5.12 BIOLOGICAL RESOURCES

El Dorado County possesses an impressive diversity of native flora and fauna. This diversity can be attributed to a combination of unique physical characteristics that have resulted in a wide diversity of habitats. These unique physical features include a wide range of elevations and varied terrain, diverse substrate material, large tracts of contiguous natural habitat, and a broad range of climatic conditions. Habitats are generally distributed in an integrated mosaic pattern across the county. Coniferous forest is dominant at higher elevations in the eastern half; oak and hardwood habitats are found mostly in the central region; and annual grassland, chaparral, agriculture, and urban development is found primarily in the western third of the county. The exhibits for the biological resources analysis are at the end of this section.

Much of the biological diversity within the county is on lands managed by the U.S. Forest Service (USFS). Land under the jurisdiction of the USFS includes portions of the Eldorado and Tahoe National forests and the Lake Tahoe Basin Management Unit, which combined cover most of the land in the eastern two-thirds of the county. The USFS is responsible for sustaining the health of the ecosystems on the lands it manages. In total, there are more than 550,000 acres of land in the county that are held in state or federal public ownership and managed principally by state or federal agencies.

This analysis is focused on the western foothill region (west slope) of the county, where the impacts of the General Plan and threats to biological diversity and sensitive biological resources are considered most serious. The impacts on biological resources are primarily the result of urbanization of the area, habitat fragmentation, water pollution, and conversion of natural land to agricultural uses.

5.12.1 EXISTING CONDITIONS

MAJOR HABITAT TYPES

The following descriptions of major habitat types are summaries of detailed accounts presented in *A Guide to Wildlife Habitats in California* (Mayer and Laudenslayer 1988). The reader is encouraged to refer to that publication for a complete description of the major habitat types in El Dorado County. Exhibit 5.12-1 depicts major habitat types in El Dorado County.

The distribution of habitats in El Dorado County was defined using land-cover data developed as part of a cooperative effort between the California Department of Forestry and Fire Protection (CDF) Fire and Resource Assessment Program (FRAP) and USFS (CDF-FRAP

2002). FRAP is mandated to assess the amount, extent, and condition of California's forestlands and rangelands. In response to this mandate, FRAP combined habitat distribution data from numerous sources, including remotely sensed satellite imagery, into a format compatible for use within a geographic information system (GIS). These data were then used to produce a single multisource vegetation layer. Using the dominant vegetation/land-cover data, FRAP converted each data source into the California Wildlife Habitat Relationship System (CWHR) to create a statewide habitat layer. The resulting single GIS data layer provides the most accurate and comprehensive source of habitat information currently available for El Dorado County (Saving, pers. comm., 2002; Motroni, pers. comm., 2002).

Habitat types were quantified using the GIS land-cover data developed by FRAP. All habitats that exceed a total of 500 acres and all sensitive habitats (described below) were quantified by acreage (Table 5.12-1). The major habitats in El Dorado County have been grouped into five categories: coniferous forest habitats, woodland habitats, shrub-dominated habitats, herbaceous-dominated habitats, and other habitats.

Coniferous Forest Habitats

Coniferous forest habitats are the dominant vegetation type above 2,500 feet elevation (Exhibit 5.12-2). Coniferous forest habitats cover 613,200 acres, or more than half of the 1,145,400 acres in the county. The eight major coniferous forest habitats in El Dorado County are Douglas-fir, Jeffrey pine, lodgepole pine, ponderosa pine, red fir, Sierran mixed conifer, subalpine conifer, and white fir.

Douglas-fir covers 68,400 acres and is found primarily at middle and higher elevations where it frequently replaces ponderosa pine on north-facing slopes. Plant diversity and density in the shrub and herbaceous understory of Douglas-fir forest vary considerably depending upon topographic and environmental factors such as elevation, aspect, and age of the stand.

Jeffrey pine covers 20,200 acres and is found generally between 6,000 and 7,000 feet elevation. Jeffrey pine replaces ponderosa pine as the dominant species of pine at higher elevations and in drainages with colder temperatures. On the west slope of the Sierra Nevada, Jeffrey pine typically occurs in mixed stands, although pure stands may be present on glaciated soils or granite outcrops.

Lodgepole pine covers 24,800 acres and is found generally between 7,000 and 9,000 feet elevation. Lodgepole pine dominates the zone commonly found immediately above red fir habitat and is characterized by open forest with sparse litter accumulation and little shrub or

herbaceous understory. It intergrades with red fir or Sierran mixed conifer below the subalpine forests and is frequently found in extensive even-aged stands around meadows.

Table 5.12-1
Major Habitat Types in El Dorado County

Category	Habitat Type	Total Acres	Acres on "Developed" Parcels	Percentage of Total
Coniferous forest habitats	Douglas-fir	68,400	9,000	5.97%
	Jeffrey pine	20,200	4,300	1.76%
	Lodgepole pine	24,800	700	2.17%
	Ponderosa pine	75,000	14,400	6.55%
	Red fir	90,300	2,900	7.88%
	Sierran mixed conifer	304,100	9,500	26.55%
	Subalpine conifer	5,400	0	0.47%
	White fir	25,000	200	2.18%
Woodland habitats	Aspen*	400	100	0.03%
	Blue oak-foothill pine	4,200	1,600	0.37%
	Blue oak woodland	43,200	15,800	3.77%
	Montane hardwood	155,900	63,300	13.61%
	Montane hardwood-conifer	49,100	16,500	4.23%
	Montane riparian*	700	300	0.06%
	Valley oak woodland*	3,300	1,800	0.29%
Shrub-dominated habitats	Alpine dwarf-shrub	1,200	0	0.10%
	Chamise chaparral	3,700	900	0.32%
	Mixed chaparral	40,000	12,900	3.49%
	Montane chaparral	38,100	1,700	3.33%
	Sagebrush	1,100	400	0.10%
Herbaceous-dominated habitats	Annual grassland	81,100	27,000	7.08%
	Wet meadow*	8,600	800	0.75%
Other habitats		101,600	12,300	8.49%
Total		**1,145,400**	**196,400**	**100%**

Sensitive habitats are marked with * and are described later in this chapter under Sensitive Biological Resources.

Source: FRAP 2002, EDAW 2003

Ponderosa pine covers 75,000 acres and usually occurs above montane hardwood-conifer (discussed under Woodland Habitat below) and below Sierran mixed conifer at elevations between 4,000 and 7,000 feet elevation. This habitat ranges in composition from open to dense forest, and may exist in pure stands or be associated with other species such as white fir, Douglas-fir, or sugar pine.

Red fir covers 90,300 acres between 6,000 and 9,000 feet elevation. Few other tree species grow in mature red fir forests because of the shading and thick layer of needles on the forest floor. At lower elevations on drier sites, red fir habitat intergrades with mixed conifer stands dominated by white fir. At lower elevations on moist sites, red fir habitat intergrades with stands of lodgepole pine.

Sierran mixed conifer covers 304,100 acres and is the most common habitat type in El Dorado County. Generally occurring between 2,500 and 6,000 feet elevation, this habitat is comprises both hardwood and conifer species. Trees commonly occurring in Sierran mixed conifer include Douglas-fir, ponderosa pine, sugar pine, incense cedar, white fir, and black oak. Historically, burning and logging have caused wide variability in stand structure, resulting in both even-aged and uneven-aged stands. Forested stands form closed, multilayered canopies with nearly 100% overlapping cover. Virgin old-growth stands where fire has been excluded are often two-storied, with the overstory composed of mixed conifer and the understory white fir and incense cedar. Shrubs are common below openings in the canopy. Common shrub species are deer brush, manzanita, bush chinquapin, squawcarpet, mountain whitethorn, gooseberry, and mountain misery.

Subalpine conifer covers 5,400 acres and is generally found between 9,000 and 11,000 feet elevation on dry, thin, well-drained soils that contain a large percentage of sand, gravel, volcanic debris, and rocks. This habitat intergrades with lodgepole pine, Jeffrey pine, and red fir habitats at lower elevations. Subalpine conifer is often dominated by lodgepole pine, mountain hemlock, and/or red fir. These trees are usually low to medium in stature because of the poor soils, heavy snow, and strong winds that characterize the climatic conditions of the high Sierra Nevada.

White fir covers 25,000 acres and is found between Sierran mixed conifer and red fir habitats, usually at elevations between 5,000 and 8,500 feet elevation. This habitat consists of nearly pure stands of white fir with a sparse understory restricted to canopy openings. White fir forests are found generally on coarse, well-drained soils on cool north- and east-facing slopes. The understory may consists of white fir seedlings and saplings as well as sparsely scattered grasses, forbs, and shrubs (e.g., gooseberry, snowberry, deer brush, manzanita).

Woodland Habitats

Woodland habitats are located primarily at middle and lower elevations in the western half of El Dorado County. The four major woodland habitats are montane hardwood-conifer, montane hardwood, blue oak-foothill pine, and blue oak woodland. These habitats combined cover 252,400 acres in El Dorado County. Woodland habitats range in structure from open savannah to dense forest. Sensitive woodland habitats in the county include montane riparian, valley-foothill riparian, aspen, and valley oak woodland. These habitats are discussed under Sensitive Biological Resources below.

Montane hardwood-conifer, which covers 49,100 acres, includes vegetation associated with both coniferous and hardwood habitats and is a transitional habitat between the montane hardwood, mixed chaparral, and woodlands of low elevations and the coniferous forests of high elevations. Habitat composition is generally defined as including a minimum of one-third coniferous trees and one-third broad-leaved trees. Typically, conifers dominate the upper canopy, ranging up to 200 feet in height, and broad-leaved trees form a sub-canopy at 30–100 feet elevation. Common tree species associated within this habitat type include black oak, ponderosa pine, Douglas-fir, white fir, and incense cedar. In the northern Sierra Nevada, montane hardwood-conifer is found between 1,000 and 4,000 feet elevation.

Montane hardwood covers 155,900 acres. This habitat usually occurs at lower elevations than montane hardwood-conifer and is often associated with major river canyons. Montane hardwood is composed of a mixture of trees that occur on rocky, poorly developed and well drained soils. The structure ranges from dense to open tree cover with a poorly developed shrub understory. At low elevations, common species include canyon live oak, foothill pine, madrone, and California bay. Black oak and Douglas-fir may occur at higher elevations. Common shrubs in montane hardwood habitat include wood rose, snowberry, manzanita, and poison-oak.

Blue oak-foothill pine covers 4,200 acres and is characterized by a mixture of hardwoods, conifers, and shrubs. This habitat is found generally in the foothills where it intergrades with blue oak woodland and annual grassland at lower elevations, extending up to about 3,000 feet elevation, where it frequently intergrades with mixed chaparral. The understory is commonly characterized by clusters of mixed shrubs with interspersed openings dominated by annual grasses. Blue oaks are dominant at lower elevations but are usually outnumbered by foothill pines at higher elevations. Associated tree species include interior live oak, canyon live oak, and California buckeye. Interior live oaks are present on alluvial soils associated with river floodplains, low foothills, and upland slopes. Canyon live oaks are present on low foothills, mountain canyons, upland slopes, and exposed ridges.

Blue oak woodland covers 43,200 acres and is found mostly below 3,000 feet elevation on shallow, rocky, and infertile soils. Blue oak woodland includes an understory of annual grasses or a poorly developed shrubby understory featuring species such as poison-oak, California coffeeberry, and buckbrush. Interior live oaks and canyon live oaks are often found in blue oak woodland. These species can also be the dominant tree species where they may be considered as distinct habitats. Interior live oaks are often associated with river floodplains, low foothills, and upland slopes. In low-elevation foothill woodlands, interior live oaks occur as widely spaced trees or clumps that may be concentrated around rock outcrops. Interior live oak becomes a more significant part of the blue oak woodland canopy with increasing elevation, particularly on north-facing slopes. Canyon live oaks are found on low foothills, mountain canyons, upland slopes, and exposed ridges.

Shrub-Dominated Habitats

Shrub-dominated habitats exist at scattered locations throughout the county and include sagebrush, alpine dwarf-shrub, montane chaparral, chamise chaparral, and mixed chaparral. These five habitats cover a total of 84,100 acres. Although none of these habitats are considered sensitive, they are known to provide habitat for a number of special-status plant and wildlife species.

Alpine dwarf-shrub covers 1,200 acres above 8,500 feet elevation. The prostrate plants within this habitat are adapted to the thin, rocky soil, heavy snowpack, and short growing season. Common plants include pussy paws, Sierra primrose, Davidson's penstemon, and Indian paintbrush.

Chamise chaparral covers 3,700 acres and is usually found below 4,000 feet elevation often consists of nearly pure stands of chamise. The purest stands of chamise occur on xeric (dry), south-facing slopes. Toyon, sugar sumac, poison-oak, and California buckthorn are commonly found with chamise in drainages and on other relatively moist sites.

Mixed chaparral covers 40,000 acres and generally occurs at higher elevations than chamise chaparral on damp or north-facing slopes. The structure of mixed chaparral is generally more complex than that of chamise chaparral and includes more woody, broader leaved species with higher canopy coverage. Vegetation typically consists of a nearly impenetrable mass of shrubs, vines, and herbs. Fire plays an important role in the composition and makeup of mixed chaparral, and the vegetation is naturally prone to wildfire. After fire removes the mature woody vegetation, a greater abundance and diversity of herbaceous plant species emerge.

Montane chaparral covers 38,100 acres and generally occurs at higher elevations (up to 9,000 feet elevation) than chamise chaparral and mixed chaparral and often intergrades with coniferous forest habitats. Montane chaparral is characterized by scattered shrubs in forests or in dense thickets where forests have been disturbed by landslide or avalanche, fire, or logging activities. Common plants found within this habitat include mountain whitethorn, greenleaf manzanita, deerbrush, and snowbrush.

Sagebrush, which covers 1,100 acres, is a common habitat type in northeastern California but is uncommon on the west slope of the Sierra Nevada. In El Dorado County its distribution is restricted to scattered locations, mostly at higher elevations.

Herbaceous-Dominated Habitats

Annual grassland, which covers 81,100 acres, is the only major herbaceous-dominated habitat in El Dorado County. Annual grassland is fairly common at low elevations (i.e., below 2,500 feet elevation) in the western region of the county. This habitat comprises mostly non-native annuals, primarily of Mediterranean origin, but can also include a variety of native herbaceous species. Non-native grasslands have replaced most native perennial grasslands in El Dorado County and throughout most of California.

Other Habitats

El Dorado County has a total of 101,600 acres that are not categorized as major habitat types. This acreage includes urban, agricultural, barren, and open water areas. However, the true extent of urban and other development in El Dorado County is greater than what was calculated using the FRAP data. Except for high-density developments, urban and low-density developed areas can be difficult to detect using remote-sensing satellite imagery because development is often obscured by tree canopy cover. Because of this limitation, low-density urbanized areas could be categorized as nonurban habitats (Saving, pers. comm., 2002). In addition, urbanization has increased since the satellite imagery used by FRAP was developed. Therefore, it is assumed that more land in El Dorado County is urbanized than the FRAP data would suggest or what is shown on Exhibit 5.12-1.

For a more accurate representation of the effects of existing development on biological resources, including habitat fragmentation, the FRAP GIS layer was overlaid onto a layer depicting the existing "developed" parcels in the County Assessor's parcel database. Acreage totals for parcels that have some level of development are identified in Table 5.12-1. The location of parcels considered developed by the County Assessor are shown in Exhibit 5.12-3.

Agricultural lands, which include cropland, orchards, and vineyards, cover 3,203 acres in El Dorado County (see Table 5.2-3). The county's two largest agricultural crops are wine grapes of the emerging vineyards/wineries in the Fair Play and Apple Hill areas and apples in the Apple Hill and Gold Hill regions.

Urban development calculated using FRAP data covers 12,600 acres in El Dorado County. However, according to the County Assessor's data, parcels with some level of development total 196,355 acres. The most densely populated areas are concentrated on the west slope of the Sierra Nevada foothills along the U.S. Highway 50 (U.S. 50) corridor. Substantial development has also occurred along the south shore of Lake Tahoe. Urban areas in El Dorado County frequently include both ornamental and natural vegetation, with highly developed areas typically having a lower percentage of native vegetation. Low-density urban development is often found in association with patches of fragmented native habitats.

Open water covers 53,600 acres in El Dorado County. The CWHR definition of open water includes lakes, ponds, rivers, and streams, provided that greater than 98% of the surface is not vegetated. Open water is present throughout the county.

Barren land covers 31,200 acres in El Dorado County. The CWHR defines barren as lands absent of vegetation measured by canopy closure. Tree and shrub habitats are considered barren if they support less than 10% crown closure. Most of the land categorized as barren in El Dorado County is present on the rocky substrates found at the highest elevations in the county.

WILDLIFE AND FISHERIES

Wildlife

The complex array of habitats in El Dorado County supports abundant and diverse fauna because large tracts of land are covered by habitats known to have outstanding value for wildlife, such as mixed coniferous and hardwood forests. Sierran mixed conifer habitat alone, the most common habitat in the county, supports 355 species of animals (Verner and Boss 1980). Oak woodlands provide habitat for more than 100 species of birds, 60 species of mammals, 80 species of amphibians and reptiles, and 5,000 species of insects (Verner and Boss 1980, Pavlik et al. 1991). Blue oak-foothill pine, another major habitat type in El Dorado County, provides suitable breeding habitat for 29 species of amphibians and reptiles, 79 species of birds, and 22 species of mammals (Verner and Boss 1980).

Important wildlife habitat is found throughout the county. Large contiguous blocks containing multiple habitat types have the potential to support the highest wildlife diversity and abundance. Special-status wildlife occur in both large and small blocks of habitat, while some large mammals and other species that have large home ranges are generally found only on large undisturbed parcels. Generally, the lowest diversity of native wildlife species can be expected in densely urbanized areas.

Coniferous forest and other high-elevation habitats provide important habitat for many wildlife species, both resident and migratory. Common resident birds found at higher elevations in the county include Clark's nutcracker, mountain chickadee, red-breasted nuthatch, brown creeper, and Williamson's sapsucker. Common migratory birds found in coniferous forest habitats at high elevations include white-crowned sparrow, Hammond's flycatcher, and Lincoln's sparrow. Mammals in the upper montane and subalpine regions include golden-mantled ground squirrel, Beldings ground squirrel, alpine chipmunk, and yellow-bellied marmot.

Wildlife diversity is generally high in the lower montane coniferous forest types. Amphibians and reptiles found in lower montane forest and woodlands include Pacific treefrog and rubber boa. Common resident birds in these forests include Stellar's jay and hairy woodpecker. Migratory species that use these forests for breeding during summer months include western tanager, Nashville warbler, and black-headed grosbeak. Common mammals in lower montane coniferous forests include mule deer and Douglas' squirrel.

Oak and other hardwood habitats at mid-elevations are important for a large percentage of the wildlife species found in El Dorado County. Reptiles and amphibians found in oak woodlands include California slender salamander, western fence lizard, and California kingsnake. Common birds in oak woodland include acorn woodpecker, western scrub-jay, and oak titmouse. Mammals that characterize oak woodland habitat include mule deer, western gray squirrel, gray fox, and bobcat.

Chaparral generally has lower wildlife diversity than most forest and woodland habitats. However, chaparral does provide habitat for many wildlife species, including some that are considered rare elsewhere. Reptiles found in chaparral include western rattlesnake, western fence lizard, and western whiptail. Common birds in chaparral at low elevations include wrentit, Bewick's wren, California towhee, and California quail. At higher elevations chaparral can provide habitat for mountain quail, fox sparrow, and green-tailed towhee. Mammals commonly associated with chaparral include and gray fox and mule deer.

Annual grasslands generally support lower wildlife diversity than woodland and shrub-dominated habitats but are invaluable to the grassland-dependent species found in El Dorado County. A great diversity and abundance of insects rely on grasslands. Reptiles found in annual grasslands include western fence lizard and gopher snake. Birds that are common in this habitat include western meadowlark, Say's phoebe, and savanna sparrow. Mammals known to use this habitat include California ground squirrel, black-tailed jackrabbit, pocket gopher, and coyote.

Agricultural land and lands dominated by urban development support many wildlife species, most of which are highly adapted to these disturbed environments. Agricultural land is not generally considered important wildlife habitat but is used by many species, particularly as foraging habitat. Wildlife found in agricultural areas varies by crop type and time of year. Common wildlife expected in most agricultural regions of El Dorado County include Brewers blackbird, American crow, red-tailed hawk, house finch, raccoon, striped skunk, and opossum. Wildlife found in urban areas is often dependent upon surrounding land uses and the presence or absence of nearby natural vegetation. In densely urbanized areas, a large percentage of the wildlife can be made up of exotic species such as rock dove, European starling, house sparrow, house mouse, and brown rat. Urban areas provide habitat for species also found in agricultural areas, such as mourning dove, American robin, and western gray squirrel.

Fisheries

Water bodies within and bordering El Dorado County support numerous species of native and introduced game and nongame fish. Within the Eldorado National Forest, there are an estimated 611 miles of streams within four major drainage systems (Middle and South Fork American River, the Cosumnes River, and the North Fork Mokelumne River). There are also 297 public and private lakes and reservoirs totaling 11,994 surface acres, with 11 large reservoirs accounting for a majority of the total surface area. The remaining area is associated mostly with small, high mountain lakes. Outside the forest boundary, there are also a substantial number of streams and lakes.

Introduced fishes are most prevalent in reservoirs or lakes where stocking occurs for sportfishing. The California Department of Fish and Game (CDFG) has an active trout stocking program in the high mountain lakes and large reservoirs in or near wilderness areas, primarily on National Forest lands. Non-native gamefish in El Dorado County include brook trout, brown trout, kokanee salmon, and lake trout. Lahontan cutthroat trout, a native species, is stocked by CDFG to sustain its population. Rainbow trout populations in El Dorado County are derived from mixed hatchery and native origin.

Native fishes found in El Dorado County streams include hardhead, Sacramento pikeminnow, Sacramento sucker, California roach, speckled dace, and sculpin (EID 2000). Rainbow trout populations in El Dorado County are a hybrid of native and stocked populations.

Currently, waterway obstructions limit movement by resident fishes within El Dorado County but are not impediments to fish migration. Historically, steelhead and other anadromous fishes were prevented from upstream migration on the South Fork of the American River above Salmon Falls and, later Folsom Dam. Important habitat for anadromous fishes on the Cosumnes River is located downstream of the section of the river that flows through El Dorado County. Dams are the most serious obstacle to movement by resident and anadromous fishes and are found on all major rivers draining from the Sierra Nevada except the Cosumnes River. In some cases, dams create beneficial reservoirs for fishing and fisheries while in other cases they may degrade water quality and streamflows, thereby affecting fisheries downstream. Dams can also limit the distribution of native fish by restricting access to native spawning areas. Introduced game species further limit populations of native species through consumption of fry or competition for limited resources.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources include those identified as such by CDFG, the California Native Plant Society (CNPS), and the U.S. Fish and Wildlife Service (USFWS). Sensitive biological resources also include those given recognition as such in local or regional plans, policies, and regulations. Information on sensitive biological resources previously reported in El Dorado County was collected from a variety of sources including electronic databases and published reports.

The California Natural Diversity Database (CNDDB) was used as the primary source to identify previously reported occurrences of special-status species and sensitive habitats. The CNDDB is a statewide inventory, managed by CDFG, that is continually updated with the locations and condition of the state's rare and declining species and habitats. Although the CNDDB is the most current and reliable tool for tracking occurrences of special-status species, it contains only those records that have been submitted to CDFG, and is not always completely up to date. Thus, additional special-status species are likely present in El Dorado County that have not been discovered or reported, and additional occurrences that have already been reported may have not yet been entered into the database. A copy of the CNDDB report for El Dorado County is provided in Appendix F. A GIS layer depicting occurrences of California spotted owl (a species not tracked by the CNDDB) was obtained from CDFG's Wildlife and Habitat Data Analysis Branch. The area identified as critical habitat for the California red-legged frog was mapped using a GIS layer developed by USFWS. Additional sources of

information used to identify potentially occurring special-status wildlife species and their habitats include *California Wildlife* (volumes I-III) (Zeiner et al. 1998, 1990a, 1990b), and *California Wildlife and their Habitats: Western Sierra Nevada* (Verner and Boss 1980).

Special-Status Species

Special-status species include plants and animals in the following categories:

- species listed or proposed for listing as Threatened or Endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA);
- species considered as candidates for listing as Threatened or Endangered under ESA or CESA;
- wildlife species identified by CDFG as Species of Special Concern;
- wildlife species identified by USFWS as Species of Concern;
- plants listed as Endangered or Rare under the California Native Plant Protection Act;
- animals fully protected in under the California Fish and Game Code;
- plants on CNPS List 1B (plants rare, threatened, or endangered in California and elsewhere) or List 2 (plants rare, threatened, or endangered in California but more common elsewhere). The CNPS lists are used by both CDFG and USFWS in their consideration of formal species protection under ESA or CESA.

Special-Status Plants

A total of 29 special-status plant species have been documented in the county (Table 5.12-2). Of these, six are state or federally listed as Threatened, Endangered, or Rare: Stebbins' morning-glory, Pine Hill ceanothus, Pine Hill flannelbush, El Dorado bedstraw, Layne's butterweed, and Tahoe yellow cress. The remaining 24 special-status plants are on CNPS List 1B or List 2. Locations of documented special-status plant occurrences in the county are shown in Exhibit 5.12-4. Several special-status plants are restricted to the Pine Hill soil formation in western El Dorado County. These plants are of particular concern to state and federal agencies responsible for protection of natural resources because of the rarity of the plants and their limited range, and because of the high development pressure in the region. Additional information on the Pine Hill formation and efforts to conserve the special-status plants that occur on the formation is provided below.

