



**LAKE COUNTY LAND TRUST
CONSERVATION PRIORITY PLAN
2017/2018**

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Executive Summary

This plan summarizes the Lake County Land Trust’s (Land Trust) efforts at identifying and ranking unique areas/ecosystems in Lake County, California, in order to guide our conservation efforts. The Land Trust provides conservation opportunities through the acquisition of, or establishment of conservation easements on unique properties potentially threatened with development or conversion to other land uses. Prior to 2007, Land Trust efforts to conserve landscapes in the County had been largely reactive in the face of impending development or land conversion. The Land Trust determined our reactive approach to land conservation did not allow us to fulfill our goals and objectives as outlined in our Strategic Plan or to maximize our limited resources, particularly as Lake County grows and threats to unique areas and resources increase. In 2007/2008, meetings with local Experts were held to gather input and set priorities for Land Trust land protection. This plan provided us with the guidance to prioritize our efforts over a 10 year planning horizon. Again, 10 years later, the Land Trust initiated an update to this plan.

In 2017, we held two workshops attended by Land Trust board members and 23 experts in local land use and natural resources. As with the first Strategic Plan development, workshop participants were asked to prioritize areas and/or issues they believed, based on their familiarity and experience, most worthy of conservation in light of future threats from development and conversion. Information derived from these workshops resulted in designation of five areas around Clear Lake as the highest conservation priorities. These areas were the Clear Lake shoreline between Clear Lake State Park and south Lakeport (Big Valley Wetlands), the watersheds of Middle Creek and Scotts Creek, the Middle Creek Ecosystem Restoration/Rodman Slough area, Cache Creek/Knoxville connectivity, and areas around Guenoc. A total of 23 areas/ecosystems were identified at the workshops and are ranked as high, medium, or low conservation priority in this plan. Areas/ecosystems not identified in this plan will not necessarily be ignored by the Land Trust, particularly when favorable opportunities are brought to our attention by interested parties. The Land Trust will always consider each area thoroughly and will not turn away meritorious projects, but we will use this plan as a guide to assist us in the evaluation and direction of future conservation opportunities and actions in the County.

“This plan summarizes the Lake County Land Trust’s efforts at identifying and ranking unique areas/ecosystems in Lake County, California, in order to guide our conservation efforts.”



Introduction

The Lake County Land Trust (Land Trust) was formed in 1994 by a group of concerned local Lake County residents. The board of the Land Trust is comprised of volunteers and the Land Trust has three part-time employees. Shortly after its founding, the Land Trust embarked on its first major project—purchase of the Rodman Ranch at the north end of Clear Lake. With overwhelming public and private support, the Land Trust was able to save the Rodman Ranch from development. To date, the successful effort to preserve Rodman Ranch (Land Trust lands are now referred to as the Rodman Preserve) remains the Land Trust’s signature project.



Figure 1: Clark's and Western Grebes on Clear Lake

The Land Trust was also successful in saving the Black Forest, 252 scenic acres (ac.) of mature Douglas-fir forest on the north side of Mt. Konocti. This project was brought to the Land Trust’s attention by public outcry over a plan to log the forest. The Land Trust was again successful in marshaling public sentiment to save the forest and to acquire the Black Forest for subsequent transfer to the Bureau of Land Management (BLM) and a seven-acre parcel to the County of Lake.



Figure 2: Black Forest

Up until the creation of our Priority Plan in 2007, we had been directed by perceived emergencies to iconic properties and ecosystems in the County. This is not to say that the Rodman Ranch or Black Forest projects were unnecessary, but, rather, that the Land Trust needs an all-encompassing view of Lake County lands and of the threats to important areas so our efforts may best serve future preservation of wildlife, agriculture, scenic, and cultural resources in the County, and of the public's opportunity to enjoy them.

The Land Trust, using techniques and tools gleaned from other organizations, has developed a working checklist and process for evaluating the numerous requests we receive to help to protect various lands in the County. This process allows the Land Trust to determine what projects fit our mission and to graciously decline projects not meeting our criteria.

What had been missing in this piece by piece approach was a comprehensive county-wide overview and an objective approach to measure how each piece fits within the county context. The 2007 Conservation Priority Plan (Plan) was intended to resolve this issue and allowed the Land Trust to weigh and pursue projects not just on their individual merit, but also with regard to their potential role in an overall, county-wide, conservation program. This had an added benefit by ensuring that the Land Trust's efforts at acquiring outside funding were equally wedded to the overall plan.

The Land Trust will always consider each project thoroughly and will not turn away worthy projects, but we will be largely guided by the ability to see how the new "piece" adds to the puzzle. Similarly, the plan is not intended as a takeover or as a directive to acquire particular properties. Instead, we will continue to work with willing landowners to achieve both their and the Land Trust's goals. But, hereafter we will be able to show those willing landowners how their project fits into a long-term, strategic plan to conserve Lake County's natural heritage.

Update on Plan Progress

From the discussions and voting, three clear priority areas were designated in 2007/2008: the Big Valley Wetlands Project (the shoreline between Clear Lake State Park and South Lakeport); Mt. Konocti; and Rodman Slough including the Middle Creek Ecosystem Restoration Project and Tule Lake. In the over 10 years since this effort was undertaken, progress has been made on all three of the top categories.

As part of the Big Valley Wetlands Project, the Land Trust, in cooperation with the California Department of Fish and Wildlife (CDFW), developed the Big Valley Wetlands Conceptual Area Protection Plan (CAPP) a document adopted by the CDFW that has made several hundred acres of property on the Clear Lake shoreline in Big Valley eligible for grant funding from the California Wildlife Conservation Board (WCB). In 2016 the Land Trust was able to purchase 32 acres of valuable wetland in the Big Valley area. The project, known as the Melo Property (named after the former owner) has permanently protected beautiful native wetland and shoreline forest as well as upland wet meadow, pasture, and oaks. The Natural Resources Conservation Service (NRCS)

has also purchased 153 acres of conservation easements in the area, thereby protecting even more wetland and Clear Lake frontage.



Figure 3: Melo Property



Figure 4: Mt. Konocti

The County of Lake was able to purchase over 1,400 acres of Mount (Mt.) Konocti, creating a popular regional park. Bathrooms have been installed on the mountain, the trail to the top of the mountain further developed, and picnic areas have been created.

The third priority identified was the Rodman Slough area and the Middle Creek Ecosystem Restoration Project, as well as Tule Lake. Rodman Slough is the mouth of Middle and Scotts Creeks at the north end of Clear Lake. The Slough contains extensive riparian forest, including a significant bird rookery, with extensive wetlands on the western side. Most of the Slough is unprotected, with the exception of the Land Trust Rodman Preserve and associated Department of Fish and Wildlife and County properties on the southwest side of the Slough.

Rodman Slough is the remnant of a large bay, alternatively called Rodman Bay or Robinson Lake. The eastern 1,400 acres of the bay was reclaimed for agricultural purposes between 1920 and 1960 by public agencies. Over 1,600 acres of land was cordoned off by levees that are now sinking and will fail at some point. Failure of the levees without a proper flow of water through restored wetlands will lead to stagnant water that will be breeding grounds for mosquitoes, which are vectors for serious illnesses such as West Nile Virus. Wetlands restoration will restore important wildlife habitats, including rearing areas and potential spawning grounds for the Clear Lake Hitch, a State Threatened Species. Estimates are that about 57% of the water and about 71% of the phosphorous that enter Clear Lake are delivered by Middle and Scotts Creeks. High phosphorous levels favor the cyanobacteria blooms that have created problems throughout the lake. Restoration of suitably designed wetlands will reduce phosphorous entry into the lake by slowing the water flow to capture sediment and allow for phosphorous and nitrogen uptake by native wetlands vegetation. This project, when constructed, will tie in with the Land Trust and CDFW properties and create the largest restored wetlands/habitat areas on Clear Lake.

Using state funding for flood mitigation, the Lake County Watershed Protection District has acquired 847 acres of property in the Project area and demolished 19 residences and associated infrastructure. Two residences and approximately 1,000 acres of land remain to be purchased. Issues with PG&E transmission lines, State Highway 20, the Nice-Lucerne Cutoff and the Robinson Rancheria need to be addressed before the levees can be removed and the area restored.

A group of local organizations, including the Land Trust and concerned citizens, have formed the Middle Creek Restoration Coalition. The coalition is Chaired by Val Nixon, current President of the Land Trust. The lead agency for planning this restoration is the U.S. Army Corps of Engineers. The Corps has determined that a full restoration is the appropriate approach. The Coalition continues to work with local, state and federal agencies in efforts to secure the necessary funding to complete this important restoration project.

Tule Lake is a natural lake located on Scotts Creek approximately one mile upstream of the confluence with Middle Creek. It was reclaimed for agricultural purposes in 1903. In 2013-2014, NRCS purchased 788 acres of conservation easements in the Tule Lake area. The easements prohibit intensive agriculture and allow at least 588 acres of agricultural land to be restored to wetlands and waters of the US. This should improve water quality leaving the Scotts Creek watershed as well as provide for improved wildlife habitat at the north end of Clear Lake.



Figure 5: Rodman Slough and Middle Creek Restoration Project Area



Figure 6: Tule Lake

“Although the County is topographically dominated by Mt. Konocti, the Coastal Mountains in general and Clear Lake, it has many other significant watersheds, lakes and mountain peaks”



The Clear Lake CAPP has been developed and approved by the CDFW to support the County of Lake’s Middle Creek Ecosystem Restoration Project and nearby areas, including Tule Lake. The CAPP recognizes the importance of these Clear Lake mixed habitats of uplands and wetlands and facilitates matching funds from the WCB to help complete the County’s proposal of restoring up to 1,400 ac. of previously reclaimed Clear Lake wetlands and adjacent habitats.

General Overview

Lake County, California, encompasses an area of 1,258 square (sq.) miles and has a population of approximately 65,000 people. The County is located 100 miles north of San Francisco, 110 miles northwest of Sacramento, 150 miles southwest of Redding, and 70 miles east of the Pacific Coast within the Coast Range between I-5 (Sacramento Valley) on the east and Highway 101 on the west. The County is served by four, primarily two lane, state highways: Highways 20, 29, 53, and 175. The County has no railroad service and no major airport.

