

THE LANDSCAPE OF LAND USE CONFLICT IN CALIFORNIA

Lynn Huntsinger and W. James Clawson
University of California, Berkeley and Davis

Résumé

Le paysage de l'utilisation des terres en Californie a été façonné par des événements historiques. Le résultat est une distribution de la propriété foncière, de l'utilisation des terres et de l'exploitation des ressources végétales qui est à l'origine des conflits du présent et prépare ceux du futur. Une série de facteurs influence l'utilisation des terres et les conflits qui en résultent: les changements démographiques et des valeurs sociales; la politique de lutte contre les incendies de forêt et l'accroissement du danger d'incendies; la perception du besoin pour la préservation d'espaces ouverts; la politique et les lois pour la préservation des espèces sauvages et de l'environnement; et des facteurs économiques, locaux, nationaux et globaux. La moitié du terrain en Californie appartient au domaine public, mais la plus grande partie de l'espace de type Méditerranéen est propriété privée. Le public et les législateurs portent un intérêt grandissant à ces paysages Méditerranéens qui contiennent des éléments d'intérêt public tels que des espaces ouverts, un habitat pour les animaux sauvages et des parcs naturels, que l'on en est venu à considérer comme plus précieuse que les productions traditionnelles de nourriture et de fibre de cette partie de l'espace Californien. La politique pour la protection et l'aménagement des ressources sur les propriétés privées en Californie en est à peine à ses débuts. La conception Américaine de ce qui forme un parc ou une réserve naturelle d'une part et l'importance culturelle de l'inaliénabilité des droits de la propriété privée d'autre part, limitent la politique de l'aménagement. Mais un certain nombre de programmes publics et privés sont apparus et continuent à se développer dans le but d'influencer l'aménagement et l'utilisation de ces terres.

Abstract

The landscape of California land use has been shaped by historical events. The resulting patterns of ownership, use, and management of vegetation types set the stage for current and future land use conflict. A variety of forces presently influence land use and conflicts over land use: changing demographics and social values; fire suppression policy and increased fire hazard; a perceived need for open space; policy and regulations protecting wildlife species and environmental quality; and economic forces, local, national, and global. Half of California is public land, but the vast majority of Mediterranean-type rangelands are in private ownership. Private rangelands are coming under increasing scrutiny by the public and legislators, because the public goods they provide as open space, wildlife habitat, and parks are coming to be valued more highly than the food and fiber traditionally produced from these lands. The evolution of policy to protect and enhance resources on private lands in California is in its infancy. American concepts of what constitutes a park or preserve on the one hand, and the cultural importance of the sanctity of private property rights on the other, limit policy development. But a number of private and public programs for influencing management and use of these lands have arisen and continue to develop.

Introduction: Historical Background

Land use conflict has a long history in California. Patterns of ownership, use and management of the state's vegetation types were established over the last two hundred years as a result of successive changes in types of settlement and the economy of the state. Today's landscape of public and private ownership, urban and rural lifeways, and extensive and intensive development sets the stage for land use conflict today.

When the Spanish established the first settlements along the coast in the eighteenth century, they displaced an aboriginal hunter-gatherer population. Native Americans relied on acorns as a major food source. A combination of abuse and disease reduced the aboriginal population to less than 5 percent of the original 300,000 by 1900 (Hornbeck, 1983).

The Spanish brought livestock to California originally as support for the missions and attending Native Americans, but soon found that with little effort, a healthy income from sea trade in hides and tallow supported an aristocratic lifestyle on large ranchos, or land grants, as well as on the missions (Burcham, 1957). The Spanish grazed their stock mostly in coastal grasslands, close to harbors and ports where ships picked up hides and tallow. The Spanish crown used the land grant to reward select individuals--by the time the Mexican government took over in 1821 only 20 grants had been made. With a less restrictive land grant policy, and the secularization of the missions, the number of land grants greatly increased over the next 30 years, spreading into the San Joaquin and Sacramento valleys and above San Francisco on the coast.

With statehood, in 1850, came another shift in land use. The conversion of ownership titles of the Spanish and Mexican land grants, mostly ranchos, became a cloudy and time consuming process that did not recognize a large portion as legal. At the same time, the Gold Rush brought scores of settlers to California, settlers that did not often respect the property rights of rancho landowners. Mining in the Sierra Nevada resulted in the expansion of timber harvest and grazing activities into higher elevations. Towns grew in the foothill regions, and urban centers such as Sacramento and San Francisco boomed. Farming and increased livestock numbers were stimulated by growing demand for food.

Many gold seekers returned home after the gold ran out, but others chose to stay. Those who remained turned to agriculture as a means of earning a living. Squatters commonly occupied grant lands. The best lowland grazing lands, and Valley wetlands, were cultivated and drained for crop production, which soon supplanted livestock production as the basis of the California economy. The decade of 1860s was called "the decade of change" (Adams, 1946) signifying the shift from livestock raising to farming as the major agricultural activity. These lowlands today remain largely in private ownership.

As the policy of the state grew more and more favorable to crop producers at the expense of grazers, range grazing became restricted to foothill lands where shallow or erodible soils, steep slopes, a lack of water, and other factors made them unsuitable for cultivation. Land use conflicts between farmers and ranchers came to a head in the early 1870s with the passage of "No-fence laws" making it the responsibility of the rancher to keep livestock containing on ranch property, rather than requiring farmers to keep livestock away from crops (Robbins, 1948). Crop production expanded rapidly through the turn of the century and into the twentieth, while the area available for grazing declined. Although some land use conflicts continued between rancher and

farmer, often crops or crop stubble were used as forage and the two uses accommodated each other.

At the same time, the draining and cultivation of valley bottom lands, and a series of droughts during the late 1800s, stimulated the use of montane pastures for forage during the summer months. As the mountains remained uninhabited or claimed, grazing was highly competitive and uncontrolled. Soon extensive damage to watersheds and forests caused by unrestricted grazing led the public to demand protection for these lands. The Forest Reserve System was initiated at the turn of the century, the precursor of today's Forest Service, and grazing was restricted in forest lands.

