assumed to follow a sequence of events similar to those of related taxa (U.S. Fish and Wildlife Service 1984a). Females deposit eggs in crevices in the bark of living blue elderberry shrubs, primarily in valley foothill riparian habitats. Presumably, the eggs hatch shortly after they are laid and larvae bore into the pith of the trunk or stem. When larvae are ready to pupate, they work their way through the pith of the shrub, open an

emergence hole through the bark, and return to the pith for pupation. Adults exit through the emergence holes and can be found on elderberry foliage, flowers, or stems or on adjacent vegetation. The entire life cycle of the VELB is thought to take two years from the time eggs are laid and hatch until adults emerge and die (U.S. Fish and Wildlife Service 1984a).

The presence of exit holes in blue elderberry stems is an indication of previous VELB use. The distinctive oval exit holes are approximately 0.25 inch in diameter and can be found from a few inches above the ground to about 10 feet up on stems ranging from 1 to 8 inches in diameter (Barr 1991).

Distribution

Information on the historical distribution and abundance of VELB is scarce. The VELB may have always been a rare species; however, the substantial reduction in Central Valley riparian vegetation in the past 100 years probably has further reduced the beetle's range and isolated the remaining populations (U.S. Fish and Wildlife Service 1984a).

In 1984, the VELB was known to occur in only three Central Valley drainages: the Merced River, Putah Creek, and the American River (U.S. Fish and Wildlife Service 1984a). However, additional field surveys in subsequent years detected new locations of VELB along the Yuba, American, Cosumnes, Sacramento, Mokelumne, Calaveras, San Joaquin, Tuolumne, Stanislaus, and Merced Rivers (Barr 1991).

The current range of the VELB extends from the northern end of the Central Valley at Redding to the Bakersfield area. In the foothills of the Sierra Nevada, adult beetles have been found in elevations up to 2,220 feet and exit holes in elevations up to 2,940 feet. Along the Coast Ranges, adult beetles have been found up to 500 feet elevation, and exit holes have been detected up to 730 feet elevation (Barr 1991).

Habitat Association

The beetle's entire life cycle is associated with blue elderberry shrubs in creeks and riparian areas connected to California's Central Valley and in the surrounding foothills up to 3,000 feet in elevation in the east and the entire watershed to the west (U.S. Fish and Wildlife Service 1984a).

Reasons for Decline

Although its historical distribution is unknown, the extensive loss of riparian forests in the Central Valley during the past 100 years probably resulted in a

decrease and fragmentation of the VELB's range (U.S. Fish and Wildlife Service 1984a; Barr 1991). Insecticide from cultivated fields and orchards adjacent to blue elderberry shrubs could affect VELB populations if it drifts when adults are present on the shrubs (Barr 1991). Herbicide drift from agricultural fields and orchards could also negatively affect blue elderberry shrubs and reduce VELB habitat.

Occurrence in the Restoration Project Area

There are no known VELB occurrences in the Restoration Project area, and no VELB were observed during field surveys; however, numerous elderberry plants that provide habitat for the beetle were found during field surveys. Many had stems greater than 1 inch diameter, which could provide habitat for the larval stage. Wherever possible, stems were surveyed for exit holes. A few stems with *possible* VELB exit holes were found in two separate large clusters of elderberry bushes located on the South Powerhouse alternative access road. However, the holes were old, and it cannot be determined whether they were made by emerging VELB; other wood-boring insects and woodpeckers could make similar-sized holes. Information on each elderberry occurrence and the presence or absence of exit holes in stems is presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b).

Northwestern Pond Turtle

Legal Status

The northwestern pond turtle is designated as a species of concern by Region 1 of the USFWS and as a species of special concern by the California Department of Fish and Game (CDFG). The species currently receives no statutory protection under the California Endangered Species Act (CESA) (Fish and Game Code §§2050-2068) or the Federal Endangered Species Act (ESA) (16 USC 1531-1544).

Description

The northwestern pond turtle is an aquatic turtle of medium size (up to 7 inches long). It is the only native turtle in northern California and is unlikely to be misidentified. The carapace is olive brown to blackish, often with darker spots or lines radiating out from the centers of the shields on the plastron. The newly hatched young are 1 inch long, with the tail nearly as long as the shell. These turtles are dietary generalists that feed primarily on small aquatic invertebrates, such as crustaceans and insects, but they also will feed on carrion. Frogs, small fish, and ducklings have been reported prey items, but it is unknown if they were captured while alive or taken as carrion (Holland 1994).

Distribution

The northwestern pond turtle is endemic to the Pacific Northwest. Two subspecies of western pond turtle are currently recognized, the northwestern and southwestern pond turtles. The former is found in northern California from the Oregon border south to the American River and the latter in the coastal areas south of San Francisco. The two subspecies intergrade in the Central and San Joaquin Valleys, but not within the Restoration Project area. It has been suggested that a third undescribed subspecies occurs near the Columbia River Gorge and that the three forms may actually represent different species (Holland 1994). Genetic studies are currently under way to resolve this question.