Although the County is topographically dominated by Mt. Konocti, the Coastal Mountains in general and Clear Lake, it has many other significant watersheds, lakes and mountain peaks. The landscape is governed by a high degree of geologic complexity originating from geologic forces and tectonic processes that have interwoven sedimentary, ophiolitic, and volcanic substrates into a complex mosaic.

The northern section of the County is sparsely populated and is very mountainous, with elevations reaching over 7,000 feet (ft.) at both the western and eastern peaks of Snow Mountain. This area has numerous streams which form the headwaters of the Eel River, which flows northwest through Mendocino and Humboldt counties to the Pacific Ocean. Although there are numerous private land holdings in this area, there are also large tracts of land within the boundaries of the Mendocino National Forest. These U.S.D.A. Forest Service (USFS) lands¹ are managed for a variety of commercial uses including, logging, grazing, and mining, as well as outdoor recreation which includes hunting, fishing, camping and off-highway vehicle use. This area also includes the Snow Mountain Wilderness Area and a state game refuge.

The central section of the County, which is the most populated section, is dominated by Clear Lake, Mt. Konocti, Cobb Mountain and the Mayacamas Mountains. The Clear Lake watershed occupies 441 sq. miles of the Coast Range of northern California and is generally rugged with elevations ranging from 4,840 ft. to the lake level of 1,326 ft.

¹ USFS manages 254,656 ac. in Lake County

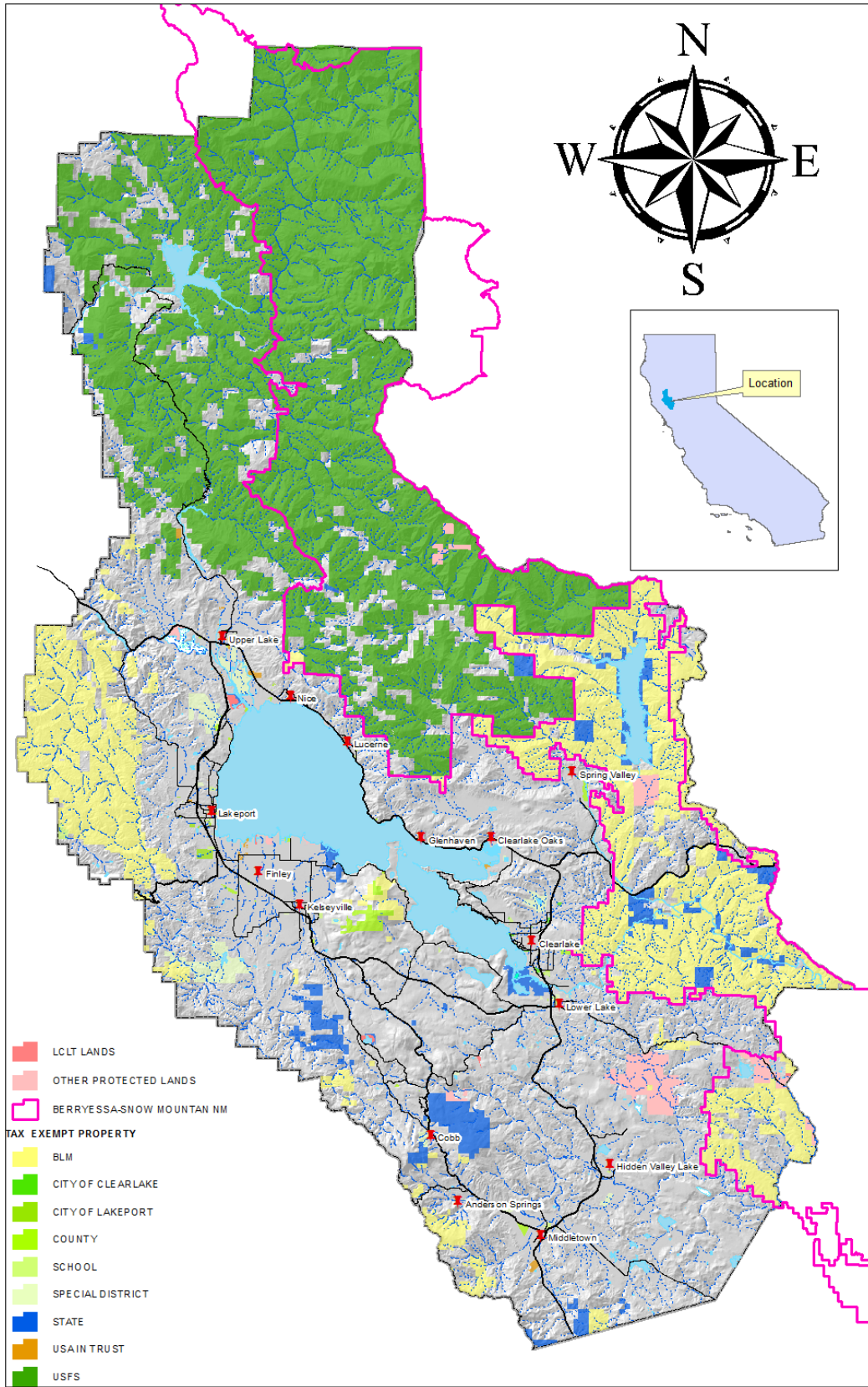


Figure 7: Lake County

“The 330,780 acre Berryessa – Snow Mountain National Monument was created in 2015 from the existing federally managed lands extending from south of Lake Berryessa to north to Snow Mountain along the eastern borders of Napa and Lake Counties”



Drainage in the Clear Lake watershed flows from west to east to the downstream boundary at the Cache Creek Dam on Cache Creek. The watershed is located entirely within the boundaries of Lake County. The lake provides water for recreation, consumption, and irrigation and is an important sport and commercial fishing lake. Middle Creek, Scotts Creek, Adobe Creek, and Kelsey Creek are the major tributaries providing inflow while Cache Creek is the main outflow. To the north and east of Clear Lake lie the headwaters of the North Fork Cache Creek, which is impounded in Indian Valley Reservoir and, after release, joins Cache Creek to flow into Yolo County in the Sacramento Valley.

This section also contains large tracts of land managed by the BLM² composed of five management areas shared between both the central and southern sections of the County: Cow Mountain, Indian Valley, Cache Creek, Knoxville, and The Geysers. The California Department of Parks and Recreation maintains Clear Lake State Park on the west shore of the Lake (600+/- ac.) and Anderson Marsh State Historic Park at the southern end of Clear Lake on the Cache Creek channel (1,322 ac.). There are also additional lands administered by the CDFW as well as the California Department of Forestry and Fire Protection (CalFire).

The 330,780 acre Berryessa – Snow Mountain National Monument (BSMNM) was created in 2015 from the existing federally managed lands (BLM and USFS) extending from south of Lake Berryessa to north of Snow Mountain along the eastern borders of Napa and Lake Counties. The USFS and BLM will jointly prepare a management plan that will address the actions necessary to protect the resources in BSMNM.

The southern section of the County contains parts of the Mayacamas Mountains of the Coast Range with some of the same peaks that dominate the central section of the County, along with Mt. St. Helena in Sonoma County. This area shares the Geysers geothermal power production area with Sonoma County and experiences frequent low magnitude tremors. The main population areas are Middletown, Hidden Valley Lake, and the mountain communities on and around Cobb Mountain and Anderson Springs. The principal watershed is Putah Creek, which exits the County at its southern end and flows into Berryessa Reservoir in Napa County.

The BLM manages areas in the southern section: The Geysers and Knoxville as well as some scattered tracts of land. The U.S. Coast Guard maintains a small area of land, formerly for its LORAN station, and CalFire manages the Boggs Mountain State Demonstration Forest. A small portion of Robert Louis Stevenson State Park is located in the southern tip of the county on the

² BLM manages 122,502 ac. in the County.

northwest slope of Mt. St. Helena. The southern section has numerous properties devoted to agriculture. The growing Hidden Valley Lake residential development is populated, in part, by retirees and workers who commute to Santa Rosa, Napa Valley, and the San Francisco Bay area for employment.



Figure 8: Agriculture in Big Valley

Flora and Fauna

The County is situated in a region that is globally recognized as a Hotspot of Biodiversity. This concept is based on the extraordinarily high levels of unique and endemic species occurring in the region and the high level of threat to this tremendous biodiversity (due to development and other habitat-alteration threats). The remarkable biodiversity is linked to the underlying geologic diversity of the region. The sedimentary, ophiolitic (especially ultramafic), and volcanic soils of the region support distinct and sharply separated plant communities and hydrologic patterns. Thus, in addition to the unique and ancient Clear Lake with its own endemic species, the county boasts a mosaic of biotic communities including: single and mixed species oak woodlands; oak savanna; mixed species chaparral communities comprising different species on sedimentary, volcanic, and serpentine soils; grasslands; serpentine meadows; riparian communities; lake-shore wetlands; upland perennial and seasonal wetlands; vernal pools; mixed evergreen; and sub-alpine. These communities support diverse animal and plant populations.

Thousands of waterfowl migrate annually to Clear Lake, including one of the largest populations of western grebes in the country, as well as hundreds of white pelicans, diving and wading ducks, geese, herons, shorebirds, and both nesting and migrating peregrine and prairie falcons, bald

“Thousands of waterfowl migrate annually to Clear Lake, including one of the largest populations of western grebes in the country, as well as hundreds of white pelicans, diving and wading ducks, geese, herons, shorebirds, and both nesting and migrating peregrine and prairie falcons, bald eagles, and osprey.”





Figure 9: Western grebes on Clear Lake

eagles, and osprey. The Lake also supports a substantial population of year-round residents for many of these species.

Clear Lake, its tributaries and bordering wetlands, support numerous large rookeries of great blue herons, great egrets, and double-crested cormorants. Local birders have recorded 308 different species of birds in the County.

Clear Lake produces large populations of bass, crappie, bluegill, carp, and catfish and is one of the premiere warm water fishing lakes in the western United States, hosting between 30 and 50 fishing tournaments a year, as well as thousands of recreational fishermen. Some of the streams flowing into Clear Lake as well as other County watersheds, support a cold water fishery with both rainbow and brown trout. The upper main-stem of the Eel River in northern Lake County maintains anadromous runs of winter and spring run steelhead and Chinook salmon.

