8D.0 NATURAL ENVIRONMENT: BIOLOGICAL RESOURCES

8D.1 OVERVIEW/GENERAL PLAN REQUIREMENTS

This section of the Natural Resources discussion summarizes biological resources present within Tehama County and includes discussion of special-status species and sensitive habitats known to occur or that potentially occur there. Recommendations regarding known or potential biological issues are included for use in the update of the Tehama County General Plan.

LEGAL BASIS AND REQUIREMENTS

Government Code section 65302(d) states the General Plan shall include a conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forest, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.

8D.2 PURPOSE AND METHODOLOGY

The plant and animals of Tehama County provide benefits to the community in several important ways. Vegetation, both living and non-living, protects soils from erosion and decreases the rate of this natural process. Fertile and stable soils are essential to agriculture and forestry and are vital to other economic activities in the county.

Healthy plant communities also decrease the likelihood and severity of fires and flooding, and the consequent impacts to life and property from these events. Vegetation often determines the type and productivity of wildlife habitat and, through the retention of soils and attenuation of flood flow, determines to a large extent the suitability and value of fish habitat. Through the processes of filtering contaminants and soil retention, vegetation is instrumental in maintaining the quality of water in the County. Healthy plant communities and the fish and wildlife that they sustain form the basis for an active tourism and recreation industry, and are essential to the quality of life in Tehama County.

This section summarizes the existing biological resources in Tehama County focusing on special-status species and sensitive habitats known to occur or that potentially occur in the county. The research methodology used is described below.

- Review of documents pertaining to the natural resources of the County (found in Bibliography)
- Examination of biological resources and vegetation maps and GIS data layers
- Related information is found in other sections of this chapter including: 8.0B, Air Quality; 8.0E, Agricultural Resources; 8.0G, Surface and Groundwater Resources; and 8.0I, Forest Resources.

8D.3 EXISTING SETTING

REGIONAL AND COUNTY SETTING

Tehama County is located in Northern California, approximately midway between Sacramento and the Oregon border. It is approximately 135 miles north of Sacramento. The west boundary of the county is in the Pacific Coast Range and the east boundary is in the southern end of the Cascade Mountain Range. The Sacramento River runs in a north-to-south direction through the

middle of the county and generally divides the county in half. The County has an area of approximately 3,000 square miles. The climate in Tehama County is typical of that found in the central valley, with summers being very warm and dry with mild, somewhat wet winters. The county's economy is largely based on agriculture including farming, ranching and timber production.

BIOLOGICAL COMMUNITIES

Biological communities are commonly defined in terms of dominant vegetation associations. These plant communities determine, to a large extent, the habitat features required for wildlife and for fish. Plant communities are generally a response to abiotic, or non-living, factors such as climate, topography and soils.

Tehama County has a very wide range of biological communities, some of which are highly productive or have rare plant communities. These include grasslands, chaparral, oak woodlands, agriculture, alpine dwarf-shrub, subalpine conifer, Klamath mixed conifer, Sierra mixed conifer, Douglas-fir, ponderosa pine, montane hardwood, montane hardwood-conifer, closed-cone pine-cypress, sagebrush, aspen, juniper, riparian, fresh emergent wetland, riverine, lacustrine, wet meadow, barren, and urban (**Figure 8D-1**). The biological communities and common plant and wildlife species occurring or expected to occur within these habitats, as described by the California Natural Diversity Data Base and the California Native Plant Society, are addressed in more detail in the following sections.

Grasslands (AGS)

Grassland communities occur throughout most of California at virtually all elevations, and are dominated by annual and perennial grasses and forbs. Grasslands in Tehama County are often maintained by cattle grazing in areas that might otherwise develop forest or chaparral communities. A variety of grassland types, including annual grassland, perennial grassland, montane meadow, wet meadow and pasture occur within the County. (Note: The California Natural Diversity Database uses acronyms for the identification of biological communities. AGS is the acronym for the Grasslands biological community.)

Community composition in grassland varies depending on habitat characteristics. Areas that are heavily grazed or otherwise disturbed are characterized by annual grasses and forbs. Dominant species in these areas may include brome (*Bromus* spp.), wild oats (*Avena fatua*), Italian ryegrass (*Iolium multiforum*), and others. In areas lacking disturbance, and on slopes with a high serpentine content, perennial grasses such as purple needlegrass (*Nasella pulchra*) and creeping wild rye (*leymus triticoides*) are dominant. Most native grasslands in Tehama County have been replaced by non-native invasive plants.

Moist areas, such as wetlands and meadows, support a variety of plants adapted to saturated or inundated soil conditions. These are classified as Palustrine emergent wetlands under the Cowardin system and can include a number of wetland grasses and forbs, as well as various species of rush (*Juncus* spp.), spikerush (*Eleocharis* spp.), and sedge (*Carex* spp.).

Grasslands commonly grade into various shrub and tree habitats. They form where grazing, fires, or other disturbances have cleared a previously present community, or where locally wet soils restrict tree and shrub growth. These conditions often result in a very abrupt line between grasslands and adjoining communities.

Many wildlife species use grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or woody vegetation for cover, breeding and resting habitat. Grasslands may also provide forage for migratory waterfowl on a seasonal basis.

Wet meadows are generally too wet for use by small mammals except during the late summer and autumn. The forbs and palatable grasses found in wet meadows are important forage for mule deer and elk, and also provide breeding and nesting habitat for yellow-headed and red-winged blackbirds and for amphibians. Fresh emergent wetlands are among the most productive wildlife habitats in Tehama County. They provide food, cover and water for more than 160 species of birds and also for reptiles, mammals and amphibians.

Wildlife found in grasslands includes Pacific chorus frog, western fence lizard, common garter snake, western rattlesnake, burrowing owl, western meadowlark, American kestrel, turkey vulture, willow flycatcher, northern flicker, western kingbird, wild turkey, great horned owl, common raven, cliff swallow, California ground squirrel, coyote, black bear and fallow deer.

Chaparral (CRC, MCH, MCP)

Chaparral communities are distributed throughout California's non-desert foothill and montane habitats. The three types of chaparral found in Tehama County are distributed as follows: Chamise-redshank chaparral (CRC) occurs in montane habitats in the extreme eastern and western portions of the County; mixed chaparral (MCH) occurs in foothill and montane areas in the east and western portions of the County; and montane chaparral (MCP) occurs in the higher montane habitats of the eastern portion of the County.

Chaparral communities are characterized by an open to very dense assemblage of woody shrubs with a canopy that can reach nearly 20 feet. Chamise-redshank communities are dominated by Chamise (*Adenostama fasciculatum*), which is often the only dominant shrub present. Montane and mixed chaparral communities are generally dominated by one or more species of ceanothus and manzanita. Other associated species include foothill pine (*Pinus sabiniana*), chamise, and scrub oak (*Quercus Berberidifolia*) for mixed chaparral, and chamise huckleberry oak (*Quercus vaccinifolia*), and chinquapin (*Chrysolepis* spp.) for montane chaparral. Understory species are generally absent, although annual and perennial grasses and forbs can occur when large spaces exist between shrubs.

Within the county, chaparral communities generally grade into other chaparral types or a variety of associated woodland and forest communities. Distributions are often patchy with chaparral, forest and a variety of intermediate communities existing in close proximity. At lower elevations, chamise-redshanks and mixed chaparral communities are associated with montane hardwood, montane hardwood-conifer, Douglas-fir forest, closed-cone pine forest, and blue oak woodland. At higher elevations, montane chaparral communities are associated with Douglas-fir, Klamath mixed conifer, Sierran mixed conifer, and subalpine conifer forests.

The chaparral communities provide habitat for a wide variety of wildlife, particularly rodents, rabbits, mule deer and other herbivorous mammals. Birds utilize the seeds, fruits, insects and cover found in chaparral. Raptors prey on these birds and on small reptiles and mammal. Common among theses are northern and southern alligator lizard, common kingsnake, rattlesnake, turkey vulture, ash-throated flycatcher, gray vireo, barn owl, common raven, Pacific kangaroo rat, desert cottontail, coyote, mule deer and elk.

Oak Woodland (OAW)

Oak woodlands consist of relatively open habitats, dominated by one or more species of oaks. It occurs throughout California, and has a patchy distribution in valleys and foothills in Tehama County. Blue oak woodlands, valley oak woodlands and blue oak-foothill pine communities all exist in Tehama County.

