

## 9. OPEN SPACE, CONSERVATION, AND RECREATION

### 9.1 Introduction

The County's natural and open space environment forms an important part of the County's unique character. In an effort to identify and understand the key natural resources in the County, this chapter is divided into the following discussions:

- Water Resources (Section 9.2)
- Soil Resources (Section 9.3)
- Biological Resources (Section 9.4)
- Scenic Resources (Section 9.5)
- Agricultural Resources (Section 9.6)
- Mineral and Energy Resources (Section 9.7)
- Recreation Resources (Section 9.8)
- Cultural Resources (Section 9.9)

### 9.2 Water Resources

Lake County contains plentiful water resources, including numerous lakes, reservoirs, creeks, and other water features. It also has groundwater resources that provide the principal source of water supply for domestic, agricultural and industrial uses in the County. This section focuses on surface and groundwater resources rather than on municipal water supplies (which are described in Section 5.2, "Water Supply").

#### METHODS

Information in the Water Resources Section was obtained from existing Lake County studies and reports, including documents and maps found on these websites:

Lake County website  
[www.co.lake.ca.us/cntyhome.html](http://www.co.lake.ca.us/cntyhome.html)

California Department of Conservation website  
[www.consrv.ca.gov/index/index.htm](http://www.consrv.ca.gov/index/index.htm)

Department of Water Resources website  
[www.waterplan.water.ca.gov/groundwater/118index.htm](http://www.waterplan.water.ca.gov/groundwater/118index.htm)

## KEY TERMS

The definitions below were obtained from the Arizona Water Resources Research Center website. The website, sponsored by the University of Arizona, contains a glossary of water-related terms and other reference materials related to water.

<http://ag.arizona.edu/AZWATER/reference/glossary/noframe.html>.

**Aquifer.** One or more geologic formations containing sufficient saturated porous and permeable material to transmit water at a rate sufficient to feed a spring or for economic extraction by a well.

**Acre-foot (pl. acre-feet).** The volume of water necessary to cover one acre of land to a depth of one foot. Equal to 43,560 cubic feet or 325,851 gallons or 1,233 cubic meters. This term is often abbreviated to "AF" or "af".

**Groundwater.** That portion of the water beneath the surface of the earth that can be collected with wells, or that flows naturally to the earth's surface via seeps or springs.

**Groundwater Basin.** A hydrologic unit of groundwater storage defined as an area more or less separate from neighboring groundwater storage areas.

**Recharge.** To add water to an aquifer; also, the water added to an aquifer. Recharge can be naturally, artificially, or incidentally added to an aquifer.

**Safe Yield.** Safe yield represents the estimated quantity of water that can be withdrawn from the aquifer annually without causing adverse conditions such as long-term overdraft exceeding the rate of recharge, irreversible land subsidence from compression of dewatered aquifer materials, and reduction in water quality.

**Watershed.** That surface area which drains to a specified point on a water course, usually a confluence of streams or rivers.

## REGULATIONS THAT AFFECT WATER RESOURCES

**Clean Water Act.** The Clean Water Act (33 USC1251-1387; Act of June 30, 1948 as Amended) is a broad statute with the goal of maintaining and restoring waters of the United States. Among its many provisions for the control of water pollution, the act also requires permits for filling or discharge of dredged materials into waters of the United States. Water quality protection under Section 401 and wetland protection under Section 404 of the Clean Water Act is regulated by local offices of the U.S. Army Corps of Engineers (San Francisco District), U.S. Environmental Protection Agency (Region IX, San Francisco), and the California Regional Water Quality Control Board (Region 1, the North Coast Region, with offices located in Santa Rosa and Region 5, the Central Valley Region with offices in Sacramento).

**Clean Water Act, Section 303(d).** As part of the federal Clean Water Act, Section 303(d) requires that a list of all surface waters that do not meet surface water quality standards be maintained. According to a 1998 303(d) list maintained by the State Water Quality Control Board, Clear Lake is listed due to its high concentration of mercury and nutrients, and Cache Creek is listed due to the presence of unknown toxic substances, and Lake Pillsbury is listed due to mercury from natural sources.

**Groundwater Management Act (California Water Code Section 10750).** The California Groundwater Management Act, commonly referred to as AB 3030, promotes development of voluntary groundwater management plans to guide ongoing management procedures for groundwater basins and ensure stable groundwater supplies in the future. The legislation is designed to provide local public agencies with increased management authority over groundwater resources in addition to those existing groundwater management capabilities.

**Lake County Groundwater Export Ordinance.** The County has adopted a groundwater export ordinance that serves to restrict unregulated extraction and export of groundwater out of Lake County. The ordinance requires a permit to be issued by the County in order to extract and export groundwater in excess of 1 acre-foot per year.

**Safe Drinking Water Act.** While the Clean Water Act addresses surface water and wetlands, the Safe Drinking Water Act is the main federal law that ensures the quality of Americans' drinking water. Under this Act, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The California Department of Health Services, Division of Drinking Water and Environmental Management administers regulatory programs that all include components designed to protect drinking water quality such as: water well installation permits, potable water supply monitoring requirements for public drinking water systems and new domestic wells, on-site septic sewer system regulations, hazardous material and waste generation, regulated underground storage tanks, and solid waste facilities.

### ENVIRONMENTAL SETTING

The following text is largely excerpted from the Draft Clear Lake Basin Management Plan (<http://watershed.co.lake.ca.us/clmp/clmp032202.pdf>), currently under preparation by the Lake County Public Works Department. This information will be subject to change as this Management Plan is finalized.

## Surface Water

Lake County's surface water resources include several lakes, reservoirs, streams, creeks, springs and ponds. The County's larger perennial streams provided the necessary water for groundwater recharge, and also deliver water to lakes and reservoirs.

The County's water supply is derived from the annual precipitation that the County receives, which varies from 22 inches at Clear Lake to 80 inches in the Myacamas Mountains. Rainfall collects at three major watersheds: the Upper Eel River, the Clear Lake Basin, and the Upper Putah Creek. The Upper Eel River drains out to the Pacific Ocean, the Clear Lake Basin drains into Yolo County, and the Upper Putah Creek drains into Napa County. Each major watershed is composed of smaller water resource components formed by streams, creeks, groundwater basins, and the terrain of the area.

## Groundwater

Managing groundwater resources is essential to support future growth and avoid impacts to existing uses. Groundwater aquifers in the County provide the principal source of water supply for domestic, agricultural, and industrial uses. Water in Clear Lake provides only a minimal source for these uses because the Yolo County Flood Control and Water Conservation District owns most of the water rights to water stored in the lake.

The major groundwater basins include Big Valley, Callayomi Valley, Scotts Creek Valley, and Upper Lake Valley. Smaller groundwater basins include High Valley, Burns Valley, Coyote Valley, Lower Valley, Long Valley, and Gravelly Valley. The combined storage capacity of the major basins is about 111,000 acre-feet, and the useable or safe-yield capacity is estimated to be about 35,000 acre-feet. In general, significant declines in water levels have occurred in the Big Valley and Scotts Creek Valley basins due to extensive use for irrigation and domestic uses.

Historical observations of groundwater quality are limited. Laws requiring testing of water wells at the time of drilling or installation originating to the 1970s are relatively new with respect to inhabitation within the County. Study of the four major groundwater basins in Lake County is currently underway by the California Department of Water Resources (DWR Bulletin 118, 2002).

Surface water commonly is hydraulically connected to groundwater, where as when surface water levels rise, so do groundwater levels, and vice versa. As development of land and water resources increase, it is apparent that such development impacts surface water resources and groundwater resources collectively. Withdraw from surface water resources cause withdraw from groundwater or conversely, pumping groundwater can deplete nearby surface water. In addition, pollution in surface waters can cause degradation in groundwater and conversely, pollution in groundwater can degrade the

quality of surface water. Thus, effective land and water management requires an understanding of the linkages between groundwater and surface water as it applies to any hydrologic setting (USGS, 1999).

The most significant problems associated with groundwater quantity in the County has been reduced groundwater levels, as a result of mining stream channel gravel deposits during the early and middle part of the 20<sup>th</sup> century. By removing gravel in upper reaches (particularly of Scotts Creek, Kelsey Creek, and Adobe Creek), the lower reaches of these channels were downcut by hydraulic scouring. The reduced surface elevation of the channel bottoms relative to the surrounding land surface and shallow underlying groundwater levels increased groundwater seepage to the stream channels and lowered groundwater levels. The County subsequently adopted the Creek Management Plan in 1981 and the Aggregate Resource Management Plan (an element of the General Plan) in 1992 to control gravel-mining operations in stream channels. As a result of lowered groundwater levels, detention structures were also constructed on Kelsey Creek and Scotts Creek to promote stream-channel deposits and restore groundwater levels and storage in the adjacent aquifers.

### Water Quality

In general, groundwater quality in the County is good to excellent (Lake County 1997). Groundwater quality depends on the quality of water recharged to the aquifer, aquifer chemical properties, and specific natural or human-caused waste inputs such as fertilizer and pesticide applications, septic system leachate, or specific waste disposal areas such as landfills, abandoned landfills, or illegal dumping. Studies conducted for the Big Valley note that the groundwater differs from other areas in the County with Big Valley having more magnesium than calcium relative to the bicarbonate content (Lake County Flood Control and Water Conservation District 1999). Sodium, chloride, and sulfate are present at relatively lower concentrations. Big Valley also occasionally has localized problems with geothermal features that contribute high levels of iron and boron, particularly during the late fall period when groundwater levels are at their seasonal low. Boron, which at high levels can damage to many agricultural crops, is present in Big Valley at moderate levels.

In other aquifers or localized areas, elevated levels of iron, manganese, or hardness may be present. These parameters do not pose health threats; however, they are associated with nuisance properties and regulated with secondary drinking water standards for such conditions as taste, odor, staining of clothing, and/or scale formation in plumbing fixtures. Some individual wells have noted specific increases in nitrate levels, which is regulated for human health concerns.

## Water Supply

There is no single source of information available with which to assess the current groundwater supply conditions in the County. However, there is a need to limit further increases in groundwater uses in the Big Valley basin because water supply shortages could occur in some areas during a drought even though the overall supply is sufficient to meet the projected demand. The variable location of shortages could occur because areas have differing natural groundwater recharge rates, lower well yields, or have higher overall well densities and use rates than other properties. The City of Lakeport has also indicated the need to implement land use restrictions for improved groundwater management of the Scotts Valley groundwater basin. The goal in Scotts Valley is to limit groundwater overdraft and avoid land subsidence.

## 9.3 Soil Resources

This section describes the general characteristics of soil resources within Lake County. Topics covered in this section include the following:

- A general description of the soil resources and associated characteristics within County; and
- The geographic location of soil types found within the planning area as delineated by the Natural Resource Conservation Service.

### METHODS

Information on soil resource was collected from the United States Department of Agriculture (USDA) and the Natural Resource Conservation Service (NRCS) Soil Survey for Lake County. Spatial information and attribute data utilized for the production of the maps produced for this section was obtained by the State Soil Graphic (STATSGO) Database.

### KEY TERMS

**Erosion.** Erosion is the detachment and movement of soil materials through natural processes or human activities.

**K-Factor.** Provides an indication of a soil's inherent susceptibility to erosion, absent of slope and groundcover factors.

**Soil Map Units.** A soil map unit is a collection of areas defined and named similarly in terms of their soil components.

**Soil Series.** The soil series is the most homogenous category in the U. S. Soils Taxonomy. As a class, the soil series is a group of soils that have horizons similar in arrangement and is differentiating characteristics.

**Soil Horizon.** A layer of soil, parallel to the soil surface, differing in properties and characteristics from adjacent layers below or above it.

### REGULATIONS THAT AFFECT SOIL RESOURCES

Regulations affecting soils are generally of two types: those related to the conservation of soils (i.e., preservation of farmland or erosion controls) and those related to geological hazards (faulting or soils that undergo liquefaction). Regulations associated with the protection and preservation of agricultural soils are presented in the Agriculture Resources section (Section 9.6). The regulation of soil hazards such as landslides are presented in the Geological and Seismic Hazards section (Section 7.2).

**California Resources Code, Division 9.** The California Resources Code establishes the Resource Conservation Commission that is to be served by a Division of Resource Conservation within the Department of Conservation (<http://carcd.org/yourdistrict/div-9.htm>). These Districts primary function is to preserve soil and prevent erosion.

**Section 65302(d), State Government Code.** This regulation requires that general plans include analysis of soils in the preparation of the conservation element. The conservation element may also cover prevention, control and correction of the erosion of soils, beaches and shores (California Government Code, Title 7 Planning and Land Use, Chapter 3 Local Planning, Article 5 (Authority For and Scope of General Plans, Section 65302(d)).

**Lake County Grading Ordinance.** The Lake County grading ordinance (Ordinance No. 2473) was enacted in May 1999. It prohibits earthmoving activities, with the exception of ongoing agricultural uses, that do not adhere to the provisions of the County Building Code. The portion of the Lake County Building Code that incorporates the Grading Ordinances states: "The purpose of this chapter is to safeguard life, limb, property, the protection of the natural and cultural resources, maintain slope stability, provide sediment control, and prevent environmental damage by regulating grading. It is the intent of the ordinance, because of the sensitivity of bodies of water within Lake County to the impacts of erosion and sedimentation, that with the exception of ongoing agricultural uses, no grading be allowed which will result in increased siltation or adverse effect to water courses or drainage." Incorporation of erosion and sediment control measures into earthmoving activities is a key component of obtaining a grading permit.

## ENVIRONMENTAL SETTING

### Erosion

Depending on the local landscape and climatic conditions, erosion may be very slow to very rapid. The detachment of soil particles can be initiated by the movement of water or wind over exposed soil. The County's Planning Area is located within a Mediterranean climatic regime, which is characterized by moist winters and dry summers. The Planning Area is therefore subject to both types of erosion depending on the time of year.

