



Resource Investments

A wide variety of public investment, taxation, and regulatory policies are in place in California that affect forests and rangelands (see the Assessment sections [Legal Framework](#) and [Institutional Framework: Governance Shifts in the 1990s](#)). Historically, these policies have reflected several overlapping themes including: 1) the support of commodity production and related rural economic activity; 2) development of water resources; 3) provision of parks and outdoor recreation; and 4) resource protection such as soil conservation and control of wildfire.

Today, California's population is overwhelmingly urban while most of its land base remains rural. The urban attitudes and metropolitan economies have substantially reshaped rural California. The economy of rural California is increasingly based on a mix of commodities, non-commodities, and individuals that commute to metropolitan areas. As a result, governmental policies are more diverse and less focused on commodity production than they were a few decades earlier. From an environmental perspective, there has been increased emphasis on many themes such as: 1) watershed and fish and wildlife habitat restoration; 2) acquisition and protection of habitat, vistas, and other unique elements of the forest and range landscape; 3) improved air and water quality; 4) controlling exotic species and forest pests; and 5) reducing the risk of wildfire.

In turn, the public policies of investment, taxation, and regulation are changing. New public policies often attempt to direct investment toward non-commodity values. Taxation policies are designed to encourage landowners to keep land in production and to support the improvement of wildlife habitat. Regulations provide more protection for fish and wildlife species listed as threatened or endangered and for air and water quality. This chapter describes a range of investment and taxation policies that are in place to help meet the demands for forest and range products and services. A more detailed discussion of regulatory policies is found in the Assessment document [Institutional Framework: Governance Shifts in the 1990s](#).

Investment policies

Investment in forest and rangeland resources fits two basic ends: 1) maximize quantities and usefulness of ecosystem commodities and services; and 2) protect, maintain, and improve ecosystems. Investment that occurs through the marketplace is mostly based on capturing the value of what resources produce (wood, beef, water, etc.) as well as the ability to exchange the value. However, the market often does not work well for many intangible, non-commodity values such as undisturbed plant communities, pleasing landscapes, rare wildlife habitat, and productive, high quality watersheds. These hard-to-quantify values also change and may actually rise as human populations increase, species become more threatened, and the costs of protection rises (Roques Wildland Resources and McWilliams, 1997).

When values cannot be captured directly in a marketplace, other measures of worth are often created that can be exchanged or purchased. Examples include environmental license plates, surcharges on recreational equipment, "green" certification for wood, and organic certification for beef. Another approach is to use a fee or tax such as the Commercial Salmon Stamp on fishing licenses. This method

attempts to capture part of the natural resource's value (in this case the value of fishing for unique species) not reflected in the market place. If ecosystem services and commodities could be valued more fully, the market place would serve to allocate investment funds appropriately. Absent this fact, government policies help determine investment strategies for natural resources (Roques Wildland Resources and McWilliams, 1997).

Three general public investment strategies in natural resources, including forests and rangelands, are pursued in California. They are reflected elsewhere in the Assessment by reference to reserved lands and various types of managed lands or working landscapes (see the Assessment document [Population and Land Use](#)).

One investment strategy is to emphasize the creation of reserves managed so that human intervention is minimal and commodity production is virtually nonexistent. Examples are federal and state wilderness areas and the University of California Ecological Reserve System. Furthermore, national and state parks often have a reserve function. Lands are acquired through a variety of funding sources: federal, state, joint federal-state, local funding, and non-profit conservancy. Conservancies are a small but important part of California's strategy to acquire key land resources (Legislative Analyst's Office (LAO), 2001).

The second strategy involves programs that invest in restoration, improvement, and maintenance of ecosystems. This method puts less emphasis on commodity values. Examples are salmon restoration efforts on the North Coast and reintroduction of endangered species back into their habitats. For example, between 1980 and 1997, the California Department of Fish and Game (DFG) expended over \$87 million on restoration projects that directly benefited anadromous fish monitoring (California Environmental Resources Evaluation System (CERES), 1998).

The third strategy is to foster stewardship and conservation management practices. This approach allows continued commodity production including activities such as timber harvesting and ranching. It can lower the incentive to convert to non-wildland and foster landowner cooperation. It may also cause less economic dislocation and increase the potential for sustainable community development. Examples include the Forest Resource Incentive Program at the state level and the Forest Stewardship Program at the federal level (see the Assessment section [Institutional Frameworks: Governance Shifts in the 1990s](#)).

These three approaches may also be used together. For example, the Natural Communities Conservation Planning Program is a mix of reserve, intervention, and improved management practices. The CALFED Bay-Delta Program is another example (see [Institutional Frameworks: Governance Shifts in the 1990s](#)).

Forest and range resource investments

Within investment strategies, investments can take four general forms: 1) ongoing management activities; 2) restoration and enhancement; 3) research, planning, assessment, and monitoring; and 4) resource protection/fire management (Roques Wildland Resources and McWilliams, 1997). All of these forms are found on California's forests and rangelands.

The main form of investment historically has been for ongoing management of commodity production (e.g., timber, cattle, hydroelectricity). For example, federal budgets historically have been directed to commodity production. Reserve management also is a significant expense for both the federal

and state governments, such as the high cost reserves in the Sierra Bioregion (Roques Wildland Resources and McWilliams, 1997). State reserve management, however, is probably less expensive than federal, given the common partnerships between the private sector and the state.

In the last two decades, investment in the restoration and enhancement of ecosystems (e.g. stream restoration, activities consistent with reserve strategies, and habitat improvement) has increased. For example, in 1997 the Legislature passed and the Governor signed SB 271 (Thompson, Chapter 293, 1997), providing an additional \$43 million over six years to specifically support watershed restoration efforts, including watershed assessments, the development of watershed action plans, the implementation of restoration projects, and monitoring (CERES, 1998; Legislative Council of California, 1997).

Research, planning, and assessment activities are another significant investment category. These activities can be annual, periodic, or one-time. Examples of annual research and assessment are actions within the reserve strategy of the national parks, those on State Forests, and those within the University of California Ecological Reserve System (see the Assessment document [Information Collection, Monitoring, and Research](#)). Examples of one-time assessments are the Forest Ecosystem Management Assessment Team (FEMAT) and the Sierra Nevada Ecosystem Project (SNEP) (see the Assessment document [Institutional Frameworks: Governance Shifts in the 1990s](#)). Additionally, all the State Forests require preparation and periodic updates of their management plans. See the online document [Final EIR for JDSF Draft Management Plan](#) for more information (California Department of Forestry and Fire Protection (CDF), 2003).