Blue oak woodland is an increasingly rare habitat found in California's foothills, forming a discontinuous ring around the central valley. In Tehama County, it is most common on the east and west of the Sacramento River between the 500 and 2,000 foot elevations. Characteristically, blue oak communities occur on dry, rocky slopes in infertile soils. Conditions are often too harsh to support other hardwood or oak woodland communities. Livestock grazing, low seedling recruitment, and land conversion are contributing to the gradual loss of blue oak woodland throughout the State.

Blue oak woodlands are dominated by blue oaks, which form an open canopy over a community of generally annual grasses and forbs. While blue oaks are the most common trees, interior live oak and valley oak occur where deep soil has formed. Valley oak woodlands are almost exclusively dominated by valley oak (*Quercus lobata*), and blue oak-foothill pine communities are usually dominated by a blue oak canopy with sparse foothill pine intermixed.

Most of the oak woodlands within the county are dominated by blue oaks, but it is a relatively uncommon plant community. It forms a patchy distribution throughout its range, often growing on steep infertile slopes within other habitat types. At the lower extent of its range, blue oak woodlands grade into annual grassland communities, which are often used for cattle grazing. At the upper elevations on the upper portion of its range, blue oak woodland grades into chamise-redshank and mixed chaparral. Throughout its range, blue oak woodlands grow in patches within montane hardwood forests, grasslands and chaparral communities.

Wildlife occurring in oak woodlands are similar to those found in both Douglas-fir forests and montane hardwood forests. These species include Pacific chorus frog, ensatina, northwestern, arboreal, and California slender salamanders, bullfrog, western fence lizard, southern and northern alligator lizards, western terrestrial garter snake, western rattlesnake, common garter snake, western rattlesnake, burrowing owl, great horned owl, red-tailed hawk, red-shouldered hawk, acorn woodpecker, western meadowlark, American kestrel, turkey vulture, Hammond's flycatcher, dusky flycatcher, northern flicker, western kingbird, chestnut-backed chickadee, ruby-crowned kinglet, western scrub-jay, Stellar's jay, Pacific slope flycatcher, Hutton's vireo, hermit thrush, wild turkey, common raven, cliff swallow, California ground squirrel, big brown bat, dusky-footed woodrat, gray fox, raccoon, mule deer, coyote, black bear and fallow deer.

Alpine Dwarf Shrub (ADS)

Alpine dwarf shrub areas occur in the highest elevations, usually above treeline in harsh environments. In Tehama County alpine dwarf shrub habitat is restricted to the northeast region of the county, mostly within Lassen National Park.

Alpine dwarf shrub areas are characterized by slowly developing communities of forb and dwarf shrubs. The perennial herbs or dwarf shrubs comprising these communities are usually less than 18-inches tall. Species composition varies. The most common shrubs occurring are oceanspray, Greene goldenweed, mountain white heather, Eschscholtz buttercup, primrose, prostrate sibbaldia, sedge, bluegrass, buckwheat, squirreltail, rock-cress, mountain sorrel, pussypaws, Indian paintbrush, Payson's draba and Sitka romanzoffia.

At the lower elevational extent of the alpine dwarf shrub habitat, it normally interfaces with subalpine conifer and closed-cone pine-cypress, subalpine forests, and Sierran mixed subalpine forests. The alpine dwarf shrub habitat often intergrades with alpine talus and scree slopes in the summit regions.

Wildlife common to this habitat includes blue grouse, Rufus hummingbird, mountain bluebird, gray-crowned rosy finch, Mount Lyell shrew, broad-footed mole, pika, white-tailed jackrabbit, yellow-bellied marmot, Belding's ground squirrel and northern pocket gopher.

Subalpine Conifer (SCN)

Subalpine conifer areas occur in extremely harsh environments at high elevations on thin and low quality soils. In Tehama County subalpine conifer forests are restricted to upper elevations in the northeast portion of the county around Mount Lassen.

Subalpine conifer habitat is typically characterized by a medium stature needle-leaved evergreen trees. Dominant species include Engelmann spruce, subalpine fir, mountain hemlock, western white pine, lodgepole pine, whitebark pine, foxtail pine, bristlecone pine and limber pine. A shrub understory may include parry manzanita, squaw currant, purple mountain heather, oceanspray and big sagebrush.

At it's upper elevation subalpine conifer intergrades with alpine dwarf shrub, while at lower elevations it intergrades with lodgepole pine, Jeffrey pine, red fir, closed-cone pine-cypress and Klamath mixed conifer forests.

Coniferous forests at high elevations typically support fewer species of amphibians, reptiles, birds, and mammals than any other major forest type. Wildlife found in subalpine conifer forests include osprey, flammulated owl, great gray owl, northern goshawk, pileated woodpecker, pine marten, Sierra Nevada red fox, wolverine, Sierra Nevada snowshoe hare, spotted bat and California horned lizard.

Klamath Mixed Conifer (KMC)

The Klamath mixed conifer habitat type is a mid-elevation forest occurring throughout the Klamath Ranges in northwestern California. Rough terrain, steep slopes, and serpentine soils are common throughout this habitat type. Within Tehama County, Klamath mixed conifer is restricted to the northwestern portion of the County and occupies a band between Sierran mixed conifer and Subalpine conifer habitats.

Klamath mixed conifer is typically characterized by a moderate to dense canopy formed from a variety of conifer species. Dominant conifers include ponderosa pine, Douglas-fir and white fir. On serpentine soils, Jeffrey pine is often the dominant tree. Other common species in this habitat type include sugar pine (*Pinus lambertiana*), incense-cedar and knobcone pine. Stands of California black oak and Pacific madrone also occur in the understory. The shrub and herbaceous layers range from sparse to well developed, and may contain manzanita, chinquapin, ceanothus, and a number of grasses and forbs.

At its lower elevation limit, Klamath mixed conifer generally intergrades with Sierran mixed conifer forests. At the higher elevations, subalpine conifer forests usually become dominant. This habitat type also commonly includes patches of montane meadow, mixed chaparral and Jeffrey pine forest.

Wildlife found in Klamath mixed conifer forests is similar to those species found in Douglas-fir, ponderosa pine and white fire habitats. The complex geology and soils that form the basis for the diverse vegetation found in these forests creates a wide array of nesting and feeding opportunities and thermal cover for wildlife. Rare, threatened or endangered wildlife in this habitat include spotted owl, peregrine falcon, wolverine and Siskiyou Mountain salamander.

Sierran Mixed Conifer (SMC)

Sierran mixed conifer forests dominate western middle elevation slopes of the Sierra Nevada, forming a vegetation band ranging 2500 to 4000 feet. Within Tehama County Sierran mixed conifer habitat is restricted to a small region in the northeastern portion of the County around Mount Lassen.

Sierran mixed conifer is an assemblage of conifer and hardwood species that forms a multilayered forest. Dominant species include white fir, Douglas-fir, ponderosa pine, sugar pine, incense-cedar, and California black oak. Jeffrey pine commonly replaces ponderosa pine at higher elevations, on cold sites, or on serpentine soils. The shrub and herbaceous layers include deeerbrush, manzanita (*Arctostaphylos* spp.), chinquapin, tan oak, bitter cherry, squaw carpet, mountain whitethorn, gooseberry, rose and mountain misery.

This habitat type adjoins ponderosa pine, Douglas-fir, Klamath mixed conifer, white fir, red fir, and subalpine conifer forests. Montane meadows and riparian deciduous woodlands are found within the Sierran mixed conifer habitat.

Wildlife found in the Sierran mixed conifer habitat supports numerous mammals and birds including spotted owl, Vaux's swift, Lawrence's goldfinch, northern goshawk, Pacific fisher, American (pine) marten, bald eagle and peregrine falcon.

Douglas-fir (DFR)

Douglas-fir forests occur in montane habitats throughout Northern California. Within Tehama County, Douglas-fir forest is common in areas that are too dry for hardwood communities and too low in elevation for other conifer types.

Douglas-fir communities are characterized by an upper canopy dominated primarily by Douglas-fir and a lower canopy composed of a number of conifer and hardwood species. Common species in the lower canopy include California black oak, canyon live oak, tanbark oak, and Pacific madrone. The understory in Douglas-fir communities is variable, ranging from sparse to very dense, and can include a number of common herbs and shrubs, such as Pacific trillium, western swordfern, California honeysuckle, western fescue, and common beargrass. In more mesic habitats, and in riparian areas, the community composition is similar to that of montane riparian forest communities.

At low elevations, Douglas-fir typically grades into oak woodlands or grassland communities. At higher elevations Douglas-fir commonly intergrades with montane hardwood, Klamath mixed conifer, ponderosa pine, and various grasslands and chaparral communities.