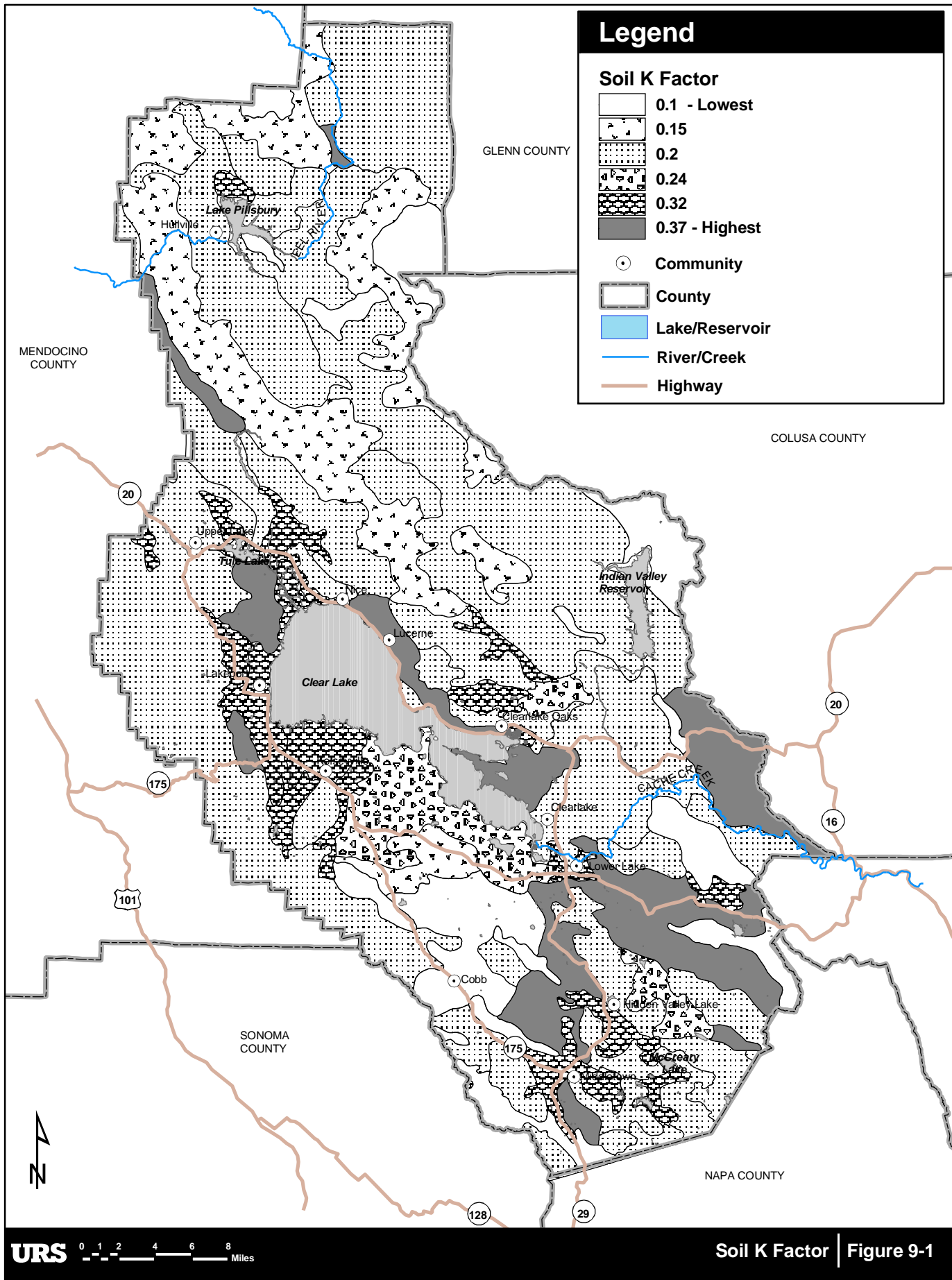
Rates of erosion can vary depending on the soil material and structure, placement, and human activity. The erosion potential for soils in the Planning Area depend on several soil characteristics, including surface texture, overall permeability, organic matter content, depth, and quantity and type of ground cover. Excessive soil erosion can lead to damage of building foundations, roadways, dam embankments and result in increased sedimentation to local drainage ways.

Figure 9-1 provides a general indication of the erosion potential for soils within Lake County. The figure is based on values for the "soil erodibility factor" or K factor defined by the Natural Resource Conservation Service (see [www.sedlab.olemiss.edu/rusle/description.html](http://www.sedlab.olemiss.edu/rusle/description.html)). The K factor incorporates information about a soil's texture and organic content. Slope, and the other erosions influences noted above, also affect the erodibility of a soil, so the mapped areas provide only a general guideline of erosion potential. Figure 9-1 was aggregated for display purposes on a County scale. The County Soil Survey, published by the NRCS, should be consulted for more detailed information.

Efforts such as implementation of the grading ordinance and development of the Clear Lake Basin Management Plan are underway in order to minimize potential erosion and sedimentation throughout the County.

### Expansive Soils

Expansive soils possess a shrink-swell characteristic. Structural damage may result over a long period of time, usually resulting from inadequate soil and foundation engineering. Expansive soils are largely comprised of clays, which expand in volume when water is absorbed and shrink when dried. A number of the soil types located within the Planning Area are comprised of potentially expansive materials. As such, these areas would be considered more likely to contain expansive clays, and therefore these factors should be taken into consideration during future planning activities and site-specific project design. Figure 9-2 provides an indication of the potential expansiveness for each of the soil types found within the Planning Area.





Soil Shrink-Swell Potential | Figure 9-2

## 9.4 Biological Resources

The Lake County Planning Area contains a variety of plants, wildlife, and habitats. This section describes biological resources in the Planning Area from both qualitative and quantitative perspectives. The results of this assessment will be used in the development of policy targeted at protecting biological resources in the planning area.

### METHODS

URS biologists utilized field reconnaissance, a review of pertinent literature, and database queries to identify biological resources within the study area. The primary sources of data referenced for this section include the following:

- California Natural Diversity Data Base (CNDDDB) – GIS Database, California Department of Fish and Game, October 2002 version
- CNDDDB Extent of Occurrences – GIS Database, California Department of Fish and Game, October 2002 version
- GAP - GIS Database, California Department of Fish and Game, 1997 version
- Native Plant Society (NPS) species list
- Federal Endangered and Threatened Species (U.S. Fish and Wildlife Service, 2002)
- Threatened and Endangered Plants List (California Department of Fish and Game)
- Threatened and Endangered Animals List (California Department of Fish and Game)
- Lake County General Plan
- Lake County GIS Database
- Ecological Subregions of California (Miles and Goudey, 1997)
- California Department of Fish and Game Habitat Conservation Planning Branch website [www.dfg.ca.gov/hcpb/species](http://www.dfg.ca.gov/hcpb/species)
- USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle, July 9, 1999, Figure1: Range of the Valley Elderberry Longhorn Beetle

URS biologists conducted a reconnaissance-level review of the information provided in the California Natural Diversity Database, the California Native Plant Society (Database), and USFWS Federal Endangered and Threatened Species databases on November 18, 2002.

## KEY TERMS

**Listed Species.** Listed species are recognized by federal, state, or other agencies in an effort to protect them or their habitat. These species are vulnerable to habitat loss or population decline because of their rarity. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been “listed” on the basis of adopted policies and expertise of state resource agencies, local governmental agencies or organizations with acknowledged expertise to meet local conservation objectives. A "listed" species is a collective term in this report based on the species being identified by one or more of the following:

- Candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613);
- Federally listed or proposed under the Federal Endangered Species Act (50 CFR 17.11-17.12);
- Fully protected animals, as defined by the State of California (California Fish and Game Code Section 3511, 4700, and 5050);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.);
- Plants listed by the California Native Plant Society (CNPS) as rare, threatened, or endangered (List 1A and List 2 status plants in Skinner and Pavlik 1994).
- Species listed by the U.S. Fish and Wildlife Service (USFWS) or the California Department of Fish and Game (CDFG) as a species of concern (USFWS), rare (CDFG), or of special concern (CDFG);
- State listed or proposed under the California Endangered Species Act (14 CCR 670.5);
- Species that meet the definition of threatened, endangered, or rare under CEQA (CEQA Guidelines Section 15380);

**Sensitive Natural Community.** A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, or is of special concern to local, state, or federal agencies. The California Environmental Quality Act (CEQA) identifies the elimination or substantial degradation of such communities as a significant impact (CDFG, 2002).

**Critical Habitat.** Critical habitat is the natural environment required by a listed species to survive. These habitats are identified by the USFWS and are provided along with listed species for an area (USFWS, 2002).

**Wetlands.** The federal government defines wetlands in Section 404 of the Clean Water Act as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do

support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b] and 40 CFR 230.3). The definition of wetlands requires three wetland identification parameters are present: wetland hydrology, hydric soils, and hydrophytic vegetation. The U.S. Army Corps of Engineers (ACOE) is the responsible agency for regulating wetlands under Section 404 of the Clean Water Act, while the Environmental Protection Agency (EPA) has overall responsibility for the Act (ACOE, 2002).

**Other Waters of the U.S.** Also a Section 404 term, referring to those hydric features that are regulated by the Clean Water Act but are not defined as wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit an identified bed and bank and an ordinary high-water mark (ACOE, 2002).

### REGULATIONS THAT AFFECT BIOLOGICAL RESOURCES

#### Clean Water Act – Section 404

Wetlands and other waters of the U.S. are subject to jurisdiction by the ACOE and EPA under Section 404 of the Clean Water Act. Wet areas that are not regulated by this act do not have a hydrologic link to other waters of the U.S., either through surface or subsurface flow. The ACOE has authority to issue a permit on a case-by-case basis, or by a general permit. General permits are handled through the Nationwide permit (NWP) process. These permits cover specific common activities that generally have minimal environmental effects and must fulfill several general and specific conditions under that NWP. If a proposed project cannot meet these conditions, an individual permit may be required from the ACOE (ACOE, 2002).

#### California Fish and Game Code Sections 1601 – 1607

The California Department of Fish and Game regulates the modification of the bed, bank, or channel of streams, rivers, and lakes under Sections 1601-1607 of the California Fish and Game Code. Also included are modifications that divert, obstruct, or change the natural flow. A person who proposes an activity that may modify a feature regulated by the Fish and Game Code must notify the California Department of Fish and Game before project construction. The California Department of Fish and Game will then decide whether to enter into a Streambed Alteration Agreement with the project applicant either under Section 1601 (for public entities) or Section 1603 (for private entities) of the Fish and Game Code (CDFG, 2002).

#### Federal Endangered Species Act

The US Fish and Wildlife Service administers the federal Endangered Species Act (16 USC Section 153 et seq.) and thereby has jurisdiction over federally listed threatened, endangered, and proposed species. Projects that may

result in “take” of a listed species must consult with the US Fish and Wildlife Service. Federal agencies that propose a project that may affect a listed species are required to consult with the US Fish and Wildlife Service under Section 7 of the Federal Endangered Species Act. If it is determined that a federally listed species may be adversely affected by the federal action, the US Fish and Wildlife Service will issue a Biological Opinion to the federal agency that describes minimization and avoidance measures that must be implemented as part of the federal action. Projects that do not have a federal nexus must apply for a take permit under Section 10 of the Act. Section 10 of the Act requires that the project applicant prepare a habitat conservation plan as part of the permit application (USFWS, 2002)

### **California Endangered Species Act**

The California Department of Fish and Game administers the California Endangered Species Act of 1984 (Fish and Game Code Section 2080), which regulates the listing and “take” of endangered and threatened species. A “take” may be permitted by California Department of Fish and Game through implementing a management agreement. Under State laws, the California Department of Fish and Game is empowered to review projects for their potential impacts to listed species and their habitats.

The California Department of Fish and Game maintains lists for Candidate-Endangered Species (SCE) and Candidate-Threatened Species (SCT). California candidate species are afforded the same level of protection as listed species. California also designates Species of Special Concern (CSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future. The CSC list is intended by California Department of Fish and Game as a management tool for consideration in future land use decisions (CDFG, 2002).

### **Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act**

The Migratory Bird Treaty Act (MBTA, 16 USC Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct “take”. The MBTA protects migrant bird species from take through setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Golden Eagle Protection Act prohibits the take or commerce of any part of these species. The US Fish and Wildlife Service administers both acts, and reviews federal agency actions that may affect species protected by the acts (USFWS, 2002).

**ENVIRONMENTAL SETTING****Regional Description of Biology**

One method of classifying the landscape is by eco-region. This method is used by the USFS and relates to the California Manual of Vegetation and USGS's Major Land Resources Area system. The eco-region approach evaluates the land from a wide range of interrelated environmental variables including topography, soils, hydrology, flora, and fauna.

Lake County contains three portions of eco-region sections according to this system. A small portion of the south County is in the Northern California Coast Section. The bulk of the County belongs to the Northern California Coast Ranges Section, while a north-south strip of the east belongs to Northern California Interior Coast Ranges (Miles and Goudey, 1997).

Northern California Coast Section vegetation is predominately characterized by the Redwood series, Douglas-fir/tanoak series, Oregon white oak series, Purple needlegrass series, Tanoak series, and Coast live oak series. Fauna associated with this Section include Roosevelt elk, black-tailed deer, black bear, mountain lion, coyote, bobcat, raccoon, skunks, marten, fisher, and river otter. Birds include eagles, hawks, owls, peregrine falcon, osprey, and a variety of shorebirds and waterfowl along the coastal part of the section (Miles and Goudey, 1997).

Northern California Coast Ranges Section vegetation is predominately characterized by the Douglas-fir/tanoak series, Blue oak series, Oregon white oak series, Chamise series, Purple needlegrass series, Mixed conifer series, and White fir series. Fauna associated with this Section include black-tailed deer, black bear, mountain lion, coyote, bobcat, and ringtail. Roosevelt elk, marten, and fisher occur in the northern part of the section. Tule elk and mule deer occur in the southern part. Birds include eagles, hawks, owls, herons and osprey (Miles and Goudey, 1997).

Northern California Interior Coast Ranges vegetation is predominately characterized by the Blue Oak series, Chamise series, Purple needlegrass series, and Foothill pine series. Fauna associated with this Section include mule deer, black-tailed deer, coyotes, ground squirrels, cottontails, jackrabbits, and kangaroo rats. Birds include turkey vultures, eagles, hawks, owls, quail, mourning dove, mockingbird, scrub jay, western meadow lark, finches, and sparrows (Miles and Goudey, 1997).