Movements of up to 3 miles across terrestrial habitats have been documented in all size classes of northwestern pond turtles. Reasons for such movements are generally unknown, but the movements may be responses to environmental stress, such as drought, or regular movements among a series of ponds (Holland 1994). Male and female home ranges have been estimated at approximately 2.5 and 0.6 acre, respectively (Bury 1972).

Habitat Association

The northwestern pond turtle inhabits a wide range of freshwater or brackish rivers, streams, lakes, ponds, and permanent or ephemeral wetlands and is often seen basking on logs, rocks, and mud banks. The species typically occurs in slow-moving streams, pools, and ponds. In most cases, emergent basking sites, such as rocks, logs, or vegetation, are present. Although northwestern pond turtles are occasionally observed in reservoirs, abandoned gravel pits, stock ponds, and sewage treatment plants, most such sightings are of displaced individuals and do not represent viable populations (Holland 1994; Jennings and Hayes 1994).

The species typically nests on gentle slopes in compact soils with a large proportion of silt or clay. Vegetation is usually sparse and consists of grass or forbs. Nests can be from about 10 feet to more than 1,300 feet away from aquatic habitats (Holland 1994). Rathbun et al. (1992) recommended a 1,600-foot buffer zone around aquatic habitats to protect nesting habitat.

The characteristics of overwintering habitat and terrestrial habitats used at other times of the year are highly variable. The presence of a duff layer seems to be a general characteristic of such habitats. The species sometimes overwinters in aquatic environments, such as on mud bottoms, beneath undercut banks or logs, or in areas of emergent vegetation. Movement between overwintering sites does occur, and turtles have been observed swimming under ice in water with temperatures as low as 34ºF (Holland 1994).

Northwestern pond turtles may be either largely inactive during the winter or active throughout the year, depending on location and environmental conditions.

In some areas, turtles overwinter communally in either aquatic or terrestrial sites. Terrestrial overwintering sites may be up to about 1,600 feet from aquatic habitats and usually consist of burrows in leaf litter or soil (Holland 1994; Jennings and Hayes 1994).

Reasons for Decline

Holland (1994) estimated a 96 percent to 98 percent decline in northwestern pond turtle populations in Oregon, but specific causes were not identified. Habitat destruction from agricultural activities, urbanization, and flood control and water diversion projects are considered primary causes of population decline (Jennings et al. 1992). Jennings and Hayes (1994) hypothesized that observed changes in age-class distribution suggest a lack of recruitment that may indicate that the destruction of nesting habitat is a significant factor in declines. They identified agricultural or livestock activity as probable causes. However, introduced exotic fish and bullfrogs that prey on young turtles may also be causing decreases in recruitment. In addition, disease and mortality from ingestion of baited hooks could be contributing factors. Although logging activities can affect the quality of aquatic habitats, no evidence exists to suggest that timber harvesting has contributed to regional or statewide population declines.

Occurrence in the Restoration Project Area

One adult was found in Ripley Creek, just upstream of the Lower Ripley Creek Feeder Dam. The turtles are likely to occur elsewhere in both forks of Battle Creek, but no turtles were found during field surveys. Information on this single observation and its potential for occurrence elsewhere in the Restoration Project area is presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b).

Foothill Yellow-Legged Frog

Legal Status

The foothill yellow-legged frog has been designated as a California species of special concern by the CDFG and as a Federal species of concern. The species currently receives no statutory protection under the CESA or the Federal ESA.

Description

The foothill yellow-legged frog is easily distinguished from the rare, Federally listed red-legged frog by the color of its legs. The foothill yellow-legged frog

rarely gives its guttural croaking mating call so, unlike the common bullfrog and tree frogs, it is usually not found by its voice. This frog breeds after the winter river levels have dropped in mid-March to May. It can be distinguished from the mountain yellow-legged frog by its snout, which has a triangular buff-colored patch, and the absence of a dark mask.

Distribution

The foothill yellow-legged frog historically occurred in most Pacific drainages from the Oregon border to the San Gabriel River drainage in Los Angeles County (Jennings and Hayes 1994). Its current distribution is the Coast Ranges and the Transverse Mountains in Los Angeles County. This species is also found along the western side of the Sierra Nevada and in most of northern California west of the Cascade crest (Zeiner et al. 1988).

Habitat Association

Habitat requirements for the foothill yellow-legged frog include shallow, flowing streams with at least cobble-sized substrate. It is believed that this substrate provides necessary refuge for larval and juvenile stages (Jennings and Hayes 1994). In the warmer part of this species' range, individuals may remain active year-round; in colder areas, individuals may become inactive or hibernate (Zeiner et al. 1988).

Reasons for Decline

Introduced predatory aquatic species such as fish and bullfrogs, poorly timed water releases from reservoirs, and decreased water flows that have forced adults to move into permanent pools where they are more susceptible to predation have contributed to the decline of this species throughout much of its range (Jennings and Hayes 1994).

