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Subgroup: Practice Resource Management

Chapter # Agricultural Lands Stewardship

“... ‘Agricultural lands stewardship’ means farm and ranch landowners – the stewards of the state’s agricultural lands – producing public environmental benefits in conjunction with the food and fiber they have historically provided while keeping land in private ownership.”

DWR. *California Water Plan Update 2005*. Agricultural Land RMS.

Agricultural lands stewardship broadly means conserving natural resources and protecting the environment by land managers whose stewardship practices conserve and improve land for food, fiber, watershed functions, soil, air, energy, plant and animal and other conservation purposes. Agricultural lands stewardship also protects open space and the traditional characteristics of rural communities. Moreover, it helps landowners maintain their farms and ranches rather than being forced to sell their land because of pressure from urban development.

Agricultural lands stewardship will continue playing a leading role in the implementation of California Water Plan Update 2009. Working landscapes will increasingly be relied on to attenuate peak precipitation runoff, as well as to provide critical habitat at key locations, while maintaining ongoing primary productivity of food and fiber. It is also anticipated that difficult decisions will be made to sacrifice some agricultural lands to ecological functions, in order to fulfill the goals of reliable water supplies and functional ecosystems.

Since the *California Water Plan Update 2005*, new assistance programs and laws and regulations affecting agriculture have been created or enacted, and old ones eliminated, reduced, or expanded. For example, the federal Farm Bill is now being reauthorized, and significant changes have been proposed to conservation, energy, rural development, and commodity titles of the Farm Bill that will affect Agricultural Lands Stewardship in positive and, perhaps, negative ways. Among the policies and initiatives are:

- a. Farm Bill reauthorization
- b. California bond measures that have been enacted since 2005 and that may be in the making in time for the 2009 Water Plan Update.
- c. The Governor’s Smart Growth Initiative
- d. The San Joaquin Valley Blueprint
- e. The California Department of Transportation-led California Blueprint
- f. New agency programs since 2005 that support Agricultural Lands Stewardship such as the Wildlife Conservation Board’s Ecosystem Restoration on Agricultural Lands program. Many new programs were made possible by enacted bond measures and will be covered under (b.), above.
- g. The California Roundtable on Agriculture and the Environment
- h. The California Rangeland Conservation Coalition.
- i. The Dairy Quality Assurance Program.
- j. Other agricultural production groups’ environmental stewardship initiatives, such as the Winegrape Grower’s Sustainable Winegrowing Program; the California Rice Commission’s Conservation Program

- k. Agricultural Innovation's Agricultural Futures Alliance initiatives
- l. Roots of Change
- m. Community Alliance of Family Farmers
- n. Fish-Friendly Farming, Sotoyome Resource Conservation District
- o. The Sacramento River Conservation Area Forum
- p. AB 32 AGCAT Greenhouse Gas Reduction Act

PLACEHOLDER Box #-1 BDPAC Working Landscapes Approach

Box #-1 BDPAC Working Landscapes Approach

The working landscape is defined as an economically and ecologically vital and sustainable landscape where agricultural and other natural resource-based producers generate multiple public benefits while providing for their own and their communities' economic and social well-being.

Agricultural Lands Stewardship in California

Agricultural lands in California comprise about 29 million acres (DOC/FMMP California Farmland Conversion Report 2002-2004). About 12.5 million of these are cultivated, while the remaining 16.5 million acres are rangeland. Stewardship of these lands requires constant balancing between market forces, natural constraints and ever changing social expectations. In describing this dynamic, Giannini Foundation's Special Report 04-1, Whither California Agriculture: Up, Down, or Out?, lists seven persistent elements that have shaped California Agriculture over the last 240 years:

“First, California agriculture has always been “demand driven.” It was never subsistence, family-farm agriculture like that which characterized much of early U.S. agriculture (Cochrane 1993); rather, it was driven by entrepreneurs seeking riches by serving high-value and/or newly emerging markets. These markets were generally distant and often foreign: hides and tallow to the United Kingdom and Boston; wheat to Europe and beyond; fruits, nuts, and vegetables to the East Coast, Europe, and, more recently, Asia; and wine to the world. Second, California agriculture is resource-dependent (land and water). Its history includes aggressive development of new land and water resources along with cases of soil and groundwater exploitation—the nature and severity of which has changed over its history. Third, California agriculture has been shaped by the absence of water in the right place. It has always been in search of more water and has been an aggressive participant in water debates (wars?) with both internal and external competing interests. Fourth, California agriculture has always depended on a large supply of agricultural labor for cultivating and harvesting its abundant produce from both relatively large-scale operations and specialty-crop farms. The source of a stable supply of field labor has varied over time with immigrants from Asia and the Americas. Fifth, California agriculture has grown rapidly and almost continuously, although it has been periodically buffeted by natural catastrophes (e.g., floods, droughts) and adverse economic shocks (e.g., the Great Depression, various recessions). Sixth, California agriculture, at least since the Gold Rush, has required very high levels of management skills—both technical and economic. It has always been dominated by large-scale operations that have grown in complexity and sophistication. Seventh, it has always been on the technological frontier in developing, modifying, or stealing new technologies,

such as large-scale mechanical technology, irrigation equipment, horticulture/plant varieties, pest control, food processing, and wine making.”

(Giannini Foundation Special Report 04-1, Whither California Agriculture: Up, Down, or Out? Section II: A Stylized History of California Agriculture from 1769 To 2000)

Institutions and policies have been developed in response to these challenges. Public investment in water infrastructure (reservoirs, canals, drains, levies, dykes) has been in the forefront of these. Underscoring the economic importance of agricultural lands, California lawmakers enacted the California Land Conservation Act of 1965 (Williamson Act) in order to protect agricultural lands and open space from premature conversion to urban uses. The Williamson Act program, administered through the California Department of Conservation Division of Land Resource Protection (DLRP), provides economic incentives to Counties to promote land use planning decisions which conserve farmland to the greatest extent feasible. Roughly half of the farmland in California is covered by long-term contractual protections under the Williamson Act. The Watershed Coordinator Grant Program, also administered by DLRP, supports projects implementing water conservation, working with private lands for watershed health, erosion and public education for water quality, best management practices, science and planning in watershed management, and working with landowners, building relationships, to build better, healthier watersheds. Permanent protection of farmland through agricultural easements are partially funded by matching fund grants administered by DLRP. Other institutions supporting agricultural land stewardship include Resource Conservation Districts (RCDs), Cooperative Extension offices (UCCE), Natural Resource Conservation Service field offices (NRCS), County Agriculture Commissioners, and the California Department of Food and Agriculture.

PLACEHOLDER Table #-1 Agricultural lands stewardship support entities

Agency, NGO, private landowner organizations
Missions in support of Agricultural Lands Stewardship
Brief description of services provided in support of private working lands stewardship
Contact information
Keyed to Hydrologic Regions

The size and terrain of California allows for diverse agriculture which is both extensive and intensive. This comes with costs, not least of which are the large amounts of capital and land needed for water capture, storage, transport, and disposal (i.e.: Lower Klamath Lake; Salton Sea). Other resource management strategies requiring significant land resources may be compatible with or conflicting with ongoing agricultural uses. Among these are: Flood Management; Ecosystem Restoration; Land Idling; Watershed Management; Forest Resource Management, Economic Incentives; Water Transfers; Agricultural Water Use Efficiency; and Urban Land Use Management. This narrative will discuss overlap with some of these other strategies.

Kinds of Agricultural Lands Stewardship Practices and Strategies

There are many ways that agricultural lands can be profitably managed. Crop lands can be managed to reduce or avoid stream bank erosion or stormwater runoff. Stream bank stabilization may include a buffer strip of riparian vegetation which slows bank erosion and filters drainage water from the fields. These measures can minimize or reduce the effects of agricultural practices on the environment and help meet governmental regulatory requirements while also reducing long-term maintenance problems for the landowner.