Table 5.12-2
Special-Status Plants Occurring or Potentially Occurring in El Dorado County

Species	Habitat	CNPS [1]	CDFG [2]	USFWS [3]
Nissenan manzanita *Arctostaphylos nissenana*	Closed-cone coniferous forest, chaparral/rocky; elevation 1,500-3,600 feet	1B	--	--
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	Chaparral, cismontane woodland, valley and foothill grassland/sometimes serpentinite; elevation 300-4,600 feet	1B	--	--
Upswept moonwort *Botrychium ascendens*	Lower montane coniferous forest (mesic); elevation 4,900-6,000 feet	2	--	--
Pleasant Valley Mariposa lily *Calochortus clavatus* var. *avius*	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/usually serpentinite, clay, rocky; elevation 200-4,300 feet	1B	--	--
Stebbins' morning-glory *Calystegia stebbinsii*	Chaparral (openings), cismontane woodland/serpentinite or gabbroic; elevation 600-2,400 feet	1B	CE	FE
Shore sedge *Carex limosa*	Bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest; elevation 3,900-8,900 feet	2	--	--
Pine Hill ceanothus *Ceanothus roderickii*	Chaparral, cismontane woodland/serpentinite or gabbroic; elevation 900-2,100 feet	1B	CR	FE
Alpine dusty maidens *Chaenactis douglasii* var. *alpina*	Alpine boulder and rock fields (granitic); elevation 9,800-11,100 feet	2	--	--
Red Hills soaproot *Chlorogalum grandiflorum*	Chaparral, cismontane woodland, lower montane coniferous forest/serpentinite or gabbroic; elevation 800-3,300 feet	1B	--	--
Brandegee's clarkia *Clarkia biloba brandegeae*	Chaparral, cismontane woodland/often roadcuts; elevation 1,000-2,800 feet	1B	--	--
Tahoe draba *Draba asterophora* var. *asterophora*	Alpine bolder and rock field, subalpine coniferous forest; elevation 8,200-11,500 feet	1B	--	--
Cup Lake draba *Draba asterophora* var. *macrocarpa*	Subalpine coniferous forest (rocky); elevation 8,200-9,200 feet	1B	--	--
Oregon fireweed *Epilobium oreganum*	Bogs and fens, lower montane coniferous forest, upper montane coniferous forest/mesic; elevation 1,600-7,300 feet	1B	--	--

Table 5.12-2
Special-Status Plants Occurring or Potentially Occurring in El Dorado County

Species	Habitat	CNPS [1]	CDFG [2]	USFWS [3]
Marsh willowherb *Epilobium palustre*	Bogs and fens, meadows and seeps (mesic); elevation 7,200 feet	2	--	--
Pine Hill flannelbush *Fremontodendron decumbens*	Chaparral, cismontane woodland/gabbroic or serpentinite, rocky; elevation 1,400-2,500 feet	1B	CR	FE
El Dorado bedstraw *Galium californicum* spp. *sierrae*	Chaparral, cismontane woodland, lower montane coniferous forest/gabbroic; elevation 300-1,900 feet	1B	CR	FE
Parry's horkelia *Horkelia parryi*	Chaparral, cismontane woodland/especially Ione formation; elevation 300-3,000 feet	1B	--	--
Long-petaled lewisia *Lewisia longipetala*	Alpine boulder and rock field, subalpine coniferous forest (mesic, rocky)/granitic; elevation 8,200-9,600 feet	1B	--	--
Saw-toothed lewisia *Lewisia serrata*	Broadleaved upland forest, lower montane coniferous forest, riparian scrub; elevation 3,000-4,700 feet	1B	--	--
Three-ranked hump-moss *Meesia triquetra*	Bogs and fens, meadows and seeps, upper montane coniferous forest (mesic)/soil; elevation 4,300-8,200 feet	2	--	--
Northern adders-tongue *Ophioglossum pusillum*	Marshes and swamps (margins), valley and foothill grassland (mesic); elevation 3,300-6,600 feet	2	--	--
Stebbins' phacelia *Phacelia stebbinsii*	Cismontane woodland, lower montane coniferous forest, meadows and seeps; elevation 2,000-6,600 feet	1B	--	--
Nuttall's pondweed *Potamogeton epihydrus* ssp. *nuttallii*	Marshes and swamps (assorted shallow freshwater; elevation 1,300-6,200 feet	2	--	--
Tahoe yellow cress *Rorippa subumbellata*	Lower montane coniferous forest, meadows and seeps/decomposed granitic beaches; elevation 6,200 feet	1B	CE	FC
Water bulrush *Scirpus subterminalis*	Bogs and fens, marshes and swamps (montane lake margins); elevation 2,500-7,400 feet	2	--	--
Marsh skullcap *Scutellaria galericulata*	Lower montane coniferous forest, meadows and seeps (mesic), marshes and swamps; elevation 0-6,900 feet	2	--	--
Layne's butterweed *Senecio layneae*	Chaparral, cismontane woodland/serpentinite or gabbroic, rocky; elevation 700-3,300 feet	1B	--	--

Table 5.12-2
Special-Status Plants Occurring or Potentially Occurring in El Dorado County

Species	Habitat	CNPS [1]	CDFG [2]	USFWS [3]
Oval-leaved viburnum *Viburnum ellipticum*	Chaparral, cismontane woodland, lower montane coniferous forest; elevation 700-4,600 feet	2	--	--
El Dorado mule-ears *Wyethia reticulata*	Chaparral, cismontane woodland, lower montane coniferous forest/clay or gabbroic; elevation 600-2,100 feet	1B	--	--

[1] California Native Plant Society (CNPS)
1B Plants Rare, Threatened, or Endangered in California and elsewhere
2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere

[2] California Department of Fish and Game (CDFG)
CE State listed as Endangered
CR State listed as Rare

[3] U.S. Fish and Wildlife Service (USFWS)
FE Federally listed as Endangered
FC Federal Candidate for listing as Threatened or Endangered

Sources: CNDDB 2002, EDAW 2003

Pine Hill Rare Plants

The Pine Hill formation, which ranges in elevation from 453 feet to 2,060 feet, is an area between Cameron Park and Salmon Falls that supports seven special-status plant species: Stebbins' morning-glory, Pine Hill ceanothus, Pine Hill flannelbush, El Dorado bedstraw, Layne's butterweed, El Dorado mule-ears, and Red Hills soaproot. With the exception of Red Hills soaproot, these plants are restricted chiefly to gabbro-derived soils and are collectively called gabbro soil plants. Gabbro soils have unusual properties derived from the underlying gabbro rock: they are generally red, mildly acidic, and rich in iron and magnesium, and often contain other heavy metals such as chromium. Outcrops of another relatively unusual rock type, serpentinite, also occur in the Pine Hill area. A total of 740 plant species (10% of the state's total) have been recorded in a 25,700-acre area within the Pine Hill formation (USFWS 2002a).

The Pine Hill rare plants have been extirpated from a significant portion of their historic range. The remaining habitat is highly fragmented, with many areas providing only marginally suitable habitat. Habitat loss is considered the primary cause of species endangerment for the gabbro plants. The gabbro soil habitat in the southern portion of the Pine Hill formation is especially fragmented (USFWS 2002a).

Conservation efforts for the gabbro plants have been ongoing for more than 20 years. Between 1979 and 1982, five of the rare plant species were listed as rare or endangered by the State pursuant to §1903 of the California Fish and Game Code (Native Plant Protection Act of 1977). These five species were subsequently added to the list of rare, endangered, or threatened plant species under CESA. In 1989, County staff were informed of the need to pursue protection of these species. At the same time, the development community became aware of CDFG's strong concern regarding this issue. There was a general agreement among CDFG, County staff, and the development community that a regional solution should be sought for development projects that could accommodate offsite mitigation.

In 1992, following a Board hearing and informational workshop, the Board of Supervisors requested the formation of the El Dorado Rare Plant Technical Advisory Committee to recommend a means by which rare-plant issues could be resolved. This committee contained members of the building and business communities, public agency staff, residents within the affected rare plant area, and members of several conservation groups. Following lengthy deliberations, the Technical Advisory Committee recommended a rare plant preserve system with five preserve units with a total area of 3,450 acres. The Salmon Falls, Pine Hill, and Cameron Park units were recommended as "core" reserve areas and two smaller reserve sites were selected as "satellite" preserves: Penny Lane Ridge and Martel Creek, both largely owned by Bureau of Land Management (BLM). The 3,450 acres amounted to less than 10% of the total rare plant habitat. In March 1993, the Board of Supervisors discussed the committee's recommendations. The Board agreed to adopt only four of the preserve sites because of costs and the belief that funding to purchase this land was not available. The Board omitted the Cameron Park site from the preserve system and declined to address the provision of County funding for the creation or management of the four preserve sites they did adopt.

In an attempt to resolve the funding issue, during May 1997 the Board of Supervisors sponsored an economic and feasibility study for the ecological preserve program. The final study was approved by the Board in September 1997. These reports served as the economic and technical basis in support of subsequent actions by the Board to adopt Ordinance No. 4500 and implementing fee resolution. Ordinance No. 4500 and fee resolution created a method by which the County raises funds to acquire land from willing sellers to be included in the ecological preserves.

The Board amended the El Dorado County General Plan (General Plan Amendment No. A 97-09) to include the Cameron Park Ecological Preserve Unit on March 24, 1998. To date, 454 acres have been acquired within the Cameron Park Preserve Unit, which is the fifth preserve site.

During 2001 the Board of Supervisors approved a Cooperative Management Agreement with BLM, CDFG, USFWS, CDF, El Dorado Irrigation District, the U.S. Bureau of Reclamation, and the American River Conservancy. In part, this agreement provides for the authorities, goals, responsibilities, and administrative process by which the participants to the agreement will work together to prepare a management plan for the ecological preserve program. As of January 2002, slightly more than 2,900 acres of rare plant habitat had been protected within the Pine Hill Ecological Preserve (Exhibit 5.12-5).

In 2002, USFWS released the *Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills* (USFWS 2002a). The plan recommends actions and identifies goals considered necessary to recover and/or protect six gabbro plants, including five federally listed plants and one CNPS List 1B plant. Recovery actions identified in the plan include: completion of the preserve system; developing and implementing management plans, including provisions for fire management; surveying historical locations and other potential habitat where species may occur; conducting research to guide recovery efforts; collecting and storing seeds; and providing opportunities for public participation, outreach and education. Interim goals of the recovery plan include stabilizing and protecting populations and conducting research necessary to refine classification and recovery criteria. The ultimate recovery goals are to protect and restore sufficient habitat and population numbers, ameliorate existing threats, and identify and avoid new threats.

Special-Status Wildlife

A total of 51 special-status wildlife species are known to occur in El Dorado County (Table 5.12-3). Of these, 10 species are state or federally listed as Threatened or Endangered: vernal pool fairy shrimp, valley elderberry longhorn beetle, Lahontan cutthroat trout, California red-legged frog, willow flycatcher, American peregrine falcon, bald eagle, bank swallow, California wolverine, and Sierra Nevada red fox. The remaining 41 species are considered as California Species of Special Concern by CDFG and/or federal Species of Concern by USFWS. Locations of documented occurrences of special-status wildlife species in the county are shown in Exhibit 5.12-6. Occurrences of red-legged frog are not shown because the CNDDB does not make specific information publically available for this species.

Table 5.12-3
Special-Status Wildlife Occurring or Potentially Occurring in El Dorado County

Species	Habitat	CDFG[1]	USFWS[2]
INVERTEBRATES			
Vernal pool fairy shrimp *Branchinecta lynchi*	Endemic to the vernal pools and swales associated with valley and foothill grasslands	--	FT
Lake Tahoe benthic stonefly *Capnia lacustra*	Endemic to Lake Tahoe where it is found at depths of 95-400 feet	--	FSC
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Elderberry shrubs, usually in streamside habitats, but also found in isolated elderberry bushes	--	FT
Button's Sierra sideband snail *Monadenia mormonum buttoni*	Moist wooded areas in the foothills of the central Sierra Nevada	--	FSC
Spiny rhyacophilan caddisfly *Rhyacophila spinata*	Mid- to high-elevation streams and rivers	--	FSC
FISH			
Hardhead *Mylopharodon conocephalus*	Undisturbed areas of larger middle- and low-elevation streams	CSC	--
Lahontan cutthroat trout *Oncorhynchus clarkia henshawi*	Coldwater lakes and streams	--	FT
AMPHIBIANS AND REPTILES			
Northwestern pond turtle *Clemmys marmorata marmorata*	Streams and ponds with suitable uplands for nesting	CSC	--
California tiger salamander *Ambystoma californiense*	Vernal pools and seasonal ponds in valley and foothill grasslands	CSC	FC
Mount Lyell salamander *Hydromantes platycephalus*	Large rock areas near seeps or streams; generally found within mixed conifer, red fir, lodgepole pine, or subalpine habitats	CSC	FSC
California horned lizard *Phrynosoma coronatum frontale*	A variety of habitats including sandy washes with scattered shrubs	CSC	FSC
California red-legged frog *Rana aurora draytonii*	Deep pools in streams and ponds with riparian and/or emergent marsh vegetation	CSC	FT
Foothill yellow-legged frog *Rana boylii*	Partly shaded, shallow streams with a rocky substrate	CSC	FSC
Mountain yellow-legged frog *Rana muscosa*	Streams, lakes, and ponds at higher elevations	CSC	FC

Table 5.12-3
Special-Status Wildlife Occurring or Potentially Occurring in El Dorado County

Species	Habitat	CDFG[1]	USFWS[2]
BIRDS			
Cooper's hawk *Accipiter cooperii*	Woodlands, riparian areas, and grasslands	CSC	--
Northern goshawk *Accipiter gentilis*	Prefers middle and higher elevations, and mature, dense conifer forest	CSC	FSC
Sharp-shinned hawk *Accipiter striatus*	Breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats	CSC	--
Tricolored blackbird *Agelaius tricolor*	Colonial breeder that requires emergent marsh or other dense cover near open water for nesting	CSC	--
Golden eagle *Aquila chrysaetos*	Nests on cliff edges or in large trees near grasslands and open forest and woodlands	CSC, FP	--
Burrowing owl *Athene cunicularia*	Grassland and agricultural field at lower elevations	CSC	--
Vaux's swift *Chaetura vauxi*	Prefers redwood and Douglas-fir habitat with nest sites in large hollow trees and snags	CSC	--
Lark sparrow *Chondestes grammacus*	Open woodlands and chaparral, and grasslands with scattered trees and shrubs	--	FSC
Northern harrier *Circus cyaneus*	Grasslands, agricultural fields, marshes, and other open habitats in valleys and foothills	CSC	--
Olive-sided flycatcher *Contopus cooperi*	Found in a wide variety of forest and woodland habitats	--	FSC
Black swift *Cypseloides niger*	Nests in moist crevices and cliffs behind or adjacent to waterfalls in deep canyons	CSC	FSC
Hermit warbler *Dendroica occidentalis*	Breeds in mature coniferous forests	--	FSC
Yellow warbler *Dendroica petechia brewsteri*	Breeds in riparian habitats, montane chaparral, and coniferous forests with dense shrub layers	CSC	--
White-tailed kite *Elanus leucurus*	Grasslands, agricultural fields, and other open habitats in foothills and valleys	FP	--

Table 5.12-3
Special-Status Wildlife Occurring or Potentially Occurring in El Dorado County

Species	Habitat	CDFG[1]	USFWS[2]
Pacific-slope flycatcher *Empidonax difficilis*	Moist woodlands including riparian woodland, oak woodlands, and coniferous forests	--	FSC
Little willow flycatcher *Empidonax traillii brewsteri*	Thickets of low, dense willows	CE	FSC
Merlin *Falco columbarius*	Open grasslands, savannas, woodlands, lakes, and wetlands	CSC	--
American peregrine falcon *Falco peregrinus anatum*	Breeds mostly in cliff edges near woodlands, forests, and lakes	CE	FSC
Bald eagle *Haliaeetus leucocephalus*	Uses snags on conifers and other large trees near large water bodies for nesting	CE, FP	FT, FPD
Yellow-breasted chat *Icteria virens*	Breeds in riparian scrub and riparian woodlands	CSC	--
Loggerhead shrike *Lanius ludovicianus*	Open habitats with scattered shrubs and trees	CSC	FSC
Lewis's woodpecker *Melanerpes lewis*	Open woodlands and forests	--	FSC
Osprey *Pandion haliaetus*	Nests on top of cliffs, human-made structures, large snags, and dead-topped trees	CSC	--
Bank swallow *Riparia riparia*	Colonial nester that requires vertical earthen banks or cliffs near rivers or lakes	CT	--
California spotted owl *Strix occidentalis occidentalis*	Nests in dense, multilayered evergreen forest	CSC	FSC
MAMMALS			
Pallid bat *Antrozous pallidus*	A wide variety of habitats at lower elevations including grasslands, shrublands, woodlands, and forests	CSC	--
Sierra Nevada mountain beaver *Aplodontia rufa californica*	Rivers, lakes, ponds, and streams with nearby dense understory of small deciduous trees and shrubs	CSC	FSC
Pale big-eared bat *Corynorhinus townsendii pallescens*	Can occur in a wide variety of habitats, absent from alpine and subalpine regions	CSC	--
California wolverine *Gulo gulo*	A variety of high-elevation habitats including subalpine and montane forest	CT	FSC

Table 5.12-3
Special-Status Wildlife Occurring or Potentially Occurring in El Dorado County

Species	Habitat	CDFG[1]	USFWS[2]
Southwestern river otter *Lontra canadensis sonorae*	Rivers and large streams	CSC	--
American marten *Martes americana*	Dense mixed evergreen forest	--	FSC
Pacific fisher *Martes pennanti pacifica*	Coniferous forest or deciduous-riparian forest with a high percentage canopy cover	CSC	FSC
Small-footed myotis *Myotis ciliolabrum*	Found in a wide variety of habitats; prefers arid wooded and brush uplands near water	--	FSC
Long-eared myotis *Myotis evotis*	Found in a wide variety of habitats including shrublands, woodlands, and forests	--	FSC
Fringed myotis *Myotis thysanodes*	Found in a wide variety of habitats including woodlands and forests	--	FSC
Long-legged myotis *Myotis volans*	Found in a wide variety of habitats including woodlands and forests	--	FSC
Yuma myotis *Myotis yumanensis*	Found in a wide variety of habitats including woodlands and forests	--	FSC
Sierra Nevada red fox *Vulpes vulpes necator*	Various habitats including forested areas and wet meadows	--	FT

1 California Department of Fish and Game (CDFG)
- CE State listed as Endangered
- CT State listed as Threatened
- CSC California Species of Special Concern
- FP Fully Protected

2 U.S. Fish and Wildlife Service (USFWS)
- FE Federally listed as Endangered
- FT Federally listed as Threatened
- FC Federal Candidate for listing as Threatened or Endangered
- FSC Federal Species of Concern
- FPD Federally proposed for delisting

Sources: CNDDB 2002, EDAW 2003

California Red-Legged Frog Critical Habitat and Recovery Plan

The California red-legged frog was federally listed as a Threatened subspecies in 1996. El Dorado County's Weber Creek watershed supports one of only three known populations of California red-legged frogs in the Sierra Nevada (USFWS 2001). The confirmed population was discovered in an impoundment along the North Fork of Weber Creek in 1996 (USFWS 2002b). The CNDDB does not make information on red-legged frog occurrences publicly available; therefore, the Webber Creek population is not shown in Exhibit 5.12-6. The impoundment and surrounding uplands were purchased as part of a cooperative effort between state and federal agencies in 1997 and are currently managed by BLM to protect the frog and its habitat (Lehr 2002). Records of California red-legged frog also exist in El Dorado County for Rock Creek (1974) and Trasverse Creek (1975) (USFWS 2002b).

The USFWS designated critical habitat for the California red-legged frog in 2001 (USFWS 2001). As part of the 2001 designation, 53,531 acres of critical habitat were included in the Weber Creek and North Fork Cosumnes watersheds (Weber Creek-Cosumnes River Unit). However, in 2002, 3.8 million acres of the critical habitat designated statewide, including the Weber Creek-Cosumnes Unit, were withdrawn as part of a settlement because the designation did not include a sufficient economic analysis as required by ESA. Under the settlement, USFWS agreed to redraw the boundaries by 2005. The settlement does not affect protection for the frog or its habitat, as afforded under Section 9 of ESA.

The USFWS released the recovery plan for the California red-legged frog in 2002 (USFWS 2002b). The objective of this plan is to sufficiently reduce threats and improve the population status of the species to warrant delisting. The plan includes conservation measures, recovery strategies, and recovery actions. The USFWS intends to focus recovery actions in core areas identified in the plan. Two core areas have been identified in El Dorado County (Exhibit 5.12-7). The Cosumnes River core area, which includes the Weber Creek watershed, covers most of the county south and west of Placerville. The Traverse Creek core area is located near Georgetown. The core areas, which are distributed throughout portions of the historic and current range, represent a system of areas that, when protected and managed for California red-legged frogs, will allow for the long-term viability of existing populations and reestablishment of populations within the historic range.

Deer Migration Corridors

El Dorado County's deer include both resident and migratory populations. Although mule deer is not recognized as a special-status species, preserving deer migration corridors is of concern to CDFG in many foothill and mountainous regions of California currently

experiencing expansion of urbanized areas. To address this concern in El Dorado County, CDFG has researched and mapped critical habitat and deer migration patterns for Pacific, Desolation Carson River, and Grizzly Flat deer herds. Critical habitat, as defined by CDFG, has been deemed essential to the long-term productivity of the herd. Areas identified by CDFG as critical winter range primarily occur between 2,000 and 4,000 feet elevation (Exhibit 5.12-7). Critical summer range is located between 4,000 and 9,000 feet elevation in the eastern half of the county and largely occurs on National Forest lands managed by USFS. Known holding areas and critical fawning areas, which are also located between 4,000 and 9,000 feet elevation are also located primarily on USFS land.

Sensitive Habitats

Sensitive habitats in the county were identified through a review of the CNDDB (CDFG 2002) and FRAP land cover data (CDF-FRAP 2002). In some cases sensitive habitats in the CNDDB correspond directly with the CWHR classification system used by FRAP, but typically, the classifications of vegetation in the CNDDB are more detailed. In other words, the sensitive habitats discussed below are generally described at a more specific level of classification than the major habitat types discussed above. Both FRAP and CNDDB data was used to map sensitive natural habitats (Exhibit 5.12-7).

The list of *California Terrestrial Natural Communities Recognized by the CNDDB* (CNDDB 2002) was used to identify CNDDB communities (or their corresponding CWHR habitat type) that are listed as high priority for inventory by the CNDDB (i.e., rare and worthy of consideration). Sensitive habitats of extremely limited distribution in El Dorado County that are located on USFS land and are therefore not discussed below include sphagnum bog and fen; both of these communities are listed as high priority for inventory in the CNDDB. Known locations for sphagnum bog and fen reported to the CNDDB are shown in Exhibit 5.12-7.

Sensitive habitats discussed below include montane and valley-foothill riparian habitat, aspen, valley oak woodland, wet meadow, and vernal pools. The extent of montane riparian habitat in the county was calculated using the FRAP land cover data. Estimates of acreage for aspen, valley oak woodland, and wet meadow are also provided in Table 5.12-1. The amount of valley-foothill riparian has not been quantified and is not shown on Exhibit 5.12-7 because it is difficult to distinguish using remote-sensing imagery (Saving, pers. comm., 2002). No acreage total is given for vernal pools, and they are not included on the exhibits, because their seasonal nature (they are typically depressions in grasslands seasonally inundated by rainwater) of vernal pools makes them difficult to quantify and map at this scale. The distribution of the other sensitive habitats in the county is shown in Exhibit 5.12-7.

Montane riparian habitat, which covers 700 acres, is associated with montane lakes, ponds, seeps, bogs, and meadows, as well as rivers and streams. This habitat is usually present below 8,000 feet elevation. Montane riparian vegetation is quite variable and often structurally diverse. Usually, the montane riparian zone occurs as narrow, often dense grove of broad-leaved, deciduous trees. In the Sierra Nevada, characteristic species include thinleaf alder, aspen, black cottonwood, dogwood, wild azalea, willow, and white alder. Like all riparian habitats, montane riparian habitat supports rich fauna that include a high diversity of amphibians, reptiles, birds and mammals. Montane and other riparian habitats also provide important migration and dispersal corridors for wildlife (Mayer and Laudenslayer 1988). A few of the many common wildlife species associated with montane riparian habitat in El Dorado County include western aquatic garter snake, Pacific treefrog, Wilson's warbler, and mink. Several special-status wildlife species depend on montane riparian including willow flycatcher and yellow-legged frog.

Valley-foothill riparian habitat is typically found at lower elevations (i.e., below 3,000 feet elevation) in western El Dorado County. It is found along many of the rivers and streams that flow through the valleys and rolling foothills in this region. Plant diversity within valley-foothill riparian varies considerably depending upon hydrological factors, soils, and other environmental conditions. Dominant tree species may include Fremont cottonwood, willow, and valley oak. The understory typically consists of a shrub and herbaceous layer. Common shrubs and vines include wild rose, blackberry, blue elderberry, poison-oak, wild grape, California coffeeberry, and willows. Common wildlife associated with valley-foothill riparian habitat include black-headed grosbeak, bushtit, striped skunk, raccoon, and gray fox. Special-status wildlife species that depend on valley-foothill riparian habitat include the northwestern pond turtle, Cooper's hawk, and foothill yellow-legged frog.

Aspen covers 400 acres, primarily at higher elevations near seeps, streams, and meadows. This habitat is almost entirely restricted to USFS land and the Lake Tahoe Basin. Mature stands of aspen usually have relatively open canopies, often shared with other deciduous trees or a few conifer species, typically pines. Aspen provides excellent foraging habitat and cover for wildlife. Aspen stands are favored by a variety of cavity nesting birds, such as the western bluebird, red-breasted sapsucker, downy woodpecker, and mountain chickadee. Aspen, which is categorized by both the CNDDB and CWHR, is listed as a high-priority community for inventory by the CNDDB.

Valley oak woodland covers 3,300 acres at lower elevations in El Dorado County. This habitat, which is dominated by valley oaks, varies from savanna-like to forest-like stands with partially closed canopies. Valley oak woodland is composed mostly of winter-deciduous, broad-leaved species. Denser stands typically grow in valley soils along natural drainages. In the foothills,

valley oak woodland often intergrades with blue oak woodland or blue oak-foothill pine habitats. Trees frequently associated with this habitat include western sycamore, box elder, Northern California black walnut, blue oak, and interior live oak. Valley oak woodland, like most oak woodland habitats, supports numerous wildlife species. It is particularly important for species that feed on acorns, are cavity-nesters, or otherwise dependent on valley oaks for food and/or breeding habitat. Wildlife found commonly in valley oak woodland includes gopher snake, acorn woodpecker, oak titmouse, white-breasted nuthatch, California quail, and western gray squirrel. Valley oak woodland is classified by both the CNDDB and CWHR, and is listed as a high-priority community for inventory by the CNDDB.

Wet meadow covers 8,600 acres in El Dorado County, where it is found predominantly at higher elevations (i.e., above 4,000 feet elevation). This habitat is found predominantly on USFS land and in the Lake Tahoe Basin. Wet meadows occur throughout virtually every forest type of the Sierra Nevada. Plant diversity varies considerably but the structure is always simple, consisting of a layer of herbaceous plants. Shrub or tree layers are usually absent or very sparse. Wet meadow supports a variety of wildlife species, which vary considerably depending on elevation, hydrology, substrate, and vegetation.