**Listed Species and Sensitive Habitats**

Listed species need to be considered when identifying and evaluating biological resources. Table 9-1 lists the special status species listed by the U.S. Department of Fish and Wildlife and the California Department of Fish and Game for Lake County. The CNDDDB lists 81 of California's approximately 1,843 listed species as occurring in Lake County. The USFWS lists 96 potential species as occurring in Lake County. When these two lists

are combined, there are 108 listed species for Lake County (CNDDDB, 2002 and USFWS, 2002).

**Table 9-1 Special-Status Species That May Occur In The Study Area**

Species	CNDDDB Sighting?	Listing			General habitat
		USFW	CDFG	NPS	
<b>Plants</b>					
<i>Amsinckia lunaris</i>	No		SLC		
Bent-flowered fiddleneck					
<i>Arctostaphylos canescens ssp sonomensis</i>	Yes		SLC	1B	Chaparral, lower montane coniferous forest.
Sonoma manzanita					
<i>Arctostaphylos manzanita ssp elegans</i>	Yes	SC		1B	Chaparral, cismontane woodland, lower montane coniferous forest.
Konocti manzanita					
<i>Arctostaphylos stanfordiana ssp. raichei</i>	No	SC	SC	1B	Chaparral, lower montane coniferous forest. Only in Lake and Mendocino Counties.
Hopland manzanita					
<i>Astragalus rattanii var jepsonianus</i>	Yes		SLC	1B	Cismontane woodland, valley and foothill grassland, chaparral.
Jepson's milk-vetch					
<i>Balsamorhiza macrolepis var macrolepis</i>	Yes		SLC	1B	Valley and foothill grassland, cismontane woodland.
Big-scale balsamroot					
<i>Brodiaea californica var. leptandra</i>	No		SLC	1B	Broadleaved upland forest, chaparral, lower montane coniferous forest.
Narrow-anthered California brodiaea					
<i>Brodiaea coronaria ssp rosea</i>	Yes		CA	1B	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland, meadows.
Indian valley brodiaea					
<i>Calystegia collina ssp. oxyphylla</i>	No		SLC		No data available
Mt. Saint Helena morning glory					
<i>Castilleja rubicundula ssp. Rubicundula</i>	No		SLC		No data available
Pink creamsacs					
<i>Carex comosa</i>	Yes			2	Marshes and swamps. Fairly widely distributed, but apparently rarely collected.
Bristly sedge					
<i>Ceanothus confuses</i>	Yes	SC	SC	1B	Closed-cone coniferous forest, chaparral, cismontane woodland.
Rincon ridge ceanothus					
<i>Ceanothus divergens</i>	Yes	SC	SC	1B	Chaparral, cismontane woodland. Endemic to Lake, Napa, and Sonoma Counties.
Calistoga ceanothus					
<i>Chlorogalum pomeridianum var minus</i>	Yes		SLC	1B	Chaparral, valley and foothill grassland.
Dwarf soaproot					
<i>Cryptantha clevelandii var dissita</i>	Yes		SLC	1B	Chaparral. Endemic to Lake and Napa Counties.
Serpentine cryptantha					
<i>Didymodon norrisii</i>	Yes			2	Cismontane woodland, lower montane coniferous forest.
Norris's beard-moss					
<i>Epilobium nivium</i>	Yes	SC	SC	1B	Upper montane coniferous forest, chaparral.
Snow mountain willowherb					
<i>Eriastrum brandegeae</i>	Yes	SC	SC	1B	Chaparral, cismontane woodland.
Brandegee's eriastrum					
<i>Erigeron angustatus</i>	Yes		SLC	1B	Chaparral. Known only from Lake, Napa and Sonoma Counties.
Narrow-leaved daisy					

**Table 9-1 Special-Status Species That May Occur In The Study Area**

Species	CNDDB Sighting?	Listing			General habitat
		USFW	CDFG	NPS	
<i>Eriogonum caninum</i>	No		SLC		No data available
Tiburon buckwheat					
<i>Eriogonum nervulosum</i>	Yes			1B	Chaparral.
Snow mountain buckwheat					
<i>Erodium macrophyllum</i>	Yes			2	Cismontane woodland, valley and foothill grassland.
Round-leaved filaree					
<i>Eryngium constancei</i>	Yes	E		1B	Vernal pools. Endemic to Lake County.
Loch lomond button-celery					
<i>Fritillaria pluriflora</i>	Yes		SC	1B	Chaparral, cismontane woodland, foothill grassland.
Adobe-lily					
<i>Gratiola heterosepala</i>	Yes			1B	Marshes and swamps (freshwater), vernal pools.
Boggs lake hedge-hyssop					
<i>Harmonia hallii</i>	Yes			1B	Chaparral.
Hall's harmonia					
<i>Hesperolinon adenophyllum</i>	Yes			1B	Chaparral, cismontane woodland, valley and foothill grassland. Known only from Humboldt, Lake and Mendocino Counties.
Glandular western flax					
<i>Hesperolinon bicarpellatum</i>	Yes			1B	Serpentine chaparral. Known only from Lake, Napa and Sonoma Counties.
Two-carpellate western flax					
<i>Hesperolinon didymocarpum</i>	Yes			1B	Chaparral, cismontane woodland, valley and foothill grassland. Endemic to Lake County.
Lake County western flax					
<i>Hesperolinon drymarioides</i>	Yes			1B	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland.
Drymaria-like western flax					
<i>Hesperolinon sp nov "serpentinum"</i>	Yes			1B	Chaparral.
Napa western flax					
<i>Horkelia bolanderi</i>	Yes			1B	Lower montane coniferous forest, chaparral, meadows, valley and foothill grassland.
Bolander's horkelia					
<i>Lasthenia burkei</i>	Yes	E		1B	Vernal pools, meadows and seeps. Critically endangered plant from Lake, Mendocino, and Sonoma Counties.
Burke's goldfields					
<i>Layia septentrionalis</i>	Yes			1B	Chaparral, cismontane woodland, valley and foothill grassland.
Colusa layia					
<i>Legenere limosa</i>	Yes			1B	Vernal pools. Many historical occurrences are extirpated.
Legenere					
<i>Linanthus jepsonii</i>	Yes			1B	Chaparral, cismontane woodland.
Jepson's linanthus					
<i>Lupinus antoninus</i>	Yes			1B	Upper montane coniferous forest, lower montane coniferous forest.
Anthony peak lupine					
<i>Lupinus sericatus</i>	Yes			1B	Chaparral, cismontane woodland, lower montane coniferous forest.
Cobb mountain lupine					
<i>Madia hallii (Harmonia hallii)</i>	No	SC		1B	Chaparral.
Hall's madia (Hall's Harmonia)					

**Table 9-1 Special-Status Species That May Occur In The Study Area**

Species	CNDDB Sighting?	Listing			General habitat
		USFW	CDFG	NPS	
<i>Mielichhoferia elongata</i>	Yes			2	Cismontane woodland. Commonly called "copper mosses".
Elongate copper-moss					
<i>Monardella villosa ssp. Globosa</i>	No		SLC	1B	Chaparral, cismontane woodland.
Robust monardella					
<i>Navarretia leucocephala ssp bakeri</i>	Yes			1B	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.
Baker's navarretia					
<i>Navarretia leucocephala ssp pauciflora</i>	Yes	E		1B	Vernal pools. Endemic to Lake and Napa Counties.
Few-flowered navarretia					
<i>Navarretia leucocephala ssp plieantha</i>	Yes	E		1B	Vernal pools. Endemic to Lake and Sonoma Counties.
Many-flowered navarretia					
<i>Navarretia myersii ssp deminuta</i>	Yes			1B	Vernal pools.
Small pincushion navarretia					
<i>Navarretia myersii ssp. Myersii</i>	No	SC		1B	Vernal pools, valley and foothill grassland.
Pincushion navarretia					
<i>Orcuttia tenuis</i>	Yes	T		1B	Vernal pools.
Slender orcutt grass					
<i>Penstemon newberryi var sonomensis</i>	Yes			1B	Chaparral.
Sonoma beardtongue					
<i>Plagiobothrys lithocaryus</i>	Yes			1A	Meadows? Valley and foothill grassland, cismontane woodland, chaparral? Known only from Lake and Mendocino Counties.
Mayacamas popcorn-flower					
<i>Sedella leiocarpa (Parvisedum leiocarpum)</i>	Yes	E		1B	Valley and foothill grassland, vernal pools, cismontane woodland. Endemic to Lake County.
Lake County stonecrop					
<i>Sidalcea oregana ssp hydrophila</i>	Yes			1B	Meadows and seeps, riparian forest.
Marsh checkerbloom					
<i>Streptanthus brachiatus ssp hoffmanii</i>	Yes			1B	Chaparral, cismontane woodland.
Freed's jewel-flower					
<i>Streptanthus breweri var hesperidis</i>	No		SLC		No data available
Green jewel-flower					
<i>Streptanthus morrisonii spp elatus</i>	Yes	SC			Chaparral, cismontane woodland, closed-cone coniferous forest. Only known from Sonoma, Lake, and Napa Counties.
Three peaks jewelflower					
<i>Streptanthus morrisonii spp kruckebergii</i>	Yes	SC			Chaparral, cismontane woodland, closed-cone coniferous forest. Only known from Sonoma, Lake, and Napa Counties.
Kruckeberg's jewelflower					
<i>Tortella alpicola</i>	Yes			2	Cismontane woodland.
Alpine crisp-moss					
<i>Tracyina rostrata</i>	Yes			1B	Cismontane woodland, valley and foothill grassland.
Beaked tracyina					
<i>Trichodon cylindricus</i>	Yes			2	Broadleafed upland forest, upper montane coniferous forest.
Cylindrical trichodon					

**Table 9-1 Special-Status Species That May Occur In The Study Area**

Species	CNDDB Sighting?	Listing			General habitat
		USFW	CDFG	NPS	
<b>Mammals</b>					
<i>Antrozous pallidus</i> Pallid bat	Yes	SC	SC		Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.
<i>Arborimus pomo</i> California red tree vole	No	SC	SC		North coast fog belt from Oregon border to Sonoma Co. in douglas fir, redwood and montane hardwood-conifer forests.
<i>Corynorhinus townsendii townsendii</i> Townsend's western big-eared bat	Yes	SC	SC		Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc.
<i>Eumops perotis californicus</i> Greater western mastiff-bat	No	SC	SC		Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral etc
<i>Martes pennanti pacifica</i> Pacific fisher	Yes	SC	SC		Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas w/ high percent canopy closure.
<i>Myotis evotis</i> Long-eared myotis bat	No	SC			Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests.
<i>Myotis thysanodes</i> Fringed myotis bat	No	SC			In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer.
<i>Myotis volans</i> Long-legged myotis bat	No	SC			Most common in woodland and forest habitats above 4000 ft. Trees are important day roosts, caves and mines are night roosts.
<i>Myotis yumanensis</i> Yuma myotis bat	No	SC			Optimal habitats are open forests and woodlands with sources of water over which to feed.
<i>Perognathus inornatus inornatus</i> San Joaquin pocket mouse	Yes		SC		Typically found in grasslands and blue oak savannas.
<b>Birds</b>					
<i>Accipiter gentiles</i> Northern goshawk	Yes	SC	SC		(Nesting) within and in vicinity of coniferous forest. Uses old nests, and maintains alternate sites.
<i>Agelaius tricolor</i> Tricolored blackbird	No	SC	SC		(Nesting colony) highly colonial species, most numerous in central valley and vicinity. Largely endemic to California.
<i>Ammodramus savannarum</i> Grasshopper sparrow	No	SC			(Nesting) dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes.
<i>Amphispiza belli belli</i> Bell's sage sparrow	Yes	SC	SC		(Nesting) nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.
<i>Ardea herodias</i> Great blue heron	Yes				(Rookery) colonial nester in tall trees, cliff-sides, and sequestered spots on marshes.

**Table 9-1 Special-Status Species That May Occur In The Study Area**

Species	CNDDB Sighting?	Listing			General habitat
		USFW	CDFG	NPS	
<i>Asio flammeus</i> Short-eared owl	No	SC	SC		(Nesting) found in swamplands, both fresh and salt; lowland meadows; irrigated alfalfa fields.
<i>Baeolophus inornatus</i> Oak titmouse	No		SLC		No data available
<i>Botaurus lentiginosus</i> American bittern	No	SC			No data available
<i>Brachyramphus marmoratus</i> Marbled murrelet	No	T			(Nesting) feeds near-shore; nests inland along coast, from eureka to Oregon border and from Half Moon Bay to Santa Cruz.
<i>Buteo regalis</i> Ferruginous hawk	No	SC			No data available
<i>Chaetura vauxi</i> Vaux's swift	No	SC			No data available
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	Yes	C			(Nestings) riparian forest nester, along the broad, lower flood-bottoms of larger river systems.
<i>Contopus cooperi</i> Olive-sided flycatcher	No	SC			No data available
<i>Dendroica occidentalis</i> Hermit warbler	No	SC			No data available
<i>Elanus leucurus</i> White-tailed kite	No	SC			(Nesting) rolling foothills/valley margins w/scattered oaks and river bottomlands or marshes next to deciduous woodland
<i>Empidonax trailii brewsteri</i> Little willow flycatcher	No		CA		No data available
<i>Falco peregrinus anatum</i> American peregrine falcon	No	D			(Nesting) near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.
<i>Gavia immer</i> Common loon	No	SC			No data available
<i>Haliaeetus leucocephalus</i> Bald eagle	Yes	T			(Nesting and wintering) ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mi of water.
<i>Lanius ludovicianus</i> Loggerhead shrike	No	SC	SC		(Nesting) broken woodlands, savannah, pinyon-juniper, joshua tree, and riparian woodlands, desert oases, scrub and washes.
<i>Melanerpes lewis</i> Lewis' woodpecker	No	SC			No data available
<i>Numenius americanus</i> Long-billed curlew	No	SC			No data available
<i>Pandion haliaetus</i> Osprey	Yes		SC		(Nesting) ocean shore, bays, fresh-water lakes, and larger streams.