Occurrence in the Restoration Project Area

Adult foothill yellow-legged frogs were found at the Lower Ripley Creek Feeder Dam and the Soap Creek Feeder. Juveniles were found at South Powerhouse, South Diversion Dam, and in the Soap Creek Feeder, and many tadpoles were found in the creek adjacent to the South Powerhouse. Information on each foothill yellow-legged frog observation is presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b).

Osprey

Legal Status

The osprey is a California species of special concern. This species is not considered to be a state species of special concern in the *Draft List of California Bird Species of Special Concern* (CDFG and Point Reyes Bird Observatory 2001), which is currently under review by the CDFG and the Point Reyes Bird Observatory Advisory Committee. The species currently receives no statutory protection under the CESA or the Federal ESA.

Description

The osprey is a very large raptor with bowed and angled wings in flight that give it a characteristic profile. Ospreys are largely white below and brown above. They often perch prominently close to water bodies. The osprey is not closely related to any other raptor and is placed in its own subfamily.

Distribution

In the western hemisphere, ospreys breed in the United States, Canada, and Mexico. While a portion of their population migrates to spend the winter in Mexico south to the Amazon Basin, some birds winter in California, especially along the coast. Often seen during migration soaring at great heights, ospreys are widely distributed throughout most of the world.

Historically, ospreys bred along the entire length of California, with population centers along the north inxterior, Channel Islands, and north, central, and south coasts (Grinnell 1915). Within this range, the distribution was spotty, as evidenced by the rarity of ospreys in the San Francisco Bay area (Grinnell and Wythe 1927). By the 1940s, Grinnell and Miller (1944) reported declines and range contraction, particularly in the southern half of the state, including the Channel Islands and the central and south coasts, and along the Sacramento and San Joaquin Rivers.

Currently, the osprey breeds in northern California from the Cascade Range south to Lake Tahoe and along the north coast south to Marin County. Regular breeding sites include Shasta Lake, Eagle Lake, Lake Almanor, Lake Oroville, New Bullards Bar Reservoir, Camanche Reservoir, other inland lakes and reservoirs, and river systems (e.g., the Pit River, Sacramento River, Yuba River, and Cache Creek) (Zeiner et al. 1990b). Ospreys winter in small numbers along the entire coast and large inland bodies of water, such as the Feather River, Putah and Cache Creeks, American River, Camanche Reservoir, Turlock Reservoir, New Melones Reservoir, and Lake San Antonio (Roberson 1985).

Habitat Association

The osprey is associated strictly with large, fish-bearing waters primarily in ponderosa pine and mixed conifer habitats. Nests are platforms of sticks constructed on the top of large snags, in dead-topped trees, on cliffs, or on human-made structures in open forest habitats. The location of nests requires tall, open-branched "pilot trees" nearby where the osprey can land before approaching the nest and where young osprey can practice flying. The osprey preys mainly on fish and, therefore, requires open waters for foraging (Zeiner et al. 1990b).

Reasons for Decline

Factors leading to the decline of osprey populations include pesticide contamination, nest-tree removal, degradation of the environmental quality of rivers and lakes, boating and other human disturbances in nesting areas, and illegal shooting (Henny et al. 1978). Osprey populations declined through the 1960s, especially in the eastern United States, because of eggshell thinning caused by pesticide contamination (Henny and Ogden 1970), which led to reproductive failure (Garber 1972); however, reproductive success has increased since the early 1970s (Airola and Shubert 1981).

Occurrence in the Restoration Project Area

One active osprey nest was found in the 2000 breeding season in a large ponderosa pine on the south bank of the South Fork Battle Creek approximately 1.3 miles downstream of the South Diversion Dam and 0.7 mile north of the access road. This nest was not active in 2001, and no breeding ospreys were observed that year. One osprey was observed foraging along South Fork Battle Creek. Information on both osprey observations is presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b).

Bald Eagle

Legal Status

The bald eagle is federally listed as threatened and state listed as endangered and is protected under the federal Bald and Golden Eagle Protection Act (16 USC 668-668d).

Description

The sharp contrast between the adult bald eagle's distinctive white-feathered head and tail and its dark brown body and wings make this species clearly identifiable. The heads and tails of younger birds are mostly brown, and these birds are often mistaken for golden eagles. When fully grown, bald eagles measure 2.5 to 3.5 feet long, with a wingspan of more than 6.5 feet. Females typically are larger than males. Bald eagles tend to be more vocal than most raptors and emit a variety of high-pitched calls (Thelander 1994).

Distribution

Bald eagles winter throughout most of California at lakes, reservoirs, river systems, and some rangelands and coastal wetlands (Zeiner et al. 1990b). Almost half of the state's population winters in the Klamath Basin, but this species is also an uncommon visitor to the Central Valley. The breeding range of bald eagles is primarily in mountainous habitats near reservoirs, lakes, and rivers in the northwest corner of the state (California Department of Fish and Game 1989). Fish constitute most of the bald eagle's diet, but wintering birds frequent Central Valley wetlands in search of dead and dying waterfowl and other water birds.