Of particular concern is the endemic Clear Lake hitch which spawns in many of the Clear Lake tributaries after migrating from the lake during spring. Populations of once abundant Clear Lake hitch have declined as a result of habitat loss and alteration in their spawning streams and competition and predation by introduced fish. In 2014, the California Fish and Game Commission designated the Clear Lake hitch as a threatened species under California's State Endangered Species Act. Lake County also supports large populations of Western Pond Turtle, a State Species of Special Concern. The Boggs Lake Preserve supports a large population of Western Pond Turtles.

According to the County's general plan, the California Natural Diversity Data Base, and the U.S. Fish and Wildlife Service there are 108 listed species in Lake County and 11 of the 150 unique and sensitive habitats in the State. The reports state that the habitats of listed species and sensitive wildlife are threatened by encroaching development and wildfire.

A series of large and destructive wildfires have impacted large areas of Lake County beginning in 2015 with the Valley Fire. From 2015 to 2018, approximately 60% of the County's total area was subject to wildfire. While areas of low or no burn exist within these burned areas, there have undoubtedly been large impacts on wildlife. While the Land Trust is not able to control or manage land at a scale likely to impact large wildfires, the Land Trust mission to protect and restore

important natural habitats in Lake County becomes more vital in the face of increasing wildfire threat.

The Human Population

The current population of Lake County is approximately 65,000 with the main population centers concentrated in the cities of Clearlake and Lakeport, the communities of Middletown, Hidden



Figure 10: Clear Lake Hitch in Adobe Creek



Figure 11: Western Pond Turtle at Boggs Preserve

Valley Lake, and Kelseyville. The population is anticipated to grow gradually with a projected increase to 70,000 in 2040. Until 1970 the population of Lake County grew at a modest rate, based in part on its remote location, lack of major highways, rail and air service, as well as an economy based primarily on agriculture, tourism and state, county, city and school system employment.

In the 1970s, California started to experience economic changes that included a rapid increase in the value of real estate, a move from a single income family to a double income family. The State's population continued rapid growth from in-state births as well as immigration from other countries and migration from other states. The County started to grow at a more substantial rate with people moving from metropolitan areas to rural areas where they could experience a slower pace of life that included cleaner air, less traffic congestion, and lower real estate prices while still remaining within a two-hour commute to either the San Francisco Bay area or

Sacramento. Many people who had experienced the life style of Lake County as tourists were now moving to the County for a permanent home and/or place to retire.

The 1990s intensified the search for communities like those found in Lake County, and the intensity of the search was fueled by historically low interest rates on home mortgages and rapidly increasing home and property values which increased the equity and the wealth of the average home owner. With the increase in real estate prices in the more populous areas, working people began searching for less expensive homes and property in a rural to remote setting that offered cleaner air, diverse outdoor recreation opportunities, relatively cheap homes and vacant land where they could either buy or build their dream home with their new wealth. This group was joined by the aging boomers who were rapidly approaching retirement and accumulating huge equity in their homes in these metropolitan areas. Both of these groups and the expansion of the local population increased the development of the county drastically. The recession that hit in 2008 stalled expansion, and the population has not significantly increased in the past 10 years.

“Clear Lake had lost 79 percent of its natural wetlands by 2002, which significantly altered the nutrient balance of the lake.”



Historical Environmental Issues

Clear Lake, one of the main natural features of Lake County and the State, has a surface area of 68 sq. miles (43,790 ac.) and is the largest freshwater lake located completely within the boundaries of California. It is a shallow, eutrophic lake and is believed to be one of the oldest natural lakes in North America with an age of 1.8 to 3 million years. Studies document that human habitation has been present around the lake for the past 10,000 to 12,000 years (Richerson *et al.* undated).

The lake is also famous, in the scientific world, as one of the first water bodies where dichloro diphenyl dichloromethane (DDD) was applied in increasing concentrations during the 1940s and 1950s to control the Clear Lake gnat. This application resulted in catastrophic ecosystem wide contamination that virtually eliminated the lake's Western Grebe population as it worked its way up the food chain (Carson 1962). This incident provided much of the data which formulated the concept known as biological magnification (Schoenherr 1992).

The first impacts to the Lake began with the arrival of the first European settlers in the mid-1800s (Richerson *et al.* 2008). With their arrival, land was cleared for farms, roads were constructed, and livestock grazing, mining, logging and firewood cutting operations accelerated rates of sediment input into the lake. Lake filling activities and wetland conversion continued to increase after 1925, resulting in increased rates of eutrophication. Mining operations started on the Oaks Arm of the Lake in 1865 were converted in 1873 from sulphur extraction to mercury extraction. The traditional method of shaft exploration was abandoned in 1927 for open pit mining. The tailings and waste rock from the open pit mining were dumped directly into the Lake. The mining continued on a limited and sporadic

basis until 1957 when the mine closed, but the mercury contaminated waste continued to leach into the lake (Richerson *et al.* 2008). Clean-up of this mining operation continues to this day; the area is designated an EPA superfund site.

Clear Lake had lost 79 percent of its natural wetlands by 2002, which significantly altered the nutrient balance of the lake (Lundquist and Smythe, 2010, Richerson *et al.* 2008). One example of wetland conversion (Richerson *et al.* 2008) occurred as a result of the 1,400 acre reclamation project started in 1920. This project used heavy equipment to eliminate most of a large wetland at the Lake's northwest end, creating Rodman Slough. By reducing and reconfiguring the wetland, the project eliminated a significant sink for nutrients and sediment. The County of Lake is currently involved in a project, the Middle Creek Flood Damage Reduction and Ecosystem Restoration Project, to purchase this area and return the land to its pre-1920 status in an effort to increase wetlands and decrease the high flood hazard in this area. Wetland improvement will provide a sink for nutrients and sediment, improving water quality in Clear Lake and increasing wildlife habitat.

Updated mapping using 2002 satellite imagery found there to be 1,920 acres of wetlands, indicating 79 percent wetland loss (Lundquist and Smythe, 2010). With the acquisition of conservation easements in Tule Lake in 2013-14, 558 acres of prior converted farmland is being allowed to revert to natural wetlands and open water, reducing the total wetland loss to 72 percent.



Figure 12: Clear Lake Shoreline

“The majority of the Lake’s shoreline has been adversely impacted by development, and newly proposed developments place the last of the Lake’s natural shoreline, wildlife habitat and wildlife corridors at risk.”



Challenges Facing the Lake County Environment

Development has and will continue to place major demands on an aging and antiquated infrastructure while also placing the County’s natural resources at risk. Growth and escalation of local land values has encouraged many local land owners to split their properties into smaller parcels for sale to developers and individuals for ranchettes, single family dwellings, subdivisions, and commercial properties. This has resulted in a changing landscape around Clear Lake and south Lake County in particular.

Although nearly half of Lake County is under the management of the U.S. Forest Service and the BLM, these lands for the most part do not border the lake. The shoreline of the lake and its adjacent wetlands are predominantly owned and controlled by private citizens with only a few significant areas open to the public and controlled by California State Parks, California Department of Fish and Wildlife, a hand-full of county and city parks, and the Land Trust.

The majority of the lake’s shoreline has been adversely impacted by development, and newly proposed developments place the last of the lake’s natural shoreline, wildlife habitat and wildlife corridors at risk. The County’s agriculture lands are also threatened by development as are areas with open space, prominent view sheds, oak woodlands, riparian corridors, and chaparral. The County’s most distinct landmark, Mt. Konocti, has been subjected to encroaching development on all sides of its base.

Because of its relative isolation, Lake County has historically not been at the same level of risk of development as other more populated counties in California. This rural character affords a great opportunity to preserve important habitats and open space before they are permanently damaged. However, human influences and practices, both past and present, have combined to adversely affect wildlife habitats and natural wetlands ecosystems, and these changes, along with their attendant impacts, are anticipated to continue. Therefore, conservation of key areas within the County is of paramount importance to the Land Trust. As a non-profit entity comprised of volunteer board members, it is imperative to prioritize our resources towards those areas at greatest risk. This strategy ensures key areas and ecosystems are the focus of our efforts and have a higher opportunity for preservation in the face of ongoing development and land conversion.

Methods used for prioritization

To determine areas of highest conservation priority, we used an expert opinion method to gather information on unique resources in the County and threats to these resources, as we had done in 2007. The expert opinion approach is a common, cost effective method utilized by various resource agencies and non-profit organizations to rapidly acquire an array of expertise regarding issues of

concern. We sought the opinions of individuals (the Experts) with a range of expertise on these issues to provide us with an understanding of ideas and subjects potentially negatively affecting ecologically or culturally prominent, unique, and important resources in the County. To the extent possible, we attempted to choose individuals with expertise and familiarity with these issues across the County.

The Land Trust held workshops where participants were asked to prioritize locations and/or ecosystems in the County for conservation purposes. Maps of Lake County, depicting a variety of attributes, provided an overview of the County and its resources. The Experts were asked to choose areas within the County they believed were of highest conservation value based on their knowledge of potential threats and/or unique ecological and cultural values. We provided the Experts with five colored stickers, ranked in priority from one to five (with one being the highest priority). The Experts were asked to place the stickers on a single map of the County in the presence of the rest of the workshop participants. The Experts placed the individually labeled stickers in sequence with their number one priority placed first and their lowest priority placed last in a sequence of five rounds. After each round the Experts were asked to explain the reasoning behind their priorities to the group and to document their rationale to ensure accuracy. This allowed all participants to understand each other's issues and helped to educate individuals on areas and issues with which they may not have been otherwise familiar.

These data were then compiled into a table and illustrated in graphs based on relative ranking and overall number of votes. The votes and ranking were then separated into three broad prioritization categories based on our review of the data distribution.

Results

We held two workshops, one in Lower Lake and the other in Lakeport in the fall of 2017 with a total of 25 participants. Participants included five Land Trust board members, two Land Trust staff, and 17 Experts with expertise and familiarity with Lake County ecology, cultural resources, geology, biology, and other closely associated fields. The Experts included representatives from federal, state, county, and non-governmental organizations. See Appendix 1 for a list of individuals who participated in the workshops and their job titles and organizational affiliations.