While very hard to estimate, annual funding levels for forest and range-related research in California appear to have been between \$40 and \$50 million from 1991 to 2001 (see the Assessment document [Information Collection, Monitoring, and Research](#)). Expenditures relating to forest and range assessment increased during recent years. Examples on federal lands include FEMAT and SNEP. An example of a California program is the North Coast Watershed Assessment Program, which expended about \$14 million from 2000 to 2003 for improved watershed information on California's North Coast.

Expenditures for monitoring activities on California's forests and rangelands are relatively limited. They are undertaken by federal land management agencies, some state agencies, and landowners (see the Assessment section [Information Collection, Monitoring, and Research](#)). Two key examples for the state monitoring activities are the California Rangeland Water Quality Plan and the Monitoring Study Group. See the Assessment documents [Institutional Frameworks: Governance Shifts in the 1990s](#) and [Protection of Soil](#).

Expenditures for resource protection: Resource protection activities involve expenditures for such things as control of exotic plant species, livestock disease prevention and response, and wildfire hazard reduction and control. These expenditures are substantial for wildfire hazard reduction and fire control at both the state and federal levels in California (see the Assessment document [Infrastructure and Services in Support of Forest and Range Communities](#)).

This is especially true since Congress adopted the National Fire Plan in 2001. The result has been that the U.S. Forest Service (USFS), the U.S. Bureau of Land Management (BLM), the National Park Service (NPS), and others have received over half a billion dollars in fiscal years (FYs) 2001 and 2002.

Following severe wildfires in 2000, President Clinton directed the Secretaries of Agriculture and the Interior to develop an approach that would manage severe wildland fires, reduce fire impacts on rural communities, and ensure effective firefighting capacity in the future. The National Fire Plan resulted from this effort. Congress subsequently adopted the plan in FY 2001 via appropriations language in the Interior and Related Agencies Appropriations Act (P.L. 106-291) as well as other written direction. As part of its direction, Congress imposed several reporting requirements, including the development of a coordinated national 10-Year Comprehensive Strategy.

The National Fire Plan was developed to address five key points: firefighting, rehabilitation and restoration, hazardous fuel reduction, community assistance, and accountability. Funding for these elements in 2002 is shown in Table 1.

Table 1. California funding for the National Fire Plan, 2002 (dollars)

Agency	Firefighting			Hazardous fuel treatment	Research R&D JFSP	Forest health projects	Community Assistance			Total
	Preparedness	Facilities	Rehab and restoration				State fire	Volunteer fire	Economic action programs	
USFS*	194,771,000	5,060,000	7,300,000	44,137,000	4,540,000	1,111,000	2,709,646	967,920	2,653,072	263,249,638
DOI	19,491,000	1,075,094	1,216,961	23,980,000	0	0		662,000		46,425,055

DOI – U.S. Department of the Interior; FY – fiscal year; USFS – U.S. Forest Service

*Allocations may vary slightly over time due to adjustments in accounting systems

Source: National Fire Plan, 2002

Funding has been made available to administrative units in the USFS and U.S. Department of the Interior (DOI), such as BLM. The focus of allocations has varied. This is seen in Table 2 that shows allocations for various USFS administrative units. The Plumas National Forest has over 14 million dollars allocated to hazardous fuel reduction, more than twice that of any other forest due to the specific program authorized by Congress through the Herger-Feinstein Quincy Library Group Forest Recovery Act. Overall budgets include both specifically authorized projects as well as allocations based on regional protocols.

Table 2. U.S. Forest Service fiscal year 2001 obligation for Pacific Southwest Intermountain Region

Funds allocated to administrative units	Preparedness	Wildland fire suppression	Hazardous fuel total	Rehabilitation and restoration	Fire facilities backlog	Research and development	Total state fire	Total volunteer fire	Total forest health	Economic action	Community and private assistance	Total
Regional Office	17,284,867	8,845,758	795,138	0	0	0	607,152	0	0	0	0	27,532,914
Angeles	11,420,406	8,538,259	371,583	0	3,847	0	0	0	18,776	0	0	20,352,871
Cleveland	9,712,321	6,539,623	337,688	0	1,070	0	0	0	15,965	0	0	16,606,667
Eldorado	4,415,883	36,551,141	1,339,255	190,263	288,270	66,003	0	0	84,799	85,000	0	43,020,615
Inyo	2,996,048	2,840,114	594,716	0	9,012	0	0	0	0	43,259	0	6,483,149
Klamath	5,688,133	13,926,902	1,523,339	0	60,422	0	0	0	149,168	59,478	0	21,407,442
Lassen	5,321,311	6,572,661	7,136,589	0	3,161,566	0	0	0	94,910	108,468	0	22,395,505
Los Padres	8,430,580	7,203,152	618,811	0	16,030	0	0	0	0	119,400	0	16,387,973
Mendocino	3,235,913	11,023,449	670,881	0	362,853	0	0	0	0	120,178	0	15,413,274
Modoc	3,001,375	16,896,776	1,849,360	5,078	101,586	0	0	0	99,000	71,093	0	22,024,268
Six Rivers	4,074,868	4,776,059	795,717	212,363	68,058	0	0	0	49,446	80,480	0	10,056,990
Plumas	5,947,985	7,576,485	16,091,380	74,490	831,896	0	0	0	0	242,810	6,163	30,771,209
San Bernardino	10,697,613	10,295,356	1,131,005	26,976	0	0	0	0	2,010	145,000	0	22,297,960
Sequoia	7,246,555	11,468,767	2,012,361	0	196,702	0	6,600	0	86,497	35,000	31,000	21,083,481
Shasta-Trinity	7,020,799	10,781,411	993,100	489,557	794,188	0	0	0	40,178	447,139	0	20,566,371
Sierra	6,496,912	14,483,009	878,674	0	107,850	0	0	0	0	130,450	0	22,096,895
Stanislaus	5,409,954	9,138,942	2,494,185	15,244	186,300	0	0	0	0	114,879	0	17,359,505
Tahoe	4,970,164	12,185,269	2,060,315	0	378,182	0	0	0	41,490	254,270	21,297	19,910,988
Lake Tahoe Basin Management Unit	840,985	1,075,390	1,538,260	0	197,172	0	0	0	0	0	0	3,651,806
Regional Programs and Earmarks	47,394,417	32,321,308	3,900,099	0	0	30	3,514,653	1,159,000	228,343	331,437	700,000	89,549,258
Region total	171,607,090	233,039,830	47,132,454	1,013,972	6,765,004	66,033	4,128,405	1,159,000	910,582	2,388,342	758,461	468,969,143

Source: National Fire Plan, 2001

Funding of investments

Investments can be made by the government, private, and non-profit organizations. All three sectors invest in California's forests and rangelands and other collaborators.