Desert lands remained largely unclaimed public domain lands into the twentieth century. Today they are administered mostly by the Department of Interior's Bureau of Land Management (BLM). The Taylor Grazing Act of 1934 created grazing districts on this land and initiated control of grazing in the public domain. Altogether approximately half of California remains public land--most of this public land is the montane forest lands of the Forest Service, and the deserts administered by the BLM.

Grazing as a dominant land use today is largely restricted to foothill areas, and areas with soils or climate unsuitable for cultivation. As a result, California's remaining rangeland forms a ring around the Central Valley, extends along the coast range, and dominates the eastern and northeastern deserts. Oak woodlands and annual grasslands provide late winter and spring forage of good quality; the bordering forests, irrigated pasture, and grain stubble have served as forage sources in summer and fall.

Ownership and Conversion of Major Vegetation Types

For the purposes of this discussion, the highly varied vegetation of the state is grouped into five broad types: forest, chaparral, grassland, woodland, and sagebrush steppe. These differ not only in the plant communities that comprise them, but in ownership as well. Forests and deserts are mostly in public ownership. Grasslands and woodlands are largely private. Chaparral lands are about evenly divided between public and private ownership (Figure 1). Some of the richest ecosystems in the state are rapidly undergoing conversion to crop and urban use, and the many ramifications of a rapidly growing and urbanizing population affect all California range and forest lands.

There is a pattern to the conversion of landscapes in California. The more economically valuable the land for agriculture, the more often it is converted to residential and urban use (Table 1). The lands that are most often converted, and most vulnerable, are those that are least protected in some sort of federal, state, or local government "reserve" status. Reserved lands are those managed for wildlife, recreation, or research (Ewing et al. 1988).

Grassland is the least protected, followed by hardwood woodland and chaparral lands. All three of these vegetation types are typically in the Mediterranean climatic zone, characterized by an understory of grasses of Mediterranean origin. Sagebrush, forest, and desert lands have the greatest public ownership and the most land in reserve status. Annual grassland and woodlands frequently occupy soils capable of sustaining a high level of agricultural production, and are most often converted to alternative uses. A large part of this conversion occurred prior to 1950.

Illustrative of this pattern on a smaller scale has been the fate of California's wetlands. Hectares of wetlands in California have declined from an estimated 2 million

Figure 1. California Acres by Ownership (Ewing et al. 1988).

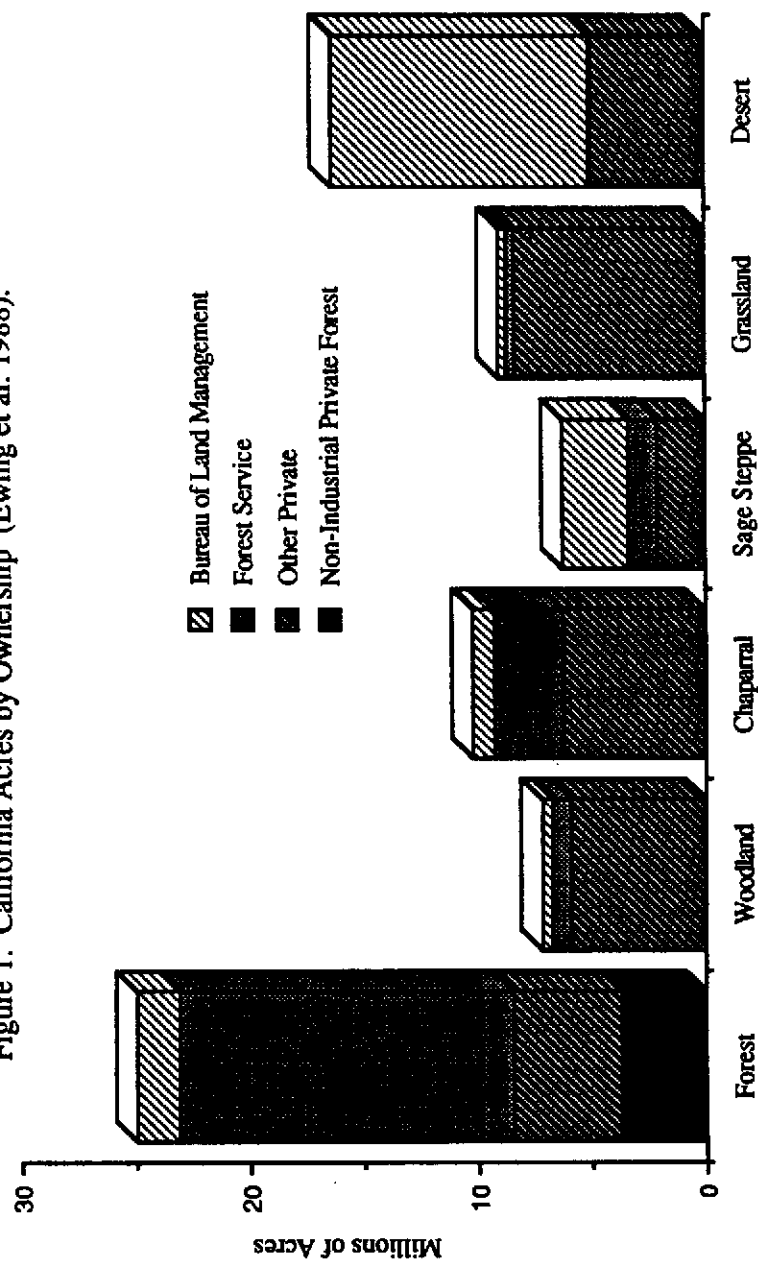


Table 1. Ownership and Conversion of Major Vegetation Types (adapted from Ewing *et al.* 1988)

Vegetation Type	1985 Ownership (millions of ha)	Percent Converted 1950-1980	Percent in Reserve Status
Conifer Forest ¹	9 total 2 industrial 2 small private 5 public	1	20
Desert	9 total 2 private 7 public	1	9
Shrublands	8 total	3	12
Chaparral ²	5 total 2 private 3 public	4	10
Sagebrush Steppe ³	3 total 1 private 2 public	3	16
Hardwoods	4 total	6	4
Forest	1 total	1	7
Woodland	3 total 2 private 1 public	7	4
Grassland	4 total 3 private 1 public	26	1
Forest and Rangeland	34 total		
Urban and Crop Land	6 total		

¹Note that montane hardwood forest is included in the "Hardwoods" category in this table. For purposes of discussion, it is included with "Conifer Forest" in the "Forest" vegetation type.