Wildlife commonly found in the Douglas-fir forests include several species of salamanders (including, ensatina, Pacific giant, California giant and California slender), tailed frog, northern alligator lizard, northwestern garter snake, western flycatcher, chestnut-backed chickadee, golden crowned kinglet, solitary vireo, varied thrush, turkey vulture, great horned owl, gray jay,

Stellar's jay, olive-sided flycatcher, Pine siskin, bushy-tailed woodrat, coyote, gray fox, elk, mule deer, fisher, deer mouse, Douglas' tree squirrel, and shrew mole.

Ponderosa Pine (PPN)

Ponderosa pine forests occur at low to middle elevations throughout the mountains of California. In Tehama County, they occur commonly on the lower slopes both east and west of the Central Valley, and also in isolated patches on ridge tops in the eastern and western portions of the County.

The ponderosa pine classification is characterized by a relatively open to very dense forest dominated by ponderosa pine. Ponderosa pine can be the only tree species present, but common associates such as California black oak, Pacific madrone, Douglas-fir, white fir, Jeffrey pine, and others can occur. The shrub layer, when present, is similar to the shrub layers in both Douglas-fir and Klamath mixed conifer habitats, and includes many common montane chaparral species.

Ponderosa pine habitat may occur in association with grassland and montane chaparral habitats. It occupies a similar elevational zone to Douglas-fir, and the two often co-occur. At higher elevations, ponderosa pine forests typically transition to Jeffrey pine or Klamath mixed conifer forests.

Wildlife found in ponderosa pine forests is similar to other forested habitats in the region, including those species found in Douglas-fir and white fir forests and in oak woodlands. Ponderosa pine may provide transitional or migratory habitat for mule deer and can be extremely important to deer nutrition in migration holding areas.

Montane Hardwood (MHW)

Montane hardwood forests are distributed in low to mid elevations throughout the western slope of the Sierra Nevada Mountain Range. One of the most abundant habitat types within Tehama County, it occurs throughout the County. It is most common in the mountains in the eastern and western part of the County.

Species composition in hardwood forests is variable. The tallest plants range from medium-sized shrubs to large trees, forming canopies that can range from sparse to very dense. Common dominants include canyon live oak, Pacific madrone, California black oak, and California bay-laurel. Blue oaks (*Quercus douglasii*) occur on dry, steep slopes with poor soil. Chaparral species such as ceanothus (*Ceanothus* spp.) and manzanita (*Arctostaphylos* spp.) often form a shrubby understory, and may compose a part of the upper canopy in areas dominated by shrubby species. Streamside areas within this habitat type are dominated by a greater abundance of riparian trees including California bay-laurel, big leaf maple and alder. At higher elevations or on moister slopes, montane hardwood forest gradually transitions to coniferous forests, resulting in an intermediate hardwood-conifer forest.

Hardwood forests within the County are highly variable and associated with a number of habitat types. Annual grassland and rangeland often forms a mosaic with hardwood forest at lower elevations in inland valleys. At higher elevations, montane hardwood transitions to chaparral in the eastern portion of the County, and Douglas-fir forest in the west and northwestern areas. At high elevations in the northwest, montane hardwood is also associated with ponderosa pine and Klamath mixed conifer.

Wildlife found in montane hardwood forests includes ensatina, relictual slender salamander, western fence lizard, northern alligator lizard, western rattlesnake, Hammond's flycatcher, northern flicker, ruby-crowned kinglet, Cassins's vireo, acorn woodpecker, wild turkey, great horned owl, Stellar's jay, dusky-footed woodrat, coyote, gray fox, black bear, mule deer, deer mouse, and western gray squirrel.

Montane Hardwood-Conifer (MHC)

Montane hardwood-conifer forests are distributed throughout Tehama County as a transitional habitat between dense coniferous forests and montane hardwood, mixed chaparral, or open woodlands. It is most common in the mountains in the eastern and western part of the County.

Species composition in montane hardwood-conifer forests is very diverse and includes California black oak, bigleaf maple, Pacific madrone, tanoak, white alder, dogwood, ponderosa pine, white fir, incense-cedar, Douglas-fir and sugar pine. Relatively little understory occurs under the dense bilayered canopy of montane hardwood-conifer forests.

A transitional habitat between dense coniferous forests and montane hardwood, mixed chaparral, or open woodlands, montane hardwood-conifer forest merges with many other habitats at its upper and lower ranges. These habitats include valley-foothill hardwood, closed-cone pine-cypress, montane riparian, montane chaparral, mixed chaparral, Klamath mixed conifer, Sierran mixed conifer and oak woodlands.

Wildlife found in montane hardwood conifer habitats varied and includes numerous birds and mammals. In mesic (exceedingly moist) areas, many amphibians are found. Due to geographic variation in components of montane hardwood-conifer forests, caution must be exercised when predicting wildlife species use.

Closed Cone Pine-Cypress (CPC)

Closed-cone pine-cypress forests are typically associated with rocky sites or infertile soils more or so than surrounding soils. This community is fire-dependant and often forms even-aged stands after a fire. Closed-cone pine-cypress is commonly found in mountainous regions of interior California. In Tehama County, it occurs in the southwestern portion of the county and in patches in mountainous areas in the east and west, usually associated with serpentine soils.

Closed-cone pine-cypress habitats often form dense, even-aged stands following fire. Single species dominance is common, yet Jeffrey pine (Pinus jeffreii), knobcone pine (Pinus attenuatta) and incense-cedar (Calocedrus decurrens) are all found on serpentinic sites. They often have a shrub layer cover of less than 50 percent. Closed-cone pine-cypress habitats commonly mix with ponderosa pine, Douglas-fir, and Klamath mixed conifer habitats, forming intermediates between the two.

Wildlife commonly found in closed cone pine-cypress forests including several species of salamanders (including: ensatina, Pacific giant, California giant, and California slender), bullfrog, southern alligator lizard, western terrestrial garter snake, western rattlesnake, dusky flycatcher, chestnut-backed chickadee, ruby-crowned kinglet, Hutton's vireo, hermit thrush, turkey vulture, great horned owl, red-tailed hawk, western scrub-jay, Stellar's jay, Pacific slope flycatcher, Pine siskin, big brown bat, dusky-footed woodrat, coyote, gray fox, raccoon and mule deer.

Sagebrush (SGB)

Sagebrush stands are typically large, open discontinuous stands of big sagebrush of fairly uniform height. It often occurs at a wide range of middle and high elevations. In Tehama County sagebrush occupies a very small portion of the county in the southeast.

Sagebrush habitat is often composed of pure stands of big sagebrush, but may include other species of sagebrush, rabbitbrush, horsebrush, gooseberry, western chokecherry, and bitterbrush. At lower elevations sagebrush gives way to grasslands and oak woodlands.

Wildlife commonly found in sagebrush include migratory mule deer, sagegrouse, jackrabbits, cottontail rabbits, ground squirrels, least chipmunk, kangaroo rats, wood rats, pocket mice, deer mice, grasshopper mice, American badger, and sagebrush vole. Birds of the sagebrush type include the peregrine falcon, bald eagle, western burrowing owl, several sparrows including Bell's sage sparrow, chukar, black-billed magpie, gray flycatcher, pinyon jay, sage thrasher and numerous hawks.

Aspen (ASP)

Aspen stands occur primarily at higher elevations near seeps, streams, and meadows. They occur in Tehama County in the far eastern mountains of the County.

Aspen habitat is composed of clones representing one or more genetic line and varies from a few stems to thousands of stems and can occupy an area as large as 50 acres. Associated subdominant tree species includes willow, alder, black cottonwood, lodgepole pine, Jeffrey pine, ponderosa pine, red fir, white fir, Douglas-fir, and Engelmann spruce. Aspens commonly occur adjacent to sagebrush habitats and other montane shrub types where they are often the only tree species present. They are also found along streams adjoining Jeffrey pine habitats and, at higher elevations, they occur with whietbark pine.

Aspen stands add significantly to the richness of wildlife habitat in areas where they occur. The habitat typically has a shrubby ecotone with adjacent meadows. This and the shrub understory within aspen stands provide nesting cover for several species that might otherwise be scarce or absent. Wildlife commonly found in aspen stands include bluebirds, sapsuckers, downy woodpeckers, chickadees, cavity nesting birds, Sierra Nevada red fox, black bear and mule deer.

Juniper (JUN)

Juniper habitats occur at middle elevations, forming a transtition between habitats of higher elevations and habitats of lower elevations. Juniper densities have increased in the last century owing to heavy grazing and reduced fire. In Tehama County, juniper occupies a small region in the northeastern portion of the county around Mount Lassen.