Habitat Association

Bald eagle nesting territories are associated primarily with young or mature forests of varying canopy closure of ponderosa and mixed conifer types, but can be found in all forest types from blue oak savanna to lodgepole pine types (Verner and Boss 1980). Bald eagles usually nest in overstory ponderosa or sugar pine with foliage shading the nests, within 0.5 mile of a large body of water and with low human disturbance (Verner and Boss 1980). Total canopy closure in stands that support bald eagle nests is usually less than 40 percent (Verner and Boss 1980).

Reasons for Decline

Historically, bald eagle populations have declined as a result of eggshell-thinning from the ingestion of dichlorodiphenyltrichloroethane (DDT), shooting, and disturbance of nest sites. However, because of their protection under the CESA, the Federal ESA, and the Bald and Golden Eagle Protection Act, their populations have recovered across most of North America and they may soon be delisted from the Federal list.

Occurrence in the Restoration Project Area

Bald eagles hunt for fish within the Restoration Project area; however, no active or inactive nest sites were identified. Bald eagles likely nest outside the Restoration Project area. Adults were seen flying high over both forks of Battle Creek on several occasions during the spring field surveys. An adult bald eagle was observed flying over the Eagle Canyon Diversion Dam site in mid-June 2000, and in mid-April 2001, an adult was seen flying high about 1 mile east of Wildcat Diversion Dam. An immature bald eagle was observed at Coleman Diversion Dam in mid-June 2000. Information on the adult bald eagle observations is presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b).

Sharp-Shinned Hawk

Legal Status

The sharp-shinned hawk is designated as a species of special concern by the CDFG. This species is not considered to be a state species of special concern in the *Draft List of California Bird Species of Special Concern* (California Department of Fish and Game and Point Reyes Bird Observatory 2001), which is currently under review by the CDFG and the Point Reyes Bird Observatory Advisory Committee. The species currently receives no statutory protection under the CESA or the Federal ESA.

Description

The sharp-shinned hawk is the smallest North American member of the genus *Accipiter*, a group of forest-dwelling hawks with short, rounded wings and a long tail that enables them to maneuver in forested habitat. Of the three species of *Accipiter* in North America, the sharp-shinned hawk is the most specialized in hunting avian prey; birds commonly make up more than 90 percent of the sharp-shinned hawk's diet during the breeding season (Johnsgard 1990). They can be distinguished from the larger Cooper's hawk by their straight rather than rounded tail tips, their short undertail coverts, and their smaller heads and shorter necks.

Distribution

Found throughout North America, sharp-shinned hawks nest primarily in heavily forested locations with little human disturbance. In California, nest sites are found almost exclusively in forests in the northern Coast Ranges, the Sierra Nevada, and the Cascades. In California, they are rare breeders, primarily in the conifer forests of the Sierra Nevada, the coastal forests of northern California

(Verner and Boss 1980), and, in small numbers, the mountain ranges of southern California (Garrett and Dunn 1981). During migration periods and in the winter, however, they are fairly common in most habitats (Grinnell and Miller 1944).

Habitat Association

Sharp-shinned hawks typically nest in montane settings with dense, relatively young, even-aged conifer stands or deciduous riparian habitats (Reynolds et al. 1982; Moore and Henny 1983; Johnsgard 1990). Nests are usually situated on moderately steep, north-facing slopes near water in stands with a high foliage density and often near forest openings or edges (Reynolds et al. 1982; Johnsgard 1990). Estimates of breeding season home ranges vary from 150 to 1,000 acres (Johnsgard 1990). Reynolds et al. (1982) recommended retaining 9-acre buffer zones around active nests, an area large enough to encompass nearby prey-plucking posts. During migration, sharp-shinned hawks can be found in all habitats, but during the winter, they are most frequently found in a variety of forest types, riparian woodlands, and suburban areas with an abundance of prey (small passerine birds).

Reasons for Decline

Sharp-shinned hawks may have never been abundant in California during the breeding season (Grinnell and Miller 1944; Remsen 1978). A possible decline noted in California during the DDT era (Remsen 1978) coincided with declines in eastern populations and probably was attributable to DDT and other pesticides (Bednarz et al. 1990). However, the population status in California is unknown. Timber harvesting has also been suggested as a potential threat to the species population (Remsen 1978).

Occurrence in the Restoration Project Area

Several individuals were seen during spring and fall migration (April and September) at various locations along access roads and Restoration Project sites. Their specific occurrence during migration is unpredictable but is often tied to local, ephemeral concentrations of prey (small passerine birds). No individuals were observed during the breeding season (June and July); therefore, they are not likely to nest in the Restoration Project area. Information on each sharp-shinned hawk observation has not been presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b) because the individuals observed on access roads and Restoration Project sites were spring and fall migrants and were not nesting in the Restoration Project area.

Cooper's Hawk

Legal Status

The Cooper's hawk is designated as a state species of special concern by the CDFG. This species is not considered to be a state species of special concern in the *Draft List of California Bird Species of Special Concern* (California Department of Fish and Game and Point Reyes Bird Observatory 2001), which is currently under review by the CDFG and the Point Reyes Bird Observatory Advisory Committee. The species currently receives no statutory protection under the CESA or the Federal ESA.