²Includes 2.5 million acres of Coastal Scrub, 11 percent of which was converted between 1950 and 1980.

³One source states that 95 percent of Kuchler's (1977) alpine habitats are in reserve status—this includes a substantial amount of alpine sagebrush (Klubnickin, 1979).

hectares in 1850, to .2 million hectares in 1950, to about 121,000 hectares today (California Department of Fish and Game, 1988). Most loss has been due to draining for crop production, although today urbanization is often responsible for the filling of wetlands. Wetlands are particularly important as wildlife habitat, providing habitat for over half of the listed endangered and threatened species in California (California Department of Fish and Game, 1988).

Current differences in vegetation type ownership have important implications for the conservation of biological diversity in the state. The five major vegetation types have different economic and social values, are used for different purposes, are home to different wildlife, and offer different recreation opportunities. Mediterranean vegetation types, particularly annual grasslands and oak woodlands, are seldom in reserve status of any form, but instead are managed by private landowners for economic use, predominantly as rangeland. As the value of range production has declined over time, and returns from crop production and residential development have increased, private land has been converted.

The statewide distribution of oak woodlands and annual grasslands roughly coincides with the distribution of private rangelands. Most are the foothill rangelands of the Coast Range and the Sierra Nevada, bordered below by intensively used crop and urban land and above by forest. While of limited potential for crop production, these lands are important for range livestock production and wildlife habitat. Oak woodlands, for example, because of their structural and vegetative diversity, moderate climate, and acorn crop, are overall the richest wildlife habitat of the five broad types, housing more wildlife species than any other (Mayer et al., 1986).

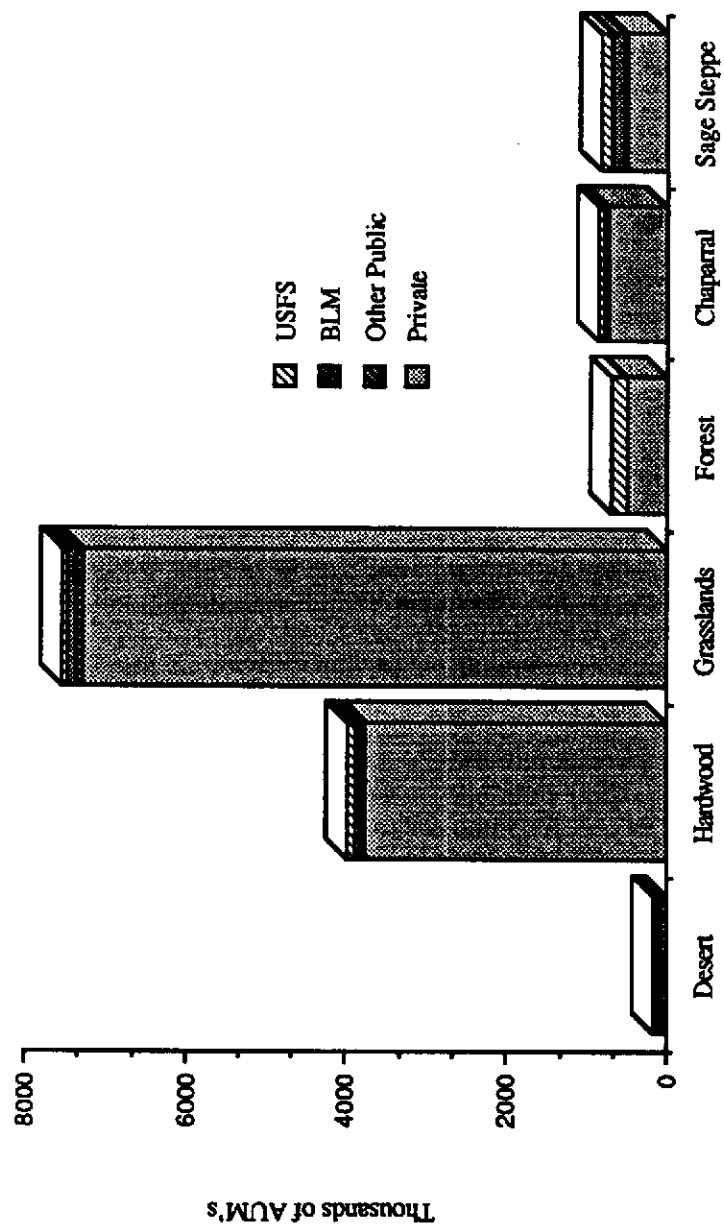
Nearly 1.2 million hectares of grassland, and .2 million hectares of oak woodland, were converted for crop and intensified forage production between 1950 and 1980 (Ewing et al., 1988). Development for residential and urban use took 55,000 hectares of oak woodland, and 115,000 hectares of grassland during the same period (Ewing et al., 1988). Conversion rates have been accelerating since then, while the causes of conversion and habitat loss have been changing. For example, it is estimated that about 68,000 hectares of oak woodland were urbanized and 12,000 hectares cleared for range improvement and firewood harvest between the late sixties and early eighties (Bolsinger, 1989). Prior to 1973, the major cause of conversion and habitat loss was harvest of oaks for agricultural purposes (Mayer et al., 1986), while today it is construction of housing and roads.