PLACEHOLDER: Box #-2 Examples of Agricultural Lands Stewardship Practices

Stream bank protection is often needed when stream configuration is modified. Use of willow mattresses helps protect these reshaped stream banks. The willows grow into a stable plant community that provides food, habitat, and overhanging shade which helps maintain cool stream water temperature for fish. Other fish friendly techniques, such as the use of logs and overhangs are also incorporated into stream bank protection to provide shade for fish. Some portions of the property may be left untouched to allow for natural flooding. Removing non-native plants, such as mugwort, vinca, and other exotics, enables native plants to become established. Combining these measures along stream banks avoids the need to use environmentally damaging riprap.

Other agronomic practices include planting cover crops to encourage beneficial insects and reducing or eliminating the need for pesticides, using recycled compost and other sources for fertilizer, and reusing waste water for irrigation. Farm ponds contribute to flood management and groundwater recharge as well as nesting and feeding habitat for various species of waterfowl and terrestrial animals. Farm ponds also can be used to help correct field drainage problems and capture wastewater. Agricultural pond management for water quality also may be a source of water for wildlife with appropriate water quality management. Wetlands can be created on farmland by incorporating rice straw into the soil after harvest.

Fencing can be installed to keep cattle out of creeks. Installing fish screens on ditches prevents entrapment of fish. Water diversions can be designed to operate without creating obstacles to migrating fish.

Crop idling is an agronomic practice to benefit the soil or for other management purposes. Crop idling may be used in conjunction with drought management programs. Drought payments to farmers could be used on farm-related investments, purchases and debt repayment, or may be spent or invested outside the community.

Integrated on-farm drainage management (IFDM) can be used to protect and enhance farmland, wildlife and water resources in drainage problem areas. The goal of IFDM is to eliminate the need for discharging subsurface drainage water from farms into waterways or evaporation ponds. The IFDM system manages irrigation water on salt-sensitive high value crops and reuses subsurface drainage and tailwater on increasingly salt-tolerant crops. Biological filters, drainage and tail water systems, crop management and salt harvesting in an evaporation system improve water use efficiency, provide for the use of concentrated drainage water, and reduce the need to dispose of agricultural drainage water. This approach to the management of agricultural lands affected by saline water and perched water tables has primarily been used on the west side of the San Joaquin Valley. It offers a temporary alternative to retirement of agricultural lands. More information can be found in the Salt Management Resource Management Strategy of this Volume.

Agricultural lands stewardship is not a new concept. Under various names, it has been practiced and encouraged by the California Department of Conservation's programs, and the U.S. Department of Agriculture (USDA) through the Natural Resource Conservation Service and various nongovernmental entities for many years. The California Resource Conservation Districts (RCDs), and other entities, specialize in working with private landowners in watershed management and coordination strategies. Governmental land acquisition programs are not agricultural stewardship when they take farm lands out of production. These programs are limited, as they now can affect only a small portion of agricultural lands. Still, stewardship is

increasingly considered by governmental and nongovernmental organizations for protecting natural resources while keeping the lands in productive private ownership.

A range of private and public programs and initiatives already exist that fit the stewardship model (see **Box #-3**). Many public programs provide technical assistance on what crops to plant, and how to plant, cultivate and irrigate them. Others provide technical help on wildlife-friendly farming techniques for wildlife and aquatic ecosystems. Additional types of programs cover soil, water, and habitat conservation planning. These efforts can identify suitable areas for farming and habitat management. Urban planning programs can also be used to avoid agricultural land fragmentation and permanent loss of valuable agricultural land because of urban development (see the urban land use management strategy). And finally, there are programs that limit or cease commercial agricultural use to promote wetlands and other wildlife sensitive areas, while keeping lands in private ownership and stewardship.