Description

This medium-sized *Accipiter* is larger than the sharp-shinned hawk. Its rounded tail, longer undertail coverts, and larger head and neck help in its identification. Cooper's hawks are smaller than northern goshawks, and adults are easily identified by the reddish barring on their underparts and their lack of a white eye stripe. Immature Cooper's hawks are much more similar to northern goshawks, but often have straight, even white barring on the tail and are smaller and not as broad-winged. Cooper's hawks can be found in a variety of habitats and elevations; however, they are not as closely tied to montane coniferous forests as are sharp-shinned hawks or northern goshawks.

Distribution

The historical range of the Cooper's hawk is similar to its current range, although the species is less common in the Central Valley than it was historically. Cooper's hawks are found throughout most of the United States, southern Canada, and northern Mexico. Northern populations are said to be migratory and southern populations, resident; however, some southern populations apparently migrate as well (Rosenfield and Bielefeldt 1993). Cooper's hawks breed throughout most of California in a variety of woodland habitats (Grinnell and Miller 1944; Garrett and Dunn 1981). They are uncommon breeders in much of California; the highest densities probably occur in the foothill oak woodlands of the Sierra Nevada and Transverse Ranges (Asay 1987). Cooper's hawks are found in greater numbers during migration and winter, when they can be found in all habitats throughout California (Grinnell and Miller 1944).

Habitat Association

The Cooper's hawk nests in deciduous, conifer, and mixed woodlands (Garrett and Dunn 1981), but will also nest in urban areas and seems to tolerate human

disturbance near the nest (Palmer 1988). The hawks nest and forage near open water or riparian vegetation. Prey comprises small birds, a variety of small mammals, reptiles, and amphibians (Zeiner et al. 1990b). The species usually breeds after two years (Rosenfield 1982; Henny et al. 1985; Asay 1987), and pairs generally return to the same territory year after year and will often build a new nest in the vicinity of the existing one (Reynolds and Wright 1978).

Reasons for Decline

The decline of eastern United States populations of Cooper's hawk is attributed to pesticide contamination. Declines in the West are less documented, but in California, they have been attributed to destruction of habitat, particularly of lowland riparian areas (Remsen 1978). Pesticides may also play a role in declines in western populations.

Occurrence in the Restoration Project Area

An immature Cooper's hawk was seen during field surveys performed in July 2000 and was probably dispersing from its natal territory. An adult Cooper's hawk was seen in April 2001 on the road to South Diversion Dam and was probably a migrating bird not breeding locally. Information on these Cooper's hawk observations have not been presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b) because neither is considered to signify breeding within the Restoration Project area.

Golden Eagle

Legal Status

The golden eagle is designated as a species of special concern by the CDFG, is a fully protected species under the California Fish and Game Code, and is protected under the federal Bald and Golden Eagle Protection Act (16 USC 668-668d).

Description

One of the largest raptors in North America, the golden eagle is named for the golden crown and nape found on the adults. Immature golden eagles can be distinguished from immature bald eagles by their smaller bill and the fact that they are white only on the bases of their primaries and tail feathers.

Distribution

Golden eagles are found throughout western North America, and a few migrate through and winter in parts of the eastern United States. The golden eagle is a permanent resident throughout California, except in the center of the Central Valley, although it winters in this area (Zeiner et al. 1990b). Golden eagle populations have declined near human population centers, but overall its population appears stable (Remsen 1978).

Habitat Association

Golden eagles are closely tied to open range, including blue oak savanna. This species avoids dense coastal and montane coniferous forests (Small 1994). It breeds from late January through August, peaking from March though July. Nests are most frequently placed on cliff ledges, but may be placed on trees large enough to support their weight. Golden eagles often maintain alternative nest sites and old nests are often reused (Zeiner et al. 1990b). The golden eagle needs open areas for hunting. Its diet consists mostly of rabbits and rodents, but also includes other mammals, reptiles, birds, and some carrion (Zeiner et al. 1990b).

Reasons for Decline

Golden eagles have declined as a result of shooting, poisoning, and disturbance of nest sites (Remsen 1978).

Occurrence in the Restoration Project Area

Golden eagles were seen flying overhead at North Battle Creek Feeder Dam and the South Powerhouse. An immature bird was seen perched on a ledge in the headwaters of Soap Creek above the South Diversion Dam access road. Old, unoccupied nests were found at the headwaters of Soap Creek Feeder and at the South Powerhouse. The eagles sighted may have nested in the region, but because their home range is very large, observations of pairs of golden eagles at a site do not necessarily indicate local nesting. Information on each golden eagle observation is presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b). In mid-April 2001, one adult golden eagle was seen circling very high over North Battle Creek, and two birds were observed in courtship display over crags at South Diversion Dam.

American Peregrine Falcon

Legal Status

The American peregrine falcon is state-listed as endangered under the CESA and is currently fully protected under the California Fish and Game Code. The peregrine falcon was formerly listed as Federally endangered, but the population has recently recovered to the extent that it was delisted in August 1999 (64 FR 46541-46558, August 25, 1999).