Juniper habitats dispersion ranges from small clumps to widely scattered single plants. Associated plant species include white fir, Jeffrey pine, ponderosa pine, whitebark pine, antelope bitterbrush, California buckwheat, wax currant, gray horsebrush, green Mormon-tea, curlleaf mountain-mahogony, and big and black sagebrush.

Juniper habitat is utilized by numerous birds and mammals, especially during harsh winters. Juniper berries are an important food source for wintering birds, while juniper foliage is consumed by several mammals. Species include mountain chickadees, Oregon juncos,

flycatchers, finches, American robins, mountain bluebirds, cedar waxwings, American kestrel, pinyon mouse, woodrat and western fence lizards.

Riparian (VRI, MRI)

Riparian habitats occur throughout California bordering aquatic habitats. Within Tehama County, both valley foothill riparian and montane riparian habitats exist. One of the most extensive units of riparian habitat lies along the Sacramento River, through central Tehama County.

Valley foothill riparian habitats are generally associated with low velocity flow creeks and rivers, flood plains, and gentle topography throughout the Central Valley and low foothills. Valley foothill riparian habitat is dominated by cottonwood, California sycamore and valley oak. Subcanopy species include white alder, boxelder, Oregon ash, wild grape, wild rose, California blackberry, blue elderberry, poison oak, buttonbrush and willow.

Montane Riparian habitats occur along rivers, streams, wet meadows, and other aquatic environments of upper elevations as a narrow, dense grove of broad-leaved, winter deciduous trees. Montane riparian habitat is dominated by black cottonwood or bigleaf maple. Associated species include dogwood, boxelder, quaking aspen, white alder, wild azalea and willow.

Transition between riparian and adjacent non-riparian vegetation is usually abrupt, especially near agriculture. Riparian habitat is found in association with riverine, grassland, oak woodland, agriculture, montane lakes, ponds, seeps, bogs meadows and springs. Water may be permanent or ephemeral.

Riparian habitats have exceptionally high value for many wildlife species. Such areas provide water, thermal cover, migration corridors and diverse nesting and feeding opportunities. Amphibians, reptiles, birds and mammals utilized riparian habitat. Listed and special status species include Sierran red fox, California horned lizard, tricolored blackbird, oak titmouse, Swainson's hawk, western yellow-billed cuckoo, Nuttall's woodpecker and California thrasher.

Fresh Emergent Wetland (FEW)

Fresh emergent wetland habitats occur on virtually all exposures, slopes and elevations throughout California. Within Tehama County fresh emergent wetland are abundant throughout the Central Valley region of the County.

Fresh emergent wetlands may occur in association with terrestrial habitats or aquatic habitats including riverine, lacustrine, riparian and wet meadow. On the upper margins of wetlands, saturated or periodically flooded soils support several moist soil plant species including big leaf sedge, Baltic rush, redroot nutgrass and saltgrass. On wetter sites, common cattail, tule bulrush, river bulrush, and arrowhead are often dominant species.

The acreage of fresh emergent wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, such as agriculture and urban environments.

Fresh emergent wetlands are among the most productive wildlife habitats in California. Numerous species of birds, mammals, reptiles, and amphibians utilize this habitat for food, cover and water. Listed and special status species that utilize this habitat include the giant garter

snake, Aleutian Canada goose, bald eagle, peregrine falcon, tricolored blackbird, greater sandhill crane and white-face ibis.

Aquatic Habitats (LAC, RIV)

Aquatic habitats occur throughout California at nearly all elevations and in association with all habitat types. *Lacustrine* (lake) habitats (LAC) are depressional bodies of fresh water (including dammed streams), which vary from large perennial lakes to shallow, seasonal ponds and playas. The largest lacustrine habitat in Tehama County is Black Butte Reservoir, southwest of Corning; other small lakes and ponds occur throughout the county. *Riverine* habitats (RIV) occur throughout the County and include seasonal and perennial streams, rivers, and drainages, including over 50 miles of the Sacramento River.

Vegetation in aquatic habitat varies with depth and flow rate. Deep water habitats lack rooted vegetation and are instead characterized by suspended algae (phytoplankton). Shallower waters may contain rooted vascular plants.

Wildlife species composition in aquatic habitats is highly variable. Lacustrine and slow moving riverine habitats generally have a high abundance of zooplanktonic organisms. These small organisms are important for the organisms that feed on them, particularly aquatic invertebrates (typically insects and worms) and fish. Fish species occur in most perennial waters, and invertebrates occur in most perennial and seasonal habitats. A number of birds, mammals, reptiles and amphibians make use of aquatic habitats, and they are dependant on it for a portion or all of their life cycle. These habitats are essential for both resident and migratory waterfowl.

Wildlife species utilizing aquatic habitat include Pacific giant and California giant salamanders, several species of newts and frogs, western pond turtle, western terrestrial garter snake, great blue herons, a wide variety of ducks and geese, gulls, osprey, bald eagle, American beaver, common muskrat, coyote, raccoon and northern river otter.

Wet Meadow (WTM)

Wet meadow habitat occurs throughout virtually every forest type in the region. Wet meadow usually occurs above 4,000 feet, yet also occurs in swales in the valley and foothill grassland of Tehama County.

Wet meadow habitat is characterized by water either at or near the surface for most of the growing season. Vegetation is composed mostly of annual grasses and forbs including several species from the genera Agrostis, Carex, Danthonia, Juncus, Salix and Scirpus. Willow and bilberry are the only shrubs found in much abundance in these habitats.

Wet meadows usually occur between fresh emergent wetlands and perennial grasslands or mesic meadow types. Transition zones are gradual and often distinction between habitat types is not always clear.

Wet meadows are generally too wet to provide suitable habitat for small mammals. Over 160 species of birds utilize wet meadow habitat, as do amphibians, reptiles and mammals. Species include mallard ducks, yellow-headed and red –winged blackbird, striped racer, and various frog species.

Barren (BAR)

Barren areas may occur throughout California in association with any habitat type. They are characterized by little or no vegetative cover due to inhospitable conditions such as surface rock, gravel, vertical banks, pavement, or unstable sand. In the form of pavement it occurs most in Tehama County along the Interstate 5 corridor and associated with urban settings.

Barren habitat may be found in juxtaposition with many different habitats. Riparian or grassland habitat may drop sharply into steep barren riverbanks of loose soils. In alpine settings, exposed parent rock is associated with subalpine conifer, red fir, lodgepole pine, pinyon-juniper, aspen, montane riparian and montane chaparral habitats. Above timberline, barren areas may be found within alpine dwarf shrub and wet meadow habitats.

Wildlife uses of barren habitat include many hawks and falcons, including American peregrine falcon, which may utilize rock ledges and cliffs. Bank swallows use barren vertical cliffs of friable soils along river corridors for nesting. Rocky river canyon walls above open water are preferred foraging habitat for many bats, while ground dwelling mammals such as pika and marmots rely on alpine talus slopes.

Agricultural (CRP)

Agricultural areas occur on arable lands throughout California. For the purposes of this habitat description, the agricultural biological community includes grain crops, orchards, row crops, and pasture. Rangelands would typically be in the grassland, oak woodland, chaparral, or montane hardwood communities. (See Section 8.0E, Agricultural Resources, for a more comprehensive discussion of agricultural resources in Tehama County.)

Agricultural areas in Tehama County occur primarily on the valley floors and lower elevations and are often associated with populated areas in proximity to major roads and highways.

Typically, agricultural fields are monotypic. However, trees are sometimes planted as windbreaks at field edges, and some ruderal (weedy) vegetation can be found along roadsides, at field edges, between rows, and under canopies in orchards. Cover crops are frequently planted between rows in orchards, creating microhabitat for insects and (other) wildlife.

Agricultural lands can grade into any habitat type. In Tehama County, it most commonly is associated with grasslands, urban areas, hardwood forests and oak woodlands. Transitions between habitats are abrupt, marking the edge of cultivated areas.

Because of their high degree of disturbance, agricultural areas generally have a low habitat value for wildlife, although a number of species adapted for disturbed conditions can be found. Fruit and nut orchards and fields of corn or pasture provide food and cover for squirrels, numerous birds, raccoons, and mule deer. Other species that take advantage of these food sources are feral pigs, ring-necked pheasant, American crows, rats, coyotes, opossums, and striped skunk. Seasonally flooded pastures and croplands can provide important habitat for migratory waterfowl.

Urban (URB)

The urban classification is characterized by human modifications to the environment, and includes all ranges of urban development from metropolitan areas to suburban and rural communities. Plant composition in urban areas is highly variable and can include areas with an

abundance of exotic ornamental plants as well as areas dominated primarily by native vegetation. The wildlife value of urban habitats varies from very low in dense, highly urbanized areas, to relatively high in areas with a lower human density and a significant amount of natural vegetation remaining. Urban areas occur throughout California in association with every major habitat type. Within Tehama County, the largest urban areas are Red Bluff and Corning; small urban areas within the County include Tehama, Rancho Tehama, Los Molinos, Mineral, Manton, Paynes Creek and Vina.