PLACEHOLDER Box #-3 Initiatives that Exemplify Agricultural Lands Stewardship Strategy

Models of Agricultural Lands Stewardship in California by Hydrologic Region and Resource Issue. A region-by-region narrative of case studies that exemplify the application of Agricultural Lands Stewardship to address resource management issues relevant to each region. For example, in the upper Feather River watershed of the Mountain Counties Area, mountain meadow management using, for example, rotational grazing and riparian buffer strips, will be described, including practices and institutional strategies used, issues addressed, and benefits. This will not be an exhaustive listing and description of initiatives addressing every resource issue in every region. The purpose of this section will be to illustrate how Agricultural Lands Stewardship is being applied in each region addressing a few of the major or typical resource issues. To the extent feasible, keys and barriers to success will be highlighted, along with contact information (names, phone numbers, and websites of project leads and sponsors).

The following examples describe a range of stewardship programs.

The CALFED Working Landscapes Subcommittee

The Bay-Delta Public Advisory Committee established a Working Landscapes Subcommittee to advise it in the formulation of a working lands management approach for Bay-Delta Programs (see Box #-3). The Working Landscape Subcommittee seeks to provide the committee with creative and practical strategies that: (1) enhance the sustainability of California agriculture; and (2) provide for participation of local communities, landowners and managers; while (3) significantly fulfilling the CALFED Record of Decision to restore ecological health and improve water management for beneficial use of the Bay-Delta system while minimizing harm to agriculture.

The Farm Security and Rural Investment Act of 2002

The reauthorized national Farm Bill 2002 provides several new and traditional agricultural conservation programs that exemplify an agricultural lands stewardship strategy. All programs are voluntary. Many programs may include technical assistance, financial incentives, or temporary and permanent set-aside payments for various purposes.

PLACEHOLDER Table #-2 Annotated list of agricultural lands stewardship best management practices

By Resource Issue(s) Addressed and Hydrologic Regions of Greatest Applicability

Water Quality

For example:

Vegetative Filter Strips (all regions)

Tail Water Return Ponds (SR, SJR, TL, CC, SC)

Etc.

Other Resource Issues to be addressed:

Water Use Efficiency/Drought Management

On-Farm/Ranch Ecosystem Restoration/Habitat Management

Energy Conservation and Supply

Air Quality and Green House Gases

Non-native Invasive Species

Soil Health

Agricultural Land Conversion/loss

Flood Management

Groundwater Management

Potential Benefits of Agricultural Lands Stewardship

1 **California Water Plan Update 2005 Agricultural Lands Stewardship Discussion.**

Agricultural lands stewardship can be included as an integral component of regional integrated resource planning, including watershed planning and implementation. Agricultural lands stewardship can use stewardship practices to protect the health of environmentally sensitive lands, recharge groundwater, improve water quality, provide water for wetland protection and restoration, reduce costs to the State for flood management, and aid riparian reforestation and management projects. Lands can also be managed to improve water management, urban runoff control, water storage, conveyance and for groundwater recharge. These stewardship practices are attractive since they don't rely on construction of major facilities.

Agricultural land stewardship can be part of a regional strategy of urban growth management. Agricultural lands provide public benefits for floodplain management, scenic open space, wildlife habitat, and defined boundaries to urban growth. Stewardship provides the rural counterpart to urban efforts to encourage more water efficient development patterns. It also can minimize fragmentation of agricultural lands by development that can decrease productivity and harm the ecosystem.

2 **Climate Change.** This narrative will provide a general summation of the benefits of Agricultural Lands Stewardship to address the threats of climate change both from reducing greenhouse gas emissions from agricultural lands, as well as by using Agricultural Lands Stewardship practices to sequester greenhouse gases, especially nitrogen and carbon.

3 **Drought Management.** The role that Agricultural Lands Stewardship plays in drought management and response will be highlighted in this section.