Description

A large and powerful predator, the peregrine falcon is the fastest bird in North America, capable of reaching speeds up to 200 mph in a dive. The adult male is blue-gray on the back, with a streaked breast. The crown and nape are black, with a black wedge that extends below the eyes, forming a distinctive helmeted appearance.

Distribution

Historically, resident American peregrine falcons occurred throughout most of California (California Department of Fish and Game 1980; U.S. Fish and Wildlife Service 1982). The population increased during winter, when migrating birds arrived from the north. Peregrine falcons nested throughout the state, with breeding pairs concentrated along the coast and around the Channel Islands. Interior nesting locations included Tule Lake in Siskiyou County, Mono Lake in Mono County, and the inner Coast Ranges in Kern County (Grinnell and Miller 1944). The population of California peregrine falcons began to seriously decline in the 1950s. Based on a conservative historical estimate, there were 100 pairs breeding in California before 1947. By 1969, fewer than 10 nesting sites were believed to be active (Herman et al. 1970). In 1970, only two nesting pairs were confirmed, with probably fewer than five nesting pairs statewide (Herman 1971). In 1992, there were approximately 140 breeding pairs of American peregrine falcons in California, primarily in mountains of the central and northern Coast Ranges and the Cascade Range (California Department of Fish and Game 1997).

Habitat Association

American peregrine falcons nest on protected ledges of high cliffs, primarily in woodland, forest, and coastal habitats (California Department of Fish and Game 1980; U.S. Fish and Wildlife Service 1982). They have been known to nest at elevations as high as 10,000 feet, but most occupied nest sites are below 4,000 feet (Shimamoto and Airola 1981). Falcons prefer to nest near marshes,

lakes, and rivers that support an abundance of birds, but they may travel several miles from their nesting grounds to forage on pigeons, shorebirds, waterfowl, and songbirds (Grinnell and Miller 1944; California Department of Fish and Game 1980). Coastal and inland marsh habitats are especially important in fall and winter, when they attract large concentrations of water birds (California Department of Fish and Game 1980).

Reasons for Decline

The widespread use of organochloride pesticides, especially DDT, was a primary cause of the decline in peregrine falcon populations (U.S. Fish and Wildlife Service 1982). High levels of these pesticides and their metabolites (i.e., by-products of organic decompositions) have been found in the tissues of peregrine falcons, leading to thin eggshells, aberrant reproductive behavior, and reproductive failure. Other causes of decline include illegal shooting, illegal falconry activities, and habitat destruction (California Department of Fish and Game 1980).

Occurrence in the Restoration Project Area

One adult peregrine falcon was observed circling high over the road at South Diversion Dam during raptor surveys on April 13, 2001.

California Spotted Owl

Legal Status

The California spotted owl is a Federal and state species of special concern. On October 12, 2000, the California spotted owl was proposed to be Federally listed as a threatened species (65 FR 60605–60607). However, until the USFWS makes the proposed listing final, the California spotted owl is still considered a Federal species of concern and a state species of special concern. Because the California spotted owl is proposed as a Federally listed threatened species, the USFWS requires that it be treated as a listed species by other Federal agencies. The species currently receives no statutory protection under the CESA or the Federal ESA.

Description

The spotted owl is a large nocturnal bird, overall brown in color, with irregular white spots on the back, head, and underparts. It is smaller than the great horned owl, lacks ear tufts, and has dark brown eyes. The closely related barred owl is

slightly larger, with horizontal bars across the chest instead of spots. The California spotted owl is one of three subspecies of the spotted owl (American Ornithologists' Union 1957) and is paler in color with larger spots than the similar, federally threatened northern spotted owl, which also occurs in California. Females typically are larger than males. Spotted owls are vocal; both male and female frequently utter a distinctive four-note call during the breeding season.

Distribution

California spotted owls occur on the western side of the Sierra Nevada from the southern Cascade Range south to Kern County, in the southern part of the Coast Range, and in mountain ranges of southern California south to Baja California (Gutiérrez et al. 1995; Verner et al. 1992b).

Habitat Association

The California spotted owl occurs in coniferous, hardwood, and mixed forests and is strongly associated with forests that have complex, multilayered structure, large-diameter trees, and high canopy closure (Bias and Gutiérrez 1992; Gutiérrez et al. 1995). Nests are placed in tree cavities or abandoned nests of other animals within areas of dense old-growth forest with more than 75 percent canopy closure (Bias and Gutiérrez 1992). Roosting sites have similar characteristics. California spotted owls forage in a wider variety of forest types, including more open forests with canopy cover as low as 40 percent (Verner et al. 1992b). In the Sierra Nevada, spotted owls prey largely on northern flying squirrels and dusky-footed woodrats, but a variety of other prey items are taken, including birds, mammals, insects, and reptiles.

Reasons for Decline

The status of the Sierra Nevada population of the California spotted owl is uncertain. Although short-term declines have been reported, data are lacking to demonstrate long-term population trends (Verner et al. 1992b). Key habitat requirements are declining as a result of logging, particularly the selective removal of large-diameter conifers (Verner et al. 1992a). In southern California, habitat for the spotted owls is decreasing because of urban expansion, rural development, and increasing water extraction, and owl populations are declining (LaHaye et al. 1992; Verner et al. 1992a).