The most densely developed urban areas provide wildlife habitat for western scrub-jay, rock dove, northern mockingbird, European starling and house finch. Associated mammals include raccoon, Norway rat, little brown myotis, Virginia opossum, squirrels, and striped skink. Suburban areas provide habitat for a greater diversity of native birds and mammals, such and wrentits, bushtits, oak titmouse, chestnut-backed chickadee, California quail and mule deer.

SPECIAL STATUS SPECIES

Special status species are defined in Section 8.4, Regulatory Framework, below. The *California Native Plant Society* (CNPS) is a private non-profit organization that works closely with the California Department of Fish and Game (CDFG) throughout the State. Information developed by CNPS is an important source of data used by CDFG and U.S. Fish and Wildlife Service (USFWS) in recommendations for listing State or Federal threatened and endangered plants species.

Table 8D-1 identifies listed and special-status species that are listed in pertinent literature as having the potential to be affected by projects occurring in Tehama County. Species 'having no potential for occurrence' are not expected to occur based on the known range of the species or the lack of suitable habitat. Species listed in the California Natural Diversity Data Base (CNDDB) as occurring within the County are included in **Table 8D-1**.

The biological communities with the least number of special-status species are the grassland, urban and agricultural communities. These biological communities are the areas with the least constraints in context of biological resources for intense land use and development. However, within these broad communities are sensitive habitats such as wetlands and serpentine soils that do support a variety of special-status species. These sensitive habitats are discussed in further detail below.

Special-status species of bats also occur in grassland, urban and agricultural communities, in part because of the availability of both natural and man-made structures for roosting. There are strategies available for allowing bats to survive, and even thrive, without precluding appropriate land use.

SENSITIVE HABITATS

Sensitive habitats (**Figure 8D-2**) include those that are of special concern to resource agencies or those that are protected under the California Environmental Quality Act (CEQA), Section 1600 of the California Fish and Game Code, California Department of Forestry and Fire Protection directives, Section 404 of the Federal Clean Water Act.

Serpentine Soils and Rock Outcrops

Areas of serpentine or rock-outcrop dominated soils are known to support a large number of special status species. Vegetation on serpentine and rock outcrop soils can vary drastically from adjacent non-serpentine soils due to the harsh soil conditions existing on these sites. Over 200 species of native California flora are restricted wholly or in part to serpentine soils, and an estimated 90 to 100 taxa are endemic to serpentine and related soil types in the northern coast ranges of California. It is a combination of these harsh soil conditions with the human disturbance (e.g., mining, grazing, logging, recreation, etc.) that has resulted in the listing of special status species associated with serpentine soils.

Serpentine soils and rock outcrops occur frequently on ridgelines throughout California, and are common in the northern and western portions of Tehama County. Although the serpentine and rock inclusions are found in a variety of habitat types, most of the serpentine soils and rock outcrops are found in Klamath mixed conifer forests, closed-cone pine-cypress forests, Douglas-fir forests, montane hardwood forests and chamise-redshank chaparral.

Wetlands/Waters of the United States

Wetland habitats, including seasonal wetland, lakes, ponds, streams and rivers, are protected under Section 404 of the Federal Clean Water Act. These habitats support numerous special status plant and animal species, and are known to be highly productive and diverse ecosystems.

Wetlands typically range from approximately 1 percent to 5 percent of the landscape, and are often the most ecologically productive portion of the landscape. Moreover, wetlands provide habitat for many special status wildlife species, directly affect the habitat of the most special status fish species, and provide habitat for some of the special status plant species in Tehama County.

The rivers and streams in Tehama County and the wetlands and seasonal drainages that are tributaries to those rivers are essential fish habitat. All land use activities in the County affect the volume and quality of surface water runoff to some extent and, consequently, the value and production of fish habitat. Since most fish habitat and the majority of fish populations have been negatively impacted by past land use practices, it is imperative that future land use be conducted in a manner that is sensitive to fish habitat in an effort to avoid local extinction of valuable species.

Wetlands and Waters of the U.S. (defined in section 8.4, Regulatory Framework, below) located within Tehama County may be negatively affected by residential and commercial development, and by agricultural and forest management practices. Modifications to wetlands or Waters of the U.S. can alter existing watersheds and their hydrologic functions, including flood attenuation. Conversely, changes to hydrologic inputs and outflow of wetlands (e.g., culvert placement) can alter the size and function of wetlands.

Old Growth Forest

Pristine old-growth forests have long been associated with forests in northwestern California. Valued as a source of high-quality timber, these forests also provide critical wildlife habitat and have been seen as crucial components of genetic reserves, biodiversity, climate stabilization, and nutrient cycling.

Despite the sensitive ecological, political and economic nature of old-growth forests, these forests are decreasing in size and there is need to address the amount, distribution, value, use, and quality of these forests in the coming decades. When the first comprehensive forest surveys were done the 1930s and 1940s, old-growth occupied about half of the forest area of California. Now that area has been reduced to less than 20 percent. The U.S. Forest Service estimates that 13 to 18 percent of the total forest land in California is considered old-growth. There is only an estimated 5 percent of the forest on public lands that is not considered old-growth today, but that could develop into old-growth in 30 years. The amount of forest land reaching old-growth status is limited.

According to the U.S. Forest Service, the majority of old-growth forests in California are federally owned. Other important owners of old-growth include the State, private landowners (including land trusts) and Native American tribes.

No one definition represents the full diversity of old-growth ecosystems. Scientists agree that the term "old-growth forests" actually includes forests in many stages of development, and forests that differ widely in character with age, geographic location, and disturbance history. Numerous factors, such as stand age, size and density, canopy layers, and the presence of decay in live trees, determine the classification of old-growth forests. These factors vary with each tree species. Therefore, defining old-growth depends on the specific forest community. Over two-thirds of the pristine old-growth in northwestern California is in Douglas-fir forest. Other forest types that have old-growth include white fir, red fir, Jeffrey pine, lodgepole pine, mixed conifer, and mixed subalpine-montane hemlock forests.

Vernal Pools

Vernal pools are a type of wetland that occurs throughout the Central Valley and are protected under Section 404 of the Federal Clean Water Act. Vernal pools are seasonal depressional wetlands, underlain by hardpan soils that are covered by shallow water for variable periods from winter to spring, but may be completely dry for most of the summer and fall. Tehama County has an estimated 138,277 acres of vernal pools distributed throughout the Central Valley region of the County **(Figure 8D-3)**.

Vernal pools can range in size from small puddles to shallow lakes and are often isolated. They are sometimes connected to each other by small drainages known as vernal swales. Vernal pools function as wetlands do in their flood attenuation, water filtration and habitat properties.

Vernal pools provide habitat for numerous birds, invertebrates and native plants. Listed and special status wildlife and plant species include vernal pool tadpole shrimp, vernal pool fairy shrimp, Conservancy fairy shrimp, Greene's tuctoria, hairy oatcut grass, pincushion narvarretia, Baker's narvarretia, Legenere, Red Bluff dwarf rush, Boggs Lake hedge-hyssop, dwarf downigia, Hoover's spruge, and Henderson's bent grass.

WILDLIFE MIGRATION CORRIDORS

Wildlife migration corridors are important for the movement of migratory wildlife populations, including large mammals such as deer and bear and small mammals such as raccoons and weasels. Amphibians often require the ability to move between wetland and other aquatic systems such as streams to forage and breed successfully. These wildlife movements may occur on a seasonal or even daily basis.

Corridors provide foraging opportunities and shelter during migration. Generally, wildlife migration corridors are established migration routes for many species of wildlife. In wooded areas, these corridors often occur in open meadow or riverine habitats and provide a clear route for migration in addition to supporting ample food and water sources during movement.

Land use activities, including clearing, grading, timber harvest, road construction, and other development projects, often bisect habitats to the extent that they lose their connectivity. Small mammals, amphibians, and reptiles may not be physically able to cross large developed areas. They may also be subject to predation by domestic dogs and cats. Along with larger wildlife species, small animals are subject to road kill whenever they attempt to cross roadways.

SPECIAL STATUS PLANTS

Special status plant species listed in **Table 8D-1** have the potential to occur within the County. These plants are afforded special protection in the California environmental review process and are considered sensitive resources. Habitats supporting conditions suitable for these species would be considered sensitive and, as such, should be surveyed prior to further development in these areas. If some or all of these species are found in areas proposed for development, the appropriate resource agencies should be contacted and, if possible, those areas should be avoided.