- 4 **Flood Management.** The benefits of specified Agricultural Lands Stewardship practices and strategies that can reduce flood threats or ameliorate the downstream damages of flooding will be described in this narrative.
- 5 **Water Supply Benefits.** This general narrative will summarize the water supply benefits of Agricultural Lands Stewardship, primarily from those practices that reduce water use, recapture and reuse irrigation water and improve water quality for on-site or downstream beneficial uses.
- 6 **Energy Conservation.** Agricultural Lands Stewardship practices and strategies can reduce the use of energy on working lands, as well as produce resources that can be used directly, or after processing, to create new energy. These practices include: conservation tillage to reduce farm implement energy use; photovoltaic installation to power farm equipment; switching to different equipment that uses less or less polluting energy; composting, fermenting or burning of agricultural waste to generate kinetic energy from latent energy for use on-farm/ranch or sale to the energy grid; growing of energy crops on existing cropped lands to produce renewable biofuels, such as biodiesel and ethanol.
- 7 **The Social Equity of Agricultural Lands Stewardship.** A general discussion of how the application of Agricultural Lands Stewardship can worsen or improve environmental justice and other community equity issues. A more specific presentation of assistance and strategies that are available or that can serve as models will be presented in this section.
- 8 **Benefits to Environment.** s
- 9 **Economic Diversification.** s

Potential Costs of Agricultural Lands Stewardship

Governmental and nongovernmental entities are seeking ways to secure funds for conservation practices that can be part of stewardship. In general, there is agreement by economists on three questions: (1) What are the direct costs for supporting stewardship programs? (2) What are the common ways to measure the costs for the wide range of environmental values? (3) What current level of investment is needed to sustain stewardship for the long term?

Developing stewardship costs is similar to estimating costs of managing lands to avoid environmental impacts such as air and water pollution, or to provide wildlife habitat or secure food and fiber production. Stewardship is a way of doing business and it should be a part of an economic model that shows a return on investment by placing a value on healthy communities and their quality of life. In addition, agricultural lands stewardship helps avoid costs associated with urban land use. Not only are there cost savings by avoiding expansion of infrastructure, but there are avoided costs for flood damage reduction measures and urban runoff. These costs have not been quantified for broad reference and application.

Some legislative proposals are seeking to provide annual payments for conservation benefits that may be part of private lands management programs. Experience and recent trends suggests that many California agricultural lands owners may participate in some agricultural lands stewardship programs if the annual rents they receive are about \$100 to \$200 per acre. Based on a DWR preliminary estimate, agricultural land use practices in California could cost about \$5.3 billion by year 2030.

Costs of implementing Agricultural Lands Stewardship will be dealt with in at least three ways:

- 1 Actual costs of best management practices where those have been documented in recent studies or project, or by conservation or agricultural agencies, such as the USDA Natural Resources Conservation Service. Costs would be expressed in terms of dollars per acre or mile, for example, or for installation of a structure.
- 2 A range of costs based on past experience or range of levels of implementation of an Agricultural Lands Stewardship practice or strategy. An example would be cost of agricultural easement acquisition, which would vary from local to local in California, and would also vary based on the extent of property interests purchased by an easement agreement (e.g., just development rights, or development rights, plus flowage rights (restrictions on crops that can be planted under the easement agreement)).
- 3 Cost estimates in reports and studies of solving a resource issue in a region or statewide. An example might be a State agency's estimate of the current cost of installing riparian buffers to protect water quality on high priority water bodies in a particular Water Quality Control Board's region.

Sources of Agricultural Lands Stewardship Assistance. In both narrative and table form, sources of three kinds of assistance available to State and regional water management program managers will be described. The focus will be to provide a resource for Integrated Regional Water Management Plan managers, for both active and prospective plans. The following table will be used to support a narrative description of sources of information and data, "boots on the ground" technical assistance, technical advice, and financial assistance (grants, loans, cost-share, and in-kind). The table will list public or private non-profit agency that provides assistance, kinds of assistance, examples of applications, and contact information of providing organization.

PLACEHOLDER Table #-3 Sources of informational, technical, and financial assistance for Agricultural Lands Stewardship

<u>Example:</u>
<u>Natural Resources Conservation Service</u>
Financial Assistance
Environmental Quality Incentives Program (Cost-share)
Informational Assistance
National Resource Inventory
<u>CA Department of Water Resources</u>
Financial Assistance
Floodplain Protection Corridor Program (grants)
<u>Ducks Unlimited</u>
Financial and Technical Assistance
Revolving Lands Strategy (grants and planning assistance)

Major Issues Facing Agricultural Lands Stewardship

There are major issues related to improving agricultural lands stewardship in California. There are issues about mixing economic endeavors with environmental goals and economic markets.