Governmental investment in resources

Government resource investment can be either project specific or be viewed across a landscape. Four main forms of financing are used: appropriations, public resource trading, market reallocation, and reinvestment (Table 3) (Roques Wildland Resources and McWilliams, 1997).

Table 3. Government resource investment

Governmental investment type	Focus
Appropriations	Government uses funds to purchase land for parks, restore rivers, protect and enhance wildlife habitat, and assist landowners in conservation and stewardship practices.
Public resource trading	Governments exchange public land and resources for private land and resources, for consolidation (BLM/USFS land transfer programs), to safeguard resources on private land that have high public values (Headwaters Forest), or, in rare instances, to fund stewardship activities on private lands (Forest Resources Improvement Fund/California Forest Improvement Program or the Resources Trust Fund).
Market reallocation	Markets are created to facilitate exchanges that previously were impaired or did not exist. This assumes an ability to capture value as well as a new group of people willing to pay for it. Examples include: transferable development rights, conservation easements, watershed-based pollution rights trading, water banking, and carbon sequestration payments.
Reinvestment	Governments make investments that are linked to or derived from the flow of resources and values in an ecosystem. These activities include: replanting trees, fuel reduction, and road repairs paid for by revenues from timber harvest; reservoir sediment reduction paid for by revenues from hydropower generation; and salmon habitat restoration financed through a tax on the annual catch of commercial fishermen. Program examples of reinvestment are the Commercial Salmon Stamp Account and the Steelhead Trout Catch Report-Restoration Card. Reinvestment approaches are not widely used in California's forest and range policy.

Source: Roques Wildland Resources and McWilliams, 1997

State and federal appropriations make up much of the funding. These funds for the most part are not tied to the productivity or the commodity value of the ecosystem where they are made. This is often true

even where revenues, such as fees and rents, are collected. These funds are often deposited in general funds and there may be no relationship between funding and revenue.

Federal investment in California ecosystems involves many agencies. Examples include the U.S. Environmental Protection Agency, DOI, U.S. Department of Agriculture, U.S. Department of Commerce, and U.S. Department of Defense. Within the DOI are the National Biological Survey, NPS, BLM, U.S. Bureau of Reclamation, and the U.S. Fish and Wildlife Service. Federal agencies receive funding from general appropriations and a variety of special accounts, trust funds, and receipt accounts financed from various fees, deposits, and receipts. Special accounts vary greatly in size and may require annual appropriation or are permanently appropriated. Each has its own purpose, requirements, and conditions. Special and other related accounts can represent significant sources of funding for federal agencies. In the 1990s, about 30 percent of total USFS funds each year were derived from these accounts (Gorte and Corn, 1995). See the online document [The Forest Service Budget: Trust Funds and Special Accounts](#) for more information.

Both revenue sources and land management activities vary greatly across federal agencies (General Accounting Office, 1997). See the online document [Land Management Agencies: Major Activities at Selected Units are not Common Across Agencies](#) for more information. Federal agencies receive revenues from a variety of sources. An example is BLM in California. Sources of revenue are shown in Table 4.

Table 4. Sources of revenue for the U.S. Bureau of Land Management in California (thousand dollars)

Revenues collected	1999	2000	2001
Rent of land	372	246	258
Right-of-way rent	1,077	1,842	1,724
Communication site rent	741	864	669
Grazing	260	271	251
Recreation	402	709	802
Sale of land	152	944	1,315
Sale of timber	121	1,315	322
Mineral material (aggregate and stone)	858	1,100	1,100
Mining claim fees	2,072	1,131	1,190
Geothermal (royalty, rent, etc)	11,084	14,373	15,000
Oil and gas (royalty, bonus)	12,029	28,855	28,860
Mineral leasing	130	85	84
Other fees and commissions	2074	9,430	10
Trusts and contributed funds	4750	9,785	5243
Total	36,128	70,950	56,967

Source: BLM, 1999 and 2000

These funds may or may not be tied to BLM program expenditures in subsequent years. However, as seen in Table 5, annual BLM program expenditures substantially exceed revenues.

Table 5. Expenditures for the U.S. Bureau of Land Management in California (thousand dollars)

Funding levels	1999	2000	2001
Energy and minerals	7,612	7,612	8,276
Lands and realty survey	8,417	8,417	8,610
Renewable resources	33,136	33,136	47,039
Resource protection/ management	9,154	9,154	18,845
General administration	7,311	7,311	7,998
Fire management	1,725	1,725	24,434
Acquisitions and construction	3,097	3,097	1,890
Range improvements	260	260	330
Land and water conservation	8,605	8,605	17,343
Total	90,047	90,047	134,765

Source: BLM, 1999 and 2000

Investments at the state level also come from a wide variety of sources. These include general appropriation, special funds, and a variety of other sources. Ballot propositions passed by voters in recent years relating to park and habitat acquisition and water-related improvements have resulted in significant statewide investment in forest and range resources. In 1996, Proposition 204 (Safe, Clean, Reliable Water Supply Act) passed authorizing \$995 million for activities relating to clean water, water recycling, ongoing programs in the Bay-Delta watersheds, and for the administrative expenses of the CALFED Bay-Delta Program studies and planning activities. In 2000, Propositions 12 (Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000) and Proposition 13 (Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act) passed. Proposition 12 authorized \$2.1 billion and Proposition 13 authorized \$1.97 billion for specified purposes. Finally, in March 2002, voters passed Proposition 40 (the California Clean Water, Clear Air, Safe Neighborhood Parks and Coastal Protection Act of 2002) authorizing \$2.6 billion for specified purposes. In total, these propositions represent an expenditure of over \$7.5 billion.