SPECIAL STATUS WILDLIFE

Avian Species

Special status avian species listed in **Table 8D-1** may utilize areas in the county for foraging and nesting habitat. These may include the bald eagle, northern goshawk, yellow warbler, American peregrine falcon, northern spotted owl, and osprey. The nests of raptors, including bald eagle, Northern goshawk, American peregrine falcon, and northern spotted owl, and the nests of migratory bird species are protected under the Federal Migratory Bird Treaty Act. Active raptor nests are also afforded additional protection under Californian Fish and Game Code Section 3503.5. As such, proposed development within areas supporting suitable nesting habitat for any of these species must be surveyed prior to construction to determine the presence/absence of these species nesting within the site. Habitat management planning may allow development to continue while protecting those avian species that are most sensitive.

Mammal Species

Special status mammal species that have the potential to occur within the planning area include California wolverine, pine martin, Pacific fisher, and numerous bat species. These species may utilize the planning area for shelter, foraging and breeding habitat. Because these species are considered sensitive by Federal, State, and/or local resource agencies, focused surveys for these species should be conducted prior to the approval of any project that may remove or fragment suitable habitats for these species. If any of these species are observed during the focused surveys, or if evidence of these species is found within the survey area, the appropriate resource agency should be contacted and effective management strategies should be developed to protect these species and their associated habitats.

Fish and Amphibian Species

Spring-run and winter-run Chinook salmon habitat are found in a large portion of Tehama County. The primary threats to these species include sedimentation caused by erosion in the watersheds, high water temperatures exacerbated by loss of riparian cover, invasive plants and fish, and blockage of fish passage due to incorrectly designed and installed culverts and dams. Moreover, predation of juvenile salmonids by invasive fish and the illegal harvest of adult salmonids are intensified in areas of fish blockage because the fish cannot escape as easily. Since all land use activities have the potential to impact water quality and other downstream resources, these impacts should be considered during the process of planning and designing land use and development.

Amphibians are negatively impacted by the direct loss of habitat, particularly wetlands and forests, and by habitat degradation in the form of water quality impacts and the loss of migration corridors. Some amphibian species are heavily preyed upon by bullfrogs, an invasive species that may be spread inadvertently when ditches and ponds are constructed.

8D.5 REGULATORY FRAMEWORK

Land use planning and decision making conducted by Tehama County must comply with applicable State and Federal laws. Compliance with the California Environmental Quality Act requires the County to conduct a review and analysis of potential environmental consequences of proposed projects.

The following describes Federal, State, and local environmental laws and policies that are relevant to the CEQA review process for biological resources, including CEQA significance criteria.

LISTED SPECIES

The Federal Endangered Species Act (FESA) of 1973 and California Endangered Species Act (CESA) of 1984 (both with subsequent revisions) are intended to protect species that are endangered or threatened with extinction.

The Endangered Species Acts are intended to operate in conjunction with CEQA and the National Environmental Policy Act (NEPA) to protect the ecosystems upon which endangered and threatened species depend. The United States Fish and Wildlife Service (USFWS) is responsible for implementing FESA, while the California Department of Fish and Game (CDFG) implements CESA. During project review, each agency is given the opportunity to comment on the potential of the project to affect listed plants and animals.

SPECIAL-STATUS SPECIES

In addition to formal listing under FESA and CESA, species on the list of "Species of Concern" developed by the CDFG receive additional consideration during the CEQA process. The list tracks species in California whose numbers, reproductive success, or habitat may be threatened.

The California Native Plan Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction,

published in the *Inventory of Rare and Endangered Vascular Plant of California*. Potential impacts to populations of CNPS-listed plants receive consideration during CEQA review.

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and Federal laws. The Federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy and birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

WATERS OF THE UNITED STATES/WETLANDS

Waters of the United States are defined as all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce…including all wetlands, lakes, rivers, streams (including intermittent streams), mudflats, sandflats, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, impoundments of waters, and their tributaries (33 CFR Section 328.3a). Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands are described below.

- Wetlands are defined as " those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 CFR section 328.3(b)] Presently, to be a wetland, a site must exhibit three wetland criteria; hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances' for the site.

The CDFG has jurisdiction under Section 1600 et seq. of the California Fish and Game Code over fish and wildlife resources of the State. Under Section 1603, a private party must notify the CDFG if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." The CDFG may propose reasonable measures to protect fish or wildlife resources that may be substantially adversely affected by the activity. The party may enter into an agreement with the CDFG identifying the approved activities and associated mitigation measures (streambed alteration agreement).

The U.S. Army Corps of Engineers (ACOE) regulates discharge of dredged or fill material into Waters of the United States under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. "Discharges of fill material" is defined as the addition of fill material into waters of the U.S., including but not limited to the following:

- Placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction;
- Site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills;
- Fill for intake and outfall pipes and subaqueous utility lines [33 CFR section 328.2(f)].

In addition, Section 401 of the CWA (33 USC 1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

CEQA SIGNIFICANCE CRITERIA

Section 15064.7 of the California Environmental Quality Act (CEQA) *Guidelines* encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. Guidance contained in the CEQA *Guidelines* may also be used; Impacts to biological resources would typically be considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts include those that diminish or result in the loss of an important biological resource, or conflict with local, State, or Federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that, although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

LOCAL GOVERNMENT

Local governments, including Tehama County and the incorporated municipalities, direct land use decisions through the adoption and implementation of land use policies and permitting requirements. These include the County General Plan and Area Plans, zoning codes, and the priority placed on the implementation of CEQA, for example. The capacity of Tehama County

to build and maintain its roads also directly affects land uses such as residential and commercial development, timber harvest, and fire protection.

Water, sewer, and flood control districts influence land use decisions in relatively narrow geographic areas. The provision of these services greatly increases the intensity of land use over what would otherwise be the case. Ideally, infrastructure such as water sewer, and roads is sited and managed in a manner consistent with environmental laws and policies that provide for the protection of important biological resources.

TRIBAL GOVERNMENT

Native American tribes in Tehama County control many thousands of acres of land and manage the natural resources on those lands. Of these natural resources, the most important are forests, fish, wildlife, and water quality.

EXISTING GENERAL PLAN OBJECTIVES

The Tehama County General Plan of 1983 states a number of objectives and associated policies that relate to the management and protection of biological communities. Objectives include:

- T-1 Preservation of prime timberlands.
- W-2 Protect surface water quality and streamflows for water supply, recreation and aquatic ecosystem management.
- WR-1 Preserve environmentally sensitive and significant lands and water valuable for their plant and wildlife habitat, natural appearance and character.
- WR-2 Afford, to the extent feasible, adequate protection to areas identified by the California Department of Fish and Game (CDFG) and the California Natural Diversity Database (CNDDB) as critical riparian zones.
- WR-3 Support and coordinate county plans with interjurisdictional programs for proper management of riparian resources in the county.
- NRP-1 Protection of resource lands for the continued benefit of agriculture, timber, grazing, recreation, wildlife habitats and quality of life.

8D.6 RELATIONSHIP TO THE GENERAL PLAN

- The General Plan update process affords the opportunity to evaluate the status of resources and the effectiveness of the County's resource protection programs.
- The County's CEQA procedures should be reviewed to assess procedures for evaluation of special status and sensitive species and habitats.