Results were compiled (Table 1) according to the participants ranking of conservation priority by general location. A total of 32 general locations were identified at the workshops. Of the 32 areas, 16 received at least two votes. A brief description is provided in the Discussion of all areas identified at the workshop.

Results from Table 1 were compiled and ranked according to the relative ranking (Figure 13) and the number of votes (Figure 14). The conservation priorities were categorized, based on breaks in the data spread, into three relative categories; areas of high conservation priority; medium conservation priority; and low conservation priority.

Table 1. General locations and/or issues displayed in order of cumulative number of votes by participants in the Lake County Land Trust land conservation strategy workshops. These data are ranked in terms of conservation priority with a rank of “1” being the highest priority location and/or issue and a rank of “5” being the lowest priority.

General Location/Issue	Rank and Number of Votes				
	#1 (5 pts)	#2 (4 pts)	#3 (3 pts)	#4 (2 pts)	#5 (1 pt)
Big Valley Wetlands	8	7	2	4	2
Middle Creek & Scotts Creek watershed	3	3	5	4	4
Berryessa Snow Mountain Connectivity	2	3	4	4	3
Middle Creek Restoration Area/Rodman Slough	3	4	2		2
Guenoc Area	1	4	4	2	
Molesworth Creek		1	1	3	2
Farmland Preservation	2	1			1
Hitch habitat: Big Valley Riparian Zones		1	1		3
Islands in Clear Lake	1		1		1
Siegler Valley to Ettawa Springs	1			2	
Mt Konocti	1			2	
Hills above Nice and Lucerne	1		1		
Red Hills native vegetation	1				1
Chaparral	1				
Oak Woodlands			1		1
Blue Lakes – North Cow Mountain connectivity		1			
Cache Creek Outlet Channel between Clear Lake and the Dam			1		1
Manning Flat			1		
Siegler Mountain/Salminas Meadow				1	
Borax Lake				1	
Adjacent to Anderson March				1	
Putah Creek Riparian Zones					1
Cow Mountain – Mendocino National Forest connector					1
Riviera Marina					1
total votes	25	25	24	24	24

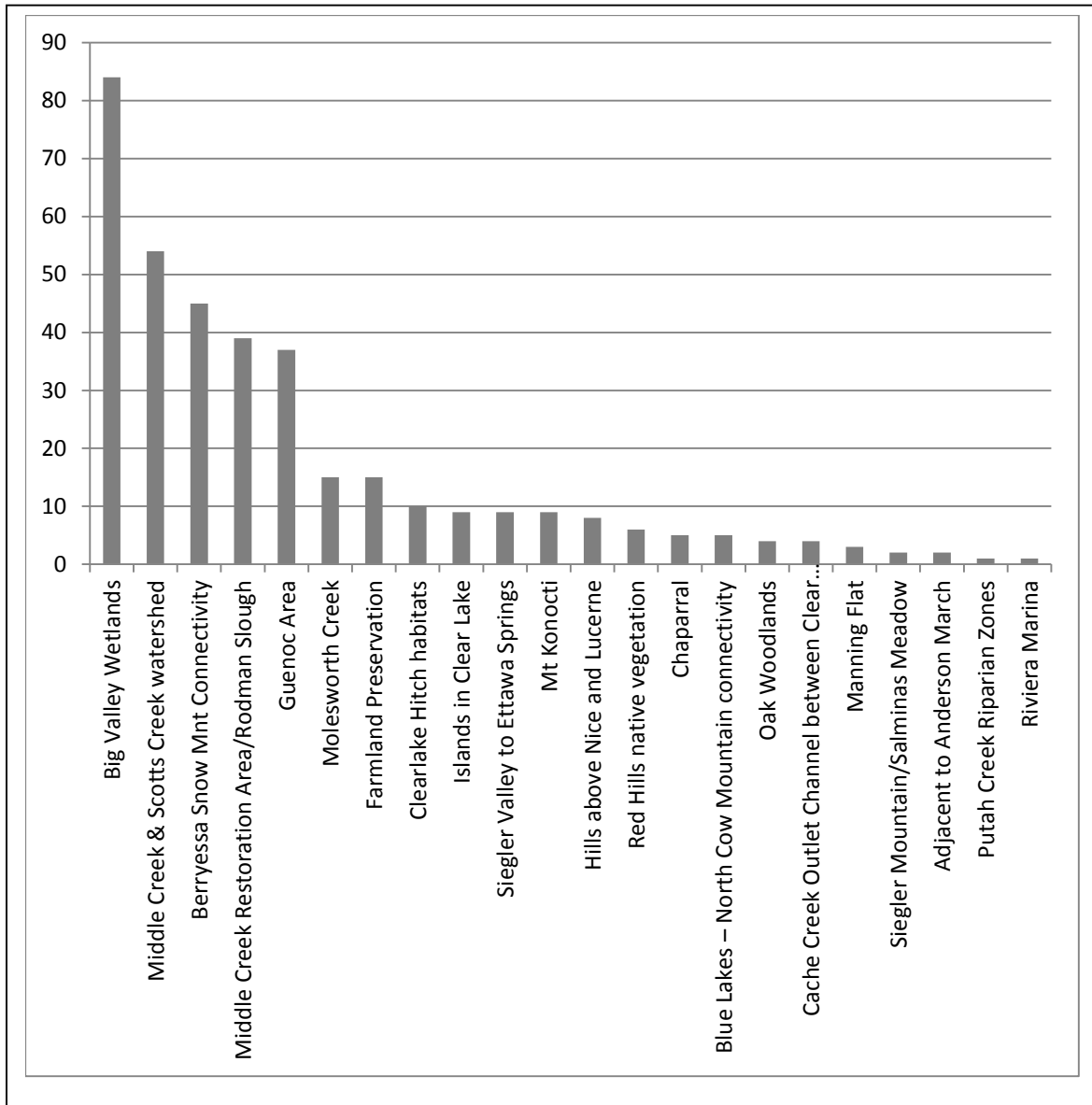


Figure 13: Compilation of scores derived for locations and/or issues based on a priority ranking. Areas receiving the highest scores are areas of highest conservation value. A rank of “1” received a score of 5 points; “2” received a score of 4 points, “3” received a score of 3 points, “4” received a score of 2 points, and “5” received a score of 1 point

The breaks in the data spread based on relative ranking were obvious between the five high conservation priority locations and medium conservation priority locations. However, the breaks in the data spread between medium and low conservation priority locations were not obvious as indicated by the relatively gradual change in the numeric rankings given to the locations. The break in conservation rating was chosen arbitrarily based on the number of locations rather than an actual obvious change in ranking priority. The areas of highest conservation priority were the Big Valley Wetlands (the shoreline and wetlands extending between the western base of Mt. Konocti and the southern edge of the City of Lakeport). The watersheds of Scotts Creek and Middle Creek ranked second highest followed by the Berryessa Snow Mountain Connectivity, the Middle Creek/Rodman Slough/Reclamation area, and then the Guenoc Area.

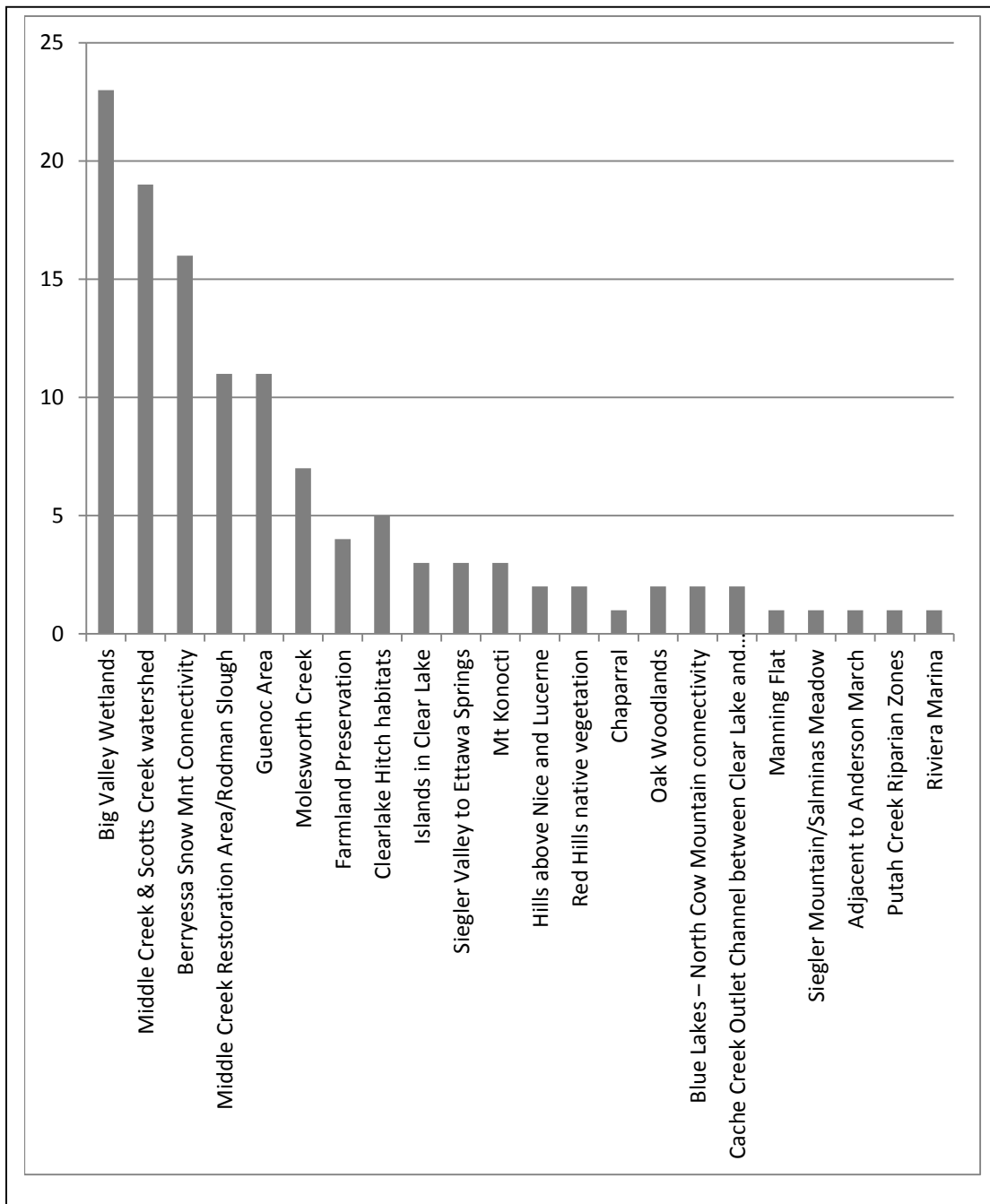


Figure 14: Total number of participant votes summarized for locations and/or issues of conservation value

The breaks in the data spread, based on number of votes, followed a similar pattern to the relative ranking data spread with some changes to where some locations fell in the conservation prioritization. The differences in the magnitude of the preferences were less using the number of votes (Figure 14) than the relative ranking (Figure 13). This is expected based on the greater number of points for higher priorities that is inherent in the relative ranking approach. The breaks were

again obvious between high and medium conservation priority while the breaks between medium and low conservation priority were less intuitive. As before, the break was chosen arbitrarily based on the large number of locations identified rather than an obvious difference in the number of votes. The relative placing of the top five priorities remains the same in both sets of data.