Vernal pools are associated with annual grassland habitat in the westernmost region of the county. These ephemeral pools support many endemic species, including special-status plants, invertebrates, and amphibians. Suitable topographic and soil conditions are prerequisites for the occurrence of vernal pools. The topography requirement is a series of microdepressions that collect water from precipitation and runoff from the surrounding higher landforms during the rainy season. The important soil requirement is a subsoil hardpan or claypan, which prevents the draining of water from these pools by downward percolation, resulting in a perched water table. Vernal pools are typically characterized by a high percentage of native annuals such as goldfields, downingia, and meadowfoam.

REGULATORY/PLANNING ENVIRONMENT

Key regulatory and planning issues for this project related to biological resources are discussed below.

Federal Regulatory Issues

Federal Endangered Species Act

Pursuant to ESA, USFWS has authority over projects that may affect the continued existence of a federally listed (Threatened or Endangered) species. Section 9 of ESA and federal

regulations prohibit the take of federally listed fish or wildlife species (16 United States Code [USC] §1538 [a] [1] [B]). Take is defined under ESA, in part, as killing, harming, or harassing (16 USC §1539 [19]). Under federal regulations, take is defined further to include habitat modification or degradation where it actually results or is reasonably expected to result in death of or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

The take prohibition of Section 9 of ESA applies only to listed species of fish and wildlife. Section 9(a)(2)(B) describes federal protection for endangered plants. In general, ESA does not protect listed plants located on nonfederal land (i.e., areas not under federal jurisdiction), unless such species are already protected by state law.

Section 7 of ESA outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat. Section 7(a)(2) requires federal agencies to consult with USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat identifies specific areas that have the physical and biological features that are essential to the conservation of a listed species, and that may require special management considerations or protection.

For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under Section 10(a) of ESA. Section 10(a) of ESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a Habitat Conservation Plan (HCP) that includes components to minimize and mitigate impacts associated with the take.

ESA requires the development of recovery plans for listed species. Restoring endangered or threatened animal and plant populations to the point where they are again secure and self-sustaining is a primary goal of USFWS. Recovery plans describe the actions considered necessary for the conservation of listed species, establish criteria for downlisting or delisting listed species, and estimate time and cost to implement the necessary recovery measures. USFWS has no specific legislative mandate to require federal, state, or local agencies or private entities to implement tasks for endangered and threatened species recovery; however, the implementation schedule, which is included in the recovery plan, indicates potentially "responsible parties" that may be interested in carrying out particular recovery tasks.

Clean Water Act

The U.S. Army Corps of Engineers (USACE) regulates the placement of fill into waters of the United States under Section 404 of the Clean Water Act. Waters of the United States include lakes, rivers, streams and their tributaries, and adjacent wetlands. Wetlands are defined under Section 404 as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted to life in saturated soil conditions. Activities that require a permit under Section 404 include placing fill or riprap in a water of the United States, and grading, mechanized land clearing, and dredging that result in discharge of fill material. Any activity that results in the deposit of dredge or fill material within the ordinary high water mark of waters of the United States usually requires a permit, even if the area is dry at the time the activity takes place.

The Clean Water Act and guidelines outlined in an memorandum of agreement (MOA) between the Environmental Protection Agency and USACE dated November 15, 1989, set forth a goal of restoring and maintaining existing aquatic resources. This MOA directed USACE to strive to avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources, and for wetlands, to strive to achieve a goal of no overall net loss of values and functions. While focusing the no-net-loss policy on wetlands, the MOA also noted the value of other Waters of the U.S., such as streams, rivers, and lakes. Under the guidelines, all Waters of the U.S. are afforded protection, including requirements for appropriate and practicable mitigation based on values and functions of the aquatic resource that will be impacted.

In 2001, the U.S. Supreme Court ruled in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* that USACE has jurisdiction only over wetlands that are adjacent to navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction could affect interstate or foreign commerce, or tributaries to any of these waters. This ruling reversed roughly two decades of agency claims of jurisdiction over "isolated" water and substantially weakened federal protection over nontidal wetlands that are not part of, or adjacent to navigable waters of the United States. USACE is currently evaluating its jurisdiction over isolated wetlands on a case-by-case basis.

Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA), first enacted in 1918, implements domestically a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former U.S.S.R., which provides for international migratory

bird protection and authorizes the Secretary of Interior to regulate the taking of migratory birds. The MBTA provides "it shall be unlawful, except as permitted by regulations, at any time, by any means, or in any manner, to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird, included in the terms of conventions with certain other countries" (16 U.S.C. 703). The list of species covered by the MBTA, which includes almost all native birds, can be found in 50 CFR §10.13.

According to USFWS, the MBTA may offer a regulatory mechanism for obtaining a "special purpose permit" for the take of birds under 50 CRF §21.27. USFWS's interpretation of the legal standard of protection is "zero loss" of migratory birds. There is legal precedent, however, that has not accepted the Federal government's position of "zero loss" and instead has defined the test of compliance as one of good faith and reasonable due care. The courts have recognized that interpreting the law to find liability for birds flying into such things as structures, plate glass windows, and aircraft is unreasonable and runs counter to common sense. Precedent exists for acceptance of reasonable mitigation measures by USFWS where complete avoidance of migratory bird loss was infeasible.

State Regulatory Issues

California Endangered Species Act

Pursuant to CESA, a permit from CDFG is required for projects that could take a species that is state listed as Threatened or Endangered (California Fish and Game Code Section 2050 et seq.). Under CESA, take is defined as an activity that would directly or indirectly kill an individual of a species. The definition does not include "harm" or "harass" as in the federal act. As a result, the threshold for take under CESA is higher than under ESA (i.e., habitat modification is not necessarily considered take under CESA). The take of state-listed species incidental to otherwise lawful activities requires a permit, pursuant to §2081(b) of CESA. The state has the authority to issue an incidental take permit under Fish and Game Code §2081, or to coordinate with USFWS during the Section 10(a) process to make the federal permit consistent with CESA.

As under federal law, listed plants have considerably less protection than fish and wildlife under California state law. The California Native Plant Protection Act (Fish and Game Code §1900 et seq.) allows landowners to take listed plant species, provided that the owner first notifies CDFG and gives the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed.

Section 1600 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources is subject to regulation by CDFG, pursuant to California Fish and Game Code §§1600 through 1603. Section 1603 states that it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFG, or use any material from the streambeds, without first notifying CDFG of such activity. The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that support or have supported riparian vegetation. CDFG's jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. A CDFG Streambed Alteration Agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

Fully Protected Species under the Fish and Game Code

Four sections of the Fish and Game Code list 37 fully protected species (Fish and Game Code §§3511, 4700, 5050, and 5515). These statutes prohibit take or possession at any time of fully protected species. CDFG is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species. CDFG has informed non-federal agencies and private parties that they must avoid take of any fully protected species in carrying out projects.

Section 3503.5 of the California Fish and Game Code

Section 3503.5 of the Fish and Game Code states that it is unlawful to take, possess, or destroy any birds of prey in the orders Falconiformes or Strigiformes (e.g., hawks, owls, eagles, falcons). This statute does not provide for the issuance of any type of incidental take permit.

California Wetlands Conservation Policy

California wetlands receive protection under the 1993 California Wetlands Conservation Policy (Executive Order W-59-93). The primary goal of this policy is to ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in a manner that fosters creativity, stewardship, and respect for private property.

County Planning Issues

Conservation of Oaks and Other Hardwoods

The four major oak and hardwood habitats described above are not typically considered sensitive habitats. All four habitats are common regionally and statewide. However, there is currently a great deal of concern about the protection of oaks and other hardwoods in California (Harris and Kocher 2002). This concern arises primarily from the rapid rate of urban development, and the habitat removal that accompanies it, in the foothills of California where oaks and hardwood habitats are predominantly found. Statewide, these habitats have also undergone loss and fragmentation because of agricultural expansion, thinning for range improvement, and firewood harvesting. It is estimated that more than a million acres of California's oak woodlands have been lost since 1950 (Bolsinger 1988). According to Giusti and Tinnin (1993), the single largest threat to the state's oak woodlands is residential development. Each year 30,000 acres of hardwood rangeland is lost to residential and commercial uses (Standiford et al. 1996) and there is little required in the way of mitigation (Light and Pedroni 2002). In addition to the removal and degradation of existing oak woodlands, the rate of regeneration is a concern, as several oak species are not regenerating adequately to ensure their long-term survival (Bolsinger 1988).

Another factor that could adversely affect oak woodlands in El Dorado County during the General Plan planning horizon is oak mortality syndrome or sudden oak death (SOD). Since 1995, unusually large numbers of coast live oak, tan oak, and black oak trees have died in coastal areas of California as a result of SOD. The cause of this disease has been linked to pathogenic fungi (CDF 2000). As of 2002, SOD had been reported from 12 California counties, with the nearest to El Dorado County being Solano County (COMTF 2002). It is not known whether SOD will spread to El Dorado County; thus far, it has not been detected in blue oaks, one of the primary oak trees found in the county. If SOD becomes prevalent in El Dorado County it could contribute to the cumulative loss of oak trees in the region.

No comprehensive statewide regulations protecting oaks currently exist. However, recent studies suggest that oak and other hardwood habitats are indeed at risk in El Dorado County and throughout California (California Oak Foundation 2003, Saving and Greenwood 2002, Giusti and Merenlender 2002, Light and Pedroni 2002). Concerns regarding the loss of these habitats resulted in the creation of the University of California's Integrated Hardwood Range Management Program (IHRMP) in 1986. In 1993, the State Board of Forestry delegated to the IHRMP the responsibility of assisting counties in the development of locally based conservation strategies for oak woodlands in lieu of a statewide regulatory program (Giusti and Merenlender 2002). In the absence of statewide regulations, responsibility for conservation

and protection falls to county and city governments. State or federal regulatory requirements usually apply only when other resources, such as streams, wetlands, and endangered species, are also involved (Harris and Kocher 2002).

Mitigating the loss of oak woodland can be problematic for local jurisdictions. Concerns about conserving the environmental value of oak woodland resources in the face of conversions to other land uses has led local planners to develop strategies to mitigate these effects. Many local conservation policies have attempted to mitigate the loss of oak woodland habitat resulting from conversion to urban or intensive agricultural land uses through tree planting. Many mitigation plans regularly call for tree planting on a replacement basis (1:1 to as high as 20:1) for trees lost (Standiford et al. 2002). However, because few monitoring studies of planted native oaks extend beyond 10 to 15 years, there have been few opportunities to assess how oak woodland habitats develop over time from areas planted, and whether this mitigation approach on overall habitat quality is effective. Standiford et al. (2002), using a modeling approach to evaluate blue oak plantation development, found that average blue oaks were still quite small and that canopy cover was relatively low 50 years after being planted, even with a fairly aggressive restoration effort.

Another factor local jurisdictions must consider is the high cost of tree planting as a mitigation strategy. In some cases, it may be more cost effective to use the mitigation funds to ensure that existing mature habitat is conserved (Standiford et al. 2002). Although it may take many decades to replace mature habitat that is lost to a particular project, tree planting is still and important conservation tool and should still be encouraged as part of an overall restoration strategy (Standiford et al. 2002). Effective mitigation at a landscape scale, however, typically requires a more diverse array of options, including preservation of mature stands to compensate for the impact of woodland conversion projects.

5.12.2 Environmental Impacts And Mitigation Measures

Thresholds of Significance

The General Plan would result in a significant impact if development would:

- have a substantial adverse effect, either directly or indirectly through habitat modifications, on any special-status species identified in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- have a substantial adverse effect on any wetlands, riparian, or other sensitive habitat identified in local or regional plans, policies, or regulations, or by CDFG or USFWS;

- 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 adopted HCP or other approved local, regional, or state plans, policies, or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species to drop below self-sustaining levels, or threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare, or threatened species.

Impact **5.12-1**

Loss and Fragmentation of Wildlife Habitat. Development under the General Plan would result in a substantial increase in urban development and population in the western foothill region of the county. This region supports a number of native habitats that are important to wildlife. Much of the native habitat that exists would be substantially reduced by impacts associated with adoption of the General Plan. This impact is considered **significant** for all four equal-weight alternatives. The severity of this impact would be greatest under the 1996 General Plan Alternative, followed by the No Project, Roadway Constrained 6-Lane "Plus," and Environmentally Constrained alternatives. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-1: Loss and Fragmentation of Wildlife Habitat	S_2	S_2	S_3	S_3	S_4	S_4	S_1	S_1

Mitigation	Significance After Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-1(a), Implement Mitigation Measure 5.9-4(b); 5.12-1(b), Minimize Erosion and Maximize Retention of Natural Vegetation; 5.12-1(c),Implement Mitigation Measure 5.9-6(a) for the No Project Alternative; 5.12-1(d), Develop and Implement an Integrated Natural Resources Management Plan; 5.12-1(e), Adopt a No-Net-Loss Policy and Mitigation Program for Important Habitat; 5.12-1(f), Require Mitigation for Loss of Woodland Habitat; and 5.12-1(g), Develop and Implement an Oak Tree Preservation Ordinance	SU_2	SU_2	—	—–	—	—	SU_1	SU_1
5.12-1(a), Limit Development on Steep Slopes to Prevent Erosion; 5.12-1(h), Remove Open Space from Mineral Resource Overlay; 5.12-1(i), Replace Implementation Programs CO-E, CO-F, and CO-I with Mitigation Measure 5.12-1(d) for the No Project Alternative; 5.12-1(j), Replace Policy CO-6b with Mitigation Measure 5.12-1(e); 5.12-1(k), Replace CO-6c with Mitigation Measure 5.12-1(f) for the No Project Alternative; and 5.12-1(l), Replace Policy CO-7a with Mitigation Measure 5.12-1(g) for the No Project Alternative	—	—	SU_3	SU_3	—	—	—	—

Mitigation	Significance After Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-1(m), Remove Open Space from Mineral Resource Overlay; ; 5.12-1(i), Replace Implementation Programs CO-E, CO-F, and CO-I with Mitigation Measure 5.12-1(d) for the No Project Alternative; 5.12-1(j), Replace Policy CO-6b with Mitigation Measure 5.12-1(e); and 5.12-1(k), Replace Policy CO-6c with Mitigation Measure 5.12-1(f) for the No Project Alternative	—	—	—	—	SU_2	SU_2	—	—

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

The evaluation of impacts on wildlife habitat incorporated both quantitative and qualitative aspects. Impacts on habitat resulting from conversion to urban and agricultural uses were evaluated by calculating the amount and type of habitat within each land use designation associated with each alternative. Two published studies on impacts associated with habitat fragmentation and habitat loss anticipated under the 1996 County General Plan were reviewed. A thorough analysis of the 1996 General Plan and its associated impacts on wildlife habitat in western El Dorado County was published in 2002 (Saving and Greenwood 2002). Harris and Kocher (2002) analyzed protection afforded oak woodlands under the 1996 County General Plan. The results of these studies have been summarized and incorporated into the impact discussions for the alternatives to which they apply. General Plan policies were reviewed to determine whether they would avoid, minimize, or reduce impacts on wildlife habitat.

The following land use groupings were developed for the biological resources analysis based on the anticipated effect of certain land uses on wildlife habitat of a particular designation:

< **High intensity:** High-density residential, medium-density residential, low-density residential (i.e., lot sizes ranging from 5 to 10 acres), multifamily residential, industrial, commercial, research and development, public facilities, and the adopted plan. These

are areas where mass grading of large blocks of undeveloped land would be expected and the landscape would become increasingly urbanized and fragmented.

< **Medium intensity:** Tourist recreational, rural land, rural residential (i.e., lot sizes ranging from 10 to 40 acres), and agricultural land. These are areas where grading can be more selective, such as grading for one residence on a 10-acre parcel, and/or where the use of land is of low enough intensity that wildlife may be expected to continue using the area. Medium-intensity land uses can also contribute to habitat fragmentation.

< **Low intensity:** Natural resources and open space. In general, these are areas expected to continue to function largely as undisturbed habitats. It should be noted that in some areas, timber harvesting and mining would be permitted on land designated as natural resources and open space. However, the large majority of land under these designations would not be affected by these activities. Therefore, for the purposes of this analysis, it is assumed that, generally, natural resources and open-space designation would result in little or no effect on biological resources.

Impacts are expected to be highest in areas designated as high-intensity land uses, because buildout of land under these designations would likely result in fragmentation and loss of the majority of the existing habitat. Medium-intensity land uses would also result in removal and fragmentation of existing habitat, but to a lesser extent than high-intensity land uses. As a result, some habitats would be expected to continue to be viable, but the quality would be diminished compared with keeping the habitat in an undisturbed condition. Low-intensity land uses would have little or no effect on existing biological resources because, in most areas, the habitats would not be substantially altered.

Biological diversity is reduced when natural habitats are converted for urban, suburban and agricultural uses. This reduction is compounded by the fragmentation of contiguous natural areas into an increasing number of smaller fragments, each of which may be too small to support viable populations of all the original inhabitants (Merenlender and Heaton 2000). Habitat removal and fragmentation can result from parceling of the landscape into smaller lots through subdivision and subsequent grading (particularly mass grading) and development of building pads, landscaping, roads, and infrastructure.

There can be impacts caused by piping and culverting of streams in connection with development projects. The nature of those impacts is described in Section 5.5.1, Surface Water and Groundwater Resources, of Water Resources.

Potentially significant secondary impacts on wildlife habitat associated with urbanization include reduction in water quality caused by urban runoff, erosion and siltation; increased noise and lighting that reduce habitat value for nocturnal wildlife; intrusion of humans and domestic animals and the resulting predation and disturbance of wildlife; increased uses of natural areas for recreational activities; impacts on tree canopy and understory from fire safety methods (defensible space); and introduction of non-native invasive species that would degrade existing habitats for native plant and wildlife species.

Table 5.12-4 lists the expected percent of habitat by land use intensity for each major habitat type and for each alternative at buildout. Several factors were weighed when assessing impacts on wildlife habitat, including the local and regional distribution and abundance of the habitat type, the degree to which the habitat is threatened or declining in El Dorado County and statewide, and the degree to which regulatory protections are in place. For this analysis, an impact was considered significant when 50% or greater of any habitat type that provides important wildlife habitat was designated for high- and medium-intensity land uses. This development-level was selected because it would likely result in a substantial reduction in habitat for wildlife and could cause the countywide population of some wildlife species that depend on these habitats to drop below self-sustaining levels.

Table 5.12-4
Expected Percent of Wildlife Habitat by Land Use Intensity at Buildout

Habitat Type	Land Use Intensity	Alt. #1 (No Project)	Alts. #2 (Roadway Constrained 6-Lane "Plus")	Alt. #3 (Environmentally Constrained)	Alt. #4 (1996 General Plan)
Agriculture	High	**11**	**10**	**9**	**11**
	Medium	**83**	**67**	**85**	**83**
	Low	6	23	6	6
Alpine Dwarf-Shrub	High	14	1	1	14
	Medium	0	6	6	0
	Low	86	93	93	86
Annual Grassland	High	**37**	**28**	**26**	**37**
	Medium	**52**	**26**	**46**	**52**
	Low	11	46	28	11
Aspen	High	2	3	3	2
	Medium	0	0	0	0
	Low	98	97	97	98
Barren	High	4	4	3	4
	Medium	1	1	2	1

Table 5.12-4
Expected Percent of Wildlife Habitat by Land Use Intensity at Buildout

Habitat Type	Land Use Intensity	Alt. #1 (No Project)	Alts. #2 (Roadway Constrained 6-Lane "Plus")	Alt. #3 (Environmentally Constrained)	Alt. #4 (1996 General Plan)
	Low	95	95	95	95
Blue Oak-Foothill Pine	High	**44**	**37**	**30**	**44**
	Medium	**33**	**23**	**34**	**33**
	Low	23	40	36	23
Blue Oak Woodland	High	**36**	**29**	**28**	**36**
	Medium	**50**	**27**	**38**	**50**
	Low	14	44	34	14
Chamise Chaparral	High	**15**	9	7	**15**
	Medium	**59**	33	26	**59**
	Low	26	58	67	26
Douglas-Fir	High	7	6	2	7
	Medium	8	7	8	8
	Low	85	87	90	85
Jeffrey Pine	High	36	35	34	36
	Medium	1	2	2	1
	Low	63	63	64	63
Lodgepole Pine	High	5	2	2	5
	Medium	0	3	3	0
	Low	95	95	95	95
Mixed Chaparral	High	**26**	18	12	**26**
	Medium	**36**	27	28	**36**
	Low	38	55	60	38
Montane Chaparral	High	3	2	2	3
	Medium	1	1	2	1
	Low	96	97	96	96
Montane Hardwood	High	**26**	**22**	**18**	**26**
	Medium	**44**	**34**	**38**	**44**
	Low	30	44	44	30
Montane Hardwood-Conifer	High	**22**	20	15	**22**
	Medium	**28**	23	26	**28**
	Low	50	57	59	50
Montane Riparian	High	**19**	**18**	**15**	**19**
	Medium	**72**	**33**	**59**	**72**

Table 5.12-4
Expected Percent of Wildlife Habitat by Land Use Intensity at Buildout

Habitat Type	Land Use Intensity	Alt. #1 (No Project)	Alts. #2 (Roadway Constrained 6-Lane "Plus")	Alt. #3 (Environmentally Constrained)	Alt. #4 (1996 General Plan)
	Low	9	49	26	9
Ponderosa Pine	High	13	11	6	13
	Medium	13	12	13	13
	Low	74	77	81	74
Red Fir	High	1	1	0	1
	Medium	1	1	1	1
	Low	98	98	99	98
Sagebrush	High	**51**	**51**	**51**	**51**
	Medium	**1**	**1**	**1**	**1**
	Low	48	48	48	48
Sierran Mixed Conifer	High	2	2	1	2
	Medium	0	1	1	0
	Low	98	97	98	98
Subalpine Conifer	High	6	0	0	6
	Medium	0	4	4	0
	Low	94	96	96	94
Urban	High	**94**	**93**	**94**	**94**
	Medium	**2**	**2**	**2**	**2**
	Low	4	5	4	4
Valley Oak Woodland	High	**46**	**35**	**35**	**46**
	Medium	**49**	**42**	**50**	**49**
	Low	5	23	15	5
Water	High	1	2	1	1
	Medium	1	1	1	1
	Low	98	97	98	98
Wet Meadow	High	10	10	10	10
	Medium	3	2	3	3
	Low	87	88	87	87
White Fir	High	0	0	0	0
	Medium	0	0	0	0
	Low	100	100	100	100

Bold numbers are used when the combination of low and medium land use intensity exceeds 50%.

Source: FRAP 2002, EDAW 2003

Most of the development pressure in El Dorado County is likely to occur in the foothills near the U.S. 50 corridor (refer to the Section 5.1, Land Use and Housing, for more specific information on development trends). Through the 2025 planning horizon, it is likely that wildlife habitat below the 2,000-foot contour line and closest to the highway corridor would be most affected. Major habitat types above the 4,000-foot contour line would generally not be significantly affected because little development is expected to occur in this region where the majority of land is under the jurisdiction of the USFS. The alternative land use maps all designate nearly this entire region as Natural Resources, which restricts all but very low-density development. With the exception of the Lake Tahoe Basin, low development pressure is anticipated in this region at the 2025 planning horizon.

The analysis prepared by Saving and Greenwood (2002) is relevant to the assessment of potential impacts on wildlife habitat described in this EIR because of its similarities with the 1996 General Plan Alternative. The authors modeled future development in western El Dorado County to assess ecological impacts of expanding urbanization. They focused their analysis on what they termed "wildlands"—large areas of contiguous habitat composed primarily of oak woodland. Saving and Greenwood calculated habitat loss and fragmentation incorporating the effects of 1996 General Plan policies that were adopted to preserve and protect habitat. An in-depth description of the methodology used for this study has been published on the CDF-FRAP website (Greenwood and Saving 1999). The following paragraphs summarize the study results.

Saving and Greenwood concluded that implementation of the 1996 General Plan would have a substantial adverse effect on wildlands and that General Plan policies only marginally mitigated habitat loss and fragmentation. The authors found that much of the impact on wildlands was associated with habitat fragmentation. The modeling results predicted that the amount of oak woodland habitat types physically lost to urban development would be only about 4% of the total, but fragmentation would convert 40% of the remaining wildlands to what they termed marginal or urban woodlands. In other words, areas that once functioned under a more natural state and presumably provided functional habitat for wildlife would be degraded, either because of proximity to urban land uses or by isolation from larger patches of contiguous natural vegetation. These impacts would presumably increase when future agricultural development, not included in the modeling, is also considered. Connectivity between northern and southern wildlands was raised as a particular concern because increased urbanization along the corridor threatens to create a separation between large areas of contiguous habitat in the northwest and southwest portions of the county.

Saving and Greenwood also concluded that subdivision occurring before the development of the General Plan limited the effectiveness of the policies to mitigate the effects of prior habitat

loss and fragmentation. The authors noted that the General Plan policies apply only when a parcel requires subdivision before development. In El Dorado County, 31% of vacant land open to development in the county (86% of parcels) was subdivided before the General Plan was adopted and is therefore not subject to most General Plan policies. These parcels currently require only ministerial review (i.e., a building permit) before construction can occur. Therefore, according to Saving and Greenwood, 1996 General Plan policies would not be effective at reducing impacts on biological resources on nearly a third of the land open to development in the county.

Another study relevant to this analysis is that of Harris and Kocher (2002), which analyzed protection afforded oak woodlands under the 1996 General Plan. These protections are the same as those included in the No Project and 1996 General Plan Alternatives Policy Document. The study was completed at the request of the University of California's IHRMP) and compared protection afforded oak woodlands in El Dorado, Placer, and Madera counties.

Harris and Kocher noted that the basis for oak woodland conservation in El Dorado County under the 1996 General Plan is oak canopy retention and open-space policies. The canopy retention standards apply to discretionary projects involving parcels with an oak woodland canopy cover of at least 10%; they require retention or replacement of the existing tree canopy on an area basis. For example, in locations with an existing canopy cover of 80% to 100%, 60% of the existing canopy must be retained or replaced. Requirements increase as canopy cover decreases (e.g., for sites with less than 20% canopy cover, 90% of the existing canopy must be retained or replaced). Retained oaks receive limited protection under the County Design and Improvement Standards Manual, which prohibits disturbance or changes within the drip-line of any oak tree during construction (Harris and Kocher 2002).