California investment related to resources comes primarily from units within five agencies: the California Resources Agency, the California Environmental Protection Agency (Cal/EPA), the California Business, Transportation and Housing Agency, the California Department of Food and Agriculture, and the University of California system. State expenditures for ecosystem management and resource infrastructure are largely vested in departments, boards, and commissions within the Resource Agency and the Cal/EPA (Table 6). Both agencies derive most of their budget from the state General Fund and other Special Funds.

Table 6. California Resources Agency and Cal/EPA funding, 1999-2003 (thousand dollars)

Agency	FY	General Fund	Special funds	Selected bond funds	Budget total	Federal funds
California Resources Agency	1999-2000	1,184,290	937,504	54,127	2,175,921	96,547
	2000-2001	2,110,007	1,049,757	665,227	3,814,991	117,836
	2001-2002	1,382,249	1,057,457	963,006	3,402,712	116,195
	2002-2003 estimated	1,115,419	1,208,193	2,785,376	5,108,988	209,418
Cal/EPA	1999-2000	166,887	548,908	36,372	751,043	142,425
	2000-2001	479,275	485,107	60,785	1,025,167	197,909
	2001-2002	406,938	607,706	308,563	1,323,207	175,305
	2002-2003 estimated	175,082	654,171	576,987	1,406,240	167,806

Cal/EPA – California Environmental Protection Agency; FY – fiscal year
Source: California Department of Finance, 2000

Special funds are important to both the California Resources Agency and the Cal/EPA. These funds account for revenues from taxes, licenses, and fees; furthermore, their use is limited to particular government functions and activities. Examples of units within the California Resources Agency that depend on special funds for more than half of their budgets include the DFG, California Department of Conservation, and the California Energy Commission. Special funds contribute more to the budget of the Cal/EPA than that of the California Resources Agency. This reflects differences in agency mandates. A larger portion of funding for the regulatory Cal/EPA is derived from permit fees, licenses, and taxes on the businesses and individuals it regulates.

Special funds in the California Resources Agency: The California Resources Agency utilizes a number of special funds and sources. Examples are shown in Table 7.

Table 7. Special funds of the California Resources Agency

Name	Fund source	Use
Resources Trust Fund: Salmon Steelhead Trout Restoration Account (1997)	Tidelands Oil Revenue	Fish recovery
Resources Trust Fund: Natural Resources Infrastructure Account (1997)	Tidelands Oil Revenue	Marine reserves, state park maintenance, conservation planning, and other natural and recreational resources
Environmental License Plate Fund	Sale of license plates	Specified categories of environmental programs
Public Resources Account, Cigarette and Tobacco Products Surtax Fund	5 percent of Cigarette and Tobacco Products Surtax	Park and recreation/wildlife habitat programs
Habitat Conservation Fund (Prop 117 – 1990)	Bond/General Fund	Wildlife habitat
Fish and Game Preservation Fund	Fishing licenses, deer tags, permits	Specified activities related to fishing and hunting/some general projects
State Parks and Recreation Fund	State Park beach fees	State Park and recreation activities
Forest Resource Investment Fund	State Forest timber sales	Administration of State Forests, urban forest grants, other

Source: LAO, 2002

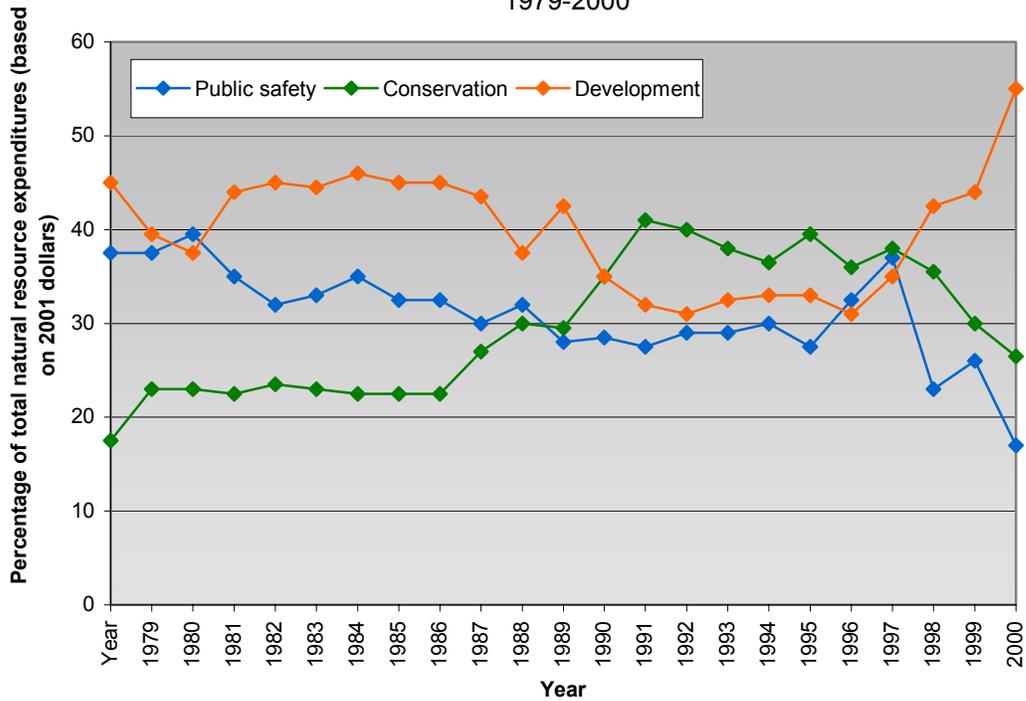
Investment programs in the California Resources Agency

A number of programs in various departments of the California Resources Agency are devoted to investment in resources. The Public Policy Institute of California (PPIC) compiled a list of programs in the California Resources Agency related to resource conservation, resource development, and public safety (Silva, 2002). The PPIC defines resource conservation programs as those devoted to protection and preservation from human disruption. This characterization includes those designed to conserve or improve habitat or to acquire, protect, restore, enhance, or preserve natural areas or resources. Resource development focuses on lands, waterways, or other resources developed for recreational or economic use. Those programs that deal with public safety focus on maintaining a safe environment for users of the resource and the resource itself. These include both hazard response and public education programs for emergencies or to prevent accidents.