Table 9-1 Special-Status Species That May Occur In The Study Area

Species	CNDDB Sighting?	Listing			General habitat
		USFW	CDFG	NPS	
<i>Plegadis chihi</i>	No	SC	SC		(Rookery site) shallow fresh-water marsh.
White-faced ibis					
<i>Phalacrocorax auratus</i>	Yes		SC		(Rookery site) colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state.
Double-crested cormorant					
<i>Progne subis</i>	Yes		SC		(Nesting) inhabits woodlands, low elevation coniferous forest of douglas fir, ponderosa pine, and monterey pine.
Purple martin					
<i>Selasphorus rufus</i>	No	SC			No data available
Rufous hummingbird					
<i>Strix occidentalis caurina</i>	Yes	T	SC		Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests w/patches of big trees.
Northern spotted owl					
<i>Toxostoma redivivum</i>	No		SC		No data available
California thrasher					
<b>Reptiles</b>					
<i>Clemmys marmorata marmorata</i>	Yes	SC	SC		Associated with permanent or nearly permanent water in a wide variety of habitats.
Northwestern pond turtle					
<b>Amphibian</b>					
<i>Rana aurora aurora</i>	No	SC	SC		Found in humid forests, woodlands, grasslands, and streamsides in northwestern California.
Northern red-legged frog					
<i>Rana boylei</i>	Yes	SC	SC		Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.
Foothill yellow-legged frog					
<i>Spea hammondi</i>	No	SC			No data available
Western spadefoot toad					
<b>Fish</b>					
<i>Archoplites interruptus</i>	Yes	SC	SC		Historically found in the sloughs, slow-moving rivers, and lakes of the central valley.
Sacramento perch					
<i>Lavinia exilicauda chi</i>	No		SC		This subspecies is confined to Clear Lake and nearby ponds. It spawns in intermittent tributary streams of Clear Lake.
Clear Lake Hitch					
<i>Lavinia symmetricus (=Hesperoleucus symmetricus)</i>	No		SC?		There are 7 California Roach subspecies identified as Fish Species of Special Concern in California. It is not certain that the California Roach found in a wide variety of Clear Lake area habitats is considered a subspecies of Special Concern.
California Roach					
<i>Onocorhynchus kisutch</i>	No	T			No data available
Coho salmon					
<i>Onocorhynchus mykiss</i>	No	T			No data available
Northern California steelhead					

**Table 9-1 Special-Status Species That May Occur In The Study Area**

Species	CNDDDB Sighting?	Listing			General habitat
		USFW	CDFG	NPS	
<b>Invertebrates</b>					
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	No	T			Occurs throughout central California, including Lake County to approximately 3,000 feet elevation. Grows in association with blue elderberry ( <i>Sambucus mexicana</i> ).
<i>Syncaris pacifica</i> California freshwater shrimp	No	E			Endemic to Marin, Napa, and Sonoma Counties. Found in low elevations, low gradient streams where riparian cover is moderate to heavy.
<i>Carterocephalus palaemon ssp.</i> Sonoma artic skipper	No	SC			No data available
<i>Dubiraphia brunnescens</i> Brownish dubiraphian riffle beetle	No	SC			No data available
SOURCE: CDFG 2002, NPS 2002, USFWS 2002					
<b>Plants - NPS</b>					
List 1B = Plants rare, threatened, or endangered in California and elsewhere					
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere					
List 3 = Plants about which we need more information--a review list					
List 4 = Plants of limited distribution--a watch list					
<b>All- UFWS and CDFGY</b>					
E = Endangered					
T = Threatened					
SC = Species of concern					
SLC = Species of local concern					
C = Candidate					
PX = Proposed Critical Habitat					
D = Delisted					

In addition to individual species these two resource agencies are concerned with sensitive habitats. Table 9-2 lists the CNDDDB sensitive habitats for Lake County (CNDDDB, 2002). Lake County has 11 of the approximately 150 unique sensitive habitats in the state. The USFWS lists the following species as having critical habitat within Lake County; California red-legged frog, Coho salmon, northern spotted owl, all vernal pool species of invertebrates and plants (USFWS, 2002).

**Table 9-2 CNDDDB Sensitive Habitat That May Occur in the County**

Sensitive habitat	Global Rank	State Rank
Central valley drainage rainbow trout/cyprinid stream	G?	S?
Clear lake drainage cyprinid/catostomid stream	G?	S?
Clear lake drainage resident trout stream	G?	S?
Clear lake drainage seasonal lakefish spawning stream	G?	S?
Coastal and valley freshwater marsh	G3	S2.1
Great valley mixed riparian forest	G2	S2.2
Northern basalt flow vernal pool	G3	S2.2
Northern interior cypress forest	G2	S2.2
Northern vernal pool	G2	S2.1
Northern volcanic ash vernal pool	G1	S1.1
Serpentine bunchgrass	G2	S2.2

Source: CDFG CNDDDB 2002

**CNDDDB ranks:**

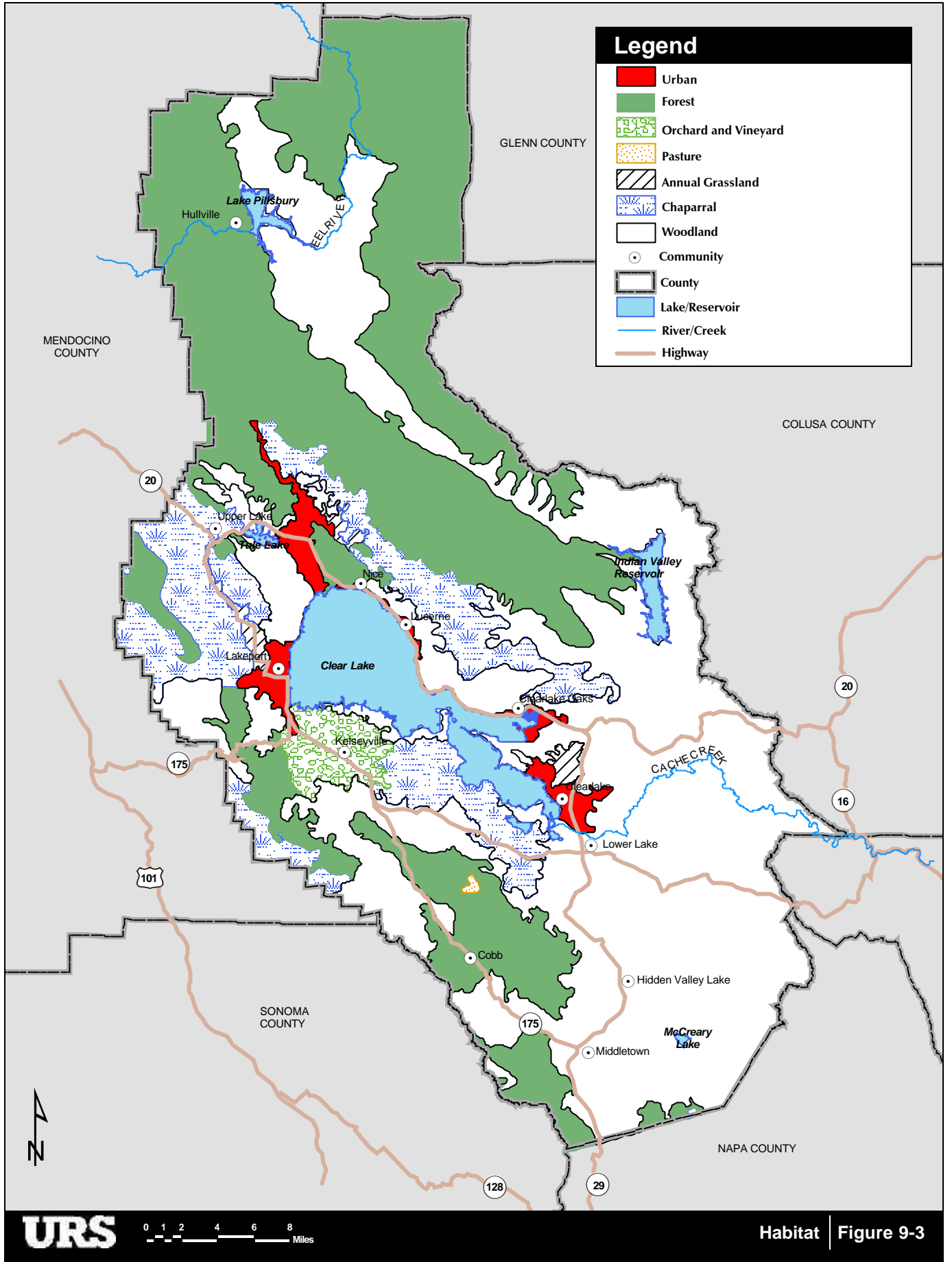
G=Global

G1	extremely endangered	G1G3	proper rank is probably within this range
G2	endangered	G2?	Proper rank is probably G2
G3	restricted range	G?	do not have enough information to rank it
G4	apparently secure	GH	all sites are historical, at least 20 years
G5	demonstrably secure		
S=State			
S1	extremely endangered		
S2	endangered		
S3	restricted range		
S4	apparently secure		
S5	demonstrably secure		
S?	not determined		

Table 9-3 identifies the habitat type and acreages that comprise the Study Area. Figure 9-3 shows the various habitat types that exist in Lake County.

**Table 9-3 Habitat that Comprises the Study Area**

<b>Habitat Type</b>	<b>Acres (Approximate)</b>	<b>Percent Of County</b>
Annual Grassland	6304.317	0.740%
Chaparral	89182.469	10.472%
Forest	305128.493	35.827%
Open Water	48812.463	5.731%
Orchard and Vineyard*	14119.921	1.658%
Pasture	367.449	0.043%
Urban	17758.998	2.085%
Woodland	369991.484	43.443%
Total Acres	851665.594	100.000%
SOURCE: CDFG GAP GIS 1998		
*Rapid expansion of vineyard development since 1998 is not reflected by this data.		



## 9.5 Scenic Resources

Lake County contains a diversity and abundance of scenic resources. In addition to Clear Lake, the largest natural freshwater lake in California, numerous streams, lakes, and reservoirs accentuate the scenic landscape. Mountainous terrain and small valleys surround many of these water features, including Clear Lake. This provides Lake County with numerous interesting and attractive scenes to enjoy while traveling along County roads and viewing the landscape from numerous vantage points, including views from Clear Lake itself.

This section describes the County's major scenic resources, divided into two categories:

- View corridors, including scenic highways
- Countywide scenic resources

### METHODS

This section was prepared based on existing reports and literature for Lake County, as well as a three-day field reconnaissance of the County on September 25-27, 2002. The Caltrans Scenic Highway Program and the Lake County zoning provisions for Scenic Corridor Districts were also evaluated.

### KEY TERMS

**View Corridor.** A view corridor is a highway, road, trail, or other linear feature that offers travelers a vista of scenic areas within a city or county.

**Viewshed.** A viewshed is the area that can be seen from a given vantage point and viewing direction. A viewshed is composed of foreground items (items close to the viewer) that are seen in detail, and background items (items at some distance from the viewer) that frame the view. If a person is moving, as when traveling along a roadway (a view corridor), the viewshed changes as the person moves, with the foreground items changing rapidly and the background items remaining fairly consistent for a long period of time.

### REGULATIONS THAT AFFECT VISUAL RESOURCES

**California Scenic Highway Program.** California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change, which would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes a list

of highways that are either eligible for designation as scenic highways or have been so designated. (California Streets and Highways Code, Section 260 et seq.) Lake County has several eligible corridors listed by Caltrans: Highway 20 and State Routes 29, 53 and 175, however none have been officially designated.

For more information see the following website:  
[www.dot.ca.gov/hq/LandArch/scenic\\_highways/scenic\\_hwy.htm](http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm).

**Lake County Zoning Code, Scenic Corridor District.** Lake County has adopted zoning provisions to establish Scenic Corridor Districts (SC). As stated in the Zoning Ordinance, the purpose of the SC District is as follows: "To protect and enhance views of scenic areas from the County's scenic highways and roadways for the benefit of local residential and resort development, the motoring public, and the recreation based economy of the County." The Zoning Ordinance states that when applying the SC District designation, at least two of the following characteristics should be present:

- Varied topographical features including uniquely shaped rocks, dominant hills, mountains or canyons.
- Vegetative features including significant stands of trees, colorful variety of wildflowers or plants.
- Water features including views of Clear Lake, creeks, streams or waterfalls.
- Pastoral features such as farms, pastures, vineyards or orchards.
- Historical buildings or districts which characterize period architecture or are indicative of past lifestyles.
- Provide convenient visual access from a state highway, county roadway, bikeway or trail.
- Allow features to remain in view of the traveling public for a reasonable length of time for lasting views or impressions.


The SC District provides guidelines for permitted uses, property development standards, maximum allowable height, alterations of natural land contours, advertising signs, and utility siting. This District has been applied to sections of SR 20 and SR 29 designated as having scenic resource value. In addition it has been applied, to a smaller extent, to County roads with extensive frontage lots.

### ENVIRONMENTAL SETTING

Scenic resources, including numerous natural and cultural assets, are one of Lake County's major attractions. Its wide-open spaces, forests, streams, and lakes provide a positive experience for both visitors and residents. There are numerous public lands that contain natural features with strong visual

qualities. Many of these areas, such as the Anderson Marsh Historic Park, are either located within or surround communities and major roadways in the County. Others, such as the Mendocino National Forest, are more remote from populated areas in the County.

In addition to natural scenic resources, Lake County’s rich cultural heritage provides additional scenic opportunities. Table 9-4 provides a brief description of several major visual and cultural resource areas in the County.

 Additional open space areas are described in Section 9.8, “Recreation Resources”.