Table 3: Conservation Priorities

PRIORITY	NAME
1	Big Valley Wetlands
2	Middle Creek and Scotts Creek Watersheds
3	Berryessa Snow Mountain Connectivity
4	Middle Creek Restoration/Rodman Slough
5	Guenoc Area
6	Molesworth Creek
7	Farmland Preservation
8	Clear Lake Hitch Habitats
9	Islands in Clear Lake
10	Seigler Valley to Ettawa Springs
11	Mt. Konocti
12	Hills Above Nice and Lucerne
13	Red Hills Native Vegetation
14	Chaparral
15	Oak Woodlands
16	Blue Lakes - North Cow Mtn Connectivity
17	Cache Creek Outlet Channel
18	Manning Flat
19	Seigler Mountain - Salminas Meadow
20	Adjacent to Anderson Marsh
21	Putah Creek Riparian Zones
22	Cow Mountain - National Forest Connector
23	Riviera Marina

Discussion

The rationales behind each Expert's priorities varied and therefore were challenging to summarize. In this section we present an overview of the participant's (Experts and Land Trust) rationale behind the areas and ecosystems they believed worthy of conservation. We attempted to summarize this information and preserve the general spirit of each Expert's comments rather than transcribe their information word-for-word. This overview was our attempt to minimize redundancy and help the reader to focus on the most salient issues identified by all workshop participants. Locations of the different areas are illustrated in Figure 15.

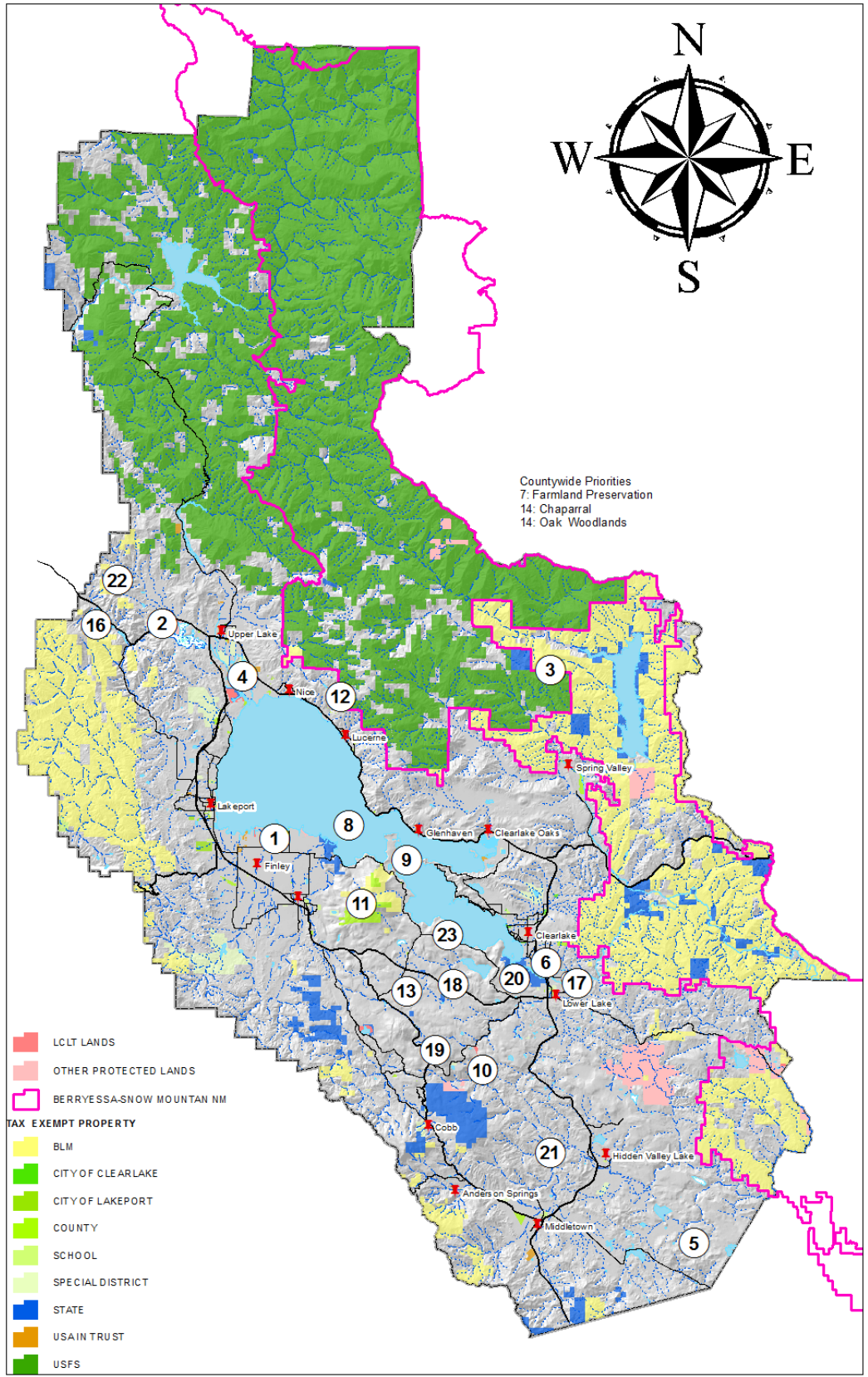


Figure 15: Conservation Priorities

Conservation Area Descriptions

Big Valley Wetlands - High Conservation Priority

The Clear Lake shoreline from Clear Lake State Park west to Lakeport represents the largest remaining area of unprotected wetland/riparian habitats adjacent to Clear Lake. The shoreline currently maintains high value habitats with pristine lakeshore vegetation and mature oaks used by a variety of species. Significant features include Quercus Point and Long Tule Point, which project prominently into the lake. This littoral shoreline provides nesting habitat for one of the largest breeding populations of Western and Clark's grebes. Also nesting along this shoreline are osprey, red-shouldered and red-tailed hawks, white-tailed kites, great blue herons, great egrets, green herons, and double-crested cormorants. The existing tules provide a filtration system important to the water quality of Clear Lake and are a major spawning ground for fish. As stated by one of our Experts, it is far easier to preserve wetlands than to recreate them, making this a high priority for the Land Trust. The entire shoreline is under threat from development, partially because underlying parcels of record provide an additional incentive to developers. The mature valley oaks and emergent wetland associations are at risk of conversion, parcelization, and fragmentation due to impending development. This is particularly noteworthy considering Clear Lake had lost approximately 72 percent of historical wetlands. Protection of the last remaining unprotected wetland habitat would have many benefits to Clear Lake's water quality and to the breeding, nesting, and feeding grounds for numerous special status species. Restoration of riparian forests could take place in some of the marginal agricultural areas and public access to Clear Lake could be provided, along with educational opportunities. Lakeside parks could be integrated with public trails to facilitate access to shoreline areas.

In 2016 the Land Trust was able to purchase 30 plus acres of valuable wetland in the Big Valley area. The project, known as the Big Valley Wetland - Melo Property (named after the former owner) has permanently protected beautiful native wetland and shoreline forest as well as upland wet meadow, pasture, and oaks. As part of the Big Valley Wetlands project, the Land Trust, in cooperation with the California Department of Fish and Wildlife (CDFG) developed the Big Valley Wetlands Conceptual Area Project Plan (CAPP) (CDFG, 2012) a document adopted by the CDFG that has made several hundred acres of property on the Clear Lake shoreline in Big Valley eligible for grant funding from the California Wildlife Conservation Board (WCB). The Natural Resources Conservation Service has also purchased two conservation easements in the area, permanently protecting 153 acres of wetland and riparian forest with Clear Lake frontage.

Middle and Scotts Creek Watershed including Tule Lake – High Conservation Priority

Protection of the Scotts Creek and the Middle Creek watersheds are important for maintenance of water quality and as habitat for fisheries. While this area is discussed separately from the Middle Creek Ecosystem Restoration Project, these watersheds are the largest source of the sediment and nutrients that are being transported into Clear Lake. Reducing sediment transport will allow the Middle Creek Ecosystem Restoration to act as a more efficient filter, thereby improving water quality in Clear Lake, and providing better habitat for fish spawning. The Scotts and Middle Creek watersheds upstream of Rodman Slough include 117,700 acres of land. A majority of the watershed is steep, mountainous terrain with mixed conifer and chaparral

vegetation types. Fifty-two percent of the watersheds are managed by government agencies, primarily the USDI BLM and the USFS. Both BLM and USFS manage lands for off-highway vehicle (OHV) recreation, timber, wildlife and other recreational purposes. Valley floor and adjacent areas are privately owned, and are generally used for agricultural and rural residential purposes. Two small communities, Upper Lake and Blue Lakes are located in these watersheds. Gravel mining, stream channelization and levee construction have disconnected streams from their floodplains in many locations.