Harris and Kocher (2002) found that the 1996 General Plan policies were not effective at adequately protecting oak woodlands and that mitigation requirements in the 1996 General Plan EIR were ineffective at mitigating the loss associated with urban development. They also found that residual trees are not adequately protected. They attributed the inadequate protection for retained trees to a lack of coordination regarding conditions on development permits, lack of enforcement or monitoring, field judgment calls on grading or building sitings by building contractors, and pure accident. Also, as Saving and Greenwood (2002) noted, the canopy retention standards apply only to discretionary projects. Harris and Kocher also questioned the practice of planting to mitigate oak tree impacts. Site reviews revealed that oak trees were inappropriately planted underneath existing woodlands, in road median stripes, along property lines, and on cut-and-fill slopes. These plantings were often aimed at mitigating losses of stands or groves but seldom met that objective from an ecological

standpoint. Additionally, Harris and Kocher concluded that offsite planting, in general, is constrained by the availability of suitable planting sites.

The findings of Saving and Greenwood (2002) and Harris and Kocher (2002) underscore the difficulty of relying on 1996 General Plan policies to mitigate impacts on wildlife habitat in El Dorado County. The challenges of mitigating the adverse effects of development on wildlife habitat in the Sierra Nevada foothills were also addressed as part of the Sierra Nevada Ecosystem Project (SNEP) (UCD 1996). The SNEP study, which covered the entire Sierra Nevada ecoregion, was requested by Congress in 1992 and was completed in June 1996. This ecosystem evaluation included a scientific review of old-growth forests, key watersheds, and significant natural areas (e.g., areas with special-status species) on federal lands of the Sierra Nevada ecoregion. The overall goal of the project was to provide an accurate ecosystem assessment that would enable managers to identify, measure, and monitor key structural components, functional processes, and ranges of variability in order to manage sustainable ecosystems.

The SNEP study included an evaluation of the Nevada and El Dorado County General Plans and the EIR analyses of those General Plans. One of the objectives of this evaluation was to determine the degree to which the impacts of the General Plans would be mitigated through the CEQA process. The SNEP evaluation concluded that the planning process had failed to adequately determine the effects of land conversion on ecological systems and mitigate the effects of future land conversion for human settlement in the Sierra Nevada (UCD 1996). The evaluation also concluded that the EIRs had underestimated the scope and severity of environmental impacts associated with development.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 2.2.2.7, 7.1.2.1 and 7.1.2.2, 7.2.2.2, 7.4.1.6, 7.4.2.1, 7.4.4.3 through 7.4.4.5, and 7.4.5.1.

No Project Alternative (2025)—Impact Discussion

Under the No Project Alternative, 21,434 new housing units are forecasted to be constructed by 2025, 14,565 of which would be in existing commitments in the western county (particularly in the El Dorado Hills, Cameron Park/Shingle Springs/Rescue, and Placerville market areas) and the remaining 6,869 units dispersed to other areas of the county. Residential subdivision

would be precluded, therefore, new housing would consist primarily of single-family homes on existing parcels (and up to 4 dwelling units [du]/lot on parcels designated for multifamily land use).

Under the No Project Alternative, 50% or greater of the following west slope habitats that provide important wildlife habitat are designated for high- and medium-intensity land uses: annual grassland, blue oak-foothill pine, blue oak woodland, chamise chaparral, mixed chaparral, montane hardwood-conifer, and montane hardwood (Table 5.12-4). Impacts on these major habitat types would be considered significant because conversion for high- and medium-intensity land uses would remove and fragment a substantial amount of the existing wildlife habitat on the west slope.

When compared to the other alternatives, the No Project Alternative would result in relatively low-density development because of the prohibition on new subdivisions. The overall number of new residential units would also be relatively low. However, the degree to which impacts on wildlife habitat would be reduced because of less habitat removal by new development would not be directly related to the lower density or the decrease in the number of dwelling units. Low-density development reduces habitat quality much more than it reduces the amount of habitat, and even low-density development, such as rural ranchettes, can have a substantial impact on habitat quality (Saving and Greenwood 2002). One of the most significant impacts of low-density development and nonurban sprawl on wildlife is fragmentation of habitat patches by roads, structures, and fences. The negative consequences of habitat fragmentation are well known theoretically and have been documented in numerous studies (UCD 1996). When habitat is fragmented from a few large patches to numerous small patches, wildlife diversity is expected to decrease even if the remaining parcels support similar vegetation and the decrease in the total amount of habitat is small. For this reason, low-density development land use designations (e.g., rural land and rural residential) were combined with high-intensity land uses when assessing the overall impacts of development on biological resources.

The No Project Alternative includes two policies that provide some degree of protection for wildlife habitat: (1) discourage development on slopes over 40% (Policy 7.1.2.1); and (2) oak canopy retention guidelines based on land use designation (Policy 7.4.4.4). Although these policies would provide some protection, they would be ineffective at reducing this impact to less-than-significant, because they do not include mandatory standards and apply only to discretionary projects. The protection of habitat on slopes exceeding 40% would not be ensured because development is only discouraged, not prohibited. Only a portion of the county's oak woodland habitat would receive protection because the canopy coverage standards allow for removal and replacement. For example, in locations with an existing canopy cover of 100%, 40% of the canopy could be removed; the remaining 60% would either

be retained onsite or could be removed and replaced. The policy is not explicit on whether the replacement would be required onsite or could occur somewhere else. It also does not specify the size of the replacement trees. Parcels with less than 10% canopy cover are not subject to the canopy retention standards; therefore, many individual and small groups of oak and other native trees that provide wildlife habitat could be removed at the discretion of the property owner, regardless of their size.

Other policies in the No Project Alternative could reduce impacts on wildlife habitat but do not prevent or fully mitigate the effects. Policy 7.1.2.2 requires that discretionary projects maximize the retention of natural vegetation but does not limit the amount that can be removed. Policy 7.4.1.6 requires comprehensive habitat restoration and/or offsite-mitigation plans for impacts on habitats of special-status plants and animals, but does not include minimum ratios for replacement or restoration and does not specify a review and approval process; thus, the degree to which the impact would be reduced is unknown. Policy 7.4.2.1 states that, to the extent feasible, critical fish and wildlife habitat will be protected. This policy is ambiguous because no attempt is made to define critical habitat, and limiting the impact to "the extent feasible" does not, in reality, limit the impact. Clustering development to retain large contiguous areas in wildlands, as encouraged by Policy 7.4.4.3, may under certain circumstances be an effective way of reducing impacts on biological resources, but again, this policy is ambiguous and is not mandatory. Policy 7.4.4.5 requires retention of an oak tree corridor to retain continuity between all portions of the stand. This policy and Policy 7.4.5.1, which requires a tree survey, preservation, and replacement plan, would ensure that no more oaks than necessary are removed, but does not limit the number of individuals or acres of oak trees that could be affected.

The No Project Alternative policies address protection of various resources related to wildlife habitat including soil, water, vegetation, and open space. Generally, these policies do not ensure that direct or secondary impacts would be avoided, minimized, or mitigated. As noted by Saving and Greenwood (2002) and Harris and Kocher (2002), the policies apply only to discretionary projects. Therefore, they would not be effective at reducing impacts on major habitat types on nearly a third of the land open to development in the county. Because impacts on wildlife habitat at lower elevations would be widespread and severe, this impact is considered significant.

No Project Alternative (Buildout)—Impact Discussion

Impacts on wildlife habitat under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development expected beyond 2025. An additional 8,086 dwelling units could be constructed on legal parcels

dispersed throughout the county and substantial job growth is forecasted. By buildout, much of the existing habitat at lower elevations could be fragmented or removed by urban and agricultural development. More habitat in the central part of the county could be removed or fragmented than at 2025, because development is expected to continue to spread east up the west slope as western El Dorado County becomes increasingly urbanized. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies CO-1d, CO-2b, CO-3e and CO-3f, CO-3h, CO-6a through CO-6c and CO-11a and CO-11b, CO-12a, and Implementation Measures CO-F, CO-I, and CO-J.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

An estimated 25,839 new housing units would be built by 2025 under this alternative. As with the No Project Alternative, most of the urbanization would occur at lower elevations along the U.S. 50 corridor. The El Dorado Hills market area would grow by nearly 15,000 housing units. Other rapidly developing regions under this alternative would include Cameron Park/Shingle Springs/Rescue and Placerville, with 3,957 and 1,925 new housing units, respectively. Unlike the No Project Alternative, this alternative would allow limited subdivision with up to four units per parcel, based on the parcel's underlying land use designation. The proposed land use designation and restrictions on subdivision would result in less dispersed development than under the No Project Alternative.

Under the Roadway Constrained 6-Lane "Plus" Alternative, 50% or greater of the following west slope habitats that provide important wildlife habitat are designated for high- and medium-intensity land uses: annual grassland, blue oak-foothill pine, blue oak woodland, and montane hardwood (Table 5.12-4). Impacts on these major habitat types would be considered significant because conversion for high- and medium-intensity land uses would remove and fragment a substantial amount of the existing wildlife habitat on the west slope.

Proposed Roadway Constrained 6-Lane "Plus" Alternative policies and implementation measures in the Conservation and Open Space Element would afford protection to wildlife and major habitat types. The policies under Goals CO-1 and CO-3 focus on protecting the county's soil and water resources but would also reduce impacts on wildlife habitat. Policy CO-1d prohibits disturbance on slopes 30% or greater unless it is demonstrated that

hazards to public safety can be reduced to acceptable levels. Although Policy CO-1d does not prohibit development on slopes greater than 30%, it should effectively discourage some development that would otherwise be expected to occur, therefore providing limited protection for wildlife habitat on steep slopes. The policies under Goal CO-1 would also reduce secondary impacts. Steep slopes are often located above perennial and intermittent watercourses. Secondary impacts of development, including siltation of streams and rivers as well as erosion, frequently result from grading on steep slopes. These secondary impacts can affect wildlife habitat, including important riparian and aquatic habitat. Reducing development on steep slopes would provide some protection for these resources. The policies under Goal CO-3 direct the County to protect wetland and riparian habitats. Policies CO-3e and CO-3f would require mitigation for impacts on these habitats. Policy CO-3h directs the County to consider the acquisition and protection of wetland and riparian habitats.

Goal CO-6 is to conserve important habitat in sufficient amount and configuration to ensure its ecological function. The policies under Goal CO-6 provide a framework for identifying and protecting important habitat in the county. Important habitat is defined as habitats that support important flora and fauna, including deer winter, summer, and fawning ranges and migration routes; stream, river, and lakeshore habitat; fish spawning areas; seeps, springs, and wetlands; oak woodlands; large expanses of native vegetation; and other unique plant, fish, and wildlife habitats. Policy CO-6a states that the County shall strive to protect important habitat. Policy CO-6b states that the County shall require applications for discretionary projects resulting in ground disturbance to include a biological resources study report, completed by a qualified biologist, for the project site. The evaluation shall determine the presence or absence of important habitat resources and shall address the potential for the project to adversely affect such resources. The report shall include measures to avoid, minimize, and mitigate project effects on such resources. Policy CO-6c directs the County to strive to protect and maintain its oak woodland resources.

Policy CO-12a addresses retention of native vegetation. Under this policy, development outside an approved building envelope on previously undisturbed sites shall retain existing, native vegetation to the greatest extent feasible. Because this policy only requires preserving native vegetation if feasible, it is not expected to provide much guaranteed protection for wildlife habitat but it could reduce the overall amount of habitat loss and fragmentation. The effectiveness of the policy would be largely dependent upon the level of enforcement by the County.

Goal CO-11 addresses protection of open space. Policy CO-11a requires that the County provide for Open Space lands through various mechanisms, including the designation of land as Open Space, Rural Lands, and Natural Resources. Policy CO-11b requires that Open

Space, Natural Resources, and Rural land use designations on the General Plan Land Use Map be maintained in support of identification of natural-resource areas required for the conservation of important habitat resources, including habitat for special-status species; protection of streams, lakes, ponds, springs, wetlands, and adjacent riparian habitat; and protection of large and contiguous native habitats (including river canyons). Impacts on wildlife habitat can be reduced by applying less intensive land use designations to habitats that are important for plant and animal life, but this policy lacks sufficient specificity to ensure that impacts would be lessened, because the designations do not restrict timber harvesting, mining, or agricultural conversion.

The implementation measures in the Conservation and Open Space Element for the proposed Roadway Constrained 6-Lane "Plus" Alternative would provide additional protection for wildlife habitat. Measure CO-F directs the County to complete an important habitat inventory using methods developed with the assistance of the Plan and Wildlife Technical Advisory Committee, CDFG, and USFWS. Measure CO-I directs the County to develop an integrated natural resources management plan. The management plan would address a number of issues related to protection of wildlife habitat. Specific elements of the management plan would include:

< coordination among, local, state, and federal agencies having jurisdiction over natural resources within the county;

< public involvement in natural resource management planning and implementation;

< conservation and restoration of large and contiguous native habitats;

< thresholds of significance for the loss of various habitats and/or resources;

< connectivity of large and contiguous native plant communities, native habitats, and other important habitat features;

< permanent protection of important habitat features through means such as use of Open Space and Natural Resource land use designations or zoning, clustering, large lot design, setbacks, or other appropriate techniques;

< incentive programs;

< monitoring of the plan's goals and objectives; and

< adaptive management.

The integrated natural resources management plan would be developed within 5 years of General Plan adoption.

Measure CO-J in the implementation plan for the Conservation and Open Space Element directs the County to adopt an oak woodland management plan that includes the following:

< canopy protection standards;

< thresholds of significance for the loss of oak woodlands;

< requirements for tree surveys and mitigation plans for discretionary projects;

< replanting and replacement standards; and

< heritage/landmark tree protection standards.

The oak woodland management plan, which would be developed within 5 years of General Plan adoption, would reduce the loss of both oak woodland, through the application of canopy protection standards, and individual oak trees, through the heritage/landmark protection standards. Replanting and replacement standards would also offset impacts, but to a lesser degree because replacing mature large oaks with smaller trees generally does not fully mitigate the impact. The success of replanting and replacing oaks would not be measureable unless the oak woodland management plan included a long-term monitoring element.

The policies and implementation measures in the Conservation and Open Space Element for the Roadway Constrained 6-Lane "Plus" Alternative would provide limited protection for wildlife habitat. The policies under Goals CO-1 and CO-3 would protect wildlife habitat on steep slopes and along streams and other surface water features, but the policies are not specifically intended to protect important wildlife habitat. The policies under Goal CO-6 require mitigation for discretionary development projects. Therefore, impacts on biological resources addressed by the policies under Goal CO-6 should be reduced. However, the policies do not limit development, include replacement of habitat ratios, or require that impacts be reduced to less-than-significant levels. The policy under Goal CO-11 would reduce impacts on wildlife habitat by directing the County to provide for open space and to maintain the Open Space and Natural Resources land use designation in support of the protection of large and contiguous native habitats, along with several other low-intensity land uses. However, the policies do not describe how such support would result in lower impacts. Furthermore, land designated as Open Space and Natural Resources is considered compatible with timber harvesting and agriculture, and does not preclude residential development. Policy CO-2b specifically identifies Open Space and Natural Resources designated land as compatible with mining, in areas covered by the Mineral Resource overlay (Policy CO-2b). Timber harvest, agriculture, and mining are generally not considered compatible with protection of

wildlife habitat, and these activities can all have long-lasting adverse effects on wildlife populations.

As with policies in the Conservation and Open Space Element, much of the focus of the measures in the implementation program is on identification of important biological resources and reduction of impacts on those resources. Compensating for those impacts by acquiring and protecting important habitat is addressed only indirectly and the measures would not require the County to fund, or otherwise attempt to achieve specific goals related to protection of wildlife habitat. Given the amount of habitat that is expected to be removed and fragmented by 2025, a substantial amount of compensatory mitigation (e.g., habitat purchased by the County to be preserved in perpetuity) would be needed in addition to avoidance and minimization measures to reduce this impact to a less-than-significant threshold.

The proposed Roadway Constrained 6-Lane "Plus" Alternative would result in significant impacts on wildlife and major habitat types including annual grassland, blue oak-foothill pine, and blue oak woodland because conversion for high- and medium-intensity land uses would remove a substantial amount of the county's existing wildlife habitat located west of the Eldorado National Forest. Many of the policies and implementation measures in the Conservation and Open Space Element are intended to reduce impacts on wildlife habitat, and if implemented and enforced, they would be a strong step in that direction. The definition of important habitat, which includes oak woodland, large expanses of native vegetation, and unique wildlife habitat, is broad enough that most major habitat types on the west slope could receive some level of protection. However, the policies and implementation measures would not fully mitigate the direct and indirect impacts on wildlife habitat on the west slope of the County.

The degree that impacts could be mitigated is difficult to predict because of the ambiguous wording of the relevant policies. Several of the policies do not clearly identify what type of projects that would apply to. Policies that apply to both ministerial and discretionary projects would be most effective at reducing impacts. Policies that only apply to discretionary projects would not be effective at reducing impacts on wildlife habitat on nearly a third of the land open to development in the county. Of the relevant policies identified for the Roadway Constrained 6-Lane "Plus" Alternative, only CO-3f and CO-6b clearly identify the type of projects that would be applicable. Policy CO-3f, which would require compensation for wetlands, applies to discretionary and capital improvement projects. Policy CO-6b mandates biological resources studies for discretionary projects that result in ground disturbance. None of the policies clearly state that they are applicable to both ministerial and discretionary projects. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Impacts on wildlife habitat under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development expected beyond 2025. An additional 15,813 dwelling units are projected to be constructed after 2025 on legal parcels (split up to four times) throughout the county. As at 2025, it is assumed that wildlife habitat at lower elevations along the corridor would be most affected by the development at buildout. It is also assumed that, when compared to the 2025 planning horizon, more habitat in the central region of the county would be removed or fragmented than at 2025, as development is likely to continue to spread east up the west slope over time. This impact is considered significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

The relevant policies that are applicable to the Environmentally Constrained Alternative are Policies CO-1d and CO-1e, CO-2b, CO-3b, and CO-3c, CO-3e, CO-3f, CO-3h and CO-6a through CO-6d, CO-11a, CO-11b, and CO-12a, and Implementation Measures CO-F, CO-I, CO-J, and CO-K.

Environmentally Constrained Alternative (2025)—Impact Discussion

A total of 32,491 new housing units are forecasted to be built by 2025 under this alternative. As with the other equal-weight alternatives, most of the urbanization would occur at lower elevations along the U.S. 50 corridor. Development would be concentrated in the El Dorado Hills and Cameron Park/Shingle Springs/Rescue, Diamond Springs, and Placerville market areas. Although under this alternative, an additional 6,000 homes would be built by 2025 than under the Roadway Constrained 6-Lane "Plus" Alternative, development would be focused in areas where it already exists. As a result, less urban sprawl and habitat fragmentation are anticipated under the Environmentally Constrained Alternative.

Under the Environmentally Constrained Alternative, 50% or greater of the following west-slope habitats that provide important wildlife habitat are designated for high- and medium-intensity land uses: annual grassland, blue oak-foothill pine, blue oak woodland, and montane hardwood (Table 5.12-4). Impacts on these major habitat types would be considered significant because conversion for high- and medium-intensity land uses would remove a substantial amount of the wildlife habitat on the west slope.

Although impacts on wildlife habitat would be significant under this alternative, they would be lower than those anticipated to result from the other three equal-weight alternatives. Components of this alternative that would contribute to reduced impacts include policies that are more protective of existing biological resources; a land use plan that has less land designated for high- and medium-intensity uses; and an Important Biological Corridor (-IBC) land use overlay that would be used to define areas that deserve additional protection through special planning consideration and associated land use applications.

Policy CO-6d for this alternative directs the County to protect core areas important for wildlife forage, cover, and migration, and areas of relatively intact native vegetation (generally west of the Eldorado National Forest), by applying the -IBC overlay. This overlay designation was developed specifically to protect biological resources in the foothill region where they are most threatened by urban development. The -IBC overlay designation would identify core areas important for wildlife forage, cover, and migration, and areas of relatively intact native vegetation in more urbanized areas of the County. The intent of this overlay designation is to provide continuous corridors of vegetation and to provide connectivity between areas of more extensive natural vegetation or greater environmental protection (e.g., to/from areas having Natural Resources, Open Space, and/or Agricultural base land use designations). The -IBC designation covers a total of approximately 70,210 acres, including approximately 11,600 acres of annual grassland, 7,450 acres of blue oak woodland, and 900 acres of blue oak-foothill pine habitat. These are the three habitat types that would be most affected by implementation of this alternative.

Implementation Measure CO-K in the Conservation and Open Space Element states that lands located under the -IBC overlay could be subject to the following provisions:

< increased minimum parcel size;

< higher canopy-retention standards and/or different mitigation standards/thresholds for oak woodlands;

< lower thresholds for grading permits;

< higher wetland/riparian retention standards and/or more stringent mitigation requirements for wetland/riparian habitat loss;

< increased riparian and wetland setbacks;

< greater protection for rare plants (e.g., no disturbance at all or disturbance only as recommended by USFWS/CDFG);

< standards for retention of contiguous areas/large expanses of other (non-oak and nonsensitive) plant communities;

< approval of discretionary building permits or some other "site review" to ensure that canopy is retained;

< more stringent standards for lot coverage, floor-area ratio (FAR), and building height; and

< no hindrances to wildlife movement (e.g., no fences that would restrict wildlife movement).

Implementation of standards for the -IBC overlay could substantially reduce impacts, but until the standards are developed, the degree to which the corridor would help minimize and avoid impacts is largely unknown. Much of the overlay area is within, and surrounded by, areas designated for high-and medium-intensity land uses. Therefore, it is uncertain how much of the biological diversity and relatively unfragmented habitat currently found within the overlay area would be protected. However, if implementation is successful, the -IBC overlay would help to protect some of El Dorado County's most important and threatened habitats.

The Environmentally Constrained Alternative includes a number of policies that would reduce impacts on major habitat types. Policy CO-1e prohibits disturbance on slopes 30% or greater in areas having the -IBC overlay designation except under certain circumstances, such as when reasonable use of the property would otherwise be denied. Like Policy CO-1d, which is the same for the Roadway Constrained 6-Lane "Plus" and Environmentally Constrained alternatives, this policy would not prohibit development on steep slopes. However, it would provide greater protection than would the policies for the other alternatives for the slopes within the -IBC overlay. Like Policy CO-1d, Policy CO-1e would also reduce secondary impacts on wildlife habitat.

The Environmentally Constrained Alternative would provide a higher level of habitat protection than the Roadway Constrained 6-Lane "Plus" Alternative partly because the wording of the policies under Goals CO-6 and CO-11 differs slightly. Under Policy CO-6b for the Environmentally Constrained Alternative, all applications for discretionary projects would need to include an independent biological resources study report. More importantly in terms of habitat protection, Policy CO-6b is more stringent under the Environmentally Constrained Alternative than under the Roadway Constrained 6-Lane "Plus" Alternative because it requires no net loss in the acreage of important habitat affected. Policy CO-11a under this alternative differs from the Roadway Constrained 6-Lane "Plus" Alternative by designating agricultural land for low-intensity land uses. Limiting land uses on land designated as agricultural would

not result in direct protection of natural habitat, but prohibiting the conversion of agricultural land to high-intensity land uses would reduce impacts on wildlife associated with habitat fragmentation.

The policies and implementation measures included in the Open Space and Conservation Element for the Environmentally Constrained Alternative would provide greater protection for wildlife habitat than would the measures the other three equal-weight alternatives. In addition, the land use plan and policies for this alternative would be more effective than those for the other alternatives at limiting urban sprawl, which would result in less wildlife habitat being adversely affected. Assuming that the County successfully develops and enforces the measures in the implementation program related to habitat protection, impacts could be reduced further through mitigation. However, the degree to which the implementation measures and policies would offset impacts on wildlife habitat is difficult to predict. In general, the policies serve more to guide the County in minimizing impacts when feasible methods exist than to ensure protection. Mitigation to ensure no net loss of important habitat would be developed, but there are no current assurances that implementation of such mitigation would be required by the County. As under the other equal-weight alternatives, a substantial amount of compensatory mitigation (e.g., habitat purchased by the County to be preserved in perpetuity) would be needed in addition to avoidance and minimization measures to reduce this impact below the significance threshold. This impact is considered significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Impacts on wildlife habitat under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development expected beyond 2025. As at 2025, it is expected that wildlife habitat types at lower elevations along the corridor would be most affected by the development at buildout. It is also expected that more habitat in the central region of the county would be removed or fragmented than at 2025, as development is likely to continue to spread east up the west slope over time. At buildout more than 55,000 new homes are projected to be built, an increase of 22,800 homes over 2025 projections, with development confined primarily to the western third of the county. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

It is forecasted that 32,491 new housing units would be built by 2025 under this alternative. As with the other equal-weight alternatives, most of the urbanization would occur at lower elevations along the U.S. 50 corridor. Growth would be less restricted and more dispersed development would be expected under this alternative than under the Environmentally Constrained Alternative because community regions and rural centers are larger under this alternative. Less dispersed development would be expected than under the No Project and Roadway Constrained 6-Lane "Plus" alternatives because additional subdivision would be allowed, which would encourage more compact development patterns.

Under the 1996 General Plan Alternative, 50% or greater of the following west slope habitats that provide important wildlife habitat are designated for high- and medium-intensity land uses: annual grassland, blue oak-foothill pine, blue oak woodland, chamise chaparral, mixed chaparral, montane hardwood-conifer, and montane hardwood (Table 5.12-4). Impacts on these major habitat types would be considered significant because conversion to high- and medium-intensity land uses would remove and fragment a substantial amount of the existing wildlife habitat on the west slope.

Although the land use plans are the same for the No Project and 1996 alternatives, impacts on wildlife habitat would be more severe under 1996 General Plan Alternative. Under the 1996 Alternative, substantially more development would occur, but development would be less dispersed. It is not clear if more or less habitat fragmentation would result from the 1996 General Plan Alternative because the effects of fragmentation can be difficult to quantify. It is clear that more wildlife habitat would be removed in areas designated for high- and medium-intensity land uses. The adverse affects of habitat removal would outweigh any potential benefits of the 1996 General Plan Alternative's less dispersed land use plan.

Similar to No Project Alternative, the 1996 General Plan Alternative policies address protection of various resources related to wildlife habitat including soil, water, vegetation, and open space. Generally, these policies do not ensure that direct or secondary impacts would be avoided, minimized, or mitigated. The policies apply only to discretionary projects; therefore, they would not be effective at reducing impacts on major habitat types on nearly a third of the land open to development in the county.