PPIC found that with the exception of 2001, the percentage of total California spending directed to natural resources has been dropping. In 1979, about four percent of total expenditures went to natural resource programs; by 2000, that number was 3.4 percent. Expenditures in FY 2001 rose because of increased spending under the state General Fund surplus (Figure 1).

Between 1979 and 1999, resource conservation programs grew compared to resource development activities. During fiscal years 2000-2001 and 2001-2002, resource development activities received an influx of monies from General Fund surpluses. From 1979 to 2001, allocations from the state General Fund declined and were largely replaced by special funds earmarked for specific purposes. By 1995, revenues from fees and program-related assessments had grown to 50 percent. Resource spending financed by the General Fund received a significant influx of monies as part of the General Fund surpluses from 1999 to 2001.

Figure 1. Percentage of natural resource expenditures by program category, excluding capital outlay, 1979-2000



Source: Silva, 2002

There is no specific allocation within PPIC data regarding programs. However, data from the PPIC allows an approximation of expenditures that contain forest and rangeland elements by program and unit within the California Resources Agency (Table 8).

Table 8. Program elements in California Resources Agency that involve forest and rangeland elements

Department	Program
Public safety	
DOC	Geologic Hazards and Mineral Resources Conservation
CDF	Fire Protection
CDF	Office of State Fire Marshal
DWR	Public Safety and Prevention of Damage
Resource conservation	
TRPA	All activities
Tahoe Conservancy	Tahoe Conservancy
CCC	Training and Work Program
DOC	Land Resource Protection
CDF	Resource Management
DFG	Enforcement of Laws and Regulations
DFG	License and Revenue
DFG	Legal Services
DFG	Inland Fisheries
DFG	Wildlife Management and Natural Heritage Program
DFG	Anadromous Fisheries
DFG	Environmental Services
DFG	Free Licenses
DFG	Fish and Game Commission
WCB	Wildlife Conservation Board
SCC	State Coastal Conservancy
Santa Monica Mountains Conservancy	Santa Monica Mountains Conservancy
San Joaquin River Conservancy	San Joaquin River Conservancy
Coachella Valley Mountains Conservancy	Coachella Valley Mountains Conservancy
Resource development	
DOC	Oil, Gas and Geothermal Protection
CSLC	Land Management
California Coastal Commission	Coastal Management Program Implementation
DPR	Combined Parks and Recreation Programs
DWR	Implementation of Water Resources Development System
DBW	All activities

CCC – California Conservation Corps; CDF – California Department of Forestry and Fire Protection; CSLC – California State Lands Commission; DBW – California Department of Boating and Waterways; DOC – California Department of Conservation; DPR – California Department of Parks and Recreation; DWR – California Department of Water Resources; SCC – State of California Coastal Conservancy; TRPA – Tahoe Regional Planning Agency; WCB – California Wildlife Conservation Board

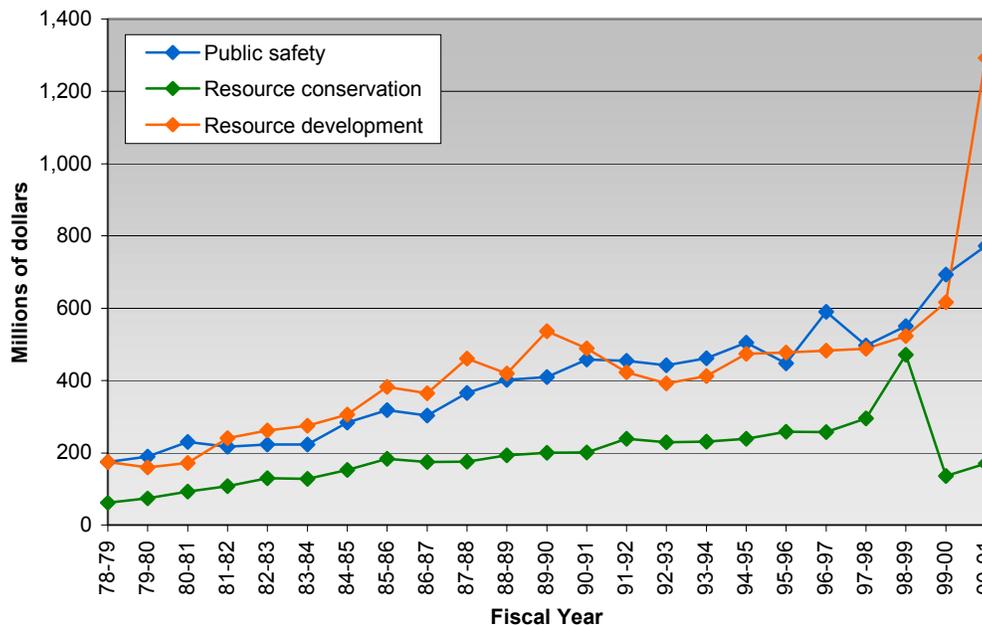
Expenditures for these programs in FY 1978-1979 through FY 2000-2001 are shown in Table 9. Total expenditures have risen steadily from approximately \$400 million in 1978-1979 to over \$1.4 billion in 1999-2000. Total expenditures jumped in 2000-2001, exceeding \$2.2 billion due to increased funding allocated from budget surpluses. Over this period, resource conservation activities have received the least funding, ranging from over \$60 million per year in 1978-1979 to about \$300 million in 1997-1998 (Figure 2). However, in 1978 nominal dollars, expenditures increased from over \$400 million in 1978-1979 to just over \$553 million in 1999-2000.