Increased focus on this strategy is necessary to implement regional integrated resource planning and management, and demonstrate to the public the measurable benefits of stewardship.

Issue 1 Resources needed to support Agricultural Lands Stewardship in California: A Gap Analysis. The needs for Agricultural Lands Stewardship in California, and the resources and policies available to support them, do not match. This section will review in very general terms where the gaps exist in terms of financial and technical assistance, data/information, research, and policies. The major provider of conservation support to private landowners, the U.S. Department of Agriculture's Natural Resource Conservation Service, the State authorized local resource conservation districts, and the California Association of Resource Conservation Districts are among a handful of State, federal and local governmental and private non-profit conservation organizations that will be tapped for information on the gaps. This will be a qualitative discussion, supplemented with quantitative analyses where they exist.

Issue 2 Duplication and lack of coordination of resources to support Agricultural Lands Stewardship. This includes not only duplication and coordination issues among assistance programs, but also the lack of coordination between regulatory drivers of conservation and the programs available to help landowners respond.

Issue 3 Landowner confidentiality and privacy protection. Many environmental regulatory programs understandably require information from working landowners about the effectiveness of grant funding made to help landowners comply with regulations. The issue has at least two facets. First, agencies have a responsibility to account for the expenditure of public funds to achieve resource protection and conservation. Second, there is an enforcement and scientific need for data on the effectiveness of Agricultural Lands Stewardship practices that are funded. These data are needed to document compliance, but also to document value of Agricultural Lands Stewardship practices to the conservation objectives of the regulatory agency. For example, the State Water Resources Control Board has required farm-specific information as part of the public record of its agricultural water quality grant programs. Besides the vulnerability that growers feel from other regulatory programs that might use the information, the requirement conflicts with USDA's conservation assistance programs and may prevent better leveraging of funds and coordination among agencies with similar goals of Agricultural Lands Stewardship.

Issue 4 Leadership. Most states maintain a state council or similar leadership and coordinating body that provide guidance to federal, state, and local programs to achieve Agricultural Lands Stewardship. Some have regulatory or oversight authority over local conservation work that uses state and federal funding; others simply set state goals for conservation and serve as a venue for coordination and problem-solving for state programs as well as local conservation entities, especially resource conservation districts.

California once supported a Governor-appointed Resource Conservation Commission that served primarily in the former capacity. The commission failed to keep pace with the changing paradigms of conservation, including the definition of conservation, the move from structural solutions to bioengineering technologies. The commission, though still authorized in State statute, has ceased to operate due to a lack of funding and commissioner appointments. The California Association of Resource Conservation Districts, among others, has called for the recreation of at least a State conservation advisory council. Based in part on the positive experience with the CALFED Bay-Delta Program Working Landscape Subcommittee, the Secretaries of Resources and Food and Agriculture explored the creation of a working lands stewardship council made up of stakeholders and agencies to identify and pursue coordinated initiatives in support of Agricultural Lands Stewardship. At present, no such State leadership body exists, though the new

California Watershed Council may help to fill this void. This section will build upon the proceeding narrative in addressing the leadership issue.

Issue 5 Underserved Agricultural Lands Stewardship stakeholders, communities, and regions. For a variety of reasons, including language barriers, the remoteness of communities and the inadequate size and capacity to be heard, some landowners, communities, and regions may not receive the share of Agricultural Lands Stewardship resources that is warranted by Agricultural Lands Stewardship resource problems. This section will draw upon existing documents to explore this issue.