California Rangeland Economy

Oak woodlands, annual grasslands, and chaparral lands are most commonly used for livestock grazing. Most often these lands are grazed by cow-calf herds. Stockers (yearling cattle), and sheep flocks, are also commonly grazed. Livestock graze an estimated 78 percent of privately owned oak woodlands (Huntsinger and Fortmann, 1990). About half of these grazed lands are used seasonally rather than year-round (Huntsinger and Fortmann, 1990). Private rangelands produce an average of 90 percent of the forage supply for livestock, with annual grasslands and oak woodlands alone producing about 75 percent of the total California annual production of 14.5 million Animal Unit Months (Ewing et al., 1988) (Figure 2).

The value of California range forage production can be estimated at about 350 million dollars in 1987, based on the pounds of meat and wool produced from range forage. This value is only an expression of the value of the grass itself, aside from the

Figure 2. AUM's Harvested From California Rangelands (Huntsinger 1989).



value of rangeland as provider of calves and feeders for the feedlot industry. The gross income from all cattle and sheep marketed for meat in the state in 1987 was 1.7 billion dollars (California Agricultural Statistics Service, 1987). This compares to a total state budget of more than 590 billion dollars.

Because the economic returns from undeveloped annual grasslands and oak woodlands are low, planning bodies often consider them of marginal value as agricultural lands and direct residential development onto them. County Crop Report estimates of annual lease rate values for grazing land in Mediterranean climate regions average from 15 to 20 dollars per hectare (County Agricultural Commissioners, 1988). Private grazing lease rates as high as 50 dollars per hectare, for high quality annual grassland range, have been reported in some areas (Ewing et al., 1988). On the other hand, a scanning of the advertisements in areas near developing cities shows real estate values of between 10,000 and 60,000 dollars per hectare. County Crop Reports give crop lease rate values varying from around \$600.00 per hectare for dryland crops like barley, to \$6,000.00 per hectare for specialty crops like grapes (County Agricultural Commissioners, 1988).

Some landowners have been able to take advantage of the wildlife value of private rangelands through game ranching. Wildlife and livestock production have co-existed quite well for more than a century in the state, and in fact these private grazing lands are the state's refuge for wildlife species excluded from crop and urban lands. Approximately .3 million hectares of California rangeland are registered with the State Department of Fish and Game as wildlife ranches (California Department of Fish and Game, 1988). Wildlife ranching is generally a supplemental income source for landowners who derive the majority of their ranch income from livestock production.

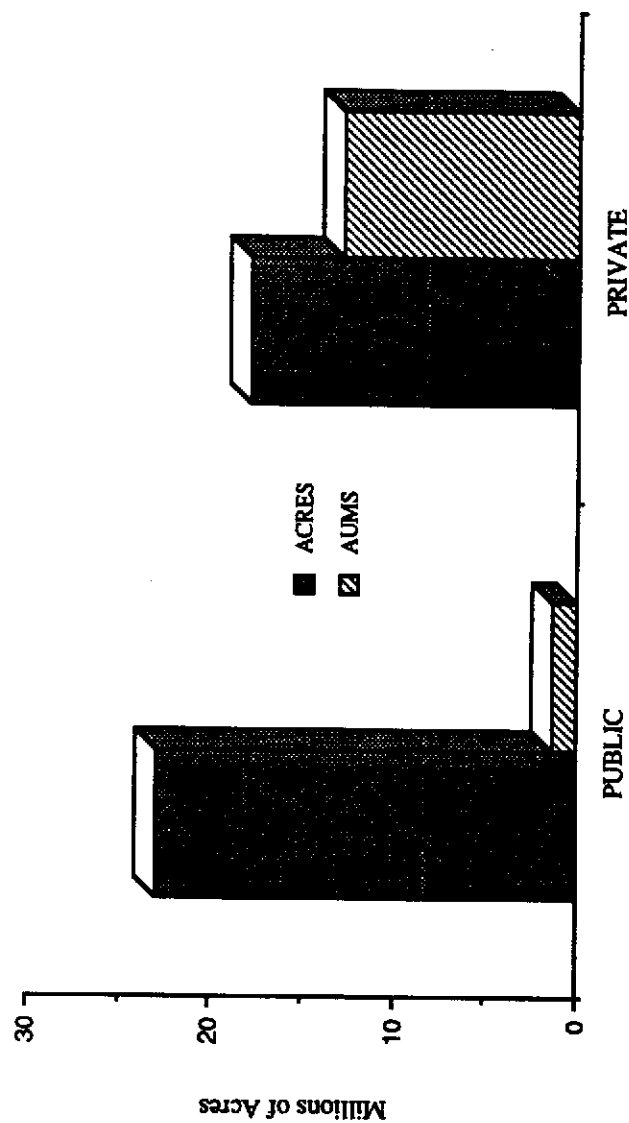
Because most Mediterranean rangelands are in private ownership, the productivity of private and public lands in California varies greatly (Figure 3). The long summer drought assures that the use of the different vegetation types and ownerships is interrelated. Livestock may winter on annual range, and summer in forest and meadow lands at higher elevations. Migratory deer travel seasonally from lowlands to highlands, using both public and private land. The development of irrigated pasture is an alternative means of providing forage for livestock during the dry summers, however in recent years the high value of crop production has led to a reduction in pasture throughout most of the state. Hectares of irrigated pasture have declined by roughly 10 percent over the last ten years (County Agricultural Commissioners, 1975 and 1985).

Land Use Issues on Private Rangelands

California is undergoing rapid population growth. About 1 in 10 Americans live in the state. Residential development and urban sprawl are now the major cause of rangeland loss, and a gradual loss in grazing capacity (Ewing et al., 1988). Such change is notable not just because grazing is excluded and wildlife habitat lost directly through development, but because the impacts of residential and urban development go well beyond the boundaries of the development itself. Between 1972 and 1985, total hectares of private rangeland used for grazing declined by nearly 33 percent, from more than 10 million to about 7 million hectares (U.S. Forest Service, 1972; County Agricultural Commissioners, 1985).