**Table 9-4 Lake County Scenic Resources**

Area and Location	Scenic Features
Clear Lake, ringed by Highways 20, 29 and 53	Multiple vista points from shoreline and from islands and boats on the Lake, views of Mount Konocti and the surrounding hillsides
Cache Creek BLM Management Area, east of Highway 53 and Clear Lake	50,000-acre roadless area with views of and from stream, river canyon with whitewater rapids, wilderness area with protected wildlife including tule elk and bald eagles
Cow Mountain Recreation Area, northwest of Lakeport	50,000-acre public land area, access to rugged Mayacmas Mountains, views of Clear Lake, surrounding mountains, Scotts Creek with oak woodland, chaparral and conifer habitat
Anderson Marsh State Historic Park & McVicar Preserve, between Clear Lake and Lower Lake on Highway 53	Historic cattle ranch, nature hiking and birdwatching with access to Clear Lake, cultural resources area
Clear Lake State Park, northeast of Kelseyville on Soda Bay Road	Views of Clear Lake and Soda Bay, oak woodland and chaparral at the base of Mount Konocti, natural history center
Mendocino National Forest including Lake Pillsbury, between north shore of Clear Lake and northern border of Lake County	Conifers, oaks and chaparral, views of Lake Pillsbury and surrounding mountains, Snow Mountain wilderness area with views to Mount Lassen, Mount Shasta and the Yolla Bolly Mountains
Mount Konocti (elev. 4,299 ft), southwest shore of Clear Lake, north of Kelseyville	Dormant volcano, tallest peak near Clearlake, unusual Black Forest habitat
Kelseyville, along Highway 29 between cities of Lakeport and Clear Lake	Stone & Kelsey Home, other historic structures built since town founded in 1854
City of Lakeport, along Highway 29 on northwest side of Clear Lake	Historic County Courthouse is regional history museum, views of Clear Lake
Middletown area, near intersection of Highways 29 and 175	Gateway to pine-covered Cobb Mountain area with 1920s era resorts, nearby Guenoc and Langtry Estate vineyards and winery
Lower Lake, near intersection of Highways 29 and 53	Historical Schoolhouse museum, Lower Lake Stone Jail and other historic structures

**View Corridors, including Scenic Highways.** The County is fortunate to have an established highway system that traverses areas of scenic and recreational interest. Highways with scenic view corridors provide for an enjoyable travel experience, link urban areas with open space areas, and provide access to recreational areas. The County contains four corridors that are already designed as eligible for scenic highway designations, and as many as twenty County roads that may be eligible for County Scenic Highway designation.

**State Scenic Highway System.** The current General Plan (1981) recommended the official designation of scenic routes in Lake County. However, subsequent studies have never been prepared. As a result, no highways or roads in the County have been officially designated as scenic. The California Department of Transportation indicates that the following highways are eligible for official scenic highway designations ([www.dot.ca.gov/hq/LandArch/scenic/schwy1.html](http://www.dot.ca.gov/hq/LandArch/scenic/schwy1.html)):

- **Highway 20.** Highway 20 runs the width of the County from the Mendocino County line on the west to the Colusa County line on the east. This highway offers a diverse range of scenic views including mountain vistas near the Mendocino County line, agriculture lands in Bachelor Valley, and rolling hills on the eastern portion of the County. The route provides excellent lake views of both Blue Lakes and Clear Lake, as the road runs adjacent to their shorelines.
- **State Route 29.** Highway 29 runs from the intersection of Highway 20 at Upper Lake south to the Napa County Line. This highway provides scenic views of many of the County's diverse natural environments. Flatlands and rolling hills laced with orchards and vineyards are common views on the road segment between Lakeport and Lower Lake. The road also offers an excellent view of Mt. Konocti. Open meadows and small valleys with a backdrop of rolling hills characterize the scenic views from the highway from the Napa County line to Lower Lake. It is an important scenic road connecting Lake County to regions south.
- **State Route 53.** State Route 53 runs from the intersection with Highway 20 to the intersection with Highway 29 at Lower Lake. Scattered views of Clear Lake with Mt. Konocti in the distance make this a very scenic route.
- **State Route 175.** Highway 175 runs from Highway 29 in Middletown to the Highway 175 and Highway 29 intersection south of Shaul Valley. This highway provides panoramic lake and mountain views, including views of most of the Clear Lake basin and Mt. Konocti.

**County Scenic Highways.** In addition to the State Routes that are eligible for the scenic highways designation, the following county roads were identified in both the current County General Plan (1981) and relevant community plans. These may have potential for a County scenic highways designation as well as a state designation, since the Caltrans program can include local routes.

- Bachelor Valley Road
- Big Canyon Road
- Bottle Rock Road
- Butts Canyon Road
- Clover Valley Road
- Elk Mountain Road
- High Valley Road
- Highland Springs Road
- Hill Road
- Kelsey Creek Drive
- Lakeshore Boulevard
- Loch Lomond
- Morgan Valley Road
- Nice-Lucerne Cutoff
- Point Lakeview Road
- Red Hills Road
- Salmina Road
- Scotts Valley Road
- Soda Bay Road
- Witter Springs Road

**Process for Designation - State Scenic Highways and County Scenic Highways.** When a local jurisdiction nominates an eligible scenic highway for official designation, it must identify and define the scenic corridor of the highway. A scenic corridor is the land generally adjacent to and visible from the highway. A scenic highway designation protects the scenic values of an area. Jurisdictional boundaries of the nominating agency are also considered, and the agency must also adopt ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes. These ordinances make up the scenic corridor protection program.

If a route is not included on a list of highways eligible for scenic highway designation in the California Streets and Highways Code Section 263 et seq., it must be added before it can be considered for official designation. A highway may be designated scenic depending on the extent of the natural landscape that can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

County roads and highways designated as "scenic" in local general plans and protected as such by local ordinances may be designated as "official" and

receive the appropriate scenic highway signs by application of the County Board of Supervisors to the State Director of Transportation, who must find the corridor standards adopted for official State Scenic Highways will be applied equally to County Scenic Highways. To receive official designation for County Scenic Highways, the local jurisdiction must follow the same process required for official designation of State Scenic Highways. The minimum requirements for scenic corridor protection include:

- Regulation of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising (including a ban on billboards);
- Careful attention to and control of earthmoving and landscaping; and
- Careful attention to design and appearance of structures and equipment.

The Transportation District Scenic Highway Coordinator is available upon request to consult with the local jurisdiction regarding the program. The Coordinator can also review the corridor survey and the highway facility study that have been prepared by the local jurisdiction. Citizen participation in developing these requirements is very important if the program is to have popular support.

### 9.6 Agricultural Resources

Since the mid-1800s, when European pioneers arrived in the region, agriculture has been an important land use component and aesthetic factor in the County. Agriculture also plays a major role in maintaining the economic vitality and rural character of Lake County. In large part, the County's ability to maintain as well as increase its agricultural productivity is dependent upon the availability of land with minimal natural limitations on their use. Furthermore, agricultural potential is determined by topography, climate, water availability, current market conditions, and the technical knowledge of the grower.

#### **METHODS**

This section was prepared based on existing studies and literature for Lake County, as well as resource agency websites researched to determine relevant key terms and regulations.

#### **KEY TERMS**

The following contract status terms and definitions used throughout this section were obtained from the State of California's Department of Conservation, Division of Land Resource Protection ([www.consrv.ca.gov/dlrp/index.htm](http://www.consrv.ca.gov/dlrp/index.htm)). The first four definitions are contract

status terms related to the Williamson Act. The last five definitions are land use categories established by the Department of Conservation to map and assess farmland.

**Active Contract.** The minimum term for a Williamson Act contract is 10 years. Since the term automatically renews on each anniversary date of the contract, the actual term can be indefinite. Active contracts are those that have not been subject to filing for notice of non-renewal, cancellation, public acquisition or annexation.

**Notice of Non-Renewal.** Williamson Act contracts may be terminated at the option of the landowner or local government by initiating the process of term non-renewal. Under this process, the remaining contract term (nine years in the case of an original term of 10 years) is allowed to lapse, with the contract null and void at the end of the term. Property tax rates gradually increase during the non-renewal period, until they reach normal (i.e., non-restricted) levels upon termination of the contract.

**Cancellation.** Under a set of specifically defined circumstances, a Williamson Act contract may be cancelled without completing the process of term non-renewal. Contract cancellation, however, involves a comprehensive review and approval process, and the payment of fees by the landowner equal to 12 percent of the full market value of the subject property.

**Expired.** Expired parcels are those parcels that have previously been subject to a Williamson Act contract, and have since been removed from the contract through non-renewal, cancellation or annexation.

**Prime Farmland.** Land that has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained yields of crops when treated and managed, including water management, according to current farming methods. It must have been used for the production of irrigated crops within the last three years. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

**Farmland of Statewide Importance.** Similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture. Considered to have an excellent combination of physical and chemical characteristics for the production of crops.

**Unique Farmland.** Land of lesser quality soils used for the production of specific high-economic value crops at some time during the monitoring program's two update cycles prior to the mapping date. It has the special combination of soil quality, location and growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods.

Unique farmland is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California.

**Farmland of Local Importance.** Farmlands not covered by the categories of Prime, Statewide, or Unique. They include lands zoned for agriculture by County Ordinance and the California Land Conservation Act as well as dry farmed lands, irrigated pasture lands, and other agricultural lands of significant economic importance to the County and include lands that have a potential for irrigation from Lake County water supplies.

**Grazing Land.** Grazing Land is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock.

**REGULATIONS THAT AFFECT AGRICULTURAL RESOURCES**

**California Land Conservation Act (Williamson Act).** The California Land Conservation Act, also known as the Williamson Act, encourages farmers to retain their lands for agricultural use by providing tax incentives. The purpose of this act is to reduce the incidence of farmland conversion from agricultural to other uses, such as residential or industrial purposes.

**Farmland Mapping and Monitoring Program.** The California State Department of Conservation has instituted the Farmland Mapping and Monitoring Program to provide the information needed to assess the value of highly productive and economically important farmland. Table 9-5 indicates total acreages of agricultural land by category (1998 to 2000) based upon the Department’s Land Use Conversion Report.

**Table 9-5 Total Acreages Of Agricultural Land By Category**

Land Use Category	Total Acres Inventoried		Net Change
	1998	2000	
Prime Farmland	16,720	16,980	260
Farmland of Statewide Importance	1,408	1,407	-1
Unique Farmland	9,216	11,076	1,860
Farmland of Local Importance	18,951	18,503	-448
<b>Important Farmland Subtotal</b>	<b>46,295</b>	47,966	1,671
Grazing Land	243,171	241,837	-1,334
<b>Total</b>	<b>289,466</b>	<b>289,803</b>	<b>337</b>

Source: California State Department of Conservation, 2000

**Farmland Security Zones.** In August 1998, the Williamson Act’s farmland security zone (FSZ) provisions were enacted with the passage of Senate Bill 1182 (Costa, Chapter 353, Statutes of 1998). This sub-program, dubbed the “Super Williamson Act,” enables agricultural landowners to enter into

contracts with the County for 20-year increments with an additional 35 percent tax benefit over and above the standard Williamson Act contract.

**Senate Bill 1835.** Senate Bill 1835 (Johnston, Chapter 690, Statutes of 1998) requires the local agency formation commission (LAFCO), to determine whether a particular city is required to succeed (adhere) to the rights, duties and powers of the county under a Williamson Act contract or whether the city may exercise an option to not succeed to the county for annexation of contracted land.

**Cortese-Knox Local Government Reorganization Act.** Senate Bill 2227 (Monteith, Chapter 590, Statutes of 1998) added new requirements to the Cortese-Knox Local Governmental Reorganization Act regarding any proposed annexation to a city of Williamson contract land. If the proposal would result in the annexation, of land that is subject to the Williamson Act, then the petition shall state whether the city shall succeed (adhere) to the contract or whether the city intends to exercise its option to not succeed to the contract.

### **Environmental Resources and Regulations**

Regulation and protection of natural and manmade resources, as presented in this Background Report, also affect the future of agriculture in Lake County. These resource areas include, but are not limited to land resources, water resources, plant and animal resources, cultural and archeological resources, geological and seismic hazards, flood hazards, and fire hazards. Preserving and promoting the agricultural resources of Lake County must be considered in the regulation of these important natural resources.

### **ENVIRONMENTAL SETTING**

The following text is excerpted from the Draft Clear Lake Basin Management Plan (<http://watershed.co.lake.ca.us/clmp/clmp032202.pdf>), currently under preparation by the Lake County Public Works Department. This draft will be subject to change as this Management Plan is finalized.

Agricultural production in Lake County began in the mid-1800s when European settlers cleared and cultivated land on the valley floors and adjacent hillslopes to raise livestock and a limited range of crops. Since then, the Clear Lake area has become the center for agricultural activity in the County, producing most of the fruit and nut crops that are at the heart of the County's agricultural economy. Despite the fact that urbanization has resulted in a substantial decrease in the acreage of available farmland in the County, both total cropland and the gross agricultural production value have increased steadily since 1950. As of 1997, there was approximately 36,000 acres of cropland in the County with an annual production value of almost 54 million dollars. The main crops produced in the County, based on total acreage and production value, are pears, wine grapes, and walnuts.

Although these 3 crops constituted only 39% of the total cropland on the County in 1997, they were responsible for more than 75% of the County's gross annual agricultural production value—clearly demonstrating the importance of these 3 crops to the local agricultural economy.

Most of the cropland in the County is located in and adjacent to Big Valley, Scotts Valley, and the community of Upper Lake. Pears, wine grapes, and walnuts are grown in all 3 regions, but cropping patterns and management practices differ somewhat between crop types. Pears tend to be grown on the fine and moderately fine textured alluvial soils that occupy the majority of the valley floors, whereas walnuts are grown primarily on the loamy residual soils that occupy the adjoining hills, mountains, and alluvial terraces. All pear orchards in the basin are irrigated and are typically maintained under a perennial cover crop. In comparison, only 75% of the walnut orchards in the basin are irrigated and, unlike pears, are maintained under a cover crop for only a portion of the season; cover crops in walnut orchards are typically turned under during September to prepare for the nut harvest and to facilitate the infiltration of upcoming winter rains. Most of wine grapes grown in the basin are white varieties such as Chardonnay and Sauvignon Blanc, but an increasing proportion are red varieties such as Cabernet Sauvignon and Zinfandel. The white varieties are grown primarily on the fine-textured soils that occupy the alluvial lowlands, whereas the red varieties do better on the adjoining hillslopes. All of the vineyards in the basin are irrigated and are typically maintained under a perennial cover crop, with the exception of a small strip around the base of the vines, which is kept clear of vegetation to reduce competition for available water and nutrients.