Issue 6 Regulatory barriers to Agricultural Lands Stewardship. Federal, State, and local regulations and permits may present crippling barriers to Agricultural Lands Stewardship. The issue may simply be the time, complexity and cost of complying with regulations relative to the Agricultural Lands Stewardship benefits to be achieved. The issue may be the costs and bad fit of regulations resulting from the application of regulations intended for urban land uses and settings to the rural conditions of the agricultural working landscapes. In at least a few circumstances, the application of one Agricultural Lands Stewardship practice may place a landowner in jeopardy with another environmental protection standard. The application of a conservation practice that could result in the “take” of listed Endangered Species Act species is one example.

Issue 7 Burden of Bureaucracy. Landowners often do not pursue available conservation financial assistance because of the amount of paperwork and process that they must go through to get the funding. This issue is often a problem of striking balance between funding accessibility and the need to be accountable to the public for the effective and legal expenditure of funds. The liability that administrators face can lead to a cumbersome bureaucracy not commiserate with level of assistance being offered.

Issue 8 Outreach and Demonstration. Cutbacks in UC Cooperative Extension Service, Natural Resources Conservation Service Environmental Quality Incentives Program (EQIP) education and demonstration funding and authority, among other reductions in conservation programs has left the success stories, and how they were achieved, untold. Too few working landowners are aware of the technical and financial assistance that is available to them. There are too few opportunities for landowners to see what their neighbors are doing that saves natural resources and even saves them money. Farm tours, tailgate sessions, workshops, and meetings out on the working landscape are needed to spread information and inspiration. There are good examples that with funding and staff assistance could be replicated. Otherwise, insufficient outreach, education, demonstration, and storytelling opportunities are barriers to Agricultural Lands Stewardship.

Some examples include: Stories of stewardship published by the U.S. Department of Agriculture’s Natural Resources Conservation Service, California Farm Bureau Federation, wildlife conservation agencies and organizations (“Farming for Wildlife”), the California Cattlemen Association and the California Rice Commission, to name a few. Also, there are a growing number of Agricultural Lands Stewardship-consistent workshops and training sessions being sponsored sporadically around the state, such as by the UC Small Farm Center; county-level farm marketing associations such as PlacerGrown in Placer County, the Eco-Farm Conference in Asilomar each winter, and others. It is hoped that review of this annotated outline will result in other examples that can be highlighted.

Issue 9 Documenting Performance of Conservation. The focus being on the need for information that makes it clear to funding organizations and landowners that Agricultural Lands

Stewardship practices are worth the investment; e.g., the practice will clean up the water enough to meeting regulatory standards or the personal stewardship goals of the landowner.

Issue 10 Regulatory Assurances. As previously noted, divulging personal or site-specific information to a granting agency can open a landowner to further regulatory liability. Similarly, there remains an issue that “no good deed goes unpunished” among some landowners, who fear that on-farm conservation, for example, can lead to the improved health in the population of a listed species, leaving the landowner at greater risk of Endangered Species Act sanctions. The issue is the need for more and easier to employ opportunities for regulatory assurances that good conservation deeds will not be punished, but rewarded.

Issue 11 Food Safety. Recent e-coli outbreaks from the consumption of leafy greens has supported the food processing industry to discourage their growers from planting or maintaining vegetation around their fields for fear that wildlife drawn to the vegetation will contaminate the fields. Unfortunately, often the vegetation removed was taxpayer-funded riparian habitat, riparian filter strips, or erosion control vegetation installed by the growers.

Issue 12 Energy crops and Climate Change. The market and our national and State leaders are encouraging growers to plant energy crops, such as corn and soybeans. While these crops have increased the profitability of farming in many regions, the new cropping patterns can also lead to increased cultivation of new lands, higher use of fertilizers and volatile organic carbons for pest management, thereby increasing energy use and greenhouse gas emissions. Cropping and ranching practices that sequester carbon, on the other hand are best suited to the production of cellulosic ethanol, whose technology is not yet developed for commercial scale use.

Issue 13 Floodplain Protection and Farming. The working landscape approach to agriculture often advocates the use of conservation easements to keep lands in private ownership and management, while permanently removing the development rights from the land and altering farming practices to those compatible with floodplain management. Among the common easement restrictions is the limitation on types of crops grown to crops that will not impede floodwater flows for lead to excessive crop loss claims. As such, flood easements often prohibit the planting of high value and flow-impeding permanent tree and vine crops. Farmers who may otherwise be interested in flood easements may be reticent to participate knowing that their “palette” of crops available to respond to market opportunities will be limited.