The land use designations under the 1996 General Plan Alternative would put more major habitats that serve as important wildlife habitat at risk of removal and fragmentation than the designations for the Roadway Constrained 6-Lane "Plus" and Environmentally Constrained alternatives. The number of habitats that would be substantially affected under this alternative

(i.e., seven) is substantially higher than the number of habitats affected under the Roadway Constrained 6-Lane "Plus" and Environmentally Constrained alternatives (i.e., four for each alternative). This alternative would also result in greater impacts on major habitats than the No Project Alternative because there would be substantially more development within areas zoned for residential development. The Conservation and Open Space policies for this alternative would reduce some direct and secondary impacts on wildlife habitat, but not to a less-than-significant level. This impact is considered significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

Impacts on wildlife habitat under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development expected beyond 2025. At buildout 78,692 new housing units are projected to be built, 46,402 more than 2025 projections. Agricultural development is also expected to continue to expand beyond 2025. As at 2025, it is assumed that wildlife habitat at lower elevations along the corridor would be most affected by the development at buildout. It is also expected that more habitat in the central region of the county would be removed or fragmented than at 2025, as development is likely to continue to spread east up the west slope as western El Dorado County becomes increasingly urbanized. This impact is considered significant.

Mitigation Measure 5.12-1—No Project Alternative

The County shall implement all of the following measures:

- Mitigation Measure 5.12-1(a): Implement Mitigation Measure 5.9-4(b) of the No Project Alternative
- Mitigation Measure 5.12-1(b): Minimize Erosion and Maximize Retention of Natural Vegetation
- Mitigation Measure 5.12-1(c): Implement Mitigation Measure 5.9-6(a) for the No Project Alternative
- Mitigation Measure 5.12-1(d): Develop and Implement an Integrated Natural Resources Management Plan
- Mitigation Measure 5.12-1(e): Adopt a No-Net-Loss Policy and Mitigation Program for Important Habitat
- Mitigation Measure 5.12-1(f): Require Mitigation for Loss of Woodland Habitat

< Mitigation Measure 5.12-1(g): Develop and Implement an Oak Tree Preservation Ordinance

These measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because the extent of fragmentation and habitat loss would be so severe that the proposed avoidance and compensatory mitigation could not fully mitigate the impact.

Mitigation Measure 5.12-1(a): Implement Mitigation Measure 5.9-4(b) of the No Project Alternative

The County shall implement Mitigation Measure 5.9-4(b) described in Section 5.9, Geology, Soils, and Mineral Resources. This mitigation measure would reduce impacts on wildlife habitat by protecting habitat on slopes 25% or greater.

Mitigation Measure 5.12-1(b): Minimize Erosion and Maximize Retention of Natural Vegetation

The County shall modify Policy 7.1.2.2 as follows to minimize soil erosion and maximize retention of natural vegetation.

> **Revised Policy 7.1.2.2:** Discretionary and ministerial projects that require earthwork and grading, including cut and fill for roads, shall be required to minimize erosion and sedimentation, conform to natural contours, maintain natural drainage patterns, minimize impervious surfaces, and maximize the retention of natural vegetation. Specific standards for minimizing erosion and sedimentation shall be incorporated into the Zoning Ordinance.

Mitigation Measure 5.12-1(b) would reduce impacts on wildlife habitat by requiring all projects to maximize the retention of natural vegetation.

Mitigation Measure 5.12-1(c): Implement Mitigation Measure 5.9-6(a) for the No Project Alternative

The County shall implement Mitigation Measure 5.9-6(a) for the No Project Alternative, described in Section 5.9, Geology, Soils, and Mineral Resources, to prohibit surface mining on land designated as Open Space.

Adoption of this mitigation measure would require modification of the land use map to ensure that the -MR overlay and OS designations conform with this policy. This mitigation measure

would prohibit mining on land designated as open space. This change would protect additional wildlife habitat and would clarify the intent of the Open Space designation.

Mitigation Measure 5.12-1(d): <u>Develop and Implement an Integrated Natural Resources Management Plan</u>

Many of the significant impacts on biological resources in the county are expected to arise from loss of habitat. Even when habitat protection is included as part of a particular project, those preservation efforts may have limited benefit to existing biological resources if the protected habitat is not connected in some way to habitat elsewhere in the county. The following policy would allow the County to develop an integrated approach to planning for habitat protection. By developing a countywide inventory of important habitats and an overall strategy for protecting those habitats, the County can ensure that its most sensitive and threatened biological resources are adequately protected in conjunction with continued development under the General Plan.

The County shall add the following policy to the Conservation Element of the General Plan:

> **New Policy 7.4.2.8:** Develop and implement an Integrated Natural Resources Management Plan (INRMP) that identifies important habitat in the County and establishes a program for effective habitat preservation and management. The INRMP shall include the following components:
>
> A. Habitat Inventory. This part of the INRMP shall inventory and map the following important habitats in El Dorado County:
>
> 1. Habitats that support special-status species;
> 2. Aquatic environments including streams, rivers, and lakes;
> 3. Wetland and riparian habitat;
> 4. Important habitat for migratory deer herds; and
> 5. Large expanses of native vegetation.
>
> The County should update the inventory every 3 years to identify the amount of important habitat protected, by habitat type, through County programs and the amount of important habitat removed because of new development during that period. The inventory and mapping effort shall be developed with the assistance of the Plant and Wildlife Technical Advisory Committee, CDFG, and

USFWS. The inventory shall be maintained and updated by the County Planning Department and shall be publicly accessible.

B. Habitat Protection Strategy. This component shall describe a strategy for protecting important habitats based on coordinated land acquisitions (see item D below) and management of acquired land. The goal of the strategy shall be to conserve and restore contiguous blocks of important habitat to offset the effects of increased habitat loss and fragmentation elsewhere in the county. The Habitat Protection Strategy should be updated at least once every 5 years based on the results of the habitat monitoring program (item F below).

C. Mitigation Assistance. This part of the INRMP shall establish a program to facilitate mitigation of impacts on biological resources resulting from projects approved by the County that are unable to avoid impacts on important habitats. The program may include development of mitigation banks, maintenance of lists of potential mitigation options, and incentives for developers and landowner participation in the habitat acquisition and management components of the INRMP.

D. Habitat Acquisition. Based on the Habitat Protection Strategy and in coordination with the Mitigation Assistance program, the INRMP shall include a program for identifying habitat acquisition opportunities involving willing sellers. Acquisition may be by state or federal land management agencies, private land trusts or mitigation banks, the County, or other public or private organizations. Lands may be acquired in fee or protected through acquisition of a conservation easement designed to protect the core habitat values of the land while allowing other uses by the fee owner. The program should identify opportunities for partnerships between the County and other organizations for habitat acquisition and management. In evaluating proposed acquisitions, consideration will be given to site-specific features (e.g., condition and threats to habitat, presence of special-status species), transaction-related features (e.g., level of protection gained, time frame for purchase completion, relative costs), and regional considerations (e.g., connectivity with adjacent protected lands and important habitat, ability to achieve multiple agency and community benefits). Parcels that include important habitat and are located generally to the west of the Eldorado National Forest should be given priority for acquisition. Priority will also be given to parcels that would preserve natural wildlife movement corridors such as crossings under major roadways (e.g., U.S. 50 and across canyons). All land acquired shall be added to the Ecological Preserve overlay area.

E. Habitat Management. Each property or easement acquired through the INRMP should be evaluated to determine whether the biological resources would benefit from restoration or management actions. Examples of the many types of restoration or management actions that could be undertaken to improve current habitat conditions include: removal of non-native plant species, planting native species, repair and rehabilitation of severely grazed riparian and upland habitats, removal of culverts and other structures that impede movement by native fishes, construction of roadway under- and overcrossing that would facilitate movement by terrestrial wildlife, and installation of erosion control measures on land adjacent to sensitive wetland and riparian habitat.

F. Monitoring. The INRMP shall include a habitat monitoring program that covers all areas under the Ecological Preserve overlay together with all lands acquired as part of the INRMP. Monitoring results shall be incorporated into future County planning efforts so as to more effectively conserve and restore important habitats. The results of all special-status species monitoring shall be reported to the CNDDB. Monitoring results shall be compiled into an annual report to be presented to the Board of Supervisors.

G. Public Participation. The INRMP shall be developed with and include provisions for public participation and informal consultation with local, state, and federal agencies having jurisdiction over natural resources within the county.

H. Funding. The County shall develop a conservation fund to ensure adequate funding of the INRMP, including habitat maintenance and restoration. Funding may be provided from grants, mitigation fees, and the County general fund. The INRMP annual report described under item F above shall include information on current funding levels and shall project anticipated funding needs and anticipated and potential funding sources for the following 5 years.

Mitigation Measure 5.12-1(e): <u>Adopt a No-Net-Loss Policy and Mitigation Program for Important Habitat</u>

Development projects can have a significant effect on important habitat by directly converting habitat to other uses or by fragmenting existing blocks of habitat. While the existing policies in the No Project Alternative require consideration of these effects, the policies do not provide clear performance standards for evaluating impacts on important habitat or for evaluating proposed mitigation programs. In addition, they do not ensure that impacts on important habitat will be fully mitigated. The following policy and implementation program include

some elements of the Environmentally Constrained Alternative and would address these issues.

The County shall replace Policy 7.4.1.6 with the following:

> **New Policy 7.4.1.6:** All development projects involving discretionary review shall be designed to avoid disturbance or fragmentation of important habitats to the extent reasonably feasible. Where avoidance is not possible, the development shall be required to fully mitigate the effects of important habitat loss and fragmentation. Mitigation shall include providing sufficient funding to the County's conservation fund to acquire and protect important habitat at a minimum 2:1 ratio. The costs associated with acquisition, restoration, and management of the habitat protected shall be included in the mitigation fee. For larger development projects (i.e., those that exceed a total of 10 acres), in addition to contributing to the conservation fund at a minimum 2:1 ratio, onsite preservation and/or restoration of important habitat shall be required at a 1:1 ratio. Impacts on important habitat and mitigation requirements shall be addressed in a Biological Resources Study and an Important Habitat Mitigation Program (described below).
>
> A. Biological Resources Study. The County shall adopt biological resource assessment standards that apply to all discretionary projects that would result in disturbance of soil and native vegetation in areas that include important habitat as defined in the INRMP. The assessment of the project site must be in the form of an independent Biological Resources Study, and must be completed by a qualified biologist. The evaluation shall quantify the amount of important habitat, by habitat type, as defined in the General Plan and delineated on maps included in the INRMP. The Biological Resources Study shall also address the potential for the project to adversely affect important habitat through conversion or fragmentation. This requirement shall not apply to projects that are on lands that either (1) have already been the subject of a study and for which all mitigation requirements are being implemented or (2) have been evaluated by the County and found to not possess any important habitat resources.
>
> B. Important Habitat Mitigation Program. The Biological Resource Study shall include an Important Habitat Mitigation Program that identifies options that would avoid, minimize, or compensate for impacts on important habitats in compliance with the standards of the INRMP and the General Plan. All mitigation programs shall include a monitoring and reporting component

requiring reports to the County not less than once each year for a period of not less than 10 years. The report will include a description of the lands included in the mitigation program (including location and size), a summary of the evaluation criteria established at the time the mitigation program was approved, an evaluation of the mitigation program based on those criteria, and recommendations for action during the following year. The County shall adopt standards for evaluating mitigation programs proposed as part of the Biological Resources Study described above. The standards shall ensure that the mitigation reduces direct and cumulative impacts of proposed development on important habitats to less than significant levels in accordance with CEQA thresholds.

Mitigation Measure 5.12-1(f): <u>Require Mitigation for Loss of Woodland Habitat</u>

Oak and hardwood woodland would be among the habitat types most affected by the development in the county. Woodlands provide valuable habitat for numerous wildlife species, and even small, fragmented patches of woodland can sustain native wildlife populations. To protect existing woodlands, compensate for the loss of woodlands as a result of future development, and, provide greater flexibility to mitigate impacts, Policy 7.4.4.4 shall be replaced. The new policy is specifically intended to protect and mitigate impacts on woodland habitat that does not meet the definition of important habitat under Mitigation Measure 5.12-1(d). Generally, this would include smaller project sites with isolated patches of woodland. This measure would not be applicable to projects that must also meet the requirements of Mitigation Measure 5.12-1(d).

The County shall replace Policy 7.4.4.4 as follows:

> **New Policy 7.4.4.4:** For all new development projects that would result in soil disturbance on parcels that have at least 10% total canopy cover by woodlands habitats as defined in this General Plan and determined from base line aerial photography or by site survey performed by a qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) the project applicant shall adhere to the tree canopy retention and replacement standards described below; or (2) the project applicant shall contribute to the County's INRMP conservation fund described in Mitigation Measure 5.12-1(d).

Option A

The County shall apply the following tree canopy retention standards:

Percent Existing Canopy Cover	Canopy Cover to be Retained
80-100	60% of existing canopy
60-79	70% of existing canopy
40-59	80% of existing canopy
20-39	85% of existing canopy
10-19	90% of existing canopy

Under Option A, the project applicant shall also replace woodland habitat removed at a 1:1 ratio. Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Plan as described in Mitigation Measure 5.12-1(d). Woodland replacement shall be based on a formula, developed by the County, that accounts for the number of trees and acreage affected.

Option B

The project applicant shall provide sufficient funding to the County's INRMP conservation fund, described in Mitigation Measure 5.12-1(d), to fully compensate for the impact to woodland habitat. To compensate for fragmentation and as well as habitat loss, the replacement mitigation ratio shall be 2:1 and based on the total woodland acreage onsite (not just the area affected). The costs associated with acquisition, restoration, and management of the habitat protected shall be included in the mitigation fee. Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Plan as described in Mitigation Measure 5.12-1(d).

Mitigation Measure 5.12-1(g): Develop and Implement an Oak Tree Preservation Ordinance

Mitigation Measures 5.12-1(d) and 5.12-1(e) will provide protection for large contiguous patches of oak woodland and other native habitats. Mitigation Measure 5.12-1(f) will provide protection for smaller stands or groves of oak trees with at least 10% canopy cover. To protect individual oak trees and give oak woodlands greater protection, the County shall develop and implement an Oak Tree Preservation Ordinance.

The County shall replace Policy 7.4.5.2 with the following:

New Policy 7.4.5.2: It shall be the policy of the County to preserve native oaks wherever feasible, through the review of all proposed development activities where such trees are present on either public or private property, while at the same time recognizing individual rights to develop private property in a reasonable manner. To ensure that oak tree loss is reduced to reasonable acceptable levels, the County shall develop and implement an Oak Tree Preservation Ordinance that includes the following components:

A. Oak Tree Removal Permit Process. Except under special exemptions, a tree removal permit shall be required by the County for removal of any native oak tree with a single main trunk of at least 6-inch diameter at breast height (dbh), or a multiple trunk with an aggregate of at least 10-inch dbh. Special exemptions when a tree removal permit is not needed shall include tree removal on all single-family residential lots that cannot be further subdivided when written approval has been received from the County Planning Department. In passing judgment upon tree removal permit applications, the County may impose such reasonable conditions of approval as are necessary to protect the health of existing oak trees, the public and the surrounding property, or sensitive habitats. The County Planning Department may condition any removal of native oaks upon the replacement of trees in kind. The replacement requirement shall be calculated based upon an inch-for-inch replacement of removed oaks and shall consist of a minimum 15-gallon tree. The total of replacement trees shall have a combined diameter of the tree(s) removed. Replacement trees may be planted onsite or in other areas to the satisfaction of the County Planning Department. The County may also condition any tree removal permit that would affect sensitive habitat (e.g., valley oak woodland), on preparation of a Biological Resources Study and an Important Habitat Mitigation Program as described in Mitigation Measure 5.12-1(e). If an application is denied, the County shall provide written notification, including the reasons for denial, to the applicant.

B. Tree Removal Associated with Discretionary Projects. Any person desiring to remove a native oak shall provide the County with the following as part of the project application:

< a written statement by the applicant or an arborist stating the justification for the development activity, identifying how trees in the

vicinity of the project or construction site will be protected, and stating that all construction activity will follow approved preservation methods;

- a site map plan that identifies all native oaks on the project site; and
- a report by a certified arborist that provides specific information for all native oak trees on the project site.

C. Commercial Firewood Cutting. Fuel wood production is considered commercial when a party cuts firewood for sale or profit. An oak tree removal permit shall be required for commercial firewood cutting of any native oak tree. In reviewing a permit application, the Planning Department shall consider the following:

- whether the removal of the trees would have a significant negative environmental impact;
- whether the proposed removal would not result in clear-cutting, but would result in thinning or stand improvement;
- whether replanting would be necessary to ensure adequate regeneration;
- whether the removal would create the potential for soil erosion;
- whether any other limitations or conditions should be imposed in accordance with sound tree management practices; and
- what the extent of the resulting canopy cover would be.

D. Penalties. Fines will be issued to any person, firm, or corporation that is not exempt from the ordinance who damages or destroys an oak tree without first obtaining an oak tree removal permit. Fines may be as high as three times the current market value of replacement trees, as well as the cost of replacement, and/or the cost of replacement of up to three times the number of trees required by the ordinance. If oak trees are removed without a tree removal permit, the County Planning Department may choose to deny or defer approval of any application for development of that property for a period of up to 5 years. All monies received for replacement of illegally removed or damaged trees shall be deposited in the County's INRMP conservation fund.

Mitigation Measure 5.12-1—Roadway Constrained 6-Lane "Plus" Alternative

The County shall implement all of the following measures:

- Mitigation Measure 5.12-1(a): Limit Development on Steep Slopes to Prevent Erosion
- Mitigation Measure 5.12-1(h): Remove Open Space from Mineral Resource Overlay
- Mitigation Measure 5.12-1(i): Replace Implementation Programs CO-E, CO-F, and CO-I with Mitigation Measure 5.12-1(d) for the No Project Alternative
- Mitigation Measure 5.12-1(j): Replace Policy CO-6b with Mitigation Measure 5.12-1(e) of the No Project Alternative
- Mitigation Measure 5.12-1(k): Replace Policy CO-6c with Mitigation Measure 5.12-1(f) of the No Project Alternative
- Mitigation Measure 5.12-1(l): Replace Policy CO-7a with Mitigation Measure 5.12-1(g) of the No Project Alternative

These potential mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because the extent of fragmentation and habitat loss would be so severe that the proposed avoidance and compensatory mitigation could not fully mitigate the impact.

Mitigation Measure 5.12-1(a): Implement Mitigation Measure 5.9-4(b) of the No Project Alternative

The County shall implement Mitigation Measure 5.9-4(b) of the No Project Alternative, described in Section 5.9, Geology, Soils, and Mineral Resources, to reduce impacts on wildlife habitat by protecting habitat on slopes 25% or greater.

Mitigation Measure 5.12-1(h): Remove Open Space from the Mineral Resources Overlay

The County shall revise Policy CO-2b to prohibit mining on land designated as open space as follows:

> **Revised Policy CO-2b:** Application of the Mineral Resource (-MR) overlay designation and the extraction of mineral resources shall be considered appropriate only on lands having the Natural Resource, ~~Open Space~~, Industrial, Commercial, Rural Lands, and Public Facilities designations. All other General Plan land use designations are

considered incompatible with mining. If an -MR overlay is placed on lands with an incompatible land use designation, a General Plan amendment must be processed to change the base land use designation to one compatible with the -MR overlay within a reasonable time.

Adoption of Mitigation Measure CO-2b would require modification of the land use map to ensure that the -MR overlay and OS designations conform with this policy. This mitigation measure would prohibit mining on land designated as open space. This change would protect additional wildlife habitat and would clarify the intent of the Open Space designation.

Mitigation Measure 5.12-1(i): Replace Implementation Programs CO-E, CO-F, and CO-I with Mitigation Measure 5.12-1(d) of the No Project Alternative

This alternative includes two implementation programs (CO-E and CO-F) aimed at identifying important habitat areas. These programs do not establish a framework for data collection or for habitat protection programs based on the information acquired. Accordingly, the County shall replace those implementation programs as well as Implementation Measure CO-I, which describes a program similar to the one outlined in Mitigation Measure 5.12-1(d) of the No Project Alternative, as follows:

New Policy: Please refer to Mitigation Measure 5.12-1(d) of the No Project Alternative.

Mitigation Measure 5.12-1(j): Replace Policy CO-6b with Mitigation Measure 5.12-1(e) of the No Project Alternative

This alternative also includes Policy CO-6b, which requires mitigation of impacts on biological resources for discretionary projects. This policy establishes a relatively low mitigation standard that would be insufficient to provide adequate protection of important habitats. Accordingly, the County shall replace Policy CO-6b as follows. The Biological Resources Study and Important Habitat Mitigation Program described in the new policy shall be included as an implementation program in the Conservation and Open Space Element.

New Policy CO-6b: Please refer to Mitigation Measure 5.12-1(e) of the No Project Alternative.

Mitigation Measure 5.12-1(k): <u>Replace Policy CO-6c with Mitigation Measure 5.12-1(f) of the No Project Alternative</u>

Policy CO-6c directs the County to strive to maintain its oak woodland resources but does not provide standards or specific direction for how such protection might be achieved. Mitigation Measure 5.12-1(f) of the No Project Alternative describes mitigation options that would substantially increase the level of protection afforded oak and other woodland habitats in El Dorado County.

The County shall replace Policy CO-6c as follows:

> **New Policy CO-6c:** Please refer to Mitigation Measure 5.12-1(f) of the No Project Alternative.

Mitigation Measure 5.12-1(l): <u>Replace Policy CO-7a with Mitigation Measure 5.12-1(g) of the No Project Alternative</u>

Oak trees provide important habitat value to wildlife in El Dorado County. Limited protection is afforded heritage and landmark trees but this protection is intended for historical and aesthetic reasons rather than biological. To ensure that individual oak tree and the wildlife habitat they provide are protected to the extent that it is feasible, the County shall replace Policy CO-7a as follows:

> **New Policy CO-7a:** Please refer to Mitigation Measure 5.12-1(g) of the No Project Alternative.

<u>Mitigation Measure 5.12-1—Environmentally Constrained Alternative</u>

The County shall implement all of the following measures:

- Mitigation Measure 5.12-1(m): Remove Open Space from Mineral Resource Overlay and Prohibit Surface Mining on Land Designated as Open Space
- Mitigation Measure 5.12-1(i): Replace Implementation Programs CO-E, CO-F, and CO-I with Mitigation Measure 5.12-1(d) of the No Project Alternative
- Mitigation Measure 5.12-1(j): Replace Policy CO-6b with Mitigation Measure 5.12-1(e) of the No Project Alternative

- Mitigation Measure 5.12-1(k): Replace Policy CO-6c with Mitigation Measure 5.12-1(f) of the No Project Alternative
- Mitigation Measure 5.12-1(l): Replace Policy CO-7a with Mitigation Measure 5.12-1(g) of the No Project Alternative

These mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because the extent of the habitat fragmentation and habitat loss would be so severe that the proposed avoidance and compensatory mitigation could not fully mitigate the impact.

Mitigation Measure 5.12-1(m): Remove Open Space from Mineral Resource Overlay and Prohibit Surface Mining on Land Designated as Open Space

The County shall revise Policy CO-2b as follows:

> **Revised Policy CO-2b:** Application of the Mineral Resource (-MR) overlay designation and the extraction of the mineral resources shall be considered appropriate only on lands having the Natural Resource, ~~Open Space~~, Industrial, Commercial, Rural Lands, Agricultural Lands, and Public Facilities designations. All other General Plan designations are considered incompatible ~~with~~ for surface mining. If an -MR overlay is placed on lands with an incompatible land use designation, a General Plan amendment must be processed to change the base land use designation to one compatible with the -MR overlay within a reasonable time.

Adoption of this mitigation measure would require modification of the land use map to ensure that the -MR overlay and OS designations conform with this policy. This mitigation measure would prohibit mining on land designated as open space. This change would protect additional wildlife habitat and would clarify the intent of the Open Space designation.

Mitigation Measure 5.12-1(i): Replace Implementation Programs CO-E, CO-F, and CO-I with Mitigation Measure 5.12-1(d) of the No Project Alternative

This alternative includes two implementation programs (CO-E and CO-F) aimed at identifying important habitat areas. These programs do not establish a framework for data collection or for habitat protection programs based on the information acquired. Accordingly, the County shall replace those implementation programs as well as Implementation Measure CO-I, which describes a program similar to the one outlined in Mitigation Measure 5.12-1(d) of the No Project Alternative, as follows:

New Policy: Please refer to Mitigation Measure 5.12-1(d) of the No Project Alternative.

Mitigation Measure 5.12-1(j): Replace Policy CO-6b with Mitigation Measure 5.12-1(e) of the No Project Alternative

This alternative also includes Policy CO-6b, which requires mitigation of impacts on biological resources for discretionary projects. This policy establishes a relatively low mitigation standard that would be insufficient to provide adequate protection of important habitats. Accordingly, the County shall replace Policy CO-6b as follows. The Biological Resources Study and Important Habitat Mitigation Program described in the new policy shall be included as an implementation program in the Conservation and Open Space Element.

New Policy CO-6b: Please refer to Mitigation Measure 5.12-1(e) of the No Project Alternative.

Mitigation Measure 5.12-1(k): Replace Policy CO-6c with Mitigation Measure 5.12-1(f) of the No Project Alternative

Policy CO-6c directs the County to strive to maintain its oak woodland resources but does not provide standards or specific direction for how such protection might be achieved. Mitigation Measure 5.12-1(f) of the No Project Alternative describes mitigation options that would substantially increase the level of protection afforded oak and other woodland habitats in El Dorado County.

The County shall replace Policy CO-6c as follows:

New Policy CO-6c: Please refer to Mitigation Measure 5.12-1(f) of the No Project Alternative.

Mitigation Measure 5.12-1(l): Replace Policy CO-7a with Mitigation Measure 5.12-1(g) of the No Project Alternative

Oak trees provide important habitat value to wildlife in El Dorado County. Limited protection is afforded heritage and landmark trees but this protection is intended for historical and aesthetic reasons rather than biological. To ensure that individual oak tree and the wildlife habitat they provide are protected to the extent that it is feasible, the County shall replace Policy CO-7a as follows:

New Policy CO-7a: Please refer to Mitigation Measure 5.12-1(g) of the No Project Alternative.

Mitigation Measure—1996 General Plan Alternative

Please refer to the proposed mitigation measures of the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because the extent of habitat fragmentation and habitat loss would be so severe that the proposed avoidance and compensatory mitigation could not fully mitigate the impact.

Impact **5.12-2**

Impacts on Special-Status Species. Development of and increases in urban, agricultural, and mined areas under the General Plan would lead to loss of habitat and loss of individuals of both special-status plants and animals. This impact is considered **significant** for all four equal-weight alternatives. The severity of this impact would be greatest under the 1996 General Plan Alternative, followed by the No Project, Roadway Constrained 6-Lane "Plus," and Environmentally Constrained alternatives. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-2: Impacts on Special-status Species	S_2	S_2	S_3	S_3	S_4	S_4	S_1	S_1

Mitigation	Significance After Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-2(a), Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative; and 5.12-2(b), Establish and Manage Ecological Preserves	SU_2	SU_2	—	—	—	—	SU_1	SU_1
5.12-2: Implement Mitigation Measure 5.12-1(c) for the Roadway Constrained 6-Lane "Plus" Alternative	—	—	SU_3	SU_3	SU_4	SU_4	—	—
* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.								