As indicated in Table 9-6, between 1997 and 2000, the total grape acreage in the county increased 76 percent.

**Table 9-6 Agricultural Production in Lake County**

Crop	Total Acres in Production		Net Change
	1997	2000	
Grapes	4,744	6,820	2,076
Pears	4,622	4,200	-422
Walnuts	4,555	4,596	41
<b>Total</b>	<b>13,921</b>	<b>15,616</b>	<b>1,695</b>

Source: Lake County Agricultural Tree and Vine Report (2000)

Raising livestock was the most common form of agriculture practiced during the early European agricultural settlement of the basin. Today, rangeland and irrigated pasture still account for nearly half of the total cropland in the County, a substantial portion of which is in the basin. Privately owned rangeland and pasture are spread throughout the basin but are concentrated primarily on the rolling uplands adjacent to Big Valley, Scotts Valley, and the communities of Upper Lake, Clearlake, and Clear Lake Oaks. There are also four publicly owned grazing allotments in the basin; three are located on the Mendocino National Forest, and the fourth is on the hills west of Scotts Valley and is administered by the U.S. Bureau of Land Management (BLM).

Livestock grazed on publicly and privately owned lands in the basin include cattle, sheep, and horses. Because permits are not required to raise livestock on privately owned rangeland, there are no detailed records listing livestock populations or grazing intensities in the county. However, the Lake County Agricultural Commissioner's Office estimates that as of 1996, there were approximately 6,000 cattle and 1,500 sheep being raised in the County.

Ongoing urbanization of the County has been responsible for the steady and sometimes dramatic reduction in acreage of farmland in the basin since the mid-1960s, and new land use trends are likely to alter the agricultural character of the basin further. For example, recent fluctuations in market conditions have forced many pear farmers in the basin to voluntarily remove their orchards from production. Approximately 850 acres of pear orchards had been retired as of April 2001, and the Lake County Farm Bureau staff predicts more orchards will likely be retired in the near future. This trend has the potential to further reduce the acreage of farmland in the basin, as retired orchards have greater likelihood of being subdivided into residential or commercial developments than orchards that are in production. However, the most substantial trend in agricultural land use in the basin in recent years is the dramatic increase in vineyard development. The pear and walnut orchards that once replaced vineyards during the times of prohibition are themselves being replaced by vineyards at a rapid rate as the County's potential for producing premium wine grapes is rediscovered. Grasslands, oak savanna, and oak woodlands are also being converted into vineyards at a significant rate. Much of the development is originating from developers from neighboring wine grape counties, such as Sonoma and Napa. The Lake County Farm Bureau staff predicts that by the end of 2001 there will be approximately 12,000 acres of vineyards in the basin. This represents a more than 300% increase from the total acreage of vineyards in the entire county as of 1996. Clearly, this land use trend will have far-reaching and long-lasting effects on the agricultural and socioeconomic character of the basin.

## 9.7 Mineral and Energy Resources

This section provides a general overview of the mineral and energy-producing resources within the Lake County planning area. The section will first identify those regulations that affect mineral and energy resources. In addition, the section will discuss the mineral and energy resources within the Planning Area including a brief discussion of active mines and mineral producers and power producers.

### METHODS

Information in the Water Resources Section was obtained from the California Department of Conservation ([www.consrv.ca.gov/index/index.htm](http://www.consrv.ca.gov/index/index.htm)) Division of Mines and Geology, the California Energy Commission

([www.energy.ca.gov](http://www.energy.ca.gov)) and through review of existing Lake County planning documents.

### KEY TERMS

The following mining and reclamation definitions are utilized by both the California Department of Conservation and Lake County to regulate mining operations.

**Area of Regional Significance** - means an area designated by the board, which is known to contain a deposit of minerals, the extraction of which is judged to be of prime importance in meeting future needs for minerals in a particular region of the state within which the minerals are located and which, if prematurely developed for alternate incompatible land uses, could result in the permanent loss of minerals that are of more than local significance.

**Area of Statewide Significance** - means an area designated by the board, which is known to contain a deposit of minerals, the extraction of which is judged to be of prime importance in meeting future needs for minerals in the state and which, if prematurely developed for alternate incompatible land uses, could result in the permanent loss of minerals that are of more than local or regional significance.

**Lead Agency** - means the city, county, San Francisco Bay Conservation and Development Commission, or the board, which has the principal responsibility for approving a surface mining operation or reclamation plan.

**Mined Lands** - includes the surface, or any part of, the process involved in the mining of subsurface, and ground water of an area in which surface mining operations will be, are being, or have been conducted, including private ways and roads appurtenant to any such area, land excavations, workings, mining waste, and areas in which structures, facilities, equipment, machines, tools, or other materials or property which result from, or are used in, surface mining operations are located.

**Mining Waste** - includes the residual of soil, rock, mineral, liquid, vegetation, equipment, machines, tools, or other materials or property directly resulting from, or displaced by, surface mining operations.

**Operator** - means any person who is engaged in surface mining operations or who contracts with others to conduct operations on his behalf, except a person who is engaged in surface mining operations as an employee with wages as his sole compensation.

**Overburden** - means soil, rock, or other materials that lie above a natural mineral deposit or in between mineral deposits, before or after their removal by surface mining operations.

**Permit** - means any authorization from, or approval by, a lead agency, the absence of which would preclude surface mining operations.

**Reclamation** - means the combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations, including adverse surface effects incidental to underground mines, so that mined lands are reclaimed to a usable condition which is readily adaptable for alternate land uses and create no danger to public health or safety. The process may extend to affected lands surrounding mined lands, and may require backfilling, grading, resoiling, revegetation, soil compaction, stabilization, or other measures.

**Surface Mining Operations** - means all, minerals on mined lands by removing overburden and mining directly from the mineral deposits, open-pit mining of minerals naturally exposed, mining by the auger method, dredging and quarrying, or surface work incident to an underground mine. Surface mining operations shall include, but are not limited to:

- (a) In place distillation or retorting or leaching.
- (b) The production and disposal of mining waste.
- (c) Prospecting and exploratory activities.

## REGULATIONS THAT AFFECT MINERAL AND ENERGY RESOURCES

### California Surface Mining and Reclamation Act of 1975 (SMARA)

SMARA (Section 2710 of the Public Resources Code) establishes the regulations of mining activities in the state of California. As a general finding SMARA states "the extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society, and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety." SMARA is intended to create and maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that:

- Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition, which is readily adaptable for alternative land uses.
- The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment
- Residual hazards to the public health and safety are eliminated.

The Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation is the enforcement body for those parts of the state that

have not implemented their own regulation of mining and reclamation activities.

### **Chapter 24, Surface Mining and Reclamation, of the Lake County Code**

Ordinance No. 2533 § 1, as adopted on July 5, 2000 updated Lake County's Chapter 24 of the County Code ([www.bpcnet.com/codes/lakeco/](http://www.bpcnet.com/codes/lakeco/)). The updated ordinance conforms to the States SMARA model ordinance and implements the policies established SMARA. In doing so the County is the lead agency (see Key Terms) in permitting mining operations and approving reclamation plans in the County. Although not part of the model ordinance, Lake County incorporated its previously adopted Aggregate Resource Management Plan as Chapter 24-4, which is described below.

### **Aggregate Resource Management Plan (ARMP)**

The ARMP was adopted by Lake County November 19, 1992 as a General Plan Amendment, thereby establishing the ARMP as a General Plan Element. The document was to be used to 1) provide general information on aggregate mining in the County, 2) to determine the policies governing mining activities at a specific location, or 3) be used to determine suitable locations for mining projects. In order to fulfill these needs, the ARMP included the following:

- An inventory of existing and potential mining sites;
- A discussion of the types and methods of mining and processing;
- An analysis of the aggregate supply in the County and predictions of future demand;
- Management policies for aggregate mining and reclamation; and
- A Program Environmental Impact Report.

Chapter 24-4 calls for updating the ARMP as necessary. Since its adoption in 1992 the Management Plan has not been updated. Therefore, there have been no revisions to the site inventory, nor has there been a comparison of actual versus predicted aggregate demand.

## **ENVIRONMENTAL SETTING**

Although some gold and silver mining activities have occurred in Lake County, sand and gravel extraction constitute the major portion of the County's mining activity, both in terms of quantity of material produced and value of extracted resource. Aggregate operations currently occur along segments of six creeks: Scotts, Middle, Kelsey, Putah, North Fork of the Cache, and Clover Creeks.

Table 9-7 lists the mining operations in the County that are subject to inspections under SMARA.

**Table 9-7 2002 SMARA Inspection List, February 4, 2003**

<b>Operator</b>	<b>Mine</b>	<b>Type of Mine (Stream Name)</b>
<b>Active Mines</b>		
Homestake Mining Co.	McLaughlin Mine	Gold Mine
Clearlake Lava, Inc.	Clearlake Lava Quarry	Hillside Quarry
Aggreline Rock, Inc.	Aggreline Quarry	Hillside Quarry
Rich-Ted Trucking	S-Bar-S Quarry	Hillside Quarry
Clearlake Lava, Inc.	Point Lakeview Rock	Hillside Quarry
Parnum Paving	Keithly Ranch Quarry	Hillside Quarry
CA Rock and Asphalt	Diamond J Ranch	Terrace Pond (Putah Creek)
Clearlake Lava, Inc.	Provedello Ponds	Terrace Pond (Cache Creek)
Clearlake Redi-Mix	Clearlake Redi-Mix	Terrace Pond (Middle Creek)
Pivniska Trucking	Cross Town Hunt Club	Terrace Pond (Middle Creek)
Pivniska Trucking	Young Pond	Terrace Pond (Middle Creek)
John Davis (Bob Ford)	Davis – Scotts Creek Bar	Terrace Pond (Scotts Creek)
CA Rock & Asphalt	Putah Creek Gravel Bar	Gravel Bar (Putah Creek)
DNA River Rock, Inc.	Processing Plant	Processing
<b>Idle Mines</b>		
Helen Hale	Hale Quarry	Hillside Quarry
<b>Mines Reclaimed in 2002</b>		
Bob Ford	Blue Rock Quarry	Hillside Quarry
Parnum Paving	Indian Creek Quarry	Hillside Quarry
DNA River Rock, Inc.	Sutterhome	Gravel Bar (Putah Creek)
Clearlake Lava, Inc.	Bell Mine	Hillside Quarry
Source: Lake County (February 2003)		

With aggregate sources within the County, construction/development projects are not dependent on non-County sources, which could increase the cost of construction. However, the mining of aggregate in the delta area of Clear Lake and along various creeks results in potential significant impacts to biological resources, groundwater, and surface water. In addition, mining activities have visual and noise impacts that may be incompatible with other uses. Since no update to the ARMP has been prepared, the current status of these resources in relationship to aggregate mining has not been reviewed. County staff has indicated that there has been a shift from in-stream mining to terrace ponds over the past decade since ARMP was adopted.

### ENERGY RESOURCES IN LAKE COUNTY

The southern portion of Lake County overlies the Geysers Known Geothermal Resource Area (KGRA), a major geothermal resource area. This area is the source of both dry steam and hot water. There are six geothermal power plants in Lake County. Five of these plants are active; the sixth power plant (Bottle Rock) is currently in suspense but may be brought back on-line soon. The size of these plants range from 10 to 133 Mega Watts (MW).

In addition to geothermal resources, the Cache Creek area in the southeast portion of the County has hydroelectric resources. The California Energy Commission database also identifies two small (i.e., both less than 4 MW) Electric power has also been produced from the Potter Valley Project since Scott Dam was built in 1921 in response to a growing demand for power in the Ukiah area. Lake Pillsbury holds the water so that, at times of the year when the Eel River traditionally went dry, there would still be water to turn the turbines in Potter Valley. The water flows from Lake Pillsbury downstream to Van Arsdale dam, where it is diverted through a tunnel in the hills into the Russian River drainage in Potter Valley. Recently, an application was made to FERC to install a generator on Scott Dam that would produce 15 million kwh annually.

Future growth within Lake County will generate new demand for electricity. New development of geothermal, hydroelectric, and wind energy resources within the County could play an important role in meeting this demand.

## 9.8 Recreation Resources

Lake County has over 10,000 acres of parks, public lands, and 500 square miles of waterways that are managed by various government entities, including the cities, county, state and federal governments (i.e., Bureau of Land Management, U.S. Forest Service) and non-profit organizations (i.e., The Nature Conservancy). However, population growth, an emphasis on resources to encourage tourism, and limited access to public and private open space has brought into focus the need for more public parkland, especially around Clear Lake. This section describes natural and cultural recreation activities located within the planning area.

The information presented in this section was developed through contacts with County staff, published reports from the County, plus information obtained from the Lake County Recreation Guide, 2001. Websites associated with the California Department of Parks and Recreation ([www.parks.ca.gov](http://www.parks.ca.gov)) and Mendocino National Forest were also researched.

## KEY TERMS

**Open Space Land.** Open space land is any parcel or area of land or water which is essentially unimproved and devoted to an open space use. Under Section 65560 of the State Government Code, open-space land is broadly defined as land designated for preservation of natural resources (i.e., lakeshore and watershed lands); managed production of resources (i.e., lands for agriculture, forestry, recharge of ground water basins); outdoor recreation (outstanding scenic, historic and cultural values, including parks and scenic highway corridors); and public health and safety (i.e., flood plains, unstable soil areas).

**Recreational Area.** Any public or private space set aside or primarily oriented to recreational use.

## REGULATIONS THAT AFFECT RECREATION RESOURCES

**Sections 65560 – 65568, State Government Code: Open-Space Lands.** This portion of California Planning Law defines open-space and requires every city and county to prepare open space plans as a required element of their General Plan. Building permits, subdivision approvals, zoning ordinance approvals must be consistent with the local open space plan.

**Section 5076, State Government Code. Open-space elements and trail considerations:** This law requires that during development of their general plan, Lake County shall consider trail-oriented recreational use and shall consider such demands in developing specific open-space programs. Further, the County shall consider the feasibility of integrating its trail routes with appropriate segments of the state system.