With 28 million people now, California will have nearly 33 million residents by the year 2000 (California Department of Finance, 1986a). Since the turn of the century, the population has been urban-based (Ewing et al., 1988). In January of 1987, six of the

Figure 3. Acres vs. Aums on California Rangelands: Public and Private (Huntsinger 1989).



state's 58 counties had populations of over 1 million, and seven had populations of over 500,000. Eighty percent of the state's citizens live in these 13 counties. Half of the population resides in the three south coast counties of Los Angeles, Orange, and San Diego (California Department of Finance, 1988).

Some rural counties are among the fastest growing in the state. Between 1980 to 1987, the 23 predominantly rural counties increased in population by an average of 24 percent, compared to an average increase of 17 percent in the other 35 counties. The three counties with the fastest growth rates in the 1980s, Nevada, Lake, and Calaveras, are all counties in which the population was more than 75 percent rural in 1980 (Ewing et al., 1988).

Changes in the composition and values of the rural population are also affecting California rangelands. One consequence of population growth in rural areas is the parcelization of large properties traditionally used for grazing livestock. A shift toward smaller rural land ownerships has been well documented nationwide (Healy and Short, 1981; Healy, 1985) as well as in California. A boom in rural subdivision for recreation occurred in California from the late 1950s to about 1975 (Ross, 1975). Most was on rangeland or cut-over forest. A 1985 survey of oak woodland residents showed that the increasing numbers of owners of small parcels are looking for natural beauty, escape from the city, and a rural lifestyle when they move to rural areas (Table 2). The traditional owner of a larger property appreciates the natural beauty of the area, but is there primarily because it is a business or family property (Huntsinger and Fortmann, 1990). The traditional rural community resident has had more or less free access to surrounding ranches for hunting and other uses. This access has changed because of tightening liability of landowners and interest in obtaining income from wildlife and other natural resources.

Table 2. Attitudes of Oak Woodland Landowners (Huntsinger and Fortmann, 1990)

	% Owners Under 81 ha	% Owners 81-2,000 ha	% Owners Over 2,000 ha
<u>The Respondent Moved to the Oak Woodland Seeking:</u>			
natural beauty	80	70	48
job opportunities	23	40	25
escape from the city	80	68	35
a different lifestyle	73	51	30
recreation	60	60	25
a lower cost of living	33	34	5
to maintain a family business or property	30	75	85

Development not only removes land from agricultural production, it results in conflicts among residents with different lifestyles and values. Incoming landowners are less likely than established residents to rely on natural resources as a source of income. Many are absentee owners with little interest in active land management (Huntsinger and Fortmann, 1990). Uncontrolled pet dogs may harass stock and wildlife. The range sheep industry has been particularly hard hit by both domestic dog predation and by the increases in native predator populations, most notably coyotes, that have resulted from public demand for protection of all wildlife. Parcelization also means more traffic and

more fences. Small parcel owners may not care for agriculture-related activities, and a variety of recent articles in the popular press have reported conflicts related to crop and livestock production. Vandalism, theft, trespass, predation, and local ordinances may increase costs to livestock producers.

On the other hand, more traditional residents may not understand the concern of new residents with aesthetic and environmental values, particularly since many of the amenities valued by the new residents may be on the large landowner's property. Traditional landowners obtain a livelihood from using the land, and tend to object strenuously to any attempt at controlling management activities or limiting development rights on private lands. The large landowner's land may be the major part of the household's financial resources, and regulation of development reduces the value of the land and the landowner's future options.

Particularly damaging is the nature of much of the urbanization of rural lands. Low density development, most notably the development of "ranchettes" of a few to two hundred hectares, is popular. This type of pattern maximizes the land used per capita and the influence of the population on the surrounding lands. Often these subdivisions are not concentrated, but scattered among larger ownerships. This creates an extensive "edge" effect, exacerbating conflicts among landowners and land uses. In areas such as the Sierra Nevada foothills, this type of development, by virtue of its extensiveness, blocks migration patterns for deer and livestock alike.

Breaking land into small parcels increases fire hazard during the state's long drought period. More people means more risk of fire due to human activity and greater loss of property as a result of fire. In only two decades the number of wildland fires in California have essentially doubled (California Department of Forestry and Fire Protection records). Haphazard development patterns, flammable construction materials, inappropriate landscaping (including failure to control surrounding vegetation), and a lack of adequate roads and fire fighting facilities all contribute to the hazard.

Another factor that enhances fire risk and reduces range productivity is the decline in controlled burning that has taken place since the 50s. Air Quality regulation and increasing costs due largely to the risks brought about by parcelization have made burning less feasible for private landowners. Over time, this results in brush invasion of rangelands. State and private prescribed burning programs can only make a small dent in the problem.

The composition of the state's population is changing. Different age and ethnic groups make different demands on natural resources, and seek different values from wildlands than the more traditional elements of California's population. There are more minorities, older people, and different types of households than ever before. There are also greater discrepancies between rich and poor. The U.S. Census reported a doubling of California's foreign-born population between 1970 and 1980, to 3.5 million people (McCarthy and Valdez, 1985). The countries of origin have changed from predominantly European to Asian and South or Central American. Minority populations as a percentage of total population increased from 22 percent in 1970 to more than 37 percent in 1985 (California Department of Finance, 1986a). This trend is projected to continue, with the white proportion of the population dropping below 50 percent by the year 2010.

While the median age in California was 30 in 1980, it is predicted to be nearly 37 by the year 2020 (California Department of Finance, 1986c). The retirement of the "baby boomers" from the late 1940s and early 50s has resulted in increased migration from urban centers to smaller towns and retirement communities (Bradshaw, 1986).