Table 9. Forest and rangeland expenditures

Forest and rangeland expenditures by program category (nominal) (millions of dollars)																							
	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01
Public safety	175	190	231	217	223	223	284	318	304	366	402	410	458	455	442	462	505	448	590	497	551	693	772
Resource conservation	61	74	94	108	131	129	153	183	175	176	193	200	201	239	229	231	239	259	258	295	471	137	171
Resource development	175	160	172	241	262	275	306	383	365	461	420	537	489	423	392	413	474	478	483	488	524	617	1,293
Total	411	424	496	566	615	628	743	884	843	1,002	1,015	1,147	1,148	1,118	1,064	1,106	1,217	1,184	1,331	1,281	1,545	1,447	2,236
Forest and rangeland percentage of total																							
Public safety	43	45	46	38	36	36	38	36	36	37	40	36	40	41	42	42	41	38	44	39	36	48	35
Resource conservation	15	17	19	19	21	21	21	21	21	18	19	17	18	21	22	21	20	22	19	23	30	9	8
Resource development	43	38	35	43	43	44	41	43	43	46	41	47	43	38	37	37	39	40	36	38	34	43	58
Forest and rangeland expenditures by program category (nominal) (millions)																							
Public safety	175	190	231	217	223	223	284	318	304	366	402	410	458	455	442	462	505	448	590	497	551	693	772
Resource conservation	61	74	94	108	131	129	153	183	175	176	193	200	201	239	229	231	239	259	258	295	471	137	171
Resource development	175	160	172	241	262	275	306	383	365	461	420	537	489	423	392	413	474	478	483	488	524	617	1,293
Forest and rangeland expenditures by program category (real 1978) (millions)																							
Public safety	175	172	180	153	148	145	176	189	175	202	212	206	219	208	196	199	214	187	242	200	217	265	285
Resource conservation	61	67	73	76	86	84	95	109	100	97	102	101	96	110	101	100	102	108	106	119	185	52	63
Resource development	175	145	134	170	173	179	190	227	210	255	222	270	233	194	174	178	201	200	198	196	206	236	476
Forest and rangeland program total expenditures and net total of all department expenditures (nominal) (millions)																							
Net totals, all departments	391	429	516	564	641	618	745	899	853	1,117	1,160	1,362	1,491	1,531	1,387	1,445	1,569	1,524	1,674	1,689	2,038	2,182	11,236
Total forest and range	411	424	496	566	615	628	743	884	843	1,002	1,015	1,147	1,148	1,118	1,064	1,106	1,217	1,184	1,331	1,281	1,545	1,447	2,236
Forest and rangeland program total expenditures and net total of all department expenditures (real) (millions)																							
Net totals, all departments	391	388	403	398	424	402	462	533	491	617	613	685	711	701	613	623	667	637	686	678	802	834	4,139
Total forest and range	411	383	388	399	407	409	461	524	485	554	536	577	548	512	471	477	517	495	546	514	608	553	824

Source: Compiled by FRAP from PPIC, 2003 fide Silva, 2002

Figure 2. Forest and rangeland expenditures by program category, 1978-2000 (nominal dollars)



Source: Compiled by FRAP from PPIC, 2003 fide Silva, 2002

Governmental policies and private investment

In general, governmental policies with respect to private investment in forests and rangelands take three forms: regulatory, taxation, and incentives or cost assistance. Regulatory policies tend to focus investment on regulatory compliance and avoidance of negative environmental impacts of management.

Tax policies can affect investment in forest and range management. Incentives and cost assistance usually are designed to promote management actions toward the goals of the governmental program.

Regulatory policies often are restrictive and have led to very substantial compliance costs, especially in the forest products industry (see the Assessment sections [Forest Products Industry](#) and [Institutional Framework: Governance Shifts in the 1990s](#)). In the case of the forest industry, changes in federal policies have led to severe decreases in timber supply on public lands and the closure of many sawmills. California Forest Practice Regulations and the requirements of other state and federal agencies have also increased the cost of timber harvesting. Substantial capital is still invested in the forest products industry in California, but investment opportunities are comparatively more attractive in southern states or in foreign countries.

Federal income tax codes are not necessarily supportive of sustainable private forest management. They work against private forest ownership relative to other forms of investment by treating income as ordinary (as opposed to long-term capital gains), restricting the deductibility of forest management costs, and setting low ceilings on reforestation costs eligible for fast amortization and the reforestation tax credit (Society of American Foresters, 2002). See the online document [Federal Tax Treatment of Timber Investments](#) for more information. Payment of federal estate taxes is also an issue for many individuals who inherit forest land. The tax is as high as 50 percent of the taxable estate and becomes due nine months after the owner's death. To pay the tax, landowners are often forced to harvest heavily or convert land to other uses.

In California, state taxation policies generally have been designed to be neutral or favorable to investment decisions. Special zoning and reduction in land taxes are available for timberland and some rangeland (see the Assessment document [Legal Framework](#)). Timber value is not taxed until trees are cut. State tax laws that allow landowners to receive a deduction for selling conservation easements tend to promote the maintenance of land in production. Timberlands zoned as Timberland Production Zone and agricultural lands zoned under the Williamson Act are valued based on their worth for timber growing or agriculture. This can often lead to a lower tax bill than if the land were valued for the traditional "highest and best use," a value that may include worth for potential development.

Tax laws and incentives programs in California may work together. An example of this is the Fish-related Incentives for Sustainable Habitat-Timber Tax Credit Program (known as the FISH Tax), created by AB 2925 (Sher, Chapter 1296, 1994) and later amended by SB 846 (Thompson, Chapter 166, 1996) (Legislative Council of California, 1994 and 1996). This program gives a tax credit to individuals and entities conducting approved habitat restoration work on their land. The work must benefit salmon or steelhead and encourage landowners to hire displaced workers from the commercial fishing or forest products industry. The program is administered by DFG, which approves individual projects and issues certificates for tax credit. There are no fees associated with any part of the program and the tax credit for approved projects is up to 10 percent of the total qualified project costs. The credit is applied to the "net tax" of the taxpayer or partnership requesting the credit as listed on the application form. This program is funded almost entirely by a tax placed on timber harvested in California, which is sold outside the United States as unprocessed logs or cants. This tax creates a tax credit fund of approximately \$500,000 per year.