Impacts to special-status species were assessed by analyzing GIS layers depicting the locations of special-status species occurrences, planned land use designations, and planned land use intensity. Using FRAP CNDDB data layers, the number of occurrences recorded in areas designated for high- and medium-intensity land use designations was calculated for each alternative. The number of state and federally listed species in high- and medium-intensity land use designations was also calculated. This analysis provides a means to quantify the relative impact on special-status species habitat for each equal-weight alternative. It is not intended to be used to predict the precise number of individuals or populations affected.

Numerous occurrences of special-status species have been documented in areas designated Natural Resource and Open Space, and on USFS land. The two County land use designations provide elements of protection for special-status species, but they do not eliminate the potential for significant impacts. The Natural Resource designation is intended to protect the economic viability and potential to harvest and process timber and mineral resources, along with other related uses. Maximum impervious surface area may reach 10% of the total lot area; however, reaching the maximum is assumed to be unlikely given the 40-acre minimum lot size. Total site disturbance can occur because of timber harvesting and grazing activity and can result in direct loss of special-status species.

The Open-Space land use designation is intended to preserve lands in a natural state with only minimum disturbance allowed. Open space lands are largely in federal and/or state public ownership. Open Space land under public ownership can be managed for multiple purposes, with natural resource protection and recreational uses being predominant.

The Ecological Preserve and -IBC overlay designations are also intended to protect special-status species and other sensitive biological resources. The Ecological Preserve overlay applies to all four equal-weight alternatives and identifies lands in public or private ownership that have the potential to be established or have been established as preserves for special-status plants and/or animal species. The -IBC overlay applies only to the Environmentally Constrained Alternative. This overlay covers large areas of natural habitat that includes sensitive biological resources, including special-status species.

The Ecological Preserve overlay is intended primarily to provide additional protection for the special-status gabbro soil plants. Much of the former habitat for gabbro soil plants in western El Dorado County has already been converted to urban uses. The County, USFWS, and other state and federal agencies are currently attempting to conserve much of the remaining habitat for gabbro soil plants. Expansion of the Pine Hill Ecological Preserve is one of the goals of the USFWS recovery plan for gabbro soil plants. Implementation of the recovery plan is expected to reduce the possibility that gabbro soil plants would become extinct or extirpated from El Dorado County, but because USFWS has no specific legislative mandate to require federal and state agencies or private entities to comply with the goals of the recovery plan, some of the goals may not be reached.

Impacts on special-status plants and their habitat are expected to be most severe in the gabbro soil region outside of the protected Pine Hill Ecological Preserve and Ecological Preserve overlay, but direct and secondary impacts are also expected within designated preserve areas. There is already substantial development in the preserve area and more development is anticipated. By 2025 the preserve would likely be substantially more isolated because it is almost entirely surrounded by high- and medium-intensity land designations under all four equal-weight alternatives.

Special-status plants have also been reported from scattered locations in the central and eastern portions of the county. Many of these occurrences are located on land outside County jurisdiction. Impacts on these plants may be avoidable or mitigated to a less-than-significant level because much of the land under County jurisdiction in this region is designated for low-intensity land uses.

Special-status species would be affected by existing and projected land uses and population. Direct impacts may include loss of habitat and individuals from urban and rural development, mineral extraction, agricultural development, timber harvesting, road building, water resource development, flood control projects, stream bank protection, and streambed alteration. Urban and rural development would result in the direct removal, degradation, and fragmentation of habitat for special-status species during grading and construction. Logging and mineral extraction would affect special-status species by removing habitat; reducing cover, nesting, and foraging habitat; and disturbing soil. Grading would remove habitat associated with the development of the road and transportation system network (described in Section 5.4, Traffic and Circulation).

Agricultural expansion has the potential for far greater impacts on the extent and connectivity of habitat than residential development, as a greater area of land in larger contiguous patches is generally more greatly disturbed (Saving and Greenwood 2002). Agricultural expansion may occur throughout the rural regions on land designated Rural Residential (No Project and 1996 General Plan alternatives), within the Agricultural overlay district (No Project, Roadway Constrained 6-Lane "Plus," and 1996 General Plan alternatives), and within lands designated Agriculture in the Environmentally Constrained Alternative, which contains choice agricultural soils. The County has very limited discretion to constrain agricultural land conversion.

Water resource development includes construction of dams and surface or subsurface diversions. Water retention or diversion affects creeks, rivers, lakes, ponds, wetlands, and/or vernal pools and the special-status species that occur in these habitats by interrupting, stopping, and/or decreasing the flow of water that maintains these resources. Urban and rural land uses add to natural runoff of floodwater flow by the provision of impervious surfaces and reduction of vegetation cover to soil. Where high water flows could result in property damage or cause adverse impacts on urbanized landscapes, flood and drainage control infrastructure may be used to intercept, store, retain, and control the rate of release/discharge of surface water flow. Such improvements may require stream channelization, stream bank alterations, water storage, and directive structures. Changes in the rate of flow or direction of water, including alterations to natural channels and streambeds, may affect special-status species that inhabit aquatic and riparian habitats.

Secondary impacts of development on special-status species would include increased air pollution; water quality impacts; introduction of non-native species; increased use of habitat for special-status species by hikers and other pedestrians, off-road cyclists, and off-road vehicles users; increased mortality associated with increased vehicular use; and increased noise and lighting that reduce habitat value for nocturnal wildlife. Air pollution generally degrades wildlife habitat by changing the rate of vegetation growth and productivity and/or increasing

mortality rates of both plants and animals. At this time, there are insufficient data to attempt to quantify the effects of air pollution on special-status species in El Dorado County. Water pollution from point or nonpoint sources affects aquatic and riparian habitats by changing the rate of vegetation growth and/or altering the proportions and/or diversity of plant and animal species that are associated with aquatic and/or riparian habitats. Water pollution impacts on special-status species could include increased mortality and impacts on food availability. Non-native species may also affect special-status species. Non-native species include ornamental plants, agricultural plant species, and domestic animals. Invasive non-native plant species may replace special-status plants. Domestic animals can interfere with the breeding, nesting, and resting of special-status wildlife.

The significance determination for special-status species was based upon an evaluation of the number and sensitivity of occurrences located within high- and medium-intensity land use designations in western El Dorado County (Table 5.12-5). Proposed General Plan policies were evaluated to determine whether they would avoid, minimize, or increase impacts on special-status species.

Although impacts on special-status species are anticipated to vary by alternative, the projected population growth and associated conversion of habitat would result in this impact being potentially significant for all four equal-weight alternatives both at 2025 and at buildout. Regardless of the alternative selected, fragmented patches of natural habitat would remain in western El Dorado County at buildout. However, the extirpation of some special-status plants and animals from the county should be considered possible, if not expected, by 2025. Special-status plant and wildlife species that are currently rare and restricted to the west slope would be particularly at risk of countywide extirpation. Wildlife species that have large territories and/or are adversely affected by habitat fragmentation (e.g., bald eagle, golden eagle) would also be at risk.

Table 5.12-5
Projected Impacts on Special-Status Species
(Occurrences[1] in High- and Medium-Intensity Land Use Designations)

Common Name	Number of Occurrences within High- and Medium-Intensity Land Use Designations (West Slope Only)		
	No Project/1996 General Plan[2]	Roadway Constrained 6-Lane "Plus"	Environmentally Constrained
Bald eagle	1	1	1
Brandegee's clarkia	3	3	3
El Dorado bedstraw	7	6	6
El Dorado County mule ears	21	16	16
Layne's butterweed	31	26	25
Mountain yellow-legged frog	1	0	0
Nissenan manzanita	5	3	5
Northern goshawk	1	1	1
Northwestern pond turtle	3	3	3
Parry's horkelia	1	1	1
Pine Hill ceanothus	14	11	10
Pine Hill flannelbush	7	7	7
Pine marten	1	1	1
Pleasant Valley Mariposa lily	4	4	2
Red Hills soaproot	7	5	4
Stebbins' morning-glory	9	8	7
Valley elderberry longhorn beetle	2	1	0
Vernal pool fairy shrimp	1	1	1
Total	**119**	**98**	**93**

[1] Occurrences only include special-status plants and animal observation documented and submitted to the CNDDB.

[2] Although the No Project and 1996 General Plan alternatives have the same land use designation, development intensity would differ. Under the No Project Alternative development would be restricted to 1 DU/parcel regardless of size. Subdivision would be allowed under the 1996 General Plan Alternative.

Source: EDAW 2002, CDFG 2002

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 7.4.1.1, 7.4.1.3 through 7.4.1.6, and 7.4.2.1.

No Project Alternative (2025)—Impact Discussion

This alternative at 2025 would significantly affect special-status plants and animals. Significant impacts would be attributed mostly to losses of habitat for special-status species that result from existing and projected land uses and population. A total of 119 occurrences of special-status species have been recorded in areas designated for high- and medium-intensity land use (Table 5.12-5). This is more than the number of occurrences under both the Roadway Constrained 6-Lane "Plus" Alternative (98) and the Environmentally Constrained Alternative (93).

Although the land use plans are the same of the No Project and 1996 General Plan alternatives, development restrictions required by the Writ would result in lower density development under the No Project Alternative. Lower density development would likely leave more potential habitat for special-status species undeveloped than under the 1996 General Plan Alternative. However, total site disturbance could occur regardless of limits on residential housing development. Therefore, the land-use intensity grouping of the No Project and the 1996 General Plan alternatives are the same.

Five special-status gabbro soil plants recorded in high- and medium-intensity land use designations are federally listed as Threatened or Endangered: Stebbins' morning glory, Pine Hill ceanothus, Pine Hill flannelbush, El Dorado bedstraw, and Layne's butterweed (Exhibit 5.12-8). Occurrences of gabbro soil plants protected by ESA in western El Dorado County are concentrated in the Cameron Park/Shingle Springs/Rescue and adjacent market areas. The five units of the Pine Hill Ecological Preserve encompass and provide limited protection for many of the remaining populations of these species (Exhibit 5.12-9).

The Ecological Preserve overlay identifies lands in public or private ownership that have the potential to be established or have been established as habitat for rare or endangered plant and animal species. The 6,600-acre Ecological Preserve overlay of the No Project Alternative and associated land uses would provide additional protection for gabbro soil plants. However, the Ecological Preserve overlay for the alternative does not cover all five units of the preserve and would not entirely cover the USFWS recovery plan area. Under the No Project

Alternative, high- and medium-intensity land use designations almost completely surround the Pine Hill Ecological Preserve and cover portions of the 6,600-acre Ecological Preserve overlay area.

Three wildlife species federally listed as Threatened have been reported in portions of western El Dorado County designated for high- and medium-intensity land use: vernal pool fairy shrimp, valley elderberry longhorn beetle, and bald eagle (Exhibit 5.12-10). Such land use designations cover a portion of the area previously identified as critical habitat for the California red-legged frog (critical habitat for the frog in El Dorado County was removed by USFWS as part of a court settlement agreement in 2002). High- and medium-intensity land use designations are also located in core recovery units as described in the California red-legged frog recovery plan.

Several policies of the No Project Alternative address protection of special-status species. Policy 7.4.1.1 states that the gabbro soil plants will be protected in perpetuity through the establishment of five preserve sites and that these preserve site shall be integrated into the overall open-space plan. The County, with assistance from numerous state and federal agencies, has made considerable progress since this policy was originally adopted in 1996 (e.g., the fifth preserve was recently established). The Ecological Preserve overlay of the No Project Alternative encompasses all of the Martel Creek, Pine Hill. and Penny Lane Units and a portion of the Salmon Falls Unit. The Cameron Park Unit is not covered by the Ecological Preserve overlay. Therefore, the Cameron Park Unit and a portion of the Salmon Falls Unit could receive less protection from the County than the other three units. Under the No Project Alternative, the Ecological Preserve overlay covers almost 6,600 acres. The coverage of this overlay, in conjunction with the implementation of the gabbro soils plant recovery plan and protection afforded under ESA, would be expected to protect gabbro soil special-status plants from extinction and extirpation from El Dorado County; however, they would not eliminate the possibility of significant effects under CEQA.

Policy 7.4.1.3 limits land uses within established preserve areas to activities that are compatible with rare plant protection and requires the County to develop an educational and interpretive program on rare plants. This policy would also reduce impacts on gabbro soil plant populations, particularly secondary impacts, such as degradation of existing habitat caused by inappropriate recreational uses. Policy 7.4.1.4 requires that approved preserves be designated as Ecological Preserve on the General Plan land use map. The effectiveness of this policy would be dependent upon the degree to which land use restrictions associated with the Ecological Preserve land use designation would protect special-status species.

Policy 7.4.1.5 addresses preparation of natural community preservation/conservation strategies. In most cases, Policy 7.4.1.5 would do little to reduce the potential for significant impacts on special-status species. Under this policy, mitigation would be required only for special-status species restricted to areas where discretionary development is proposed; mitigation would not be required as long as the species was found and protected elsewhere on public land or private Natural Resources land. Furthermore, even if such plans were prepared by the County, they would not necessarily result in less-than-significant impacts under CEQA.

Policy 7.4.1.6 directs the County to, under certain circumstances, require comprehensive habitat restoration and/or offsite mitigation plans. This policy also does not require impacts to be reduced to less-than-significant levels and applies only to discretionary projects; therefore the policy would not be applicable to projects on nearly a third of the land open to ministerial development approvals in the county.

Policy 7.4.2.1 would also be mostly ineffective in mitigating impacts on special-status species. This policy requires the County to protect, to the extent feasible, special-status species by developing biological conservation plans. This policy is applicable only when federal or state plans do not provide adequate protection on lands outside County control. This policy could be effective in avoiding or delaying extirpation of a particular special-status species, but because few species have approved conservation plans, many special-status species would receive no consideration. Also, the policy does not adequately describe what would be included in a County-sponsored conservation plan or state whether it would be used to mitigate impacts considered significant under CEQA.

With the exception of plants protected by the Pine Hill Ecological Preserve and the Ecological Preserve overlay, special-status species would receive little guarantee for protection from direct and indirect impacts under the No Project Alternative. Protection would be limited because of policy language that requires mitigation and avoidance of special-status species only when feasible or when required by state or federal law. In addition, most policies apply only to projects subject to discretionary action by the County. Listed and candidate species are afforded protection under ESA and CESA, but this protection would not reduce impacts on special-status plants and wildlife below the significance threshold. Under ESA and CESA, habitat for listed animals can typically be removed by private landowners as long as it does not result in death of or injury to the animals. Listed plants receive even less protection under ESA and CESA. As a result, the habitat for a listed species could be largely or, in some cases, entirely removed, degraded, or fragmented without constituting a take under CESA and/or ESA.

In addition to significant loss of special-status species and their habitat, the No Project Alternative could potentially conflict with the goals of the recovery plans for gabbro soil plants and California red-legged frog. The Ecological Preserve overlay does not entirely cover the Pine Hill Ecological Preserve units and the policies do not address protection of gabbro soil plant populations outside of the preserve units. Protection of areas outside of the overlay area but within the Pine Hill Recovery Plan boundary (refer to Exhibit 5.12-5) is also not addressed. No policies specifically address conservation of California red-legged frog or its habitat. Therefore, the County would have limited options to assist in the recovery or limit development in core recovery areas for the California red-legged frog.

The No Project Alternative would result in loss of special-status species and their habitat. It could also conflict with recovery plans approved by USFWS. This impact is considered significant.

No Project Alternative (Buildout)—Impact Discussion

Impacts on special-status species under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is expected to continue beyond 2025, and the potential development of all legal parcels. Impacts on special-status species in the central region of the county could increase as development is expected to continue to spread east. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies CO-5a through CO-5e, CO-6b, and Implementation Measures CO-E, CO-G, and CO-I.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

This alternative at 2025 would significantly affect special-status plants and animals. Significant impacts would be attributed mostly to losses of habitat for special-status species that result from existing and projected land uses and population. A total of 98 occurrences of special-status species have been recorded in areas designated for high- and medium-intensity land use (Table 5.12-5). This is more than the number of occurrences under the Environmentally Constrained Alternative but less than under the No Project and 1996 General Plan alternatives.

As under the No Project Alternative, five federally listed plants have been recorded in areas designated for high- and medium-intensity land uses (Exhibit 5.12-11). The Ecological Preserve overlay would encompass four of the Pine Hill Preserve Ecological Units and a portion of the Salmon Falls Unit. It would also encompass many, but not all, of the special-status plant occurrences in the region (Exhibit 5.12-12). The overlay would not cover the entire plan area identified by the USFWS in the gabbro soil plants recovery plan (USFWS 2002a). High- and medium-intensity land use designations would almost completely surround the Pine Hill Ecological Preserve development of these surrounding properties would biologically isolate the units comprising the preserve.

Most portions within the preserve would be afforded the limited protection provided by the Open Space land use designation and Ecological Preserve overlay. However, in some instances, areas included within the Ecological Preserve overlay are designated for high- and medium-intensity land uses.

Three wildlife species federally listed as Threatened (i.e., vernal pool fairy shrimp, bald eagle, and valley elderberry longhorn beetle) have been reported in portions of western El Dorado County designated for high- and medium-intensity land uses (Exhibit 5.12-11). Such land uses are also designated in the area previously identified as critical habitat for the California red-legged frog. Core recovery units, described in the recovery plan for California red-legged frog, are also in areas designated for high- and medium-intensity land use.

The Conservation and Open Space Element addresses special-status species in several of its policies. Policy CO-5a directs the County to strive to protect special-status species and their habitats. Policies CO-5b through CO-5d address ecological preserves in general, and the Pine Hill Ecological Preserve specifically. Policy CO-5b directs the County to continue providing permanent protection for Pine Hill gabbro soil plants and their habitat through the management of the Pine Hill preserve, consistent with County Code Chapter 17.71 and the recovery plan for gabbro soil plants. Policy CO-5d requires that land uses within established ecological preserves and other plant or wildlife reserves be limited to activities deemed compatible by the County with the protection of the targeted resource(s); however, this policy is ambiguous about how the County would enforce such limitations. It is also not clear whether enforcement would extend to all parcels or only to those that have proposed projects requiring discretionary approval. Policy CO-5e states that for discretionary projects that propose grading or other disturbance in areas known or having the potential to support special-status species or their habitats, the project applicant shall include an independent biological resources study report. If the report concludes that the project affects the targeted species or its habitat, a comprehensive habitat restoration and/or mitigation plan must be implemented as part of the project.

Protection of special-status species and their habitat is also addressed in the implementation program of the Conservation and Open Space Element. Measure CO-E directs the County to develop a program to identify special-status plant, fish, and wildlife species and their habitat within 5 years of General Plan adoption. Measure CO-G requires the County to work cooperatively with CDFG and USFWS to implement the ecological preserve and recovery program for gabbro soils plants and to develop a long-term preserve strategy. Measure CO-G also directs the County to develop implementation measures to incorporate in County development standards for ministerial and discretionary projects. These measures may include:

- identification of compatible land uses within preserve sites, which may include passive recreation, research and scientific study, and interpretive education; and
- development of a fuels management and fire protection plan to reduce fire hazards at the interface between rare plant preserve sites and residential land uses.

The development standards outlined in Measure CO-G are ongoing and implementation would continue immediately upon General Plan adoption. The standards would be incorporated into the updated Zoning Ordinance and design standards programs. Conservation of special-status species would also be addressed by an integrated natural resources management plan (Measure CO-I).

The policies and measures in the Conservation and Open Space Element for the Roadway Constrained 6-Lane "Plus" Alternative would reduce impacts on special-status species. However, the policies do not require that impacts be reduced to less-than-significant levels for projects that would adversely affect special-status species or their habitat. Therefore, the degree to which adverse effects would ultimately be mitigated would be dependent upon future development of the implementation standards and measures, and interpretation and enforcement of those standards and measures by County staff members. Under Policy CO-6b, all discretionary projects that adversely affect special-status species would be required to implement a comprehensive habitat restoration and/or offsite mitigation plan. This policy would be effective at reducing impacts on special-status species. However, Policy CO-6b does not limit development, include replacement-of-habitat ratios, or require that impacts be reduced to less-than-significant levels. Moreover, Policy CO-6b is only applicable to discretionary projects.

The special-status gabbro soil plants that occur at the Pine Hill Preserve would be largely protected by Policies CO-5b and CO-5d, and Measure CO-G. Federally listed gabbro soil plants would also receive limited protection under ESA. This protection would not be

sufficient to reduce impacts on these plants to less than significant because the potential for loss of habitat and plants exists inside and outside of the Pine Hill the Ecological Preserve and Ecological Preserve overlay.

With the exception of the policies related to the Pine Hill preserve and gabbro soil plants, none of the policies specifically encourage the County to purchase or seek conservation easements on land that is important to special-status species and threatened by implementation of the General Plan. The intent to work cooperatively with USFWS, CDFG, and other agencies in developing and implementing protection programs is stated, but the policies do not afford California red-legged frog and other special-status wildlife species the same level of protection as that afforded the gabbro soil plants.

The policies under the Roadway Constrained 6-Lane "Plus" Alternative do not provide much more assurance than those under the No Project Alternative that special-status species would be protected; however, the implementation measures in the Open Space and Conservation Element do provide specific guidance for development of programs and standards that would facilitate the ability of the County to identify and protect special-status species. Identifying existing occurrences of special-status plants and animals, and their habitat, is essential to providing long-term protection for these species. Implementation of Measure CO-E would allow the County to identify key areas for special-status species protection and recovery. Implementation of Measure CO-G, which applies to both ministerial and discretionary projects, and Measure CO-I could allow result in additional long-term protection for special-status species. However, until these programs are developed, special-status species would receive little guarantee of protection from direct and indirect impacts under this alternative. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Impacts on special-status species under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is expected to continue beyond 2025. As at 2025, it is assumed that special-status species at lower elevations along the corridor would be most affected by the buildout scenario. It is also assumed that impacts on special-status species in the central region of the county would increase over 2025, because development is likely to continue to spread east up the west slope over time. In total, more than 41,000 new housing units are projected to be constructed by buildout. The policies identified as reducing impacts on biological resources at 2025 would also be applicable at buildout. These policies would reduce direct and secondary impacts on special-status species, but not below the significance threshold. This impact is considered significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative above.

Environmentally Constrained Alternative (2025)—Impact Discussion

This alternative at 2025 would significantly affect special-status plants and special-status animals. Significant impacts would be attributed mostly to losses of habitat for special-status species that result from existing and projected land uses and population. A total of 93 occurrences of special-status species have been recorded in areas designated for high- and medium-intensity land use (Table 5.12-5). The total number of occurrences in high- and medium-intensity land use destinations under the Environmentally Constrained Alternative is less than the other three equal-weight alternatives.

As under the No Project and Roadway Constrained 6-Lane "Plus" alternatives, five special-status plants recorded in high- and medium-intensity land use designations are gabbro soil plants that are federally listed as Threatened or Endangered (Exhibit 5.12-14). The Ecological Preserve overlay would encompass four of the Pine Hill Preserve Ecological Units and a portion of the Salmon Falls Unit. It would also encompass many, but not all, of the special-status plant occurrences in the region (Exhibit 5.12-15). The overlay would not cover the entire preserve area recommended by USFWS in the gabbro soil plants recovery plan (USFWS 2002a). The entire Salmon Falls Unit would be afforded limited protection by being designated as Open Space. The Environmentally Constrained Alternative designates more land as Ecological Preserve than the other equal-weight alternatives (i.e., more than 6,700 acres). Much of the area surrounding the Ecological Preserve is designated for high- and medium-intensity land uses. High- and medium-land use designations are also identified within areas designated as Ecological Preserve.

Habitat for gabbro soil plants could also be protected by the -IBC overlay designation, which also covers a portion of the Pine Hill formation. The -IBC overlay is intended to identify those regions with the most important natural habitat features, including extent, connectivity, and function, and apply specific standards to limit incompatible development within the overlay area. It is expected that once these standards are adopted, they will reduce impacts within the overlay area; however, until the standards are developed, the effectiveness of the overlay cannot be predicted.

Three wildlife species federally listed as Threatened have been reported in portions of western El Dorado County designated for high- and medium-intensity land uses for the Environmentally Constrained Alternative (Exhibit 5.12-16). High- and medium-intensity land uses are also designated in the area previously identified as critical habitat for the California red-legged frog. Such designations are also located in the core recovery units as described in the recovery plan for California red-legged frog. The -IBC overlay does encompass a portion of the critical habitat designation and the core recovery units (Exhibit 5.12-12). The -IBC overlay also includes suitable habitat and could protect a number of other special-status wildlife species found at lower elevations in western El Dorado County.

The policies and implementation measures in the Conservation and Open Space Element for this alternative that relate directly to protection of special-status species are similar to those for the Roadway Constrained 6-Lane "Plus" Alternative. However, the land use plan for the Environmentally Constrained Alternative would be more effective at concentrating development, which would result in less habitat for special-status species being adversely affected. The primary difference in policies between the two alternatives is that the Environmentally Constrained Alternative would protect more habitat for special-status species found at lower elevations by applying the -IBC overlay. At least 17 occurrences of special-status plant and wildlife species have been documented in the -IBC overlay (CNDDB 2002). Another distinction between this alternative and the Roadway Constrained 6-Lane "Plus" alternative is that the Ecological Preserve overlay for the Environmentally Constrained Alternative is slightly larger, and thus would provide additional protection for some special-status species, particularly gabbro soil plants. However, as with the other equal-weight alternatives, the policies and implementation measures for this alternative do not provide assurance that this impact would be reduced to less-than-significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Impacts on special-status species under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is expected to continue beyond 2025. As at 2025, it is assumed that special-status species at lower elevations along the corridor would be most affected at buildout. It is also assumed that impacts on special-status species in the central region of the county would increase, as development is likely to continue to spread east up the west slope over time. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

This alternative at 2025 would significantly affect special-status plants and special-status wildlife. Significant impacts would be attributed mostly to loss of habitat for special-status species that result from existing and projected land uses and population. A total of 119 occurrences of special-status species have been recorded in areas designated for high- and medium-intensity land use (Table 5.12-5).

As with the No Project Alternative, with the exception of plants protected by the Pine Hill Ecological preserve and the Ecological Preserve overlay, special-status species would receive little guarantee of protection under the 1996 General Plan Alternative other than that provided by state and federal endangered species regulations. Special-status species that occur in areas designated for high- and medium-intensity land uses would be particularly at risk.