Policy Environment for Private Rangelands

Privately-owned Mediterranean-type rangelands are affected by federal, state, and local government policy and regulation, as well as emerging private conservation efforts. Public agencies employ the tools of acquisition, regulation, incentives, and education to influence use and management of private lands. In addition, local and county land use planning has major impact on land use.

This type of policy and regulation challenge the basic right of property ownership. Ownership of land by a private individual is one of the founding principles of the United States. The "fee simple ownership" concept allowed the land to be the absolute property of its owner to do with as he wished without interference from any others, including government (Clawson, 1972). This evolution in itself is causing much of the conflict surrounding land use on private rangelands.

Land use legislation at the federal level generally provides a broad framework for action on private lands, while the state provides more specific direction. But it is counties and local governments that interpret state and federal guidelines, and local concerns, to shape the landscape of land use within their jurisdictions through the development of a General Plan. State law requires that each city and county adopt a comprehensive, long-range General Plan addressing nine mandatory elements: land use, circulation, housing conservation, open space, noise, seismic safety, public safety, and locality. Essentially it is a statement of local desires for land use and development as expressed through zoning designations (Doak et al., 1988).

An example of the interaction of federal, state, and local policies can be found in the area of legislation for environmental quality. The National Environmental Policy Act of 1969 (NEPA) requires every federal agency to prepare and circulate an environmental impact statement "on proposals for legislation and other major federal actions significantly affecting the quality of the human environment" (Dana and Fairfax, 1980). The California Environmental Quality Act of 1970 (CEQA) requires state and local agencies to prepare and submit environmental impact reports (EIR) when the lead agency finds that a discretionary project may have a significant effect on the environment (Doak et al., 1988).

At the local level, General Plans and subdivisions are considered projects under CEQA and may require the preparation of EIRs. The EIS and EIR process allows the public and a variety of state agencies to comment on local projects and influence the effect projects have on particular resources of concern such as water quality, timber, fire protection, and wildlife habitat (Doak et al., 1988). Local agencies themselves commonly use CEQA to justify General Plan objectives and projects. In fact, providing local planners with the information necessary to justify conservation of particular resources under CEQA is considered a key to influencing local planning, and private groups with particular interests often work toward this end.

In recent years, the influence of the state on private rangeland management has shown signs of increasing, yet most existing legislation affects private rangelands only indirectly. While there is a body of legislation in place aimed at conserving forest resources and productivity for timber production, no legislation currently exists with the objective of maintaining the long-term productivity of rangelands for grazing, wildlife habitat, or other extensive uses. The California Land Conservation Act of 1965 and the Private Lands Wildlife Management Act of 1984 are examples of state-level legislation and programs affecting private rangelands. The Land Conservation Act, often referred to as the Williamson Act, authorizes counties and cities to offer use-value property assess-

ment to agricultural landowners through contracts which restrict the development of land for a minimum of 10 years (Snyder, 1966). Penalties for early cancellation are as much as 25 percent of the market value of the land.

Under the Act, assessment of agricultural property is based on its potential agricultural income rather than on its market value. Such taxation is designed to avert land conversion that occurs when speculation-driven increases in property assessments place tax burdens on farmers that reduce profits below a reasonable operating level. Subvention payments by the state partially replace losses in local tax revenues (McClaran et al., 1985). Counties participate on a voluntary basis, and contract terms and conditions often differ considerably from county to county, as does the strength with which each county uses the Act as a land use planning tool (Doak et al., 1988). Enrollment peaked in 1980 at about 6.5 million hectares; in 1988, 36 million hectares were enrolled. Land enrolled as "non-prime," often synonymous with rangeland, was 4 million hectares (University of California, 1989).

The Private Lands Wildlife Management Act of 1984 provides a market incentive to landowners for improving wildlife habitat through the "Ranching for Wildlife" Program (Smith, 1985). Participating landowners file a wildlife habitat management plan with the California Department of Fish and Game that provides for habitat manipulation or management increasing the population of designated game species such as deer, elk, antelope, turkeys, or feral pigs. Once the plan is approved, the landowner may be allowed to follow special rules that allow hunting of animals outside of normal seasons or restrictions. The landowner can then charge hunters for the privilege of hunting on the property, most likely with a higher probability of success than elsewhere due to the special rules.

The program's goal is to increase actively managed wildlife habitat, but it also provides opportunity for diversification of income sources for rangeland landowners. This may help to maintain large landholdings (Doak et al., 1988). The program is somewhat controversial. Some publics see the marketing of wildlife for profit as inappropriate. Certain groups of hunters see it as a violation of their hunting rights, or view the special seasons and rules as bad wildlife management.

A special statewide education program of the University of California targeting owners of oak-dominated rangelands has been in place since 1986, with the objective of improving landowner management practices and directing conversion away from sensitive areas--woodlands of high value as wildlife habitat, watershed, or grazing land (Passof and Bartolome, 1986). This program, known as the Integrated Hardwood Range Management Program (IHRMP), has made a special effort to reach a broad spectrum of landowners, as well as county planners, and was developed as an alternative to statewide regulation of oak harvest similar to the statewide regulation of timber species now in place. Rangeland livestock producers are among the most stringent believers in the American doctrine of private land rights. The more traditional, larger landholders oppose interference in private rights the most strongly (Huntsinger and Fortmann, 1990) (Table 3).

Table 3. Oak Woodland Landowner Attitudes Toward Regulation
(Huntsinger and Fortmann, 1990)

	% Owners Under 81 ha	% Owners 81-2,000 ha	% Owners Over 2,000 ha
<u>Respondents Agree that:</u>			
state regulation means a loss of liberty and freedom	53	65	79
regulation leads to socialism	38	50	58
oaks are being lost in California	61	51	21
oak use should be regulated	35	31	8

The General Plan process, CEQA, and various planning and zoning laws give local governments extensive power to influence local private land use. In addition, local governments often acquire and manage lands, most often for parks and open space. But local agencies are strongly influenced by local interests, and the need for revenue to support public programs. Development for residential and industrial use often provides much needed revenue in rural counties.