There are numerous federal and state cost-share and technical assistance programs available to landowners in California. Loosely, these programs can be grouped by focus as: 1) fire and fuel reduction

and hazard mitigation; 2) forest management; 3) habitat restoration and land management information; 4) natural resources in non-wildland areas; 5) rural economic development; 6) watershed and wetland protection and restoration; and 6) wildlife and wildlife management. For a detailed listing of programs, see the online document [Cost-Share and Assistance Programs for Individual California Landowners](#). See also the Assessment document [Institutional Framework: Governance Shifts in the 1990s](#). The most direct incentive program in forestry is the California Forest Improvement Program. The focus is on reforestation and related benefits such as habitat improvement. The main emphasis is the small landowner with less than 5,000 acres of timberland where the state may cost-share up to 90 percent of a forest improvement project. Over the years of California Forest Improvement Program funding, over 200,000 acres of forest land were reforested (CERES, 1998).

Another example is California's Private Lands Wildlife Habitat Enhancement and Management Area program. Established in 1983, it was the first official incentive program in the United States. It gives landowners transferable hunting permits, extended seasons, and ranch-specific harvest limits. In return, landowners agree to specific steps to improve habitat and to carry out other wildlife and hunter management activities. In 1998, 60 properties encompassing 700,000 acres were participating in the program (Alaska Village Initiatives, 2003).

A third example of state-private investment mechanism is conservation banking. A conservation banking is a parcel, or a series of land parcels, sold to those who must compensate for resource impacts on land elsewhere. Conservation banks can put into a single transaction mitigations what would otherwise occur on a project-by-project basis. This can avoid long time delays and costs for landowners seeking individual project approvals. Conservation credits can be tied to conservation banks and can be bought and sold by anyone that needs to mitigate for a project that occurs after the creation of the bank.

The State adopted a Policy on Conservation Banking in 1995 that was designed to focus on the conservation of high priority biological resources in specific regions (CERES, 2000). An example of implementation of this policy is the development of a number of conservation banks as part of the Natural Communities Conservation Planning Program in Southern California. This is a regional habitat conservation strategy focused on conservation of multiple species and their habitat in coastal sage scrub habitat while also fostering compatible use of private land (see the Assessment paper [Institutional Framework: Governance Shifts in the 1990s](#)). About 20 conservation banks have been formed to help implement the program. Examples include the 1,500-acre San Vicente Conservation Bank, the 260-acre Carlsbad Highlands Conservation Bank, and the Crestridge Conservation Bank. Located in southern Orange County with an area that has the highest density of gnatcatchers in the county, the Chiquita Canyon Conservation Bank is a 327-acre bank created by the Orange County Transportation Corridor Agencies. Its purpose is to provide mitigation for construction of future highway projects and for sales of credits on the open market (CERES, 2000).

Concluding observations

The diversity of conditions across rural California is reflected in the wide array of governmental policies for investment, taxation, and regulation. Since the 1990s, there has been an increasing emphasis on policies to promote new services in addition to historical public investment policies focused on rural economic vitality and basic public safety requirements. Some of these changes are due to the need for

implementation to meet the broad goals of federal and state environmental laws such as the Clean Water Act and the Endangered Species Act (see the Assessment document [Institutional Framework: Governance Shifts in the 1990s](#)). Increased funding became available as the California electorate passed a number of recent bonds that provided billions of dollars of new funding. In addition, the severe fires of 2000 and 2002 prompted the Congress to substantially increase funding for fuels reduction programs in California and other Western States.

While the overall level of investments has increased, it is not clear that the myriad of historical and recent investment, taxation, and regulatory policies are fully coordinated. In fact, policies may work against each other. It is probable that costs and delays associated with California's regulatory climate concerning timber harvesting can act as a significant deterrent to private sector investment in timber growing (see the Assessment paper [Forest Products Industry](#)). This may make it more difficult to maintain forest health or provide for certain kinds of wildlife habitat. In addition, lands held in public ownership but not managed may have substantial vegetation that increases risk of wildfire and spread of insects and disease. Finally, the need to reduce fuel hazards near communities at risk from wildfire may be clear. Yet, use of prescribed fire may be limited by air quality concerns, and the price for electricity generated from woody biomass may be too low because price supports have been dropped.

One evident policy thrust is that much more funding is available for land acquisition and support of conservation tools such as easements (see the Assessment document [Institutional Framework: Governance Shifts in the 1990s](#)). However, in 2001, the Legislative Analyst's Office (LAO) reviewed the state's overall approach to land conservation (LAO, 2001). In this report, the LAO noted that much of California's land is not threatened and that the adequacy of current protection is not known. The report also summarized California's land conservation goals as: 1) providing open space and recreational opportunities near population centers; 2) providing camping, hiking, and other outdoor recreational activities in remote locations; 3) ensuring sustainability of agricultural land; and 4) preserving wildlands for environmental and wildlife purposes (LAO, 2001).

In the 1999-2000 Budget Act the California legislature directed the Secretary for Resources to begin preparing a "statewide conservation and habitat blueprint." The blueprint is designed to assess the current condition of the state's natural resources and habitat, as well as to set long-term funding and policy priorities and targets for future investment in resource protection and habitat acquisition or preservation (California Legacy Project, 2002).

The California Resources Agency initiated the California Legacy Project to provide a strategic approach to conserving the state's natural resources (see the home page of the [California Legacy Project](#) for more information). The Legacy Project aim is to integrate conservation assessment and planning among five different objectives. These include terrestrial biodiversity, aquatic biodiversity and watershed values, working landscapes, recreation lands, and urban open space. In a recent report, the project made several key conclusions that in part apply to forests and rangelands (California Legacy Project, 2002). These are summarized in Table 10.

Table 10. Negative concerns and positive elements for forests and rangelands from the California Legacy Project, 2002

Negative concerns for forests and rangelands	Positive elements for forests and rangelands
Conversion and fragmentation of land and natural habitat continues as a stress factor on both working landscapes and biodiversity. Growth suggests increasing impacts in the foothills, the lower to mid-elevations of the Sierra Nevada, and the eastern side of the Central Valley. This suggests pressure on oak woodland habitats and some timberlands.	Population growth (urban infill) within existing urban areas has increased. Expansion of urban areas onto adjacent lands seems to have slowed in some areas of the state.
Several habitats occur predominantly on private lands. Much of these habitats remain at risk of conversion to residential land uses.	More funding is available to meet conservation objectives for working landscapes, open space, and biodiversity protection.
Seven additional species are presumed or possibly extinct since the last report on the state of U.S. plants and animals was issued in 1997	There are more coordinated, collaborative, and stakeholder-driven protection and restoration efforts throughout the state.
More than 224,000 acres of crop and grazing lands were converted to urban land uses between 1988 and 1998. In central and southern California, farmlands and grazing lands represent 30 to 90 percent of all lands converted to urban areas.	Timberland Production Zones are providing protection for timberland in four of the five counties with the highest acreage of forest land lost due to development between 1990 and 1998. Between 65 and 91 percent of private timberlands in these counties are enrolled in Timber Production Zones.