Potential projects in the watersheds include:

- Water Quality: Three major creeks – Middle, Scotts, and Clover - flow into Rodman Slough, and thence into Clear Lake. Prior studies indicate these creeks contribute 71 percent of the sediment and phosphorus to Clear Lake, a naturally eutrophic lake. Excess phosphorus from various sources contributes to cultural eutrophication of Clear Lake. Reduced erosion and sediment delivery from these watersheds would lead to improved water quality in Clear Lake.
 - Water quality is expected to improve due to filtering by restored tules and other enhanced wetland vegetation.
 - In 2013-2014, NRCS purchased 788 acres of conservation easements in the Tule Lake area, allowing 558 acres of agricultural land to restore to wetland and waters of the US. These conservation easements stopped the century long practice of over 500 acres of intensive agriculture (wild rice most recently, green beans and corn in the past) located in the active floodplain of Scotts Creek. Additional restoration is necessary, including: revegetation of suitable areas with wetland vegetation, such as tules; measures to reduce the use of the historic pilot channel during low flows. The Land Trust is currently working with the NRCS in restoration of tules in Tule Lake.
 - Floodplain areas along Scotts Creek between Eickhoff Road and Tule Lake are frequently flooded, although remnant private levees exist. These floodplain areas extend for much of this length. Because of the frequent flooding, there is limited development within these areas. These floodplain areas provide valuable floodplain and riparian habitats and help remove some of the sediment and phosphorus from Scotts Creek, preventing it from entering Clear Lake. Permanently protecting these floodplain areas from future development will protect these beneficial functions. Modification of the remnant levees may also improve the sediment and phosphorus removal by the floodplain.
- Also envisioned is connectivity to the Beltramo Ranch, the present County Park at the mouth of Rodman Slough, Tule Lake, Witter Springs, and Bachelor Valley.
- Another component of this project could include conservation easements to restrict development on larger rangeland parcels.
- The acquisition of select in-holdings adjacent to BLM managed land is also desired. Development could potentially adversely impact downstream water quality and Lakeport's water supply. The landscape is comprised of oak forest and chaparral and should be considered an integral part of creating interest and funding for land conservation on and around the northern areas of Big Cow Mountain. Of special interest are the Black Oak Springs area and the Scotts Creek headwaters.

- The acquisition of select in-holdings adjacent to USFS managed land is also desired. Development could potentially adversely impact downstream water quality and Upper Lake's water supply. The landscape is comprised of conifer forest, oak forest and chaparral and should be considered an integral part of creating interest and funding for land conservation on and around the north central area of Lake County.

Berryessa-Snow Mountain Connectivity - High Conservation Priority

The Berryessa – Snow Mountain National Monument was created in 2016 from the existing federally managed lands (BLM, USFS, and Bureau of Reclamation) extending from south of Lake Berryessa north to Snow Mountain along the eastern borders of Napa and Lake Counties. This area is included in the Blue Ridge-Berryessa Conceptual Area Protection Plan (BRBNA³ CAPP). The BRBNA CAPP (June 2013) states:

The character of the region has changed little in the past century and communities within the BRBNA generally want to see it remain that way. Properties in the region, compared to other parts of California, remain largely intact with few owners. Nearly half of the region is under public ownership or protected by land trusts and other non-governmental conservation entities, with much of the land being in large, contiguous blocks. These characteristics of land ownership and resource quality make the BRBNA an outstanding opportunity to protect a largely intact ecosystem at relatively low cost.

Land in public ownership accounts for close to 303,000 acres of the BRBNA and includes lands owned and/or managed by the BLM, the Bureau of Reclamation (BOR), CDFW, the California Department of Parks and Recreation, and the US Forest Service (USFS). Private lands and lands without public access comprise approximately 483,000 acres of the BRBNA including large ranches, land trust protected natural resource lands, and lands in the University of California's Natural Reserve System.

The BRBNA is characterized by both its natural values and land-based economic enterprises, including natural habitat, working ranches, occasional vineyards, and recreation lands. A wide variety of habitats are represented within the BRBNA including serpentine chaparral, grasslands, oak woodlands, and extensive riparian and cliff habitats. The area's size and remoteness support tule elk, bald and golden eagles, mountain lions, and black bears. The serpentine soils of the region host a large number of indigenous plants, while Cache and Putah Creeks and their tributaries, and the region's lakes, provide abundant riparian habitat.

This project has several components that are interrelated. Each of these aspects is discussed below.

- **BSMNM Inholdings:** These are private holdings within the overall boundaries of the BSMNM. Protection of the lands would improve wildlife corridors and public access to the National Monument. Protection of the lands would protect chaparral, oak woodlands and serpentine areas as well.
- **Cache Creek-Knoxville Connector:** There are large blocks of privately held land that separate the BLM managed Cache Creek Wilderness Area and the McLaughlin Reserve and nearby

³ Blue Ridge – Berryessa Natural Area, currently known as the Blue Ridge – Berryessa Partnership

BLM Knoxville Recreation Area Lands. Protection of these areas will insure necessary wildlife corridors to connect these protected lands.

- Clearlake-BSMNM Connectivity: The purpose of protecting this area is to improve public access to the BSMNM from the City of Clearlake.
- Benmore Canyon/Benmore Creek watershed. Protection of this area would improve public access to the BLM lands and the Silver Spur Ranch, recently purchased and protected by Tuleyome. This would also contribute to improving connectivity within the BSMNM.

Middle Creek Ecosystem Restoration Project/Rodman Slough - High Conservation Priority

The Rodman Slough area and the proposed Middle Creek Flood Reduction and Ecosystem Restoration Project in combination with the recently protected Tule Lake make up the historic wetland ecosystem at the base of the Middle and Scotts Creek watersheds. When restored, this will be the largest wetland ecosystem around Clear Lake and will provide sediment filtration for 57% of the water that flows into the lake. Sediment and nutrient removal by the wetlands should contribute to significant improvements in Clear Lake water quality. This area hosts several important great blue heron and great white egret rookeries and provides foraging habitat for a variety of raptor species. There is a variety of wildfowl here as well, and it is a popular waterfowl hunting site. Lake County's Native Americans have identified this area as a major site for traditional plant gathering and as a spawning area for the Clear Lake hitch. Local bird experts identified Rodman Slough and surrounding habitat as an important foraging area for migrating songbirds, especially warblers. The Land Trust has expressed interest in holding the required conservation easements on the properties acquired for the Project.

The Land Trust should continue to participate in and support the Middle Creek Coalition in their efforts to further progress on the Middle Creek Ecosystem Restoration Project.

Guenoc Area – High Conservation Priority

The Guenoc Area includes lands east of Highway 29 extending to the Central Valley foothills along the eastern edge of Lake County, near the Napa County line. Long Valley, along Butts Canyon Road features wetlands (e.g., vernal pools) and oak savannah scattered over large undeveloped areas. It is characterized by a high water table and upland game and wetland species. Many of the hillsides in the area consist of ultramafic, including serpentine, soils. Endemic plant species include the McNab cypress that grows in the area's serpentine soils. The area is geologically complex and is important for its biological diversity and endemic plant communities, including serpentine chaparral.

Critical Linkages: Bay Area and Beyond (2013) identified the Guenoc Area as a major wildlife corridor between the protected lands in the Mayacamas Mountains to the protected lands in the Blue Ridge. The Mayacamas to Berryessa Landscape Connectivity (M2B) study has also identified several major wildlife corridors in the Guenoc Area. Ongoing development, including

vineyards, disrupts animal migration corridors which are crucial to biodiversity and climate change resilience.

Protection would enhance wildlife corridors and preserve Native American areas of cultural importance. This area is threatened by proposed residential, resort and vineyard development on a large scale.

Molesworth Creek – Medium Conservation Priority

Molesworth Creek runs through southern Clearlake from the County landfill to Anderson Marsh State Park. The entire Molesworth Creek watershed is within the Clearlake City Limits and consists of small lots, with the exception of large lots near the Lake County landfill. This limits the opportunities for land and ecosystem conservation. East of Highway 53 is an area of small lots, frequently referred to as “The Avenues”. Due to small lot size and limited infrastructure, many of these lots have not been developed and have limited development potential. Occasionally, property owners approach the Land Trust about either selling or donating their lots to the Land Trust. In the past, the Land Trust has declined to acquire these properties due to the limited conservation value and difficulty maintaining the property.

There is extensive trash and debris accumulation in the creek channel and area, resulting in degraded habitat and potential water quality issues. As essentially all of the creek channel is on private property, most of which are small parcels, there are limited opportunities for the Land Trust to impact this issue. The Land Trust could support community clean up days, which have been occurring over the last several years.

The mouth of Molesworth Creek west of Ridgeview Drive was rerouted at some point in the past. This section of the creek is almost entirely on State lands (Anderson Marsh State Historic Park). Topography and vegetation indicate the creek originally looped to the south and flowed directly into Cache Creek. The creek now flows directly west into Clear Lake. This shortened the length of the creek mouth substantially, steepening the creek gradient and increasing erosion and sediment transport. This has resulted in formation of a substantial delta in Clear Lake, erosion of an archeological site, head cutting upstream creating a barrier to spawning Clear Lake Hitch, and increased sediment and nutrient transport to Clear Lake. Restoration of the mouth of the creek to something resembling the natural path has been discussed with State Park personnel for several years, however, funding has not been obtained for restoration. The restoration would address all the issues identified above. The Land Trust could facilitate and assist the State Park in obtaining funding and restoring the mouth of Molesworth Creek.

Farm Land – Medium Conservation Priority

Major agricultural areas in Lake County would benefit from conservation easements. Sustaining agriculture in the county into the future may be problematic because many larger parcels are threatened by potential subdivision. Big Valley, Upper Lake Valley and Scotts Valley are the primary areas of prime farmland in Lake County. Preservation of these areas through conservation and agricultural easements should be encouraged to prevent urban encroachment

on agricultural land, open space, vernal pools, and other habitats. This farmland area is a historical component of Lake County's cultural heritage and contributes to the maintenance of pre-development hydrologic conditions into adjacent streams. Maintaining the existing viewsheds, and agricultural lands around transportation corridors, including Highway 20, 29, 175, Elk Mountain Road, Morgan Valley Road, and Scotts Valley Road would help preserve the rural character of Lake County.