## ENVIRONMENTAL SETTING

The following text is largely excerpted from the Draft Clear Lake Basin Management Plan (<http://watershed.co.lake.ca.us/clmp/clmp032202.pdf>), currently under preparation by the Lake County Public Works Department. This information will be subject to change as the Management Plan is finalized.

The natural resources of the County are a draw for those wishing to fish, hike, boat, camp, and bike. With 51% of the County in public ownership, recreation on public land is, and has been, a major attraction in the County. However, most of the largest open space lands are a considerable distance from the communities surrounding Clear Lake. There are, in addition to outdoor recreational activities, opportunities for residents and tourists to visit indoor recreational facilities and participate in cultural events.

### Clear Lake

Clear Lake is California's second largest freshwater lake and offers outstanding recreational activities including fishing, motor boating, sailing, swimming, para-sailing and water-skiing. The lake consists of 43,000 surface acres of freshwater, 62 access points to the water and a total of 11 public boat ramps. Several businesses around Clear Lake offer rental of fishing boats, ski boats, kayaks, pedal boats, paddle boats and row boats. There are 16 County Parks and 2 State Parks ringing the perimeter of Clear Lake. The State Parks include:

- **Clear Lake State Park.** This park offers several miles of hiking trails and fire roads. Most of the terrain is hilly, with elevations of 1,320 to 1,600 feet. The 3-mile Dorn Trail winds through oak woodland and chaparral. The 1.4-mile Dorn Nature Loop provides an overlook of Clear Lake, vineyards, and the Mendocino Range beyond. The ¼-mile Indian Nature Trail passes through the site of a former Pomo Indian Village. Clear Lake State Park also provides horse trails for equestrian use.
- **Anderson Marsh Historical State Park.** Anderson Marsh's natural features comprise over 400 acres of tule marsh; 470 acres of meadow, oak, and manzanita; and 13,000 feet of lake and stream shoreline. The park also includes the 540-acre McVicar Wildlife Sanctuary and provides visitors with bird watching, hiking, and picnicking opportunities.

### Other Lakes

For the most part, resident and visitor recreational use is focused on Clear Lake, which remains the primary center of water sport activities in the county. However, additional access to fishing, boating, swimming and other water sports exists. There are county, state and federal recreational areas as well as private facilities on and near these popular water sport locations:

- **Blue Lakes.** Blue Lakes is located in the northwest part of county and offers opportunities for various water sports activities, including fishing, canoeing, sailing and windsurfing. Because the use of powerboats is limited to 5 miles per hour, this pair of lakes offers a quiet environment for relaxation. Boat launch ramps, picnic areas, and hiking trails are available at the private lodging facilities that surround these lakes.
- **Highland Springs Reservoir.** Highland Springs Reservoir is a small reservoir located just south of the City of Lakeport. The reservoir provides for boating, fishing, swimming, and picnicking activities, primarily for the residential community that surrounds it. Indian Valley Reservoir.

- **Indian Valley Reservoir.** Indian Valley Reservoir, which is comprised of approximately 3,800 surface acres of water, is located northeast of the community of Clearlake Oaks. In addition to offering various water sport activities, the reservoir provides opportunities for camping, hiking, and hunting.
- **Lake Pillsbury.** Lake Pillsbury, a reservoir which contains approximately 2,000 surface acres of water, is located in the northern part of the county, and offers a number of water sports as well as a private resort. Boat launch ramps and several campgrounds are located on the lake, which is surrounded by Mendocino National Forest.

**Parks**

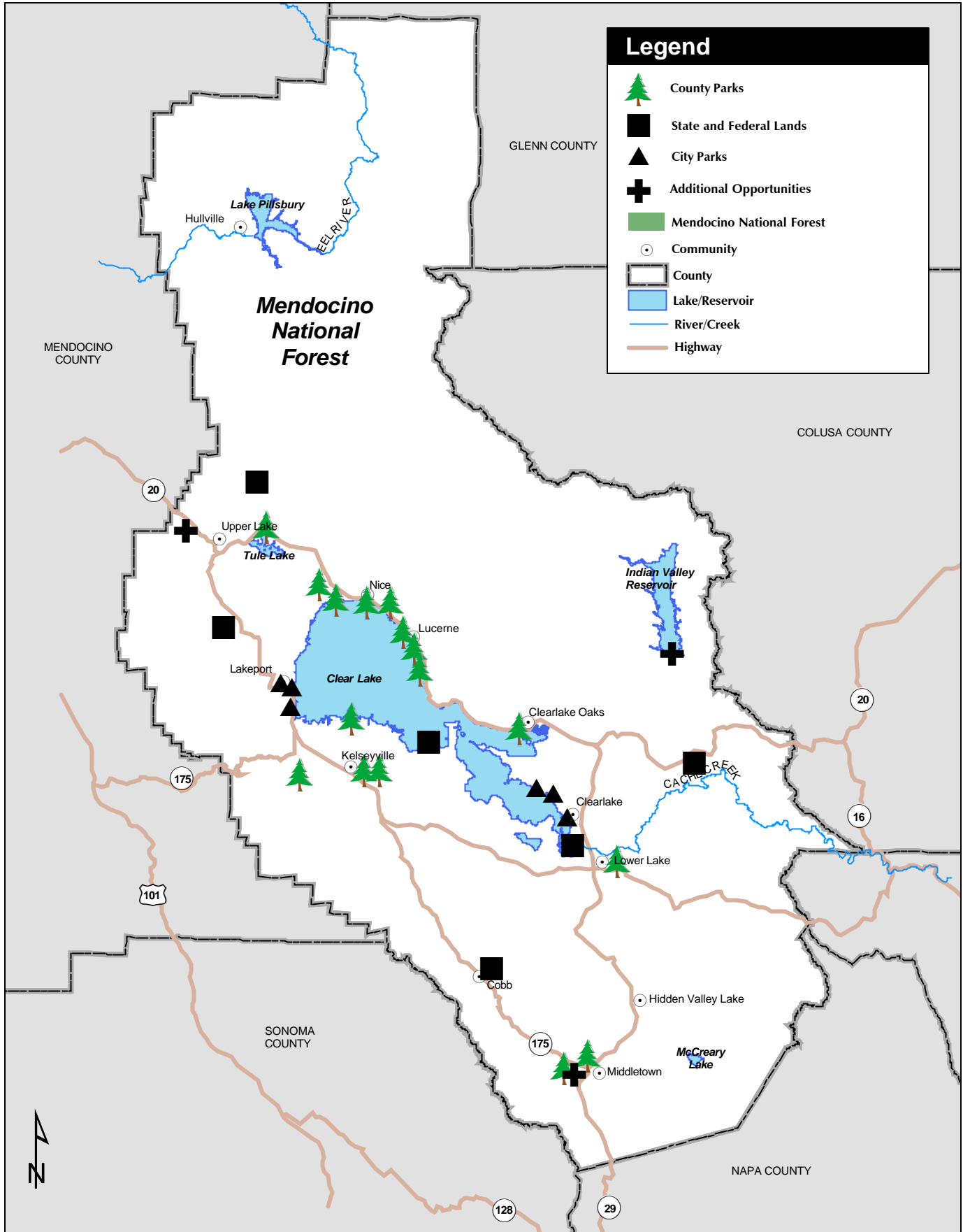
Community parks are located within many communities around Clear Lake. There are 16 County Parks. The County is also home to several state and federal open space lands. Table 9-8 provides a brief description of all the County, State, and Federal recreational areas located throughout Lake County. Figure 9-4 indicates the locations of these recreational areas.

**Table 9-8 Recreational Areas in Lake County**

ID	Recreation Area	Acreage	Type of Use/Features
<b>County</b>			
1	Middletown Trailside Nature Preserve, Middletown	107	Picnicking, hiking, horseback riding
2	Middletown Pool/Tennis, Middletown	1	Picnicking, swimming pool, tennis courts
3	Lower Lake	1	Picnicking and playground
4	Clearlake Oaks Beach	1	Picnicking, swimming, fishing
5	Lucerne Clubhouse	1	Picnicking and swimming
6	Lucerne Harbor	2	Picnicking, fishing, and boat ramp
7	Alpine, Lucerne	1	Fishing and swimming
8	Nice Beach	1	Swimming and fishing
9	Hinman, Nice	1	Playground and T-ball field
10	Keeling, Nice	1.5	Picnicking, swimming, and boat ramp
11	Upper Lake	8	Picnicking, softball field, and tennis court
12	Rodman Slough, off Highway 20 between Lucerne and Nice	40	Picnicking, canoeing, and fishing
13	Pioneer, Kelseyville	0.25	Picnicking
14	Lakeside, Kelseyville	53	Picnicking, swimming, fishing, and boat ramps
15	Kelseyville	3	Picnicking
16	Highland Springs Recreation Area, Kelseyville	n.a.	Picnicking, lake, beach, and disc golf course
<b>City</b>			
17	Redbud	15	Picnicking, fishing, and boat ramp
18	Austin	20	Picnicking and swimming
19	Highlands	1	Picnicking and fishing
20	Westshore Pool	0.5	Picnicking and swimming

**Table 9-8 Recreational Areas in Lake County**

ID	Recreation Area	Acreage	Type of Use/Features
21	Library Park	3	Picnicking and swimming
22	Westside Community	55	Under Development
<b>State</b>			
23	Clear Lake State Park, 3 miles northeast of Kelsey on the west shore of Clear Lake (CA State Parks)	n.a.	Lake swimming, picnicking, hiking, boat ramp, horse trails and camping (4 campgrounds with 149 campsites).
24	Anderson Marsh State Historic Park & McVicar Preserve, southeast corner of Clear Lake in the Lower Lake area (CA State Parks)	1,000	Hiking and bird watching, former ranch, history center
25	Boggs Mountain Demonstration State Forest, southern part of Lake County north of Middletown (CA Department of Forestry)	3,500	Camping, picnicking, horseback riding, hiking, bicycling, demonstration of forestry practices
<b>Federal</b>			
26	Cow Mountain Recreation Area, located in mountains between the Cities of Lakeport and Ukiah (BLM)	60,000	Camping, hiking, bicycling, horseback riding, off-highway vehicle trails
27	Cache Creek Management Area, along Cache Creek southeast of Clear Lake (BLM)	80,000	Managed for wildlife. Hiking, river rafting, fishing, hunting allowed during specified times of the year. Closed to vehicular traffic
28	Mendocino National Forest, including Snow Mountain Wildness Area and Lake Pillsbury, located in northern portion of Lake County (US Forest Service)	1,000,000	Backpacking, boating, camping, fishing, hiking, off-highway vehicle trails. Includes 36,370 acres of Snow Mountain Wilderness Area which is closed to vehicular traffic
<b>Additional Opportunities</b>			
29	Middletown Central Park	n.a.	Picnicking and horse arena
30	Blue Lakes	n.a.	Swimming and fishing
31	Indian Valley Dam and Reservoir	3,700 acre reservoir	Picnicking, camping, fishing, swimming, and boat ramp.
Source: Lake County Recreation Guide, 2001			



**Hiking Trails.** Nearly all of the public open space areas discussed in this section offer hiking and picnicking opportunities. Hiking trails range from short, flat trails such as those along Clear Lake to multi-day backpacking trails in Mendocino National Forest that extend beyond the County limits. Some parks, such as Clear Lake State Park, offer equestrian facilities.

**Bicycling Trails.** The County currently has three constructed bikeways: Lakeshore Boulevard Bikeway which extends from Main Street in Lakeport to Park Way north of Lakeport; Lake Street Bikeway, which extends from Morgan Valley Road in Lower Lake to Cache Creek in Clearlake; and Konocti Road Bikeway, which extends from the Konocti Road junction at Main Street in Kelseyville to a point 0.7 miles east. In addition to using these constructed bikeways, cyclists in the County have identified several unofficial bike paths through local, state and federal lands.

The Lake County/City Area Planning Council adopted the Lake County Regional Bikeway Plan in September 2000. This Plan is intended to provide guidance and coordinate efforts of local agencies regarding existing policies and programs that enhance bicycling in the County.

**Areas of Geologic Interest.** Residents and visitors interested in Lake County's numerous geologic resources can hunt for minerals, tour old mines, and visit geothermal plants. Rock hounds can hunt for minerals such as obsidian, jasper, agate and serpentine along Bottle Rock Road, St. Helena Creek and near Cobb Mountain. There are both active and inactive mines, generally viewed while on guided tours since they are located on private lands. The Geysers is the largest complex of geothermal generating plants in the world. Wells, some of them over two miles deep, have been drilled to tap the natural steam. A visitor center in Middletown provides an overview of geothermal history and use.

**Other Tourism Opportunities.** In addition to its natural amenities, countless residents and visitors enjoy sightseeing the cultural attractions of Lake County. There are an increasing number of casinos, wineries, museums, and historic points of interests. Events such as concerts, fishing and golf tournaments, festivals and craft fairs draw additional visitors. The Konocti Harbor Resort, B&Bs and other lodging facilities support multi-day visitation to the County.

Tourism opportunities are spread throughout the more developed portions of the County. They play a significant role in the planned implementation of the County's recently completed Economic Development Strategic Marketing Plan. That plan, which includes a community assessment section, also contains over 100 recommendations to improve the appearance of the county, communities, and many private businesses in the county.

**Recreational Areas Managed for Natural Resources.** Lands managed for protection and enhancement of natural resources allow plentiful

opportunities for viewing wildlife and wildflowers, and in some cases, use of mountain bikes and off road vehicles.