These findings suggest that carrying out a coordinated and comprehensive conservation strategy is complex (California Legacy Project, 2003). There are wide range of existing conservation goals, programs, and plans. These provide both a challenge and opportunity for further coordination.

A wide range of governmental investment policies will be necessary. These will include priority acquisitions by public agencies and a variety of actions by private landowners (California Legacy Project, 2003). Private landowners can carry out long-term stewardship of their lands but they may need financial, technical, or other forms of assistance to provide that stewardship. A number of programs have been developed to provide such assistance (see [Institutional Framework: Governance Shifts in the 1990s](#)).

To promote investments in sustainable forests and rangelands, policies must address the natural, economic, and social dimensions of these resources. Forest policies that deal with uncertainty and promoting sustainability will play out differently based on land management and use patterns throughout California's forests and rangelands. A key principle is that policies must be tailored to the unique spatial characteristics of the problem—from small watersheds to larger bioregions. Public policies designed to foster investment must consider the wide variety of ownership patterns, management goals, and constraints that occur in each of the landscape classes for overall landscape-level goals to be achieved. In most cases, some form of management (e.g., stewardship, protection, restoration) will be required.

For investments to have broad geographical impact, they will need to be concentrated in the Private and Working/Public landscapes (see [Population and Land Use](#)). To the greatest degree Working/Private landscapes are those lands in private ownership located between reserves and developed lands. They are used for a variety of purposes with commodity production often as the primary focus. These areas, where the role of private investment for production of energy, lumber, and livestock is coupled with supportive policy tools, can potentially play the biggest role in maintaining lands in an unfragmented condition. Other uses are habitat restoration or management, recreation, and dispersed living space. These areas provide significant traditional ecosystem services as complements to the primary revenue producing management goals.

A number of these lands, especially near urban areas or key ecological resources, could be protected directly from residential development through various types of easements. Management concerns in these areas vary. Larger ranchers and timber growers face limited profitability and a variety of production constraints. Smaller landowners with significant portions of the private forest and rangeland resources have more diverse objectives and have fewer management resources to deal with increasingly complex challenges. The use of conservation easements, which has expanded substantially, provides some landowners with another source of income while maintaining lands in their current state. Wildfire remains a threat to landowners, as do some pests and exotics. In some locations, downstream flooding is still an issue to residents.

Communities reliant on these lands also have seen a decline in the number of jobs that come from these resource-based industries. The overall economic base has diversified in most areas and the social well being in rural areas tends to be good. However, a number of the more rural communities face difficulties in their ability to provide jobs, programs, and infrastructure.

Working/Public landscapes are those lands in public ownership between reserves and developed lands. For the most part, these are federally owned and managed more for ecosystem restoration and services, recreation, and habitat than comparable private lands. Commodity production is still significant on many parcels, especially on the more production fraction.

The focus of issues on these lands relates in part to location and in part to the category of concern. For example, recreation is paramount in southern California where four national forests are within easy driving distance of millions of people. On the other hand, concerns over protecting endangered species and old growth forests are important across California and are relevant to citizens across the United States. Past management legacies, wildfire, exotics, and pests are ongoing concerns to public forest and rangeland managers. Reducing fire hazard near communities is a focus of the recent National Fire Plan, and these efforts are likely to expand. Public agencies continue actions to restore watersheds and habitat within budget restrictions, and this will need to continue.

In many cases, more than one tool can be used to address impacts as shown by Figure 3. The choice of these tools depends on conditions and policy makers.

Figure 3. Toolbox for the Working Landscape



Glossary

anadromous: Moving from the sea to fresh water for reproduction.

BLM: U.S. Bureau of Land Management.

Cal/EPA: California Environmental Protection Agency.

cant: Round log with one sawmilled side.

CCC: California Conservation Corps.

CDF: California Department of Forestry and Fire Protection.

CERES: California Environmental Resources Evaluation System.

CSLC: California State Lands Commission.

DBW: California Department of Boating and Waterways.

DFG: California Department of Fish and Game.

DOC: California Department of Conservation.

DOI: U.S. Department of the Interior.

DPR: California Department of Parks and Recreation.

DWR: California Department of Water Resources.

FEMAT: Forest Ecosystem Management Assessment Team.

forests and rangelands: Specific habitats in the Conifer, Hardwood, Shrub, Grassland, and Desert and some Wetland (Wet Meadow) land cover types excluding Urban, Agriculture, Barren, and Water categories.

FY: Fiscal year.

LAO: Legislative Analyst's Office.

NPS: National Park Service.

PPIC: Public Policy Institute of California.

rangelands: Any expanse of land not fertilized, cultivated or irrigated that is suitable, and predominately used for, grazing by domestic livestock and wildlife. These include the Conifer Woodland, Hardwood Woodland, Shrub, Grassland, Desert land cover types along with and some habitats within the Wetland and Hardwood Forest land cover classes.

SCC: State of California Coastal Conservancy.

SNEP: Sierra Nevada Ecosystem Project.

timberlands: Forest land capable of growing 20 cubic feet or more of industrial wood per acre per year (mean increment at culmination in fully stocked, natural stands). Timberland is not in a reserved status through removal of the area from timber utilization by statute, ordinance, or administrative order and is not in a withdrawn status pending consideration for reserved.

TRPA: Tahoe Regional Planning Agency.

urban: A land cover class and management landscape class having housing densities greater than one unit per acre or classified as commercial/industrial/transportation. Human impact on natural ecological processes is significant.

USFS: U.S. Forest Service.

watershed: The land area drained by a particular stream course.

WCB: California Wildlife Conservation Board.

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