Clear Lake Hitch Habitats – Medium Conservation Priority

The Clear Lake Hitch, a large minnow species endemic to Clear Lake, was once a plentiful food source for the Pomo inhabitants of the Clear Lake region. The Hitch are also important to the lake's ecosystem as a food source for birds, fish, and other wildlife. In the spring, Hitch migrate upstream to Clear Lake tributaries in order to spawn before returning to the lake. The population has declined substantially due to water diversions that cause streams to dry up prematurely, drought, degradation of spawning habitats, migration barriers, pollution, and the introduction of non-native fish species. The Hitch once spawned in all of the Clear Lake tributaries, but most of the streams and wetlands are no longer accessible during the spawning season due to destruction or degradation, and the Hitch can no longer reach the majority of their historic spawning grounds. In 2013 and 2014, the spawning runs were the worst ever recorded. In 2014, the California Fish and Game Commission designated the Clear Lake Hitch as a threatened species under the state's Endangered Species Act. Adobe and Kelsey creeks, which flow through Big Valley, are important tributaries to Clear Lake. Both creeks maintain the best remaining spawning runs of the Clear Lake hitch. These creeks would be an appropriate area for establishment of greenbelts and flood easements along major waterways in areas threatened by urban encroachment. All streams that feed into Clear Lake, and especially those that have continuing hitch spawning runs, could also be considered for protection in this category.

Islands in Clear Lake – Medium Conservation Priority

Rattlesnake Island, in the Clearlake Oaks arm of Clear Lake, is an important, highly visible, mostly undisturbed island on the lake. It features lush wetlands and is of significant Native American archeological importance. As a historic archeological area, there should be minimum development on this island. Indian Island, near Anderson Marsh, also hosts cultural resources, and is a prominent visual resource. The State of California, through the Department of Parks and Recreation, obtained a 1.5-acre conservation easement on the south end of Indian Island to protect the cultural, aesthetic and natural values of that portion of the island. In 2006, the State took action as a vineyard was planted partially within the easement. That portion of the vineyard has since been removed.

Anderson, Windmill and Windflower Islands, all located between the Oaks and Lower Arms of the lake, are privately owned and already have homes developed on them. Windmill and Windflower Islands have substantial wetland areas and are essentially fully developed. Shag Rock is also privately owned, but cannot be developed. The presence or absence of archeological resources on these islands is unknown.

Several islands in Clear Lake are already owned by the government, including the Soda Baths in Soda Bay (BLM), Monitor Island (CDFW), and Dollar Island near Buckingham (County of Lake). Some smaller islands do not have a designated parcel and are presumably owned by the State, such as Beakban Island and Dollar Island near Clearlake Oaks. These islands are considered protected, although there were reports of looting of archeological resources from Beakban Island during the 2014-15 drought.

Siegler Valley to Ettawa Springs – Medium Conservation Priority

The Clear Lake Volcanics of Siegler Canyon and Big Canyon area host heavily forested landscapes with major springs that are important to downstream riparian areas. Much of the area was burned by the Valley Fire in 2015. Issues in this area involve view-shed preservation, water resources, riparian health, and downstream water quality. Siegler Canyon Creek maintains perennial water and has a remnant population of rainbow trout due to numerous upstream springs. Oak woodlands border the creek in the area as it flows to the northeast towards Lower Lake. Residential development to the west (Loch Lomond, Bonanza Springs) is encroaching on the area. However, limited water supplies may restrict growth. Extensive vineyard development on Perini Hill over the last 30 years has substantially reduced forests in the area. A band of ultramafic soils runs along the north side of Big Canyon Creek from the west side of Siegler Valley to the southeast. This includes the historic Howard Springs Resort and several abandoned mercury mines and prospects.

Siegler Valley is a large (125 +/- acre) meadow area between Big Canyon and Siegler Creeks. The valley floor has been dewatered by stream head cutting, draining of wetlands and construction of the Siegler Airport in the 1940's. Coast Range Wetlands is restoring a historic wetland of over 30 acres in the northeast corner of Siegler Valley as part of a wetland mitigation bank. The Land Trust holds a conservation easement on the 36 acre property. Additional restoration opportunities may exist in the valley.

Big Canyon Creek runs through Ettawa Springs, off of Big Canyon Road on the northern edge of Boggs Mountain. This stream sustains a population of remnant rainbow trout, which are the remaining components of a historical steelhead run⁴. This area includes Boggs Mountain State Demonstration State Forest which supports Douglas-fir, Ponderosa pine, oak woodlands, and riparian habitat. It maintains populations of northern spotted owls, fox, deer, bear, and mountain lion. The Land Trust of Napa County (LTNC) holds 207+/- acres of conservation easement between Ettawa Springs and Boggs Mountain SDSF. For several years, LTNC has proposed transferring the stewardship of these easements to Land Trust. Potential projects include transfer of the easement or acquisition of additional easements in the area.

⁴ Steelhead are the anadromous form of rainbow trout. The connection between these streams and the Pacific Ocean was broken upon construction of Berryessa Reservoir, resulting in the loss of the steelhead run into these headwater streams.

Working forests could be encouraged to generate income and demonstration of sustainable forestry and fire/fuels management. Protection measures could include additional conservation easements and restoration projects.

Mt. Konocti – Medium Conservation Priority

Rising 3,000 ft. above the shores of Clear Lake, Mt. Konocti, an inactive volcano, is a prominent feature of Lake County's landscape. Not only is it the signature visual landmark of the County, the mountain possesses a variety of important habitats and is part of a wildlife corridor that starts at the Mayacamas Mountains/Cobb Mountain, crosses Highway 175, and continues over the mountain to Clear Lake State Park. Mt. Konocti contains habitats ranging from chaparral and oak woodland, to forests, cliffs, and wetlands. It is home to a variety of wildlife as well as threatened and endangered plants and wildlife species. Golden eagles have been observed foraging on the mountain and peregrine falcons nest on the northern cliffs. The topography of the mountain lends itself to several microclimates with unique vegetative communities including an unusual grove of mission live oaks. The County of Lake was able to purchase a large portion of Mt. Konocti, creating a popular regional park. Bathrooms have been installed on the mountain, the trail to the top of the mountain further developed, and picnic areas have been created. The County owns 1,163 acres and BLM manages 1,317 acres of Mt. Konocti. While this is promising, there remains the possibility of high density housing development that would reduce habitat availability.

Threats to this landmark are numerous and include development pressure in the Buckingham Peak area from subdivision-creep up the mountain as well as continued development of single family homes. Mt. Konocti is particularly susceptible to scarring by earth movement, as is evidenced by the historical Bell Mine as well as the current subdivisions on its lower flanks.

Preservation of the remaining mountain would save some of the most important view sheds in the County as well as unique habitats. Protection of the private inholdings and properties between the nearby communities would enhance the public benefit. Benefits would also accrue to the County's tourist industry by diversifying tourism opportunities through the development of public access, multi-use trails. Trails could be established to connect the public lands, adjacent communities and Clear Lake State Park.

Hills Above Nice and Lucerne – Medium Conservation Priority

This is an area of 'paper' subdivisions (old substandard subdivisions with inadequate lot size and little or no supporting infrastructure) above the town of Nice and Lucerne on the northern shore of Clear Lake. There is a large amount of illegal dumping occurring as well as illegal off-highway-vehicle (OHV) use. Combining the many small parcels on these steep hillsides would help protect the area from continued view shed degradation as well as minimize/prevent the erosional processes and resulting sedimentation that is impairing Clear Lake's water quality. Benefits would also include possible integration of a trail system that could connect to the National Forest Lands. With approximately 10,000 parcels, a majority of which are smaller than 0.2 acres, it is not clear what role the Land Trust can serve. Lake County was accepting donated parcels in accordance with the Lake County Paper Subdivision Management Plan (2015). By late 2017, the County

owned approximately 150 of the paper subdivision lots in the area. As of 2019, Lake County was no longer accepting these parcels.

Red Hills Native Vegetation – Lower Conservation Priority

The Red Hills wine grape AVA region is rapidly being converted to vineyards due to the recognized value of grapes grown there. This is leading to loss of native vegetation and threatening important wildlife habitat and movement corridors. The Mayacamas to Berryessa Landscape Connectivity study has identified several north-south corridors to Mt. Konocti as well as a corridor extending from Boggs Lake Preserve to Anderson Marsh State Historic Park which pass through the Red Hills AVA. These wildlife corridors should be permanently protected from future development.

Chaparral – Lower Conservation Priority

The chaparral areas throughout Lake County provide wildlife habitats and corridors. Extensive vineyard development may greatly reduce the amount of this habitat and also connectivity between protected wildlife habitats. Chaparral areas should be protected to maintain wildlife corridors between protected lands and through partially developed areas, especially in unique environments, such as ultramafic soils.

Cow Mountain-Mendocino National Forest Corridor – Lower Conservation Priority

The Mayacamas to Berryessa Connectivity Study identified a significant wildlife corridor roughly along the Lake and Mendocino County border that connects the Cow Mountain Recreation Area (BLM) with the Mendocino National Forest (USFS). Of particular concern, was connectivity of North Cow Mountain and Blue Lakes, at the southern end of the Corridor. There are several isolated BLM managed parcels in the northern portion of the corridor. The Blue Lakes community and Highway 20 present major obstacles to wildlife movement through the area. Protection of the openness of private lands in the area will insure the ability of large animals to move through this important corridor.

Oak Woodlands – Lower Conservation Priority

Oak woodlands are county-wide. These native trees provide important wildlife habitats and are being lost due to development. Oak woodlands should be protected to maintain wildlife corridors between protected lands and through partially developed areas, especially where they provide benefits, such as floodplain function and wildlife and wildfire buffers.