TABLE 8D-1
LISTED AND SPECIAL-STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN TEHAMA COUNTY AND VICINITY

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
Plants					
Henderson's bent grass (*Agrostis hendersonii)*	SC	--	3	AGS (vernal pools)	Yes
scabrid alpine tarplant (*Anisocarpus scabridus)*	--	--	1B	KMC	Yes
Sonoma manzanita (*Arctostaphylos canescens ssp. Sonomensis)*	--	CSC	1B	MCH, MCP, PPN, KMC (serpentine)	Yes
Konocti manzanita (*Arctostaphylos manzanita ssp. Elegans)*	--	--	1B	CRC, MCH, MCP, SMC, OAW	Yes
northern spleenwort (*Asplenium septentrionale)*	--	--	2	CRC, MCH, MCP, SMC, OAW, SCN, KMC	Yes
Jepson's milk-vetch (*Astragalus rattanii var. jepsonianus)*	--	CSC	1B	CRC, MCH, MCP, OAW, AGS (serpentine)	Yes
big-scale balsamroot (Balsamorhiza macrolepis var. macrolepis)	--	CSC	1B	CRC, MCH, MCP, OAW,AGS (serpentine)	Yes
Resin birch (*Betula pumila var. glandulifera*)	--	--	2	FEW, SMC, WTM, SCN	Yes
upswept moonwort (Botrychium ascendens)	SC	--	2	SMC	Yes
scalloped moonwort (*Botrychium crenulatum)*	SC	--	2	FEW, SMC	Yes
mingan moonwort (*Botrychium minganense)*	--	--	2	SMC, KMC	Yes
western goblin (*Botrychium montanum)*	--	--	2	SMC, KMC	Yes
Indian Valley brodiaea (Brodiaea coronaria ssp. Rosea)	--	E	1B	CPC, CRC, MCH, MCP, OAW, AGS (serpentine)	Yes
Butte County morning-glory *(Calystegia atripliifolia spp. Buttensis)*	SC	--	1B	CRC, MCH, MCP	Yes
Wilkin's harebell *(Campanula wilkinsiana)*	SC	--	1B	WTM, SCN, KMC	Yes

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
fox sedge (Carex vulpinoidea)	--	--	2	*VRI, FEW*	*Yes*
Hoover's spurge (*Chamaesyce hooveri)*	T	--	1B	(vernal pools)	Yes
Stony Creek spurge (*Chamaesyce ocellata ssp. Rattanii)*	--	CSC	1B	CRC, MCH, MCP, AGS	Yes
dwarf soaproot (*Chlorogalum pomeridianum var. minus)*	--	CSC	1B	CRC, MCH, MCP (serpentine)	Yes
Shasta clarkia (*Clarkia borealis ssp. Arida)*	--	--	1B	OAW, SMC, KMC	Yes
white-stemmed clarkia *(Clarkia gracilis spp albicaulis)*	--	CSC	1B	CRC, MCH, MCP, OAW (serpentine)	Yes
talus collomia (*Collomia larsenii)*	--	--	2	ADS, CPC, SCN, KMC	Yes
clustered lady's-slipper (Cypripedium fasciculatum)	SC	--	4	SMC (serpentine)	Yes
silky cryptantha (Cryptantha crinita)	SC	--	1B	OAW, SMC, VRI, AGS	Yes
dwarf downingia (*Downingia pusilla)*	--	--	2	AGS (vernal pools)	Yes
golden draba (Draba aureola)	--	--	1B	ADS, SCN (serpentine)	Yes
four-angled spikerush (Eleocharis quadrangulata)	--	--	2	WTM, FEW	Yes
Oregon fireweed (*Epilobium oreganium)*	SC	--	1B	WTM, SMC, KMC, FEW	Yes
Brandegee's eriastrum (*Eriastrum brandegeeae)*	SC	--	1B	CRC, MCH, MCP, OAW	Yes
Tracy's eriastrum (*Eriastrum tracyi)*	--	R	1B	CRC, MCH, MCP, OAW	Yes
Dubakella Mountain buckwheat *(Eriogonum libertini)*	--	CSC	4	CRC, MCH, MCP, SMC (serpentine)	Yes
pyrola-leaved buckwheat (*Eriogonum pyrolifolium var. pyrolifolium)*	--	--	2	ADS	Yes
Butte County fritillary (Fritillaria eastwoodiae)	SC	--	3	CRC, MCH, MCP, OAW, SMC (serpentine)	Yes
adobe-lily (*Fritillaria pluriflora)*	SC	--	1B	CRC, MCH, MCP, OAW, AGS	Yes
Boggs Lake hedge-hyssop (Gratiola heterosepala)	--	E	1B	WTM, FEW, (vernal pools)	Yes
Stebbins's harmonia (Harmonia stebbinsii)	SC	--	1B	CRC, MCH, MCP, SMC,	Yes

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
				(serpentine)	
Tehama County western flax (Hesperolinon tehamense)	SC	--	1B	CRC, MCH, MCP, OAW, (serpentine)	Yes
water howellia (*Howellia aquatilis)*	--	--	2	WTM, FEW	Yes
little hulsea (Hulsea nana)	--	--	2	ADS, SCN	Yes
Baker's globe mallow (Iliamna bakeri)	--	CSC	1B	CRC, MCH, MCP, JUN	Yes
Red Bluff dwarf rush (Juncus leiospermus var. leiospermus)	SC	--	1B	CRC, MCH, MCP, OAW, WTM, AGS (vernal pools)	Yes
Colusa layia (Layia septentrionalis)	--	CSC	1B	MCH MCP, CRC, AGS, OAW (serpentine)	Yes
Legenere *(Legenere limosa)*	SC	--	1B	(vernal pools)	Yes
Mt. Tedoc leptosiphon (Leptosiphon nuttallii ssp. Howellii)	--	--	1B	SMC, KMC (serpentine)	Yes
Stebbins's lewisia (Lewisia stebbinsii)	--	--	1B	SMC, KMC (serpentine)	Yes
Mt. Tedoc linanthus *(Linanthus nuttallii ssp. Howellii)*	--	CSC	--	SMC, KMC (serpentine)	Yes
red-flowered lotus (*Lotus rubriflorus)*	SC	--	1B	OAW, AGS	Yes
Anthony Peak lupine (Lupinus antoninus)	SC	--	1B	PPN, KMC, WFR, RFR	Yes
Lassen Peak copper-moss (*Mielichhoferia tehamensis)*	--	--	1B	ADS	Yes
leafy-stemmed miterwort (*Mitella caulescens)*	--	--	2	MHW, SMC, WTM, KMC	Yes
Baker's narvarretia (Navarretia leucocephala ssp. bakeri)	SC	--	1B	PPN, OAW, MHW, AGS, FEW, SMC, FEW (vernal pools)	Yes
pincushion navarretia (Navarretia myersii ssp. Myersii)	--	--	1B	(vernal pools)	Yes
northern adder's-tongue (*Ophioglossum pusillum)*	--	--	2	WTM, FEW, AGS	Yes
*Hairy Orcutt grass (*Orcuttia pilosa)	T	E	1B	(vernal pools)	Yes
slender orcutt grass (Orcuttia tenuis)	T	E	1B	(vernal pools)	Yes

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
tall alpine-aster *(Oreostemma elatum)*	--	CSC	1B	WTM, FEW, SMC, KMC	Yes
Ahart's paronychia (*Paronychia ahartii)*	SC	--	1B	OAW, AGS (vernal pools)	Yes
moss phlox (Phlox muscoides)	--	--	2	ADS, SCN	Yes
Hall's rupertia (Rupertia hallii)	--	CSC	1B	OAW, SMC	Yes
Sanford's arrowhead (*Sagittaria sanfordii)*	SC	--	1B	WTM, FEW	Yes
slender bulrush (*Scirpus heterochaetus*)	--	--	2	SMC, WTM, FEW	Yes
water bulrush (*Scirpus subterminalis*)	--	--	2	WTM, VRI, MRI, FEW	Yes
rayless mountain ragwort (*Senecio indecorus)*	--	--	2	WTM, FEW	Yes
marsh checkerbloom (Sidalcea oregana ssp. Hydrophila)	--	--	1B	AGS, PPN, KMC, MHW, DFR, VRI, MRI, WTM, FEW	Yes
Red Mountain campion *(Silene occidentalis ssp. longistipitata)*	SC	--	1B	CRC, MCH, MCP, SMC, KMC, SCN	Yes
Cascade alpine campion (*Silene suksdorfii)*	--	--	2	ADS, SCN, KMC, SMC	Yes
Lassen Peak smelowskia (Smelowskia ovalis var. congesta)	--	--	1B	ADS	Yes
long-leaved starwort (*Stellaria longifolia)*	--	--	2	WTM, MRI	Yes
northern daisy (Trimorpha acris var. debilis)	--	--	2	ADS, WTM, SCN	Yes
*Greene's tuctoria (*Tuctoria greenei)	E	R	1B	(vernal pools)	Yes
Invertebrates					
Antioch Dunes anthicid beetle (Anthicus antiochensis)	--	--	--	Loose sand	No
Sacramento anthicid beetle (*Anthicus sacramento)*	--	--	--	Loose sand	No
*Conservancy fairy shrimp (*Branchinecta conservatio)	E	--	--	LAC (vernal pools)	Yes
vernal pool fairy shrimp (Branchinecta lynchi)	T	--	--	LAC (vernal pools)	Yes
valley elderberry longhorn beetle (Desmocerus californicus dimorphus)	T	--	--	RIV, LAC	Yes