Although the land use plan and policies are the same for the 1996 General Plan and No Project alternatives, impacts on special-status species would be expected to differ because different land use patterns and amounts of development would result. The location, density, and dispersion of development are factors to consider when evaluating potential impacts on special-status species. Generally, in areas that are known to support a variety of special-status species that occupy a variety of habitat types, such as the west slope of El Dorado County, the potential for impacts would increase as density, amount, and dispersion of development increases. However, this generalization is not always true. If development is concentrated in areas where habitat for special-status species is nonexistent or severely degraded and important habitat for special-status species is protected, impacts could be less even when the overall amount of new development is higher.

Development is expected to increase substantially under both the 1996 General Plan Alternative and the No Project Alternative, but because the 1996 General Plan Alternative allows residential subdivision, development would be more concentrated. As a result, impacts on special-status species under the 1996 General Plan Alternative would be higher in Community Regions and Rural Centers, which would be much larger and more populated under this alternative. The less developed regions of the west slope located outside of

proposed Community Regions and Rural Centers would have less development pressure. Under the No Project Alternative, impacts on special-status species could be lower in areas designated as medium- and high-intensity land uses because less land would be developed. However, the limits on subdivision under the No Project Alternative would be expected to disperse development that could adversely affect special-status species over a larger region of the west slope. Despite the potential for more dispersed development under the No Project Alternative, impacts on special-status species would likely be higher, at least marginally, under the 1996 General Plan Alternative because far more residential development would be allowed.

The potential adverse effects on habitat for special-status species that could result from encouraging dispersion of development by restricting the density of development could also result from the Roadway Constrained 6-Lane "Plus" Alternative, which limits subdivision but to a lesser extent than the No Project Alternative. However, the Roadway Constrained 6-Lane "Plus" Alternative has much smaller Community Regions and Rural Centers than the 1996 General Plan Alternative and less land designated for high- and medium-intensity land uses than the 1996 General Plan and No Project alternatives. Development is anticipated to be most concentrated under the Environmentally Constrained Alternative because this alternative allows subdivision and has policies that would encourage development in urban centers.

Impacts on special-status species under the 1996 General Plan Alternative are considered significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

Impacts on special-status species under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is expected to continue beyond 2025. By buildout, much of the suitable habitat for special-status species at lower elevations could be fragmented or removed by urban and agricultural development. More habitat in the central region of the county could be removed or fragmented than at 2025 as development is expected to continue to spread east. In total, 78,692 new housing units are projected to be constructed by buildout, 8,086 more than at 2025. The policies identified as reducing impacts on biological resources at 2025 would also be applicable at buildout. These policies would reduce impacts on special-status species, however, the impact would remain significant.

Mitigation Measure 5.12-2—No Project Alternative

The County shall implement both of the following measures:

- Mitigation Measure 5.12-2(a): Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative
- Mitigation Measure 5.12-2(b): Establish and Manage Ecological Preserves

These potential mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because the amount and location of proposed development is such that impacts on special-status species could not be avoided and the amount of habitat to support remaining populations would not be sufficient to ensure that local extirpation would not occur.

Mitigation Measure 5.12-2(a): Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative

The County shall implement Mitigation Measures 5.12-1(d) and 5.12-1(e), described above under Mitigation Measure 5.12-1—No Project Alternative, to reduce impacts on special-status species by developing and implementing an integrated Natural Resources Management Plan and a no-net-loss policy for important habitat, which would include habitat for special-status species.

Mitigation Measure 5.12-2(b): Establish and Manage Ecological Preserves

Policy 7.4.1.1 has been largely implemented by the County and shall, therefore, be replaced as follows:

> **New Policy 7.4.1.1:** The County shall continue to provide for the permanent protection of the eight sensitive plant species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves, consistent with County Code Chapter 17.71 and the USFWS's *Gabbro Soil Plants for the Central Sierra Nevada Foothills Recovery Plan* (USFWS 2002).

Mitigation Measure—Roadway Constrained 6-Lane "Plus" Alternative

The County shall implement the following measure:

< Mitigation Measure 5.12-2(a): Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative

This potential mitigation measure is described below. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level because the amount and location of proposed development is such that impacts on special-status species could not be avoided and the amount of habitat to support remaining populations would not be sufficient to ensure that local extirpation would not occur.

Mitigation Measure 5.12-2(a): Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative

The County shall implement Mitigation Measures 5.12-1(d) and 5.12-1(e), described above under Mitigation Measure 5.12-1—No Project Alternative, to reduce impacts on special-status species by developing and implementing an integrated Natural Resources Management Plan and a no-net-loss policy for important habitat, which would include habitat for special-status species.

Mitigation Measure 5.12-2—Environmentally Constrained Alternative

Please refer to the proposed mitigation measure for the Roadway Constrained 6-Lane "Plus" Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level because the amount and location of proposed development is such that impacts on special-status species could not be avoided and the amount of habitat to support remaining populations would not be sufficient to ensure that local extirpation would not occur.

Mitigation Measure 5.12-2—1996 General Plan Alternative

Please refer to the proposed mitigation measures of the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because the amount and location of proposed development is such that impacts on special-status species could not be avoided and the amount of habitat to support remaining populations would not be sufficient to ensure that local extirpation would not occur.

Impact **5.12-3**

Impacts on Wildlife Movement. Urban development in western El Dorado County under the General Plan would substantially reduce the ability of terrestrial wildlife to move unimpeded through this region. The increased population would result in additional barriers to wildlife such as fencing, roadways, and more vehicular traffic. Development under the General Plan could also result in impacts on aquatic habitat, such as diversion of streamflows, that could impede movement by native fishes. This impact is considered **significant** for all four alternatives. The severity of this impact would be greatest under the 1996 General Plan Alternative, followed by the No Project, Roadway Constrained 6-Lane "Plus," and Environmentally Constrained alternatives. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-3: Impacts on Wildlife Movement	S_2	S_2	S_3	S_3	S_4	S_4	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-3(a), Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative; and 5.12-3(b), Apply -IBC Overlay to Lands Identified as Having High Wildlife Habitat Values	SU_2	SU_2	—	—	—	—	SU_1	SU_1

Mitigation	Significance After Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-3(c), Implement Mitigation Measure 5.12-1(c) for the Roadway Constrained 6-Lane "Plus" Alternative; and 5.12-3(b), Apply -IBC Overlay to Lands Identified as Having High Wildlife Habitat Values	—	—	SU_3	SU_3	SU_4	SU_4	—	—
* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.								

Many wildlife species move from one location to another to areas that provide suitable cover, foraging habitat, and breeding habitat. Wildlife movement can be divided into two broad categories: long-distance seasonal migration between winter and summer habitats, and regular short-distance movements within home ranges or territories. Allowing animals to move unimpeded increases their chances of survival and reproductive success and enhances opportunities for genetic interchange between populations.

Landscape-level impacts on terrestrial wildlife movement commonly occur when large areas of contiguous habitat become fragmented. Movement of resident fishes can also be affected by fragmentation when it results in surface water degradation or diversion of streamflows. Fragmentation in the foothills of the Sierra Nevada usually results when the landscape is parceled into smaller lots through subdivision. Adverse effects on wildlife movement can result even from relatively low-density residential development and become increasingly problematic at lot sizes less than 10 acres per unit.

Preserving connectivity between large areas of natural habitat is a key to maintaining opportunities for wildlife movement. Natural linkages often exist in the form of riparian corridors, canyon bottoms, and ridgelines. But connectivity is not just corridors; habitat linkages are best provided by maintaining a permeable landscape, one that permits the uninhibited movement of wildlife species across large distances. Connectivity, as it relates to wildlife movement, is afforded more by the suitability of the overall landscape matrix than by the presence or absence of discrete corridors (Monterey County 2002). To protect

opportunities for wildlife movement in areas that are becoming increasingly urbanized, it is essential to preserve a permeable landscape and to ensure, wherever possible, that major movement corridors continue to function unobstructed by roads, fencelines, and other barriers.

Many areas in western El Dorado County could be described as important wildlife corridors. Riparian zones and canyons that currently serve as important corridors for local movement by terrestrial wildlife species include: South Fork American River, Webber Creek, Deer Creek, Big Canyon Creek, Middle Fork Cosumnes River, Camp Creek, and North Fork Cosumnes River. Important movement corridors for migratory deer have been identified by CDFG (Exhibits 5.12-15 through 5.12-17). Under CEQA, impacts are considered significant when they result in substantial interference with the movement of any native resident or migratory species. Therefore, significant impacts could result from actions that substantially isolate wildlife populations or eliminate opportunities for wildlife to reach important habitat for their survival and reproduction.

Important migratory-deer-herd habitat identified by CDFG includes summer, winter, fawning, and holding habitats. Important summer, fawning, and holding areas are found at higher elevations in the eastern and central portions of the county on land that is predominantly under USFS jurisdiction. Important summer habitat is located at lower elevations on both jurisdictional and USFS land, but areas between winter and summer habitat are designated largely for low-intensity land uses under each equal-weight alternative. Because future and existing development would be concentrated at lower elevations on the west slope through 2025, development in areas that link important winter and summer habitat may not be substantially affected. By buildout, however, urban development could progress up the west slope enough to encroach on important deer-herd habitat; at this point, the density of housing and associated development (e.g., fencing, roadways) could substantially impede the movement of migratory deer.

Potentially significant effects are expected on wildlife movement in the western third of El Dorado County where development pressure is heaviest. As this region becomes increasingly urbanized, uninhibited movement by wildlife would become more difficult because of new urban and agricultural development. Secondary obstructions and disturbances, such as fencing, lighting, roadways, traffic, and domestic pets, would also adversely affect wildlife movement opportunities. U.S. 50, which bisects the county, and development adjacent to the highway already limits north-south wildlife movement in western El Dorado County.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 7.1.2.1 and 7.1.2.2, 7.2.2.2, 7.4.2.1 and 7.4.2.2, 7.4.2.4 and 7.4.2.5, and 7.4.4.3 through 7.4.4.5.

No Project Alternative (2025)—Impact Discussion

Under this alternative at 2025, high- and medium-intensity land use designations would cover much of the western third of the county. Building limits required under the Writ would limit subdivision and reduce the number of houses and other residential buildings developed at 2025. However, with an anticipated additional 21,434 homes projected at 2025, the ability of wildlife to move freely over larger regions of western El Dorado County would be substantially diminished.

When compared to the other alternatives, the No Project Alternative would result in relatively low-density development because of the restrictions on the number of units per parcel. The overall number of new residential units would also be relatively low. Nonetheless, under the No Project Alternative, wildlife movement through areas designated for medium- and high-intensity land uses would become increasingly problematic during the planning horizon. In addition to new residential and commercial development, wildlife movement would be adversely affected by new roads and fences under No Project Alternative. The effects of these barriers would depend upon the specific life histories of each species affected. Structures can usually be avoided by most wildlife at densities of less than one unit per acre, and they do not constitute significant barriers if dispersed among adjacent parcels (UCD 1996). Fences can serve as significant barriers for many mammals and reptiles, but they appear to constitute a relatively low barrier to the movement of birds. Roads are probably the single most important barrier to wildlife and genetic movement between habitat patches (UCD 1996).

Several policies in the No Project Alternative are intended to minimize impacts on wildlife movement. Policies under Objective 7.4.4. address habitat fragmentation, but only as it relates to protection of oak woodland habitat. Objective 7.4.2 specifically mentions protection, where feasible, of important migratory deer herd habitat and wildlife corridors. Policies under Objectives 7.4.2 and 7.1.2 would reduce impacts on wildlife movement by limiting development in areas favored by wildlife as movement and migration corridors. Policy 7.1.2.1 discourages development on slopes greater than 40%; development on steep slopes would be allowed if a number of standards included in the policy are met. Although Policy 7.1.2.1 does

not prohibit development on the county's steepest slopes, it is expected that development would be sufficiently limited and that impacts on wildlife movement would be considered during the site selection process. Policies 7.4.2.1, 7.4.2.2, 7.4.2.4, and 7.4.2.5 direct the County to protect corridors when identified during project review. Methods of protection would include mandatory clustered development and setback distances from designated or protected migration corridors, with setbacks determined as part of the environmental analysis. Policy 7.4.2.5, which requires setbacks from all rivers, streams, and lakes, is perhaps the most effective of the policies under Objective 7.4.2 because it applies to both ministerial and discretionary projects. The effectiveness of Policy 7.4.2.5 would be largely dependent upon the width of the setback, which is not stated in the policy document. The width of setbacks is also undefined by Policy 7.4.2.2 (mandatory clustering of development).

With the exception of Policy 7.4.2.5, the County has limited options under the No Project Alternative for preserving uninhibited movement by wildlife across parcels where development can occur without discretionary approval. For nondiscretionary projects, even on land designated as Natural Resources, the site can be entirely fenced and total site disturbance can occur without mitigation. Conversion of natural land for agricultural uses that may limit or prohibit wildlife movement can also occur without discretionary action by the County.

The Open Space designation would not substantially reduce impacts on wildlife movement and the goal of the Open Space land use designation as stated in Policy 7.4.2.2 (i.e., to ensure continued viability of contiguous or interdependent habitat areas and the preservation of all movement corridors between related habitats) would be jeopardized by the 1996 Land Use Plan. The only corridor that links large areas of open space and is covered entirely by the Open Space designation is the USFS area along the El Dorado–Placer county line north of Folsom Lake. In general, areas designated as Open Space on the 1996 land use map are found in small isolated blocks surrounded by medium- and high-intensity land uses. Some blocks are covered by the Mineral Resources overlay. Policies 7.2.1.2 and 7.2.2.2, which identify mining as potentially compatible with the Open Space land use designation, could have an adverse affect on wildlife movement.

The No Project Alternative at 2025 would reduce opportunities for wildlife movement throughout a large region of western El Dorado County. The policies in the policy document would reduce these impacts to some extent. Generally, the policies only try to minimize impacts to what is considered feasible and do not include language or compensatory mitigation for impacts. Policies related to surface mining may conflict with the Open Space designation as defined in Policy 7.4.2.2. This impact is considered significant.

No Project Alternative (Buildout)—Impact Discussion

Impacts on wildlife movement under this alternative at buildout would be higher than at 2025 because of the anticipated steady increase in population and associated urban development that is expected to continue until buildout. At buildout, wildlife movement could be severely constrained at lower elevations by urban and agricultural development. Wildlife corridors and the permeability of the landscape as it relates to wildlife movement could also be reduced in the central region of the county.

Roadway Constrained Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies CO-1d, CO-3c, CO-3e, CO-3f, CO-3h, CO-4b, CO-6a through CO-6c, CO-11a and b, and Implementation Policies CO-C, CO-I, and CO-J.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

This alternative at 2025 would have a significant impact on wildlife movement. Significant effects would be attributed mostly to loss of existing movement corridors and fragmentation of habitat in western El Dorado County from high- and medium-intensity land uses. Under the Roadway Constrained 6-Lane "Plus" Alternative, 25,839 new housing units would be constructed by 2025. Most of the urbanization would occur below the 2,000-foot contour line along the corridor. The 6,600-acre Ecological Preserve overlay would protect wildlife movement only to a limited extent and only within small regions that would be isolated by development by 2025.

Several policies in the Conservation and Open Space Element for this alternative would help to reduce potential effects on wildlife movement. Policy CO-1d would limit disturbance on slopes 30% or greater. To the extent feasible, policies under Goal CO-3 (to preserve and protect the quality, function, and value of the county's surface water resources) and Goal CO-4 (to protect groundwater and surface water quality) include policies that would minimize impacts on fish movement and would protect riparian habitat, which is used by many species for short- and long-distance movement.

Goal CO-6 is to conserve important habitat in sufficient amounts and configurations to ensure its continued ecological function. This goal is directly applicable to preserving wildlife movement. Policy CO-6b would require that a report be prepared that includes measures to

avoid, minimize, and mitigate project effects on important resources, which would include large expanses of native vegetation. If the recommended mitigation is adequate and the County requires implementation, this policy could help to mitigate the effects of development associated with discretionary projects.

Some measures in the implementation program, including Measure CO-C (prepare and adopt a riparian setback ordinance), Measure CO-I (develop an integrated natural resources management plan), and Measure CO-J (develop an Oak Woodland Management Plan), could be effective at reducing impacts on wildlife movement. However, these measures could take 3 to 5 years to implement and do not make any references to minimizing project impacts as they relate to CEQA.

The land use plan for the Roadway Constrained 6-Lane "Plus" Alternative designates a relatively large amount of habitat in western El Dorado County as Open Space, Natural Resources, and Rural Lands. Open Space and Natural Resources are identified in this analysis as low-intensity land use designations; Rural Lands is designated as a medium-intensity land use designation. Policy CO-11b states that the Open Space, Natural Resources, and Rural Lands use designations would be maintained and implemented partially in support of protection of large and contiguous native habitats. However, the designations would also be maintained for uses that could conflict with efforts to minimize effects on wildlife movement: forest products, agricultural land, recreational use, and mineral production.

Although this alternative does not provide assurances that existing wildlife corridors would continue to function as they do currently, it does outline future development of programs that would assist the County with the identification and protection of key wildlife movement areas. Until those programs are developed or unless the policies are revised to include additional assurances that adequate mitigation would be required, the degree to which wildlife movement corridors are ultimately protected is uncertain. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Impacts on wildlife movement under this alternative at buildout would be higher than at 2025 because of the anticipated steady increase in population and associated urban development that is expected to continue until buildout. At buildout, movement of terrestrial wildlife could be severely constrained by urban and agricultural development at lower elevations in western El Dorado County. Wildlife corridors and the permeability of the landscape as it relates to wildlife movement could also be reduced in the central region of the county.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

The relevant policies that are applicable to the Environmentally Constrained Alternative are Policies CO-1d, CO-3c, CO-e and CO-3f, CO-3h, CO-4b, CO-6a through CO-6c, CO-6d, and CO-11a and CO-11b, and Implementation Policies CO-C, CO-I, and CO-J.

Environmentally Constrained Alternative (2025)—Impact Discussion

Under the Environmentally Constrained Alternative land use plan, wildlife movement would be adversely affected by the development of 32,290 new housing units. However, under this alternative, high- and medium-intensity land uses are relatively concentrated, thus likely benefitting wildlife movement by leaving larger regions of western El Dorado County designated for low-intensity land uses.

The policies and implementation measures in the Conservation and Open Space Element that relate directly to protection of wildlife movement are similar for the Environmentally Constrained and Roadway Constrained 6-Lane "Plus" alternatives. However, the land use plan for the Environmentally constrained Alternative would be more effective at limiting urban sprawl, which would result in preservation of more unfragmented habitat. The primary difference in policies between the two alternatives is that the Environmentally Constrained Alternative would protect areas that are important for wildlife movement by applying the -IBC overlay.

The -IBC overlay would encompass 70,210 acres and would link natural habitat in the western third of the county. The overlay is intended to provide continuous corridors of vegetation and habitat and to provide connectivity between areas of more extensive natural vegetation or greater environmental protection (e.g., to/from areas having Natural Resource, Open Space, and/or Agricultural base land use designations). Land located within the overlay area would be subject to a number of standards that would be expected to facilitate wildlife movement. Depending upon the strength of the standards, the -IBC overlay could have varying degrees of success toward achieving its objectives. Standards that restrict or severely limit high- and medium-intensity land uses within the corridor would help the County achieve its goal of conserving important habitat in sufficient amounts and configurations to ensure its continued ecological function. It would also contribute to achieving the goal of conserving open-space land for the protection of natural resources and wildlife habitat. Given the amount of high- and medium-intensity development that would be allowed under this alternative and the fact

that some areas in the overlay area are already developed, the ability of the County to preserve uninhibited wildlife movement throughout the -IBC overlay may not be feasible.

The -IBC overlay area would be effective at preserving substantial connectivity and wildlife movement opportunities where they are most threatened. Specifically, the standards enforced in areas within the -IBC overlay area could: preserve opportunities for north-south movement by large terrestrial mammals through areas dominated by high- and medium-intensity land uses; link the two largest polygons on the Ecological Preserve overlay; and protect a portion of the Weber Creek canyon and other major watercourses. The -IBC overlay would also help to preserve some of the county's most valuable and pristine low-elevation habitat. It is also important to note that because the proposed corridor crosses the entire western section of the county, it could be the first step toward a multicounty regional corridor that could benefit wildlife and preserve wildlife habitat over a large region of the Sierra foothills.

The Environmentally Constrained Alternative does not provide assurances that existing wildlife corridors would continue to function as they do now. However, like the Roadway Constrained 6-Lane "Plus" Alternative, it does outline future development of programs that would assist the County in identifying and protecting key wildlife movement areas. It also includes the -IBC overlay, which gives this alternative the most promising terms of preserving connectivity of important habitat in western El Dorado County. Even with the -IBC, the degree to which wildlife movement corridors would ultimately be protected is uncertain because of the amount of development expected during the planning horizon. This impact is considered significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Impacts on wildlife movement under this alternative at buildout would be higher than at 2025 because of the anticipated steady increase in population and associated urban development that is expected to continue until buildout. At buildout, movement of terrestrial wildlife could be severely constrained by urban and agricultural development at lower elevations in western El Dorado County. However, the -IBC overlay would help ensure that opportunities in this region for wildlife movement by larger mammals in this region are not eliminated. Wildlife corridors and the permeability of the landscape as it relates to wildlife movement would also be reduced in the central region of the county. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

Under this alternative at 2025, high- and medium-intensity land use designations would cover much of the western third of the county. In total, 32,491 new housing units would be built by 2025. The impact of new-home construction and related adverse effects would substantially diminish wildlife movement across this region. In addition to new housing, commercial, and agricultural development, wildlife movement would be adversely affected by secondary impacts including new roadways, fencing, and water development and flood control projects. North-south movement would become particularly problematic for terrestrial wildlife as urban development increases along the U.S. 50 corridor.

Although the policies and land use designations are the same for the 1996 General Plan and No Project alternatives, the 1996 General Plan Alternative would result in greater impacts on wildlife movement because far more new residential development would be allowed. Like the No Project Alternative, the 1996 General Plan Alternative would restrict development over a large region of western El Dorado County. Development would likely be more dispersed under the No Project Alternative; thus, impediments to wildlife movement could occur over a larger geographic region. However, the size of the Community Regions and Rural Centers under the 1996 General Plan would be much larger. In these, and other areas designated for high- and medium-intensity land uses, obstacles including new residential development and roadways would create a landscape that would be expected to be nearly impervious to long-distance movement by some terrestrial wildlife species by 2025. This impact is considered significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

Impacts on wildlife movement under this alternative at buildout would be higher than at 2025 because of the anticipated steady increase in population and associated urban development that is expected to continue until buildout. At buildout, movement of terrestrial wildlife would be severely restricted by urban and agricultural development at lower elevations in western El Dorado County. Wildlife corridors and the permeability of the landscape as it relates to

wildlife movement would also be reduced in the central region of the county. This impact is considered significant.

Mitigation Measure 5.12-3—No Project Alternative

The County shall implement both of the following measures to reduce impacts on wildlife movement:

< Mitigation Measure 5.12-3(a): Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative

< Mitigation Measure 5.12-3(b): Apply -IBC Overlay to Lands Identified as Having High Wildlife Habitat Values

These potential mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because movement by terrestrial wildlife would be substantially impeded and some populations could become isolated and eventually extirpated.

Mitigation Measure 5.12-3(a): Implement Mitigation Measures 5.12-1(d) and 5.12-1(e) of the No Project Alternative

The County shall implement Mitigation Measures 5.12-1(d) and 5.12-1(e), listed under Mitigation Measure 5.12-1—No Project Alternative above, to reduce impacts on wildlife movement.

Mitigation Measure 5.12-3(b): Apply -IBC Overlay to Lands Identified as Having High Wildlife Habitat Values

The County shall implement the following new policy to facilitate wildlife movement through developed regions on the west slope.

> **New Policy:** The -IBC overlay shall apply to lands identified as having high wildlife habitat values because of extent, habitat function, connectivity, and other factors. Lands located within the overlay district shall be subject to the following provisions:
>
> < increased minimum parcel size;
>
> < higher canopy-retention standards and/or different mitigation standards/thresholds for oak woodlands;

- lower thresholds for grading permits;
- higher wetlands/riparian retention standards and/or more stringent mitigation requirements for wetland/riparian habitat loss;
- increased riparian corridor and wetland setbacks;
- greater protection for rare plants (e.g., no disturbance at all or disturbance only as recommended by USFWS/CDFG);
- standards for retention of contiguous areas/large expanses of other (non-oak or non-sensitive) plant communities;
- building permits discretionary or some other sort of "site review" to ensure that canopy is retained,
- more stringent standards for lot coverage, FAR, and building height; and
- no hindrances to wildlife movement (e.g., no fences that would restrict wildlife movement).

The standards listed above shall be included in the Zoning Ordinance.

Mitigation Measure 5.12-3(b) would reduce impacts on wildlife movement by providing connectivity of important habitats.

Mitigation Measure 5.12-3—Roadway Constrained 6-Lane "Plus" Alternative

The County shall implement both of the following measures:

- Mitigation Measure 5.12-3(c): Implement Mitigation Measure 5.12-1(i) for the Roadway Constrained 6-Lane "Plus" Alternative
- Mitigation Measure 5.12-3(b): Apply -IBC Overlay to Lands Identified as Having High Wildlife Habitat Values

These potential mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because movement by terrestrial wildlife would be substantially impeded and some populations could become isolated and eventually extirpated. A measure that would require a 40-acre minimum parcel size in areas of critical summer and winter deer habitat was also considered but was not proposed because the combination of existing development restrictions in areas identified as critical deer herd habitat, implementation of an integrated natural resources management plan required under Measure 5.12-3(a), and the - IBC overlay required under Measure 5.12-3(b), would provide a comparable level of protection to important migratory deer habitat.

In addition, while protection of larger parcels of undeveloped habitat increase opportunities for wildlife movement, deer can successfully migrate through smaller parcels depending on the nature of the particular site, the type of structures built (e.g., perimeter fences, roadways) and the degree of development or other barriers to movement in the surrounding area. Parcel sizes of 10 acres or greater in many instances are sufficient to allow for deer migration and movement by other wildlife species.

The large majority of critical deer herd habitat is on land designated as Natural Resource, which limits development to 40 acres or 160 acres/du. In areas where critical deer herd habitat is not on land designated as Natural Resource, the integrated natural resources management plan and the -IBC overlay would allow for minimum parcel sizes to be increased on a site-specific basis as necessary to protect deer migration habitat and other important habitat areas. It would also permit the application of more stringent lot coverage standards and restrictions on fences and other hindrances to wildlife movement. These requirements would protect deer migration corridors to the maximum extent feasible. However, the effectiveness of these measures is limited by existing parcel sizes, which cannot be reduced, as well as existing patterns of development. As the analysis of the No Project Alternative indicates, the impacts would remain significant even if all new subdivisions were prohibited.