- **Boggs Lake Preserve.** This vernal pool preserve, owned and managed by The Nature Conservancy, contains an abundance of rare plants. It is located on Harrington Flat Road off Bottle Rock Road between Cobb and Kelseyville.
- **Cache Creek Management Area.** The Cache Creek Area, managed for tule elk, bald eagles and other wildlife, includes approximately 80,000 acres of BLM land. It is traversed by about 35 miles of the north fork of Cache Creek. The area contains no developed campgrounds or facilities, and is closed to motorized vehicles. The area is managed for the maintenance of its existing natural habitat, and is available only for limited recreational activities, such as hiking, river rafting, fishing and hunting.
- **Cow Mountain Recreation Area.** The Cow Mountain Recreation Area contains approximately 60,000 acres of BLM land located in rugged terrain in the Mayacamas mountains between the cities of Lakeport and Ukiah (Mendocino County). Cow Mountain is divided into two areas, North Cow Mountain and South Cow Mountain. North Cow Mountain is designed primarily for non-motorized activities including camping (1 campground), hiking, hunting, horseback riding, and mountain bicycling. South Cow Mountain is used primarily for off-highway vehicle use, but also accommodates non-motorized recreational activities as well such as camping (2 campgrounds).
- **Mendocino National Forest.** In addition to Lake County, the Mendocino National Forest spans Butte, Colusa, Glenn, Lake, Mendocino, Tehama and Trinity counties. For Lake County, the forest extends from the northern shore of Clear Lake to the northern boundary of the county. In its totality, the forest covers approximately 1 million acres of land that offers various recreational opportunities, including backpacking, boating, camping, fishing, hiking, and off-highway vehicle travel. Although the forest does not contain any paved roads or highways, it does have logging and mining activities. Lake Pillsbury, located within the forest, is described listed under water sports, and the Snow Mountain Wilderness Area is described below.
- **Snow Mountain Wilderness Area.** Snow Mountain Wilderness Area is located within the Mendocino National Forest. It contains the tallest peak (elev. 7056 ft.) in Lake County and straddles Lake, Colusa and Glenn Counties. This wilderness area is a transition zone between the Coast Range and the lower valley foothills. Higher elevations are relatively flat and eroded, with some stands of red fir and large expanses of bare ground with trails that provide vast

overlooks. Mid-elevations are covered in red, white, and Douglas fir and ponderosa pine. It is closed to vehicular travel.

### 9.9 Cultural Resources

The protection of cultural resources (prehistoric- and historic-period archaeological sites, historic-period buildings and structures, and traditional cultural areas) serves at least four purposes for Lake County. First, the numerous traditional cultural areas that are preserved or mitigated during the EIR process provide the large population of living Native Americans living in Lake County access to areas that are of spiritual importance to them as well as access to traditional resource locations such as those used for collection of basketry materials or as fishing areas. Second, through studying Lake County's cultural resources scientists are able to reconstruct historic events and cultural patterns that aid in the understanding of contemporary cultural processes. From this understanding, we are provided with the opportunity to better understand our own strengths and weaknesses. Third, cultural resources have long been used for educational purposes providing both local and visiting schools with a visual "hands-on" means of teaching California history. Fourth, cultural resources provide the materials for local history displays, demonstrations, and tours that can enhance the county's tourist industry.

#### METHODS

The information presented in this section was developed through researching the published Area Plans of Lake County (cited below); from searching websites of regulatory agencies and cultural resource agencies (cited below); and by requesting updated information, review, and revisions from the Coordinator at the Northwest Information Center of the California Historical Resources Information System. The Northwest Information Center is one of twelve institutions under agreement with the California Office of Historic Preservation to integrate information on new and known cultural resources into the California Historical Resources Information System, and to provide information on resources and surveys to government, institutions and individuals who have a need TO KNOW.

#### KEY TERMS

The following definitions were obtained from websites containing California Public Resource Code ([www.leginfo.ca.gov](http://www.leginfo.ca.gov)) and California Native American Heritage Commission information ([www.nahc.ca.gov](http://www.nahc.ca.gov)).

Archaeology: the scientific study of material remains (as fossil relics, artifacts, and monuments) of past human life and activities (Merriam-Webster OnLine Dictionary, [www.m-w.com/cgi-bin/dictionary](http://www.m-w.com/cgi-bin/dictionary)).

**Historic-period:** This term is defined as the time period after the arrival of European settlers in California. Native American settlements during that time include villages, seasonal camp sites, stone tool quarry sites, hunting and butchering sites, traditional trails, and sites with rock carvings or paintings. ([www.nahc.ca.gov/understandingcr.html](http://www.nahc.ca.gov/understandingcr.html)).

**Historic District:** The term “Historic District” means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures or objects united historically or aesthetically by plan or physical development (California PRC Section 5020.1(h), [www.leginfo.ca.gov/calaw.html](http://www.leginfo.ca.gov/calaw.html)).

**Historic Resource:** The term “Historic Resource” includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (California PRC Section 5020.1(j); [www.leginfo.ca.gov/calaw.html](http://www.leginfo.ca.gov/calaw.html)).

**Prehistoric-period:** The Pre-historic period is the time period involving Native American societies and their activities prior to the arrival of Europeans in California ([www.nahc.ca.gov/understandingcr.html](http://www.nahc.ca.gov/understandingcr.html)).

**Rancheria:** A rancheria is defined as a rural Native American settlement ([www.dictionary.com](http://www.dictionary.com)).

**Areas of Traditional cultural significance:** “Traditional cultural” areas are locations, which have been, and often continue to be, of economic and/or religious significance to Native Americans people today. They include sacred areas where religious ceremonies are practiced or which are central to their origins as a people. They also include areas where Native Americans gather plants for food, medicinal, or economic purposes. A certain measure of protection is provided for such resources by California State Law ([www.nahc.ca.gov/understandingcr.html#tcs](http://www.nahc.ca.gov/understandingcr.html#tcs)).

## REGULATIONS THAT AFFECT CULTURAL RESOURCES

The majority of Lake County’s cultural legacy is fragile and non-renewable. The prehistoric- and historic-period resources and their importance to local Native Americans and to scientific interpretation are easily impacted, damaged or destroyed by surface and subsurface ground alteration or nearby development. Due to the fragile nature of these resources, federal, state and local laws have been enacted in an effort to manage and protect them.

**The National Historic Preservation Act of 1966, as amended, and its implementing regulation, 36 CFR 800:** An act to establish a program for the preservation of additional historic properties throughout the nation. Among

its numerous features, the Act authorized the Secretary of the Interior to maintain a National Register of Historic Places and gave the Advisory Council the authority to issue regulations instructing federal agencies on how to implement Section 106 of the act ([www.usbr.gov/laws/nhpa.html](http://www.usbr.gov/laws/nhpa.html)).

**National Environmental Policy Act of 1969:** Declares that it is the policy of the federal government to preserve important historic, cultural, and natural aspects of the Nation's heritage. Federal agencies must prepare environmental impact statements prior to making decisions about projects, which may significantly affect the quality of the human environment ([www.afbca.hq.af.mil/handbook/basis/regs/ceqregs.htm](http://www.afbca.hq.af.mil/handbook/basis/regs/ceqregs.htm)).

**Archaeological Resources Protection Act of 1979:** Regulates the taking of archaeological resources on federal lands by setting a broad policy that archaeological resources are important for the nation and should be protected. It establishes a requirement for the excavation or removal of archaeological resources from public or Indian lands with special permits. Violations of the law include civil and criminal penalties of fines and imprisonment ([www.usbr.gov/laws/arpa.html](http://www.usbr.gov/laws/arpa.html)).

**American Indian Religious Freedom Act of 1978:** An act setting forth a policy of protecting and preserving the rights of Native Americans to Freedom of Religion ([www.usbr.gov/laws/airfa.html](http://www.usbr.gov/laws/airfa.html)).

**Native American Graves Protection and Repatriation Act of 1990:** This law address the rights of lineal descendants, Indian tribes, and Native Hawaiian organizations to Native American human remains, funerary objects, sacred objects, and other cultural items ([www.usbr.gov/laws/nagpra.html](http://www.usbr.gov/laws/nagpra.html)).

**California Environmental Quality Act of 1970:** CEQA establishes statutory requirements for the formal review and analysis of discretionary projects in California. CEQA applies to discretionary projects causing a substantial adverse change in the significance of an historical or archaeological resource with a significant effect on the environment. CEQA Guidelines Section 15064.5, "Determining the Significance of Impacts on Historical and Unique Archeological Resources", provides guidance concerning potential impacts to cultural resources ([http://ceres.ca.gov/topic/env\\_law/ceqa/guidelines/](http://ceres.ca.gov/topic/env_law/ceqa/guidelines/)).

**California Public Resources Code Sections 5020, 5024, 5079 and 5097:** Various sections of the State PRC provide protection for cultural resources, historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological sites, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, especially those situated on public lands ([www.nahc.ca.gov/statepres.html](http://www.nahc.ca.gov/statepres.html)).

**Lake County Ordinance:** Lake County has passed its own ordinance regarding cultural resources (Section 4-5 of the County's Building Regulations). Lake County's ordinance helps protect cultural resources and

clarify the procedures for dealing with cultural resources for both the developer and the landowner.

## ENVIRONMENTAL SETTING

Approximately 20% of the land area within Lake County has been inspected in an effort to locate and record cultural resources. As a result of this work, there are approximately 1650-recorded Prehistoric-period Native American archaeological sites and 500-recorded Historic-period archaeological sites. There are approximate 240-recorded historic buildings or structures within Lake County. Although not complete, results from this work demonstrate the richly varied and unique quality of Lake County's cultural heritage.

For more than 10,000 years, people have chosen to live in the Clear Lake basin. For example, the Mostin site, an archaeological site located along the southern part of Clear Lake, has provided carbon-14 dating results at 10,470 ± 490 years before present (Jacobs 2001), which identifies this village as one of the oldest in North America. Prehistoric-period use of and settlement in this area was made possible by the presence of an environment with abundant water and rich in food resources and raw supplies necessary for material culture needs. During this long ten thousand year span, people's lifeways gradually changed from nomadic groups following the herds of large Late Pleistocene game animals, such as woolly mammoths, to the more sedentary way of life demonstrated in the later archaeological evidence of numerous villages, with the same living areas being used over long periods of time. Semi-sedentary living situations were depended upon developing a staple food source (e.g., acorns, fish) and ways to insure preservation and storage for year-round consumption. The Clear Lake Basin, Coyote and Long Valleys near Middletown as well as several small valleys such as Wilson and Jericho Valleys provided an astonishing variety and abundance of resources. Fish, waterfowl, small and large mammals (including deer and elk) were plentiful as was a wide assortment of vegetal matter used as food sources. Material culture needs were met with the huge supplies of tulle, willow, and sedge found around the margins of Clear Lake and other marsh-like environments, which were used in a variety of ways: the tulle for boats and houses, the willow and sedge for baskets. The Clear Lake Basin volcanics provided two sources of obsidian, from the Borax Lake and Konocti areas, the prized material used in tool manufacture such as projectile points, scrapers, and knives. Animal bone was used as well in the manufacture of tools and ornaments: bone provided the raw material for awls, gaming pieces, whistles, ear tubes, etc. Upland mountain areas also provided an environment plentiful in resources, particularly large game animals and large stands of several varieties of acorn bearing oak trees (Barrett 1964; Heizer ed. 1978; Kroeber 1925).

The history-period is composed of two parts: one, the Contact-period; and, two, the Post Contact or Historic-period. The Contact-period is defined as the time period when EuroAmerican travelers and settlers first came into

contact with the indigenous Native American populations living in what is now Lake County. The names by which we identify groups living in this area, although suggestive of tribal names, are, in fact, based solely on similarities and differences in language. With this in mind, nine groups are represented in Lake County: the Lake Miwok, Southeastern Pomo, Eastern Pomo, Northern Pomo, Yuki, Hill Patwin, Wappo, Southern Pomo, and Central Pomo. The social and political organization of the people living in this part of Northwestern California during the Contact-period was not based on large tribal affiliations but on smaller units called tribelets, each of which had a well-defined territory within the larger linguistically defined area. For example, there were three Southeastern Pomo speaking tribelets holding territories at the southern end of Clear Lake: *Kamdot*, *Koi*, and *Elem* (Gifford 1923:79; Heizer 1978; Kroeber 1925; Kniffen 1939:Map 1). Within each tribelet's territory, there was one or more living or work locations. In 1832, there is record of early contact made by a Russian party from Fort Ross (Lower Lake Area Plan n.d.:3-14). In 1836, Salvador Vallejo led the first Spanish expedition into Clear Lake area, and as a result, he applied for a land grant in the Upper Lake/Bachelor Valley area (Hoover et al. 1966:139). During the period between 1830 through 1860, the slow and then greatly increasing infiltration of Spanish/Mexican and American settlers into the area created tension with the indigenous Native American groups, and many Indians were captured, killed, or rounded up and resettled in reservation such as the one at Round Valley (Heizer 1978:299; Hoover et al. 1966:139). In addition, contact between Native Americans and EuroAmericans brought new diseases, particularly flu, smallpox, and cholera, that resulted in the unintentional but devastating deaths of thousands of Native Americans (Heizer 1978:299).

After 1860, the Historic-period saw the influx of a considerable population relocating from various other parts of the United States and its territories. Historically, the lands comprising Lake County were originally part of Napa County but, in 1861, the new Lake County lands were set off and Lakeport was designated the County seat (Hoover et al. 1966:138). Early land use consisted mainly of farming and ranching activities; in particular, crops consisted of wheat, wine grapes, and fruit orchards, while cattle were run on most ranches. In addition, there were three main historic industries in the county: resorts, milling and mining. The mineral and hot springs abundant throughout this volcanic-based area provided the opportunity for development of numerous health resorts, for example, the ones at Harbin Springs, Siegler Springs, Anderson Springs, and Bartlett Springs. Mining was economically feasible for mercury (around Middletown and Sulphur Bank area), sulfur (from Sulphur Bank Mine) and borax (Borax Lake area). Flour and lumber mills were also an important industry in early historic settlement of the county providing flour for bread and lumber for home construction (Hoover et al. 1966:140-141). Today, the County maintains its rural nature with farming and ranching activities, along with enhancement of the health resorts. Mining and milling, however, have been significantly reduced or moved elsewhere, respectively. Lake County, however, is still the home of a large indigenous Native American population that has diligently worked to

maintain its various traditions and identities. These Native people have ancestral ties to several Tribes that are now legally defined as sovereign governments and, as such, are not subject to local government plans, policies or regulations.

Presently, Lake County has one archaeological district, and several archaeological sites and historic-period buildings that are listed on the National Register of Historic Places as well as the California Register. Based on all the above information, the Coordinator at the Northwest Information Center of the California Historical Resources Information System agrees with the conclusion that there is a very high potential for the identification of additional historical resources that would be eligible for listing on either of these Registers.