Occurrence in the Restoration Project Area

Suitable nesting and roosting habitat occurs in dense forest with large trees on lower canyon slopes, and suitable foraging habitat occurs more widely throughout the Restoration Project area. The California spotted owl is not known to breed within the Restoration Project area, and to date, no California spotted owls have been observed within the Restoration Project area. Surveys in the 2001 breeding season are the first year of a two-year survey following the USFWS-endorsed *Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls* (U.S. Fish and Wildlife Service 1992). According to USFWS representatives, the survey protocol for the California spotted owl will be similar to the survey protocol for northern spotted owl.

Vaux's Swift

Legal Status

Vaux's swift is designated as a species of special concern by the CDFG (Remsen 1978). The species currently receives no statutory protection under the CESA or the Federal ESA.

Description

Vaux's swift is a migratory, insectivorous bird that nests and roosts in large hollow trees and snags. As with other swifts, this species forages in the air over forest canopy, grasslands, and water. Vaux's swift can be readily distinguished from the larger white-throated swift by its lack of obvious white on the throat and flanks and from the larger black swift by its squared-off tail, pale brown throat and rump, and narrower wings. Vaux's swift can be readily distinguished from the many species of swallows by its overall dark brown plumage, cigar-shaped body, and twittering wing beats.

Distribution

In California, the species occurs during the breeding season primarily in the narrow redwood-forested coastal zone from the Oregon border south to Santa Cruz County. The species also occurs across the northern portion of the state and in the Sierra Nevada, although apparently at much lower densities (Bull and Collins 1993; Sterling and Paton 1996).

Habitat Association

In California, Vaux's swifts appear to prefer redwood and Douglas fir forest types (Sterling and Paton 1996), constructing their nests in large hollow trees and snags and burned-out hollows (Bull and Cooper 1991; Bull and Collins 1993). Several investigators have reported an association between the presence of Vaux's swift and old- growth forests (Manuwal and Huff 1987; Lundquist and Mariani 1991; Bull and Hohmann 1993; Sterling and Paton 1996). However, age and structural characteristics of forest stands may not in themselves be as critical to swifts (Bull 1991) as the need for suitable nest and roost trees. Nest and roost trees are more likely to occur in old-growth forests because of the large size and decay conditions of the trees (Bull and Hohmann 1993; Bull and Collins 1993).

Nest trees tend to be large, averaging 32 inches in diameter at breast height in one study (Bull and Hohmann 1993). However, Bull and Hohmann (1993) also reported limited use of residual snags in second-growth forests, and Dawson (1923) and others (cited in Sterling and Paton 1996) described nests in residual snags in old burns and clear-cuts. These findings suggest that retained hollowed trees and snags could continue to provide habitat in regeneration areas. Lundquist and Mariani (1991) recommend retention of snags greater than 30 inches in diameter at breast height. Vaux's swifts forage on insects and spiders, usually above the canopy, water, and grasslands, but may also take prey near branches inside the canopy (Bull and Collins 1993).

Reasons for Decline

Populations of Vaux's swift declined in Oregon and Washington during the 1980s (the percentages of annual change were –8 percent in Oregon and –11 percent in Washington) (Bull and Collins 1993). Corresponding data for California are lacking (Sterling and Paton 1996). The removal of large snags and hollow trees generally associated with late seral-stage forests probably has contributed to population declines (Bull and Collins 1993).

Occurrence in the Restoration Project Area

An individual was sighted flying over blue oak savanna just outside the Restoration Project area on June 13, 2000, and a pair was observed at the Lower Ripley Creek Feeder on July 25, 2000. Although the nest location is unknown, these birds are probably nesting in a large snag somewhere in the canyon of either South Fork or North Fork Battle Creek at a higher elevation outside the Restoration Project area. Information on Vaux's swift has not been provided in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b) because it is not known to nest in the Restoration Project area or at the elevation and habitat in California where the swift was observed (Sterling and Paton 1996). Furthermore, the pair of Vaux's swift observed at the Lower Ripley Creek Feeder

in late July 2000 is best interpreted as birds dispersing from their breeding territory.

Willow Flycatcher

Legal Status

The willow flycatcher is state-listed as endangered. One subspecies occurring in California, the southwestern willow flycatcher (*Empidonax traillii extimus*), is Federally listed as endangered.

Description

The willow flycatcher is in the genus *Empidonax*, a group of small, dull-plumaged flycatchers. It can be distinguished from other members of its genus by its loud song, "fitz-bew," and by its lack of a white eye ring. The species includes four or five subspecies, three of which breed in California: *extimus* (southwestern) in southern California, *brewsteri* (little) in the Sierra Nevada, and *adastus* east of the Sierra Nevada (Sedgwick 2000). The willow flycatchers seen in the Restoration Project area are likely to be *brewsteri*, based on range, although *adastus* could also occur in migration.