Financial conditions and demographics differ greatly from county to county, and as a result, the interpretation of state and federal legislation, and the nature and strength of General Plans, differs from county to county. When combined with general planning, the Williamson Act is an effective tool for limiting or slowing conversion of farm and range-land, even at the urban fringe (McClaran et al., 1985). However, rising costs in county government and low level of state subvention funds is causing counties to question their financial ability to continue participation in the program (University of California, 1989).

One tool that is increasingly used by local government to both control development and increase revenues is the establishment of fees that developers must pay to local governments in order to acquire necessary permits for development. These fees may be quite high, and may consist of a lump sum of money placed in trust to pay for services to the residents of the new development, and to defray any other increased costs to the county or city due to urban expansion. This may result in discretionary funds of many millions of dollars available to the local agency.

Another method employed by local governments to maintain open space and other amenities is to require developers to set aside a certain proportion of their land as permanent open space. In exchange, development or more intensive development is allowed on the remaining land. The open space may be held in trust by the new homeowners, or donated to the local government, or managed by a private organization in trust. These open space areas are believed to enhance the value of neighboring homes as well. Mitigation requirements, under the authority of CEQA, are also becoming increasingly common. Local agencies may allow landowners to sell the development rights to their property, either to developers interested in applying the rights at another location, or to private conservation groups. This allows landowners to profit from the development value of their land, while directing development to other locations.

Some public interest groups are involved in their own statewide planning for conservation of resources. For example, the Nature Conservancy evaluates the properties it

acquires in accordance with criteria based on its ecological importance to the maintenance of the variety California habitat types. Other tools used by private groups, and sometimes by public agencies, are the creation of land trusts and the purchasing and exchange of development rights. The American Farmland Trust, or the Trust for Public Lands, for example, may purchase or accept conservation easements restricting the development of land, or may obtain land for transfer to government entities, for return to restricted private ownership, or for retention and management (Doak et al., 1988). Some of these groups work with local government to make decisions about selection of sites for acquisition, and to arrange long-term management of lands held in trust or acquired.

The many layers of authority and legislation affecting private rangelands has not resulted in a coordinated approach to conservation of rangelands and their many associated resources. Regional and statewide planning is lacking, resulting in the potential loss of much of the state's ecological diversity, particularly on private lands.

Conclusions

Patterns of land use and ownership put California's Mediterranean-type grass and woodlands at risk. Most are in private ownership, threatened with conversion to cropland or residential use. In addition, the speculative nature of ownerships at an ever-expanding urban fringe means that these lands are not managed for maintenance of long-term productivity. Squeezed between the montane forests above and the crop and urban land below, California's Mediterranean rangeland landscape today is the foothills of the Sierra Nevada and Coast Ranges, a contiguous band roughly circling the Central Valley. This line of retreat is increasingly fragmented.

Policy affecting the use and management of privately owned rangeland is not generally directed toward the maintenance of this landscape at a statewide or even regional scale. Landscape-level decisions about the location of development and distribution of land uses are made at the county and city level. Objectives, financial resources, and level of sophistication varies greatly from county to county. Regional considerations about the quantity, diversity, and contiguousness of wildlife habitat or livestock grazing lands are not taken into account.

In the absence of any statewide policy addressing the need to protect rangelands as an extensive resource, local planners may direct development to these "non-prime" lands in deference to crop and forest lands. Yet foothill Mediterranean rangelands, with their vast ownerships and non-intensive grazing use, are the last refuge for wildlife that has been excluded from lowlands by crop production and agriculture.

There are at least two important reasons why land use policy with respect to private rangelands in California is only now being developed. First, the owners of this land have long been a powerful political constituency in the state and the nation, and include among their number individuals like Ronald Reagan. These ranchers have a firm belief in the sanctity of private property rights, and are extremely resistant to attempts to limit their options. In many cases the value of the land is the major part of the family's financial assets, and regulation or land use zoning often reduces the value of these assets.

Second, the American mind has been shaped by the settlement of a wilderness continent (Nash, 1985). The American concept of a park or preserve is of pristine wildland: appreciation of the pastoral is not a large part of American values, particularly in the urban West. Yet this demand that protected lands also be pristine limits the options

for conservation of valuable wildlife habitat, grazing land, and open space, particularly in landscapes that are in private ownership. Currently, the main mechanism for influencing management and use of rangelands is public acquisition, an extremely expensive option, particularly as the richer the habitat, in general, the more costly the land.

Although rangeland landowners are opposed to regulation, they have responded well to incentive programs, particularly the Williamson Act. But Williamson Act lands are not recognized as a systematic, long-term conservation effort. In addition, urban publics are suspicious of those who would profit from what they see as "pristine" wildland. The Ranch for Wildlife program is a case in point. It has been argued in the popular press that it is not right to profit from wildlife.

To maintain in perpetuity the extensive, contiguous, diverse Mediterranean grassland and woodland ecosystems of California and the public goods they provide, use of land trusts, permanent contracts, purchase and sale of development rights, and regional planning would best be carried out on a coordinated basis. Through the purchase of development rights from rural landowners, for example, rangelands could be kept in the extensive management that has made them valuable as grazing lands, wildlife habitat, watershed, and open space.

At the same time, the public's appreciation for the pastoral landscape should be nurtured. Contracts with private landowners, or trusts, could allow for some recreational use in concert with range livestock and game production. There are many avenues to be explored in private lands conservation in California, but the lack of connection between urban and rural publics hinders progress. An urban voter base seems to view extensive lands and open spaces as inherently "public" in character. In doing so, they recognize the multiplicity of public goods that can come from these lands, but not the rights, goals, and needs of property owners. In many parts of the world, parks are inhabited, and the land is used to meet the needs of the inhabitants as well as the general public. It is time Californians expanded their view of landscape to give the pastoral its role in the conservation of state resources.