Cache Creek between the City of Clearlake and the Clear Lake Dam – Lower Conservation Priority

This area consists of the dammed portion of Cache Creek and supports primarily riparian and wetland habitat, and oak woodland habitats. There are listed and/or sensitive species using this

area, including bald eagles, osprey, and the Clear Lake hitch. Mammals include deer, fox, mountain lions, and black bears. The grasslands are a foraging area for numerous raptor species. A large subdivision has been proposed for the north side of Cache Creek. The Cache Creek corridor serves as an important connection between Anderson Marsh and Cache Creek Wilderness, however, development along Cache Creek makes corridor maintenance difficult.

Manning Flat – Lower Conservation Priority

Manning flat is an area that is experiencing severe erosion due to manmade channeling that is causing large sediment dumping into Thurston Lake. Stopping and remediating the erosion damage would be very costly. The area south of State Highway 29 has not been subject to erosion due to the presence of the highway and maintains one of the few remaining populations of Lake County Stonecrop, a very rare, endemic plant.

Seigler Mountain/Salminas Meadow – Lower Conservation Priority

This region, north of Loch Lomond is a conifer forest habitat. This wildlife habitat is greatly reduced due to the combination of development and recent fires. It has been particularly hard hit by the Bark Beetle, with impacts on pine trees reaching levels seen in the hardest hit regions of the state. The remaining forest area should be protected from encroaching development.

Salminas Meadow includes significant wetlands and wet meadows and may support some rare plants. Some of these areas are protected from development by subdivision restrictions, however, significant areas may still be developed. Protection of these important disappearing habitats should be supported.

Areas Adjacent to Anderson Marsh – Lower Conservation Priority

Anderson Marsh is largely protected within the boundaries of Anderson Marsh State Historic Park. Preservation of lands around the park could act as buffers to likely development between the City of Clearlake and the community of Lower Lake, thereby maintaining the aesthetic qualities of the Park. The park contains oak woodlands, grass covered hills, and tule marsh. The area is replete with archeological sites, some up to 10,000 years old, from the Southeastern Pomo tribe.

Anderson Marsh is the largest area of protected land adjacent to the south end of Clear Lake and provides wildlife access to the lake. Wildlife corridors have been identified to the west and east of the park. Protection of these wildlife corridors is necessary for the terrestrial wildlife in the area.

Putah Creek Riparian Corridor – Lower Conservation Priority

There is little protection for the Putah Creek riparian corridor. There is loss of habitat from; instream gravel mining that has led to channel incision and bank instability, urban encroachment,

bank hardening (rip rap), agricultural encroachment, flood control projects (e.g., Hidden Valley Lake levee), and OHV use. There is currently limited vegetation. Restoration and protection of this riparian area would provide an important wildlife corridor between the Mayacamas mountain range and the Berryessa-Snow Mountain National Monument.

Clear Lake Riviera Marina – Lower Conservation Priority

The acquisition of the Riviera Marina, presently under plans for residential development, would create and preserve rapidly diminishing public access to Clear Lake. It would also protect important tule habitat and a beautiful scenic hillside of native plants, including buckeye, mountain mahogany, chaparral, and small oaks. Public access to the lake is limited, particularly when considering the lake's large size.

Borax Lake – Lower Conservation Priority

Borax Lake is a federally recognized National Historic Landmark and has important archaeological value. The chemical borax is a natural anti-fungal agent commonly used in detergents. Paleo-Indian tribes about 12,000 years ago washed clothing in the waters of the lake and made soap with the borax. The area was also rich in obsidian and tribes gathered obsidian from the area, which they used to make spearheads and arrowheads. The lake is now partially owned by the Archaeological Conservancy and is considered one of the oldest and most significant archaeological sites in the United States. Artifacts from 12,000 years ago, such as spearheads, have been recovered from the site. During the Gold Rush, borax was harvested to extract gold from rocks. Hiking Borax Ridge above the lake reveals amazing views of Mount Konocti and Clear Lake. Unprotected areas are threatened by development of this unique habitat.

Mayacamas to Berryessa Connectivity Network Study

As the Mayacamas to Berryessa Connectivity Network Study (M2B) was being developed concurrent with the priority ranking process, the results were not available for incorporation in the priority ranking. M2B was not ranked as part of this process.

M2B is a public-private collaboration between land trusts, open space and park districts, State and Federal land managers, and ecology researchers dedicated to landscape-level conservation of Northern California's inner Coast Ranges. The project facilitated the application of recent advances in habitat mapping, landscape linkage analyses, and climate threat assessment to advance a multi-county (including Lake, Napa, Solano and Sonoma) habitat connectivity roadmap spanning from the Mayacamas Mountains to the new Berryessa - Snow Mountain National Monument. The habitat connectivity roadmap connects large blocks of publicly owned or privately protected lands, see Figure 16. Results inform site-specific habitat corridor action plans to advance protection and enhancement of habitat linkages key to biodiversity and watershed health by members of the network steering committee and their home organizations.

The M2B results should be utilized when evaluating potential conservation projects. Where appropriate, we have included pertinent references in the above discussions.

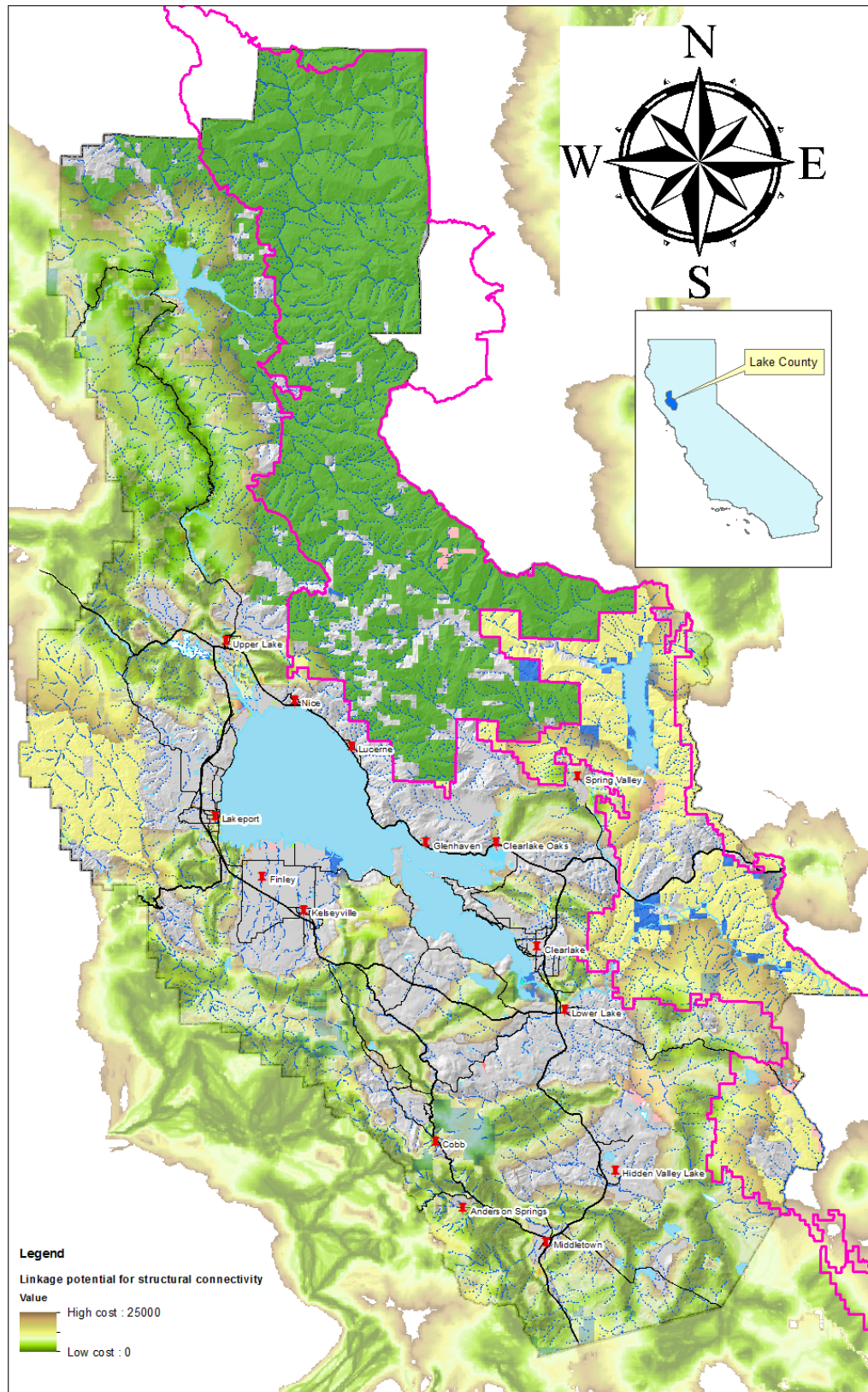


Figure 16: Structural connectivity from M2B

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APPENDIX 1

Names of individuals participating in the Lake County Land Trust conservation prioritization workshop, their titles, and affiliations.

County

Water Resources Department

Philip Moy, Director

Will Evans, Program Coordinator

Community Development Department

Byron Turner, Planner

Agriculture Department

Steve Hajik, Director

City of Clearlake

Russ Perdock, Mayor

Lake County Resource Conservation District

Bill Lincoln, Board Member

Dr. Harry Lyons, Board Member

Merry Jo Velasquez, Board Member

Jim Bridges, Board Member

State

Central Valley Regional Water Quality Control Board

Michelle Wood, Environmental Scientist

Taranjot Sahota, Environmental Scientist

Department of Parks and Recreation

Eddie Guaracha, District Superintendent

Department of Fish and Wildlife

Josh Bush, Biologist

Federal

USDA Forest Service

Frank Aebly, District Manager

USDA Natural Resources Conservation Service

Korinn Woodard, District Conservationist

USDI Bureau of Land Management

Amanda James, Field Manager

Rebecca Wong, National Monument Manager, BSMNM

Tribal

Middletown Rancheria

Stephanie Reyes, Tribal Historic Preservation Officer

Other

Sierra Club, Lake Group

Victoria Brandon, Treasurer, Conservation Chair

Ruth Stierna, Citizen

Lake County Land Trust

Val Nixon, President

Erica Lundquist, Secretary

John Wise, Treasurer

John Stierna, Board Member

Roberta Lyons, Board Member

Tom Smythe, Executive Director

APPENDIX 2

Map figures in 11" x 17" format