The willow flycatcher differs from the similar western wood-pewee in its song and "whit" call note; its habit of flicking its tail (shared by other *Empidonax* species); its lack of dark coloring or vested look on its breast; and its brighter yellow belly, longer tail, paler and greener head and back, and broader, more prominent white wing-bars.

Distribution

Historically, the little willow flycatcher was a common nesting species in the Sierra Nevada, Central Valley, and the central and northern Coast Ranges. Now it is found only in isolated populations in mountain meadow systems in the Sierra Nevada and the Cascade Range (Harris et al. 1988; California Department of Fish and Game 1997).

Habitat Association

The little willow flycatcher breeds and forages almost exclusively in wet mountain meadow systems with standing water for at least part of the breeding season (May to July) and with ample numbers of willow and other associated trees and shrubs (Harris et al. 1987). It arrives on the breeding grounds in May

and June and departs for South America in August (Harris et al. 1988; Zeiner et al. 1990b).

Reasons for Decline

This species has declined for a variety of reasons, including nest parasitism by brown-headed cowbirds, loss and degradation of riparian and meadow habitats, and disturbance of nest sites by cattle (Zeiner et al. 1990b; California Department of Fish and Game 1997).

Occurrence in the Restoration Project Area

During 2000, willow flycatchers were seen at Eagle Canyon Diversion Dam and in the riparian habitat at the Lower Ripley Creek Feeder during their peak spring migration period. Although birds were observed singing in appropriate nesting habitat, they are presumed to have been migrants because follow-up searches of these sites in July did not detect nesting willow flycatchers. Information on both willow flycatcher occurrences is presented in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b).

Yellow-Breasted Chat

Legal Status

The yellow-breasted chat is designated as a species of special concern by the CDFG. The species currently receives no statutory protection under the CESA or the Federal ESA.

Description

The yellow-breasted chat is the largest of the New World warblers. It has a very large head with bright white "spectacles," bright yellow breast, white belly, and undertail coverts. The head, back, and wings are medium gray. Throughout the year, the yellow-breasted chat feeds on insects and spiders, berries, and other fruits.

Distribution

The yellow-breasted chat was once common throughout riparian woodland and scrub habitats in California. It is now an uncommon breeder along the coast of

California and in the foothills of the central and southern Sierra Nevada, and breeding populations have declined over much of its former range in southern California (Garrett and Dunn 1981). It is increasingly rare in the Sacramento Valley and rare in the San Joaquin Valley and Mojave Desert (Garrett and Dunn 1981; Small 1994). The mid-elevation western slope of the northern Sierra Nevada is one of the strongholds for this species in California. Yellow-breasted chats are fairly common throughout the riparian habitats in the Restoration Project vicinity.

The breeding season for the yellow-breasted chat is from early May to early August, peaking in June. A migratory species, the yellow-breasted chat leaves for wintering grounds in Mexico and Guatemala in September and returns in April (Dunn and Garrett 1997).

Habitat Association

Although generally associated with riparian habitats, chats in the foothills of the Sierra Nevada are very closely tied to blackberry brambles for cover and for foraging (fruit). Yellow-breasted chats build nests in dense riparian habitats, often consisting of willow thickets and tangles of California wild grape and blackberry brambles (Grinnell and Miller 1944; Dunn and Garrett 1997).

Reasons for Decline

The loss and fragmentation of riparian habitats are major causes of the decline of the yellow-breasted chat (Garrett and Dunn 1981; Dunn and Garrett 1997). Brood parasitism by the brown-headed cowbird has caused the decline of this species, even in areas with intact riparian habitat (Remsen 1978).

Occurrence in the Restoration Project Area

Yellow-breasted chats were found at four riparian sites that had blackberry brambles and riparian scrub: the Darrah Springs Feeder, Coleman Diversion Dam/Inskip Powerhouse, Lower Ripley Creek Feeder, and Inskip Diversion Dam/South Powerhouse. Information on the yellow-breasted chat occurrences at Darrah Springs and Coleman Diversion Dam/Inskip Powerhouse are in Table II-3 in Volume II of the Summary Report (Jones & Stokes 2001b). The occurrences at the Lower Ripley Creek Feeder and Inskip Diversion Dam/South Powerhouse have not been provided in Volume II because the chats observed at these sites were migrants and do not nest in the area.

Special-Status Bats

Numerous bats were observed foraging over the Restoration Project area during the field surveys, and roosting bats were observed in abandoned tunnels near the South Powerhouse and at Inskip Diversion Dam. None was identified by species, but the following species have potential to occur in the Restoration Project area based on their habitats and geographic range:

- Fringed myotis (*Myotis thysanodes*)
- Long-eared myotis (*Myotis evotis*)
- Small-footed myotis (*Myotis leibii*)
- Long-legged myotis (*Myotis volans*)
- Yuma myotis (*Myotis yumanensis*)
- Pallid bat (*Antrozous pallidus*)
- Townsend's big-eared bat (*Plecotus townsendii*)

All of these species are considered Federal species of concern, and known roosting sites in abandoned tunnels should be protected with a steel mesh or bat door that permits access by bats but not by humans or predators.