BIBLIOGRAPHY

- Adams, F. 1946. The History and Background of California Agriculture. In California Agriculture. University of California Press, Berkeley, CA. 1-50.
- Bolsinger, C. L. 1988. The hardwoods of California's timberlands, woodlands, and savannas. Resource Bulletin PNW-RB-148. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR. 148 pp.
- Bradshaw, T.K. 1986. Social and economic development in California's forest and range lands. University of California, Berkeley, CA. 142 pp.
- Burcham, L.T. 1957. California Range Land. Calif. Dept. of Forestry and Fire Protection, Sacramento, CA. 261 pp.
- California Agricultural Statistics Service. 1987. California livestock statistics. Annual Report. California Department of Food and Agriculture, Sacramento, California. 18 pp.
- California Department of Finance. 1986a. Projected total population for California by race/ethnicity: July 1, 1980 to July 1, 2020. Report 86 P-4. Sacramento, CA. 8 pp.
- California Department of Finance. 1986b. California statistical abstract 1985. Annual report. Sacramento, CA. 125 pp.
- California Department of Finance. 1986c. Population projections for California counties 1980-2020 with age/sex detail to 2020. Report 86 P-3. Sacramento, CA. 75 pp.
- California Department of Finance. 1988. Population estimates of California cities and counties January 1, 1987 to January 1, 1988. Report 88 E-1. Sacramento, CA. 75 pp.
- California Department of Fish and Game. 1988. Wetlands Resources Policy. Addenda. Sacramento, California. 3 pp.
- Clawson, M. 1972. America's Land and Its Uses. John Hopkins Press, Baltimore, MD. 166 pp.
- County Agricultural Commissioners. 1988. County Crop Reports. Annual report of the Agricultural Commissioner in each county. California Department of Food and Agriculture, Sacramento, CA.
- County Agricultural Commissioners. 1985. County Crop Reports. Annual report of the Agricultural Commissioner in each county. California Department of Food and Agriculture, Sacramento, CA.
- County Agricultural Commissioners. 1975. County Crop Reports. Annual report of the Agricultural Commissioner in each county. California Department of Food and Agriculture, Sacramento, CA.
- Dana, S.T. and S.K. Fairfax. 1980. Forest and Range Policy. McGraw-Hill New York, New York. 458 pp.

- Doak, S., K. Green, S. K. Fairfax, and S. Johnston. 1988. The legal environment for hardwood land ownerships in California. Report to the California Department of Forestry and Fire Protection, Sacramento, CA. 123 pp.
- Ewing, R. A., R. N. Tuazon, N. Tosta, L. Huntsinger, R. Marose, K. Nielson, R. Motroni, and S. Turan. 1988. California's forests and rangelands: growing conflict over changing uses. California Department of Forestry and Fire Protection, Sacramento, CA. 348 pp.
- Healy, R.G. 1985. How much urban impact on the South's farm and forest lands? *Rural Development Perspectives* (October): 27-30.
- Healy, R.G. and J.L. Short. 1981. The market for rural land: trends, issues, policies. The Conservation Foundation, Washington, D.C. 306 pp.
- Hornbeck, D., P. Kane, and D. Fuller. 1983. *California Patterns: A Geographical and Historical Atlas*. Mayfield Publishing Co., Palo Alto, CA.
- Huntsinger, L. 1989. *Grazing in California's Mixed Conifer Forests: Studies in the Central Sierra Nevada*. Ph.D. Dissertation, Department of Forestry and Resource Management, University of California, Berkeley. 189 pp.
- Huntsinger, L. and L.P. Fortmann. 1990. California's Privately Owned Oak Woodlands: Owners, Use, and Management. *Journal of Range Management*. March (in press).
- Klubnickin, K. An analysis of the distribution of park and preserve systems relative to vegetation types in California. 1979. Masters Thesis. California State University, Fullerton, CA. 134 pp.
- Mayer, K. E., P. C. Passof, C. L. Bolsinger, W. E. Jr. Grenfell, and H. Slack. 1986. Status of the hardwood resource of California: a report to the Board of Forestry. Report to the State Board of Forestry. California Department of Forestry and Fire Protection, Sacramento, CA. 126 pp.
- McCarthy, K.F., and R.B. Valdez. 1985. California's demographic future. pp. 37-62. In Kirlin, J.J. and D.R. Winkler (eds.) *California policy choices*. University of Southern California, School of Public Administration, Los Angeles, CA. 263 pp.
- McClaran, M.P., J. Romm, and J.W. Bartolome. 1985. Differential farmland assessment and land use planning relationships in Tulare County, California. *Journal of Soil and Water Conservation* 40(2):252-255.
- Nash, R. 1985. *Wilderness and the American Mind*. Yale University Press. New Haven, CN. 300 pp.
- Robbins, W.W. 1948. *Land in California*. University of California Press, Berkeley, CA. 291 pp.
- Ross, G.C. 1975. The urbanization of rural California. Special report 11. Institute of Urban and Rural Development, The Center for Real Estate and Urban Economics, University of California, Berkeley, CA. 223 pp.
- Scott, Michael J., Blair Csuti, James D. Jacobi, and John E. Estes. 1987. Species Richness. *BioScience* 37(11):782-788.

- Smith, B.D. 1985. Ranching for Wildlife. Outdoor California, California Department of Fish and Game, Sacramento, CA. March-April, p 9-11
- Snyder, J.H. 1966. A New Program for Agricultural Land Use Stabilization: The California Land Conservation Act of 1965. Land Economics, February, 1966
- U.S.D.A. Forest Service. 1972. The nation's range resources: a forest-range environmental study. Forest Resource Report No. 19. Washington, D.C.
- University of California. Agricultural Issues Center. 1989. Williamson Act Study. Report to California Department of Conservation (in preparation).