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
Leech's skyline diving beetle (Hydroporus leechi)	SC	--	--	LAC	Yes
California linderiella fairy shrimp (Linderiella occidentalis)	SC	--	--	LAC	Yes
vernal pool tadpole shrimp (Lepidurus packardi)	E	--	--	(vernal pools)	Yes
Amphibians and Reptiles					
western tailed frog (*Ascaphus truei)*	SC	CSC	--	MHW, DFR, RDW, PPN	Yes
northwestern pond turtle (*Clemmys marmorata marmorata)*	SC	CSC	--	RIV, LAC	Yes
California horned lizard (Phrynosoma coronatum frontale)	SC	--	--	AGS, OAW, KMC, MHW, VRI, MRI, SMC, CPC, SCN	Yes
California red-legged frog (Rana aurora draytonii)	T	CSC	--	RIV, LAC	Yes
foothill yellow-legged frog (*Rana boylii)*	SC	CSC	--	RIV	Yes
cascades frog (*Rana cascadae)*	--	CSC	--	RIV	Yes
mountain yellow-legged frog (*Rana muscosa)*	C		--	LAC, RIV, WTM, MRI, SCN	Yes
western spadefoot toad (*Scaphiopus hammondii)*	SC	CSC	--	AGS, OAW, MHW, CRP	Yes
*giant garter snake (*Thamnophis gigas)	T	--	--	WTM, LAC	Yes
Fish					
chinook salmon spring-run (*Oncorhynchus tshawytscha spring-run)*	T	T	--	RIV	Yes
chinook salmon winter run (*Oncorhynchus tshawytscha winter run)*	E	E	--	RIV	Yes
Mammals					
pale big-eared bat (Corynorhinus townsendii pallescens)	SC	CSC	--	OAW, DFR, MCH	Yes
Pacific western big-eared bat (Corynorhinus townsendii townsendii),	SC	--	--	WFR, MCP, RFR, KMC, MHW, DFR	Yes
spotted bat (Euderma maculatum)	SC	--	--	AGS, SMC, KMC, SCN, ADS	Yes

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
California wolverine (Gulo gulo)	--	T	--	MCP, DFR, KMC, RFR, WFR, PPN	Yes
Sierra Nevada snowshoe hare *(Lepus americanus tahoensis)*	SC	--	--	SMC, KMC, SCN, MRI, WTM	Yes
American (pine) marten (*Martes americana)*	--	--	--	MHW, DFR, KMC, PPN, WFR, RFR, CPC	Yes
Pacific fisher (*Martes pennanti pacifica)*	C	CSC	--	MHW, DFR, DMC, PPN, WFR, RFR, CPC, SMC	Yes
Bats: small-footed myotis bat *(Myotis ciliolabrum),* long-eared myotis bat *(Myotis evotis),* fringed myotis bat *(Myotis thysanodes),* long-legged myotis bat *(Myotis volans),* Yuma myotis bat *(Myotis yumanensis)*	SC	--	--	MCH, MCP, CRC, OAW, DFR, MHW, KMC, PPN, WFR, RFR	Yes
San Joaquin pocket mouse (*Perognathus inornatus inornatus)*	SC	--	--	AGS	Yes
American badger (*Taxidea taxus)*	--	CSC	--	AGS, SGB	Yes
Sierra Nevada red fox (*Vulpes vulpes necator)*	--	T	--	SCN, ADS, ASP, KMC, MHC, MRI	Yes
Birds					
northern goshawk (*Accipiter gentiles)*	SC	CSC	--	SMC, KMC, SCN, CPC, MRI, (old growth)	Yes
tricolored blackbird (*Agelaius tricolor)*	SC	CSC	--	AGS, VRI, FEW	Yes
Bell's sage sparrow *(Amphispiza belli belli)*	SC	--	--	SGB, CRC	Yes
Western burrowing owl (*Athene cunicularia hypugaea)*	SC	CSC	--	AGS, PPN, SGB	Yes
oak titmouse *(Baeolophus inornatus)*	--	CSC	--	OAW, MHW, BOP, MHC, VRI	Yes
American bittern *(Botaurus lentiginosus)*	SC	--	--	LAC, RIV, FEW	Yes
Aleutian Canada goose *(Branta Canadensis*	D	--	--	LAC, AGS	Yes

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
leucopareia)					
ferruginous hawk *(Buteo regalis)*	SC	--	--	AGS, CRP	Yes
Swainson's hawk (*Buteo swainsoni)*	--	T	--	OAW, AGS, CRP, VRI	Yes
Lawrence's goldfinch *(Carduelis lawrencei)*	SC	--	--	OAW, CRC, SMC, MCH, MCP	Yes
Vaux's swift *(Chaetura vauxi)*	SC		--	MHW, DFR, PPN, KMC, SMC	Yes
western yellow-billed cuckoo (*Coccyzus americanus occidentalis)*	C	E	--	VRI	Yes
black swift *(Cypseloides niger)*	SC	--	--	OAW, DFR, CPC	Yes
yellow warbler (*Dendroica petechia brewsteri)*	--	CSC	--	MHW, DFR, PPN, KMC	Yes
white-tailed kite (Elanus leucurus)	SC	--	--	AGS, CRP	Yes
little willow flycatcher (*Empidonax trailli brewsteri)*	--	E	--	MHW, DFR, CPC, MCH, MCP, CRC	Yes
prairie falcon (Falco mexicanus)	--	CSC	--	AGS, CRP	Yes
American peregrine falcon (*Falco peregrinus anatum)*	D	E	--	MCH, AGS, BAR, MHW, CPC, DFR	Yes
greater sandhill crane *(Grus Canadensis tabida)*	--	T	--	LAC, AGS, CRP, FEW	Yes
bald eagle (*Haliaeetus leucocephalus)*	T	E	--	LAC, MHW, DFR, KMC, PPN, WFR, SMC, (old growth)	Yes
yellow-breasted chat (*Icteria virens)*	--	CSC	--	CPC, MHW, DFR, OAW	Yes
loggerhead shrike (Lanius ludovicianus)	SC	--	--	AGS, OAW, MHW, MCH, CRC	Yes
Lewis' woodpecker (Melanerpes lewis)	SC	--	--	PPN, MHW, DFR, KMC, SMC, OAW	Yes
long-billed curlew (Numenius americanus)	SC	--	--	AGS	Yes
flammulated owl (Otus flammeolus)	SC	--	--	PPN, KMC, DFR, SCN, MHW	Yes

SPECIES	FEDERAL	STATE	CNPS[1]	HABITAT	POTENTIAL FOR OCCURRENCE
osprey (Pandion haliaetus)	--	CSC	--	CPC, DFR, MHW, PPN, KMC, SMC, SCN	Yes
Nuttall's woodpecker *(Picoides nuttallii)*	--	CSC	--	OAW, VRI	Yes
white-faced ibis *(Plegadis chihi)*	SC	--	--	LAC, CRP, FEW	Yes
bank swallow *(Riparia riparia)*	--	T	--	MHW, DFR, CPC, OAW	Yes
rufous hummingbird *(Selasphorus rufus)*	SC	--	--	MHW, DFR, MCH, MCP, CRC, OAW	Yes
northern spotted owl (*Strix occindentalis caurina)*	T	--	--	DFR, MHC	Yes
California spotted owl (*Strix occindentalis occindentalis)*	SC	--	--	DFR, KMC, MHW, SMC (old growth)	Yes
California thrasher *(Toxostoma redivivum)*	SC	--	--	CRC, MCH, MCP, KMC, OAW, VRI	Yes

Notes: E=Endangered, T=Threatened, PE=Proposed Endangered, SC-Federal Species of Concern, C-Candidate, CSC-California Special Species of Concern, R-Rare

CNPS ([1]California Native Plant society) Categories: 1A=Plants believed extinct; 1B=Plants rare, threatened or endangered in California and elsewhere; 2+Rare/Endangered in California, more common elsewhere; 4=Plants of limited distribution-a watch list.

Grassland-AGS, Chaparral-CRC, MCH, MCP, Oak Woodland-OAW, Agricultural-CRP, Alpine Dwarf-Shrub-ADS, Subalpine Conifer-SCN, Klamath Mixed Conifer-KMC, Sierran Mixed Conifer-SMC, Douglas-fir-DFR, Ponderosa Pine-PPN, Montane Hardwood-MHW, Montane Hardwood-Conifer-MHC, Closed-cone Pine-Cypress-CPC, Sagebrush-SGB, Aspen-ASP, Juniper-JUN, Valley Foothill Riparian-VRI, Montane Riparian-MRI, Fresh Emergent Wetland-FEW, Riverine-RIV, Lacustrine-LAC, Wet Meadow-WTM, Barren-BAR, Urban-URB

Source: California department of Fish and Game-California Natural Diversity Database (CNDDB), US Fish and Wildlife Service, California Native Plant Society.