Mitigation Measure 5.12-3(a): Implement Mitigation Measure 5.12-1(d) of the No Project Alternative

The County shall implement Mitigation Measure 5.12-1(d), described under Measure 5.12-1—No Project Alternative above, to reduce impacts on wildlife movement.

Mitigation Measure 5.12-3(b): Apply -IBC Overlay to Lands Identified as Having High Wildlife Habitat Values

Please refer to the proposed Mitigation Measure 5.12-3(b) of the No Project Alternative above.

Mitigation Measure 5.12-3—Environmentally Constrained Alternative

Please refer to the proposed Mitigation Measure 5.12-3(a) for the Roadway Constrained 6-Lane "Plus" Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level because movement by terrestrial wildlife would be substantially impeded and some populations could become isolated and eventually extirpated.

Mitigation Measure 5.12.-3—1996 General Plan Alternative

Please refer to the proposed mitigation measures of the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because movement by terrestrial wildlife would be substantially impeded and some populations could become isolated and eventually extirpated.

Impact **5.12-4**

Removal, Degradation, and Fragmentation of Sensitive Habitats. Development under the General Plan would result in removal, degradation, and fragmentation of sensitive habitats. Habitats affected would include federally protected wetlands and riparian habitat identified as sensitive by CDFG. This impact is considered **significant** for all four alternatives. The severity of this impact would be greatest under the 1996 General Plan Alternative, followed by the No Project, Roadway Constrained 6-Lane "Plus," and Environmentally Constrained alternatives. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-4: Removal, Degradation, and Fragmentation of Sensitive Habitats	S_2	S_2	S_3	S_3	S_4	S_4	S_1	S_1

Mitigation	Significance After Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.12-4(a), Implement Mitigation Measures 5.12-1(d), 5.12-1(e), and 5.12-3(b) of the No Project Alternative; and 5.12-4(b), Implement Multiple Policies to Reduce Impacts on Sensitive Habitats	SU_2	SU_2	SU_3 (Measure 5.12-4(a) only)	SU_3 (Measure 5.12-4(a) only)	SU_4 (Measure 5.12-4(a) only)	SU_4 (Measure 5.12-4(a) only)	SU_1	SU_1

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Sensitive habitats located in western El Dorado County and are discussed below include aspen, montane and valley-foothill riparian habitat, valley oak woodland, wet meadow, and vernal pools. These habitats and their analogous classifications in the CNDDB have been identified as rare and worthy of consideration by CDFG (CNDDB 2002). Sensitive habitats that include aquatic components or meeting the regulatory definition of wetlands may receive protection under the federal Clean Water Act and/or §1600 of the California Fish and Game Code. Section 404 of the Clean Water Act prohibits the filling of jurisdictional waters of the United States without a permit. Activities that would alter riparian habitat and lakes, rivers, and streams are regulated by CDFG. Pursuant to §§1600 through 1603 of the California Fish and Game Code, CDFG has regulatory authority over all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports wildlife resources. CDFG's jurisdiction extends to watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.

Sensitive habitats are found throughout El Dorado County. Montane riparian and wet meadow are found predominantly on USFS land in the eastern and central regions of the county. A total of 700 acres of montane riparian habitat and 8,600 acres of wet meadow have been identified in the county. Valley-foothill riparian habitat is found along rivers, creeks, and lakes at lower elevations. Vernal pools and valley oak woodland are also found primarily at lower elevations and usually on flat terrain. There are 3,300 acres of valley oak woodland in the county, where it is often located along slow-moving watercourses and in flat river valleys.

Potential impacts on valley oak woodland, wet meadow, and montane riparian habitats were assessed by analyzing GIS layers and land use designations (i.e., land use intensity). For sensitive habitats not mapped countywide in a GIS format (i.e., valley-foothill riparian and vernal pools), impacts were assessed by analyzing impacts on major habitat types that they are commonly associated with in regions of the county where they are most likely to occur. Impacts on aspen were determined to be less than significant and are not discussed further because this habitat is limited almost entirely to USFS land and the Lake Tahoe Basin. Proposed policies were evaluated to determine whether they would avoid, minimize, or increase impacts on sensitive habitats.

Direct impacts on sensitive habitats would include removal, degradation, or fragmentation associated with urban and agricultural conversion. Activities ancillary to development such as the culverting, lining, or piping of streams can also have direct impacts on sensitive habitat. These impacts are summarized in Chapter 5.5, Water Resources (see Table 5.5-12). Secondary impacts on sensitive habitats would include degradation related to the increase in the human population (e.g., incompatible recreational use), competition from introduced invasive non-native species, expansion or introduction of livestock grazing, and effects on water quality such as increased sedimentation, erosion, and pollution.

The equal-weight alternatives considered in this EIR would rely heavily on avoidance measures to mitigate the effect of the General Plan, as opposed to compensatory mitigation. Avoidance of sensitive habitat can be problematic in El Dorado County because a thorough inventory of such habitats has not been completed. Protection of sensitive habitats would be addressed by the County on discretionary projects. However, this project-by-project approach to sensitive habitat protection often results in piecemeal mitigation and fragmentation. Adequate protection for sensitive habitats in El Dorado County is more likely to be achieved when a regional or watershed-based approach is taken to identifying and mitigating impacts on sensitive habitat.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 7.1.2.1 and 7.2.1.2, 7.2.2.2, 7.2.3.1 through 7.2.3.5, 7.3.3.1 and 7.3.3.2, 7.3.4.1 and 7.3.4.2, 7.4.1.5 and 7.4.1.6, 7.4.2.1 through 7.4.2.3, 7.4.2.5, 7.4.4.2 through 7.4.4.5, 7.4.5.1, and 7.6.1.1.

No Project Alternative (2025)—Impact Discussion

Sensitive habitats potentially affected by this alternative at 2025 include valley oak woodland, montane and valley-foothill riparian habitat, wet meadow, and vernal pools. Under this alternative, 95% of the habitat classified as valley oak woodland and 91% of the montane riparian habitat would be in high- and medium-intensity land use designations (Table 5.12-4, Exhibit 5.12-17). As noted under the No Project Alternative discussion for Impact 5.12-1, the lower density of development under the No Project Alternative compared to the other alternatives would not eliminate the possibility of total site disturbance. The amount of vernal pool and valley foothill riparian habitat in high- and medium-intensity land use designations is unknown, but is likely substantial given that both habitats are found in the western region of the county, where future and current development is concentrated. Less than 15% of the wet meadow habitat would be located in areas designated for high- and medium-intensity land use.

The Open Space land use designation and Ecological Preserve overlay could serve to protect a limited amount of sensitive habitat. One of the stated purposes of the Open Space land use designation (Policy 7.6.1.1) is conserving natural resource areas including rivers, streams, and watershed lands. However, the Open Space designation of the No Project Alternative encompasses only a small amount of sensitive habitat in western El Dorado County and does not encompass any major watersheds or river corridors. The coverage of the overlay is limited because of the fact that the designation does not allow regimental development and much of the land in western El Dorado County is under private ownership. Therefore, the County has limited opportunities to apply the Open Space overlay, even on parcels that have large areas of undisturbed sensitive habitat. The Ecological Preserve overlay is limited to the region that provides habitat for gabbro soil plants, but depending on the content of development standards, it could provide a limited amount of protection for riparian habitat and valley oak woodland.

Several policies in the No Project and 1996 General Plan alternatives Policy Document recommend or require avoidance measures to reduce impacts on sensitive habitats. Policy 7.1.2.1 probably would not substantially reduce direct impacts on sensitive habitats because none of the habitats of concern typically occur on steep slopes; however, this policy would reduce secondary impacts on riparian and associated aquatic habitat because riparian habitat is frequently found in steep canyons.

Objective 7.3.3 addresses protection of wetlands, which includes riparian, wet meadow, and vernal pool habitat. Policy 7.3.3.1 requires a site-specific wetland investigation within those areas identified as wetlands on the Important Biological Resources Map as well as those areas having wetland characteristics. Policy 7.3.3.2 requires that direct or indirect loss of wetlands

and/or riparian vegetation associated with discretionary application approval be compensated by replacement, rehabilitation, or creation of wetlands habitat on a no-net-loss basis. Policy 7.3.4.2 requires that adequate mitigation be provided for modification of natural streambeds. These policies would help mitigate adverse effects on sensitive habitat, but it is not expected that replacing, rehabilitating, and creating wetlands at a 1:1 ratio would adequately compensate for the loss of function and value of natural wetlands. Likewise, integrating natural watercourses into new development, as required by Policy 7.3.4.1, would only partially compensate for impacts on riparian and wetland habitats.

Objective 7.4.2 also addresses protection of wetlands and riparian habitat. Policies 7.4.2.1 and 7.4.2.2 require the County, to the extent feasible, to identify and protect critical fish and wildlife habitat. The protection afforded sensitive habitats by these policies is not known because the County does not provide a definition of critical fish and wildlife habitat. The intent of Policy 7.4.2.5 is clear; setbacks are required from all rivers, streams, and lakes. This policy would likely protect some or all riparian and wetland habitat from direct impacts on both ministerial and discretionary development projects, but protection is not assured because the width of the minimum setbacks is not defined.

Valley oak woodland would receive limited protection under Policies 7.4.4.2 through 7.4.4.5, 7.4.5.1 and 7.6.1.1. These policies mostly seek to preserve a portion of existing oak woodland or replace a portion of what would be lost during development of discretionary projects. Because none of the policies seek to preserve remaining intact valley oak woodland, they would not be effective at preventing additional fragmentation and loss of valley oak woodland at 2025. Compensatory mitigation, as described in Policy 7.4.4.4, would not be expected to substantially reduce impacts on valley oak woodland. Policies that address individual valley oak trees (Policies 7.4.4.2 and 7.4.5.1) would allow the loss of landmark/heritage oaks to be compensated by planting young oaks which, under most circumstances, would not fully compensate for the loss.

Many of the relevant policies of the No Project Alternative require mitigation only when feasible or under limited circumstances, and many of the policies only apply to discretionary projects. None of the policies specifically attempt to reduce impacts on sensitive habitats to below the threshold of significance under CEQA. As a result, a gradual but steady loss of sensitive habitats is expected. This impact is considered significant.

No Project Alternative (Buildout)—Impact Discussion

Impacts on sensitive habitats under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is

expected to continue beyond 2025. As at 2025, it is assumed that sensitive habitats at lower elevations along the U.S. 50 corridor would be most affected when projected buildout is reached. It is also assumed that sensitive habitats in the central region of the county would be affected more than 1t 2025 as development is likely to continue to spread east up the west slope over time. In total, more than 29,520 new housing units would be constructed by buildout. The policies identified as reducing impacts on biological resources at 2025 would also be applicable for buildout. These policies would reduce impacts on sensitive habitats, but not below the significance threshold. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies CO-3a through CO-3h, CO-6a through CO-6c, CO-7a, CO-11b, and Implementation Measures CO-C, CO-F, and CO-I.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

Sensitive habitats potentially affected by this alternative include montane and valley-foothill riparian habitat, valley oak woodland, wet meadow, and vernal pools. Under this alternative, 77% of the habitat classified as valley oak woodland and 51% of the montane riparian habitat would be in high- and medium-intensity land use designations (Table 5.12-4, Exhibit 5.12-16). The amount of vernal pool and valley foothill riparian habitat in high- and medium-intensity land use designations is unknown, but both habitats are found in the western region of the county along U.S. 50, where future and current development is concentrated. Less than 15% of the wet meadow habitat would be located in areas designated for high- and medium-intensity land use. Anticipated development of land designated for high- and medium-intensity uses would remove and fragment sensitive habitats. Impacts would be most severe at low elevations along the U.S. 50 corridor.

Protection of riparian habitat and wetlands is addressed by several policies in the Conservation and Open Space Element. In addition, several policies that are directed at protecting surface water quality and aquatic habitats would also benefit existing riparian habitat. Goal CO-3 is to preserve and protect the quality, function, and value of the county's surface water resources. Policy CO-3b directs the County to require that all new development fully mitigate project effects on wetlands to achieve "no net loss" consistent with the policies of the state and federal governments. This policy also requires that the County support mitigation banking programs that provide the opportunity to mitigate impacts on wetland and riparian areas. Policy CO-3c

directs the County to require buffers around natural watercourses, wetlands, and other water features for wildlife habitat and open space. In cases when avoidance and minimization of wetland impacts cannot be avoided during construction of a discretionary or capital improvement project, Policy CO-3f directs the County to require compensation of 1:1 replacement or 2:1 restoration. Policy CO-3h states that the County should consider the acquisition of areas containing wetlands, meadows, and riparian corridors for parks limited to passive recreational activities.

Goal CO-6 directs the County to conserve important habitat in sufficient amounts and configurations to ensure its continued ecological function. Policy CO-6a requires the County to strive to protect important habitats. The County's definition of important habitat would encompass most sensitive habitats, including those that fall under the following broader categories: habitats that support important flora and fauna; streams, rivers, and lakeshore habitat; wetlands; and oak woodlands. Policy CO-6b directs the County to require preparation of a biological resources study report that includes measures to avoid, minimize, and mitigate project effects on important habitat resources. Policy CO-6c directs the County to strive to maintain its oak woodland resources.

Goal CO-7 is to protect individual trees important to the scenic quality of urbanized areas and the heritage of El Dorado County. Policy CO-7a directs the County to strive to protect heritage and landmark trees. Because the policy does not include any references to the importance of large oaks and other native trees as biological resources, this policy would not be expected to be effective at mitigating the loss of valley oak trees or valley oak woodland.

The Open Space land use designation and the Ecological Preserve overlay could serve to protect a limited amount of sensitive habitat. One of the stated purposes of the Open Space land use designation (Policy CO-11b) is identification of natural resource areas for protection of streams, lakes, ponds, and wetlands and adjacent riparian habitat. However, the Open Space land use designation is applied to only a small amount of sensitive habitat in western El Dorado County. No major watersheds or river corridors are encompassed by the Open Space designation, in large part because much of this area is privately owned. The Ecological Preserve overlay for the Roadway Constrained 6-Lane "Plus" Alternative is limited to the region that provides habitat for gabbro soil plants, but the overlay could also provide a limited amount of protection for riparian and valley oak resources.

Several of the measures in the Implementation Program specifically address protection of sensitive habitats. Measure CO-C would require the County to prepare and adopt a riparian setback ordinance within 3 years of General Plan adoption. Measure CO-F directs the County to complete an important habitat inventory within 5 years of General Plan adoption.

Development of an integrated natural resources management plan that addresses conservation and connectivity of important habitats, as outlined in Measure CO-I, could be tailored to provide protection to the most threatened sensitive habitat and restoration of sensitive habitats that are degraded.

The effectiveness of the policies and implementation measures in the Conservation and Open Space Element at reducing impacts on sensitive habitats would be limited, and a gradual but steady loss of these habitat would be expected throughout the planning horizon. Many of the relevant policies apply only to discretionary projects, and none of the policies specifically require that impacts be reduced below CEQA thresholds of significance. USACE and CDFG regulatory requirements would provide additional protection for wetland and riparian habitat. However, a loss of habitat quality must be assumed when replacing relatively pristine habitat at a 1:1 ratio, as USACE/CDFG wetland regulations typically require. Impacts on sensitive habitats can be reduced by applying less intensive land use designations, but the Open Space designation lacks sufficient specificity to ensure that impacts would be substantially reduced. Conservation strategies that focus on protecting large tracts of contiguous habitat and preserving riparian corridors, which could result from implementing Measure CO-I, could be effective at preserving sensitive habitats in western El Dorado County. However, this measure would need to be defined further before its potential benefits to sensitive habitats could be predicted. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Impacts on sensitive habitats under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is expected to continue beyond 2025. As at 2025, it is assumed that sensitive habitats at lower elevations along the U.S. 50 corridor would be most affected when projected buildout is reached. It is also assumed that sensitive habitats in the central region of the county would be affected more than at 2025, as development is likely to continue to spread east up the west slope over time.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

The policies that are applicable to the Environmentally Constrained Alternative are Policies CO-3a through CO-3h, CO-6a through CO-6c, CO-7a, CO-11b, and Implementation Measures CO-C, CO-F, CO-I, CO-J, and CO-K.

Environmentally Constrained Alternative (2025)—Impact Discussion

Sensitive habitats potentially affected by the this alternative include montane and valley-foothill riparian habitat, valley oak woodland, wet meadow, and vernal pools. Under this alternative, 85% of the habitat classified as valley oak woodland and 74% of the montane riparian habitat would be in high- and medium-intensity land use designations. The amount of vernal pool and valley foothill riparian habitat in high- and medium-intensity land use designations is unknown, but both habitats are found in the western region of the county along U.S. 50, where future and current development is concentrated. Less than 15% of the wet meadow habitat would be located in areas designated for high- and medium-intensity land use. Anticipated development of land designated for high- and medium-intensity uses would remove and fragment sensitive habitats. Impacts would be most severe at low elevations along the U.S. 50 corridor.

The policies and implementation measures in the Conservation and Open Space Element that relate directly to protection of sensitive habitats are similar for the Environmentally Constrained and Roadway Constrained 6-Lane "Plus" alternatives. However, the land use plan for the Environmentally Constrained Alternative would be more effective at limiting urban sprawl, which would presumably result in greater opportunities to preserve and restore existing sensitive habitats.

The primary distinction between this alternative and the Roadway Constrained 6-Lane "Plus" Alternative related to protection of sensitive habitat is the application of the -IBC overlay to this alternative. The -IBC overlay encompasses large areas of some of El Dorado County's most sensitive and threatened habitats. To quantify the acreage of habitat that receives some level of protection from the -IBC overlay, the GIS layer for major habitat types (Exhibit 5.12-1) was overlaid on the -IBC. Based on this analysis, nearly 900 acres of valley oak woodland and 200 acres of montane riparian habitat would be covered by the -IBC. An undetermined but substantial amount of valley-foothill riparian habitat would also be covered. The 11,600 acres of annual grasslands included in the -IBC overlay could support vernal pool habitat. The overlay could potentially reduce impacts by requiring provisions as part as future development. These provisions, which have been only generally defined and addressed in the Implementation Program under Measure CO-K, could include higher wetland/riparian retention standards and/or more stringent mitigation requirements for wetland/riparian habitat loss, increased riparian corridor and wetland setbacks, and standards for retention of contiguous areas/large expanses of other (non-oak or nonsensitive) plant communities.

Application of the -IBC overlay would increase protection afforded sensitive habitats by the Environmentally Constrained Alternative beyond that provided by the other equal-weight

alternatives. The policies and implementation measures under this alternative would reduce impacts on sensitive habitats, but not to less-than-significant levels, because even the most protective policies (e.g., Policy CO-3f) would require no more than 1:1 replacement for sensitive habitat. As discussed previously, replacing relatively pristine wetlands with created (i.e., artificial) wetlands does not fully compensate for the impact. The relevant measures in the Implementation Program (i.e., Measures CO-C, CO-F, CO-I, and CO-J) outline programs that could be successful at mitigating impacts, but do not include specific standards that would allow the effectiveness of these measures to be predicted. This impact is considered significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Impacts on sensitive habitats under this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is expected to continue beyond 2025. As at 2025, it is assumed that sensitive habitats at lower elevations along the U.S. 50 corridor would be most affected when projected buildout is reached. It is also assumed that sensitive habitats in the central region of the county would be affected more than at 2025, as development is likely to continue to spread east up the west slope over time. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

Sensitive habitats potentially affected by this alternative include valley oak woodland, montane and valley-foothill riparian habitat, wet meadow, and vernal pools. Under this alternative, 95% of the habitat classified as valley oak woodland and 91% of the montane riparian habitat would be in high- and medium-intensity land use designations (Table 5.12-4, Exhibit 5.12-15). The amount of vernal pool and valley foothill riparian habitat in high- and medium-intensity land use designations is unknown, but is likely substantial given that both habitats are found in the western region of the county, where future and current development is concentrated. Less than 15% of the wet meadow habitat would be located in areas designated for high- and medium-intensity land use.

Please refer to No Project Alternative (2025)—Impact Discussion above. Although the land use designations are the same, this alternative would result in greater impacts on sensitive habitat than the No Project Alternative. Under this alternative, far more new residential development that could affect sensitive habitat would be allowed. Even though less urban sprawl would be anticipated, impacts would be expected to be higher. As with the No Project Alternative, the 1996 General Plan Alternative at 2025 would result in the loss and disturbance of wetlands over a large region of western El Dorado County. The policies would reduce these impacts to some extent but, generally, the policies seek only to minimize impacts to what is considered feasible and do not include compensatory mitigation for impacts. This impact is considered significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

Impacts on sensitive habitats this alternative at buildout would be higher than at 2025 because of the anticipated increase in population and associated urban development that is expected to continue beyond 2025. As at 2025, it is assumed that sensitive habitats at lower elevations along the U.S. 50 corridor would be most affected when projected buildout is reached. It is also assumed that sensitive habitats in the central region of the county would be affected more than at 2025 as development is likely to continue to spread east up the west slope over time. This impact is considered significant.

Mitigation Measure 5.12-4—No Project Alternative

The County shall implement both of the following measures to reduce impacts on sensitive habitats:

- Mitigation Measure 5.12-4(a): Implement Mitigation Measures 5.12-1(d), 5.12-1(e), and 5.12-3(b) of the No Project Alternative
- Mitigation Measure 5.12-4(b): Implement Multiple Policies to Reduce Impacts on Sensitive Habitats

These potential mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level, because future development would eliminate and degrade a substantial amount of sensitive habitat and feasible opportunities to mitigate this impact would be limited.

Mitigation Measure 5.12-4(a): <u>Implement Mitigation Measures 5.12-1(d), 5.12-1(e), and 5.12-3(b) of the No Project Alternative</u>

The County shall implement Mitigation Measures 5.12-1(d) and 5.12-1(e), described under Mitigation Measure 5.12-1—No Project Alternative above, and 5.12-3(b), described under Mitigation Measure 5.12-3—No Project Alternative above, to reduce impacts on sensitive habitats.

Mitigation Measure 5.12-4(b): <u>Implement Multiple Policies to Reduce Impacts on Sensitive Habitats</u>

Policy 7.3.3.1 shall be replaced as follows:

> **New Policy 7.3.3.1:** For projects that would result in the discharge of material to or that may affect the function and value of river, stream, lake, or pond, or wetland features, the application shall include a delineation of all such features. For wetlands, the delineation shall be conducted using the USACE Wetland Delineation Manual.

Policy 7.3.3.2 shall be deleted:

> ~~**Policy 7.3.3.2:** A feasible project modification shall be considered to avoid wetland disturbance. Direct or indirect losses of wetlands and/or riparian vegetation associated with discretionary application approval shall be compensated by replacement rehabilitation, or creation of a wetlands habitat on a no-net-loss basis. Compensation may result in provision of wetlands habitat on- or off-site at a minimum of a 1:1 ratio as associated with the disturbed resource. A wetland study and mitigation monitoring program shall be submitted to the County and concerned State and Federal agencies for review prior to permit approval.~~

The County shall add the following policies under Objective 7.3.3:

> **New Policy:** The County shall develop a database of important surface water features, including lake, river, stream, pond, and wetland resources.

> **New Policy:** The Zoning Ordinance shall be amended to provide buffers and special setbacks for the protection of riparian areas. The County shall encourage the incorporation of protected areas into conservation easements or natural resource protection areas.

Exceptions to riparian and wetland buffer and setback requirements shall be provided to permit necessary road and bridge repair and construction, trail construction, and other recreational access structures such as docks and piers, or where such buffers deny reasonable use of the property, but only when appropriate mitigation measures and Best Management Practices are incorporated into the project.

For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.

New Policy: Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.

A measure that was considered but not proposed is a complete prohibition on the culverting, lining, or piping of streams. The proposed measures would provide a comparable level of protection by requiring that disturbance or fragmentation of important habitat—which includes aquatic environments such as streams, rivers and lakes, and wetland and riparian habitat—be avoided except where avoidance is not possible (see Mitigation Measures 5.12-1(d) and (e)). In addition, where avoidance is not possible, mitigation would be required at a level sufficient to fund preservation and/or restoration at a 2:1 ratio, with additional onsite mitigation at a 1:1 ratio required for larger projects. Mitigation Measure 5.12-4(b) above would require buffers and special setbacks for the protection of riparian areas, with exceptions allowed only where necessary for the repair or construction of bridges, roads and recreational structures or to avoid a regulatory taking problem, and then only where mitigation and BMPs are incorporated into the project. The measure would also require integration of rivers, streams, lakes, ponds and wetlands into new development in such a way that disturbance is avoided or minimized. A complete prohibition on culverting, lining or piping of streams is not feasible because there may be instances where such activities cannot be avoided. The proposed measures, however, would prohibit culverting, liming, or piping except where avoidance is infeasible and compensatory mitigation would be required in those cases.

Mitigation Measure 5.12-4—Roadway Constrained 6-Lane "Plus" Alternative

Please refer to the proposed Mitigation Measure 5.12-4(a) of the No Project Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level because future development would eliminate a substantial amount of sensitive habitat and feasible opportunities to mitigate this impact would be limited.

Mitigation Measure 5.12-4—Environmentally Constrained Alternative

Please refer to the proposed Mitigation Measure 5.12-4(a) of the No Project Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level because future development would eliminate a substantial amount of sensitive habitat and feasible opportunities to mitigate this impact would be limited.

Mitigation Measure 5.12-4—1996 General Plan Alternative

Please refer to the proposed mitigation measures of the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level because future development would eliminate a substantial amount of sensitive habitat and feasible opportunities to mitigate this impact would be limited.

Exhibits

Designated Land Uses by Intensity

High intensity: High-density residential, medium-density residential, low-density residential (i.e., lot sizes ranging from 5 to 10 acres), multifamily residential, industrial, commercial, research and development, public facilities, and the adopted plan.

Medium intensity: Tourist recreational, rural land, rural residential (i.e., lot sizes ranging from 10 to 40 acres), and agricultural land. These are areas where grading can

be more selective, such as grading for one residence on a 10-acre parcel, and/or where the use of land is of low enough intensity that wildlife may be expected to continue using the area.

Low intensity: Natural resources and open space.

Bold numbers are used when the combination of low and medium land use intensity exceeds 50%.

Source: FRAP 2002, EDAW 2003 37

Greenwood and Saving 1999 38

Harris and Kocher 2002 39

1996 68

* Although the No Project and 1996 General Plan alternatives have the same land use designation, development intensity would differ. Under the No Project Alternative development would be restricted to 1 DU/parcel regardless of size. Subdivision would be allowed under the 1996 General Plan Alternative.

Source: EDAW 2002, CDFG 2002 72

Monterey County 2002 87