Issue 14 Water conservation and water rights. The conservation of water on agricultural lands, depending of the nature of water contracts and rights, could result in the loss of water availability. For example, conservation of water could lead to a base of water use that may be used in the future for calculating cutbacks in water allocations. Conserving farmers could find themselves in a position that their water allocation during a drought is not sufficient to meet minimum crop needs.

Issue 16 Water Transfers. Increasingly, idling of agricultural land for the temporary or permanent transfer of water or water rights is a strategy to meet urban and environmental water needs in times of shortage, an increasingly normal condition with climate change and population growth. Idling of cropland can result in a degradation of soils from salt accumulation absent the leaching fraction component of irrigation, erosion, or invasive plant species. Strategies are needed that integrate water transfers with crop rotation/agronomic fallowing, soil-building schemes that also provide conjunctive wildlife habitat benefits.

Issue 17 Agricultural Conservation Easements are Forever. There is a growing awareness of the need for conservation easements to protect agricultural lands from the fragmentation of agricultural landscapes into parcels too large to mow and too small to farm. Yet, growers often loathe giving up their future “retirement account” of subdivision potential forever. Ways to enable growers to use easements as an aid in financial and estate planning are available, but too few growers are aware of them. One example is the use of clustering development to salvage development value income while protecting the bulk of the land for agriculture in ways that do not impede surrounding agricultural uses or exacerbate the provision of urban services by cash-strapped counties.

Issue 18 Farm Market and Economic Considerations. The three legs of sustainability include economic sustainability (along with environmental and social equity). A growing body of environmental, labor, food safety, land use and other regulations have increased the cost of doing business in California. Land costs have increased as demand for housing and open space uses compete for land. International competition from developing countries where regulatory and labor costs are lower and trade liberalization has driven the prices California growers can command in the marketplace. These and other factors make grower choices to invest in Agricultural Lands Stewardship practices difficult. Finding market value for the environmental services Californians demand from agriculture is one key to keeping California growers profitable and sustainable. These services include improved wildlife habitat, clean and more abundant water supplies, places to spread floodwaters, recreation, scenic open space, energy, carbon sequestration, groundwater recharge and clean air.

Issue 19 Landowner Concerns. Landowners are concerned that environmental programs that help growers improve habitat might attract more threatened and endangered species affecting landowners use of land. Thus some landowners are reluctant to be involved with government agencies, even though some of these agencies might help landowners to comply with real regulatory requirements.

Federal Endangered Species Act assurances can only be granted by the U.S. Fish Wildlife Service and the National Marine Fisheries Service. In order to determine what type of species must be covered and possible protective measures that may be required, surveys are necessary to determine what species are present. This only increases landowner concerns that they will be subject to increased restrictions if the presence of endangered species is verified on their property.

Some landowners question how they can adequately maintain their privacy and, at the same time, satisfy the public need for information of farm activities supported by public resources. In addition, there is landowner confusion regarding what type of assurances can be provided. A perspective is that the economic return from certain land stewardship programs may often be less than the return from other options for land use, especially when urban development is an option.

Issue 20 Lack of Information. There is a lack of scientific, economic, social and environmental studies and monitoring of agricultural lands stewardship programs to evaluate their merits for ecosystem restoration, water quality, and agricultural economics for large and small agricultural operations. There are conflicting reports about the compatibility of certain agricultural lands stewardship and ecosystem restoration programs. In order to justify public investment in stewardship, there must be accountability in terms of monitoring.

Issue 21 Complex Regulations and Programs. Institutional regulations and programs are complex and sometimes conflict. Agricultural landowners may be discouraged when developing a stewardship program for multiple purposes such as water and soil conservation, ecosystems

restoration, floodplain and wetlands management, water quality and land use planning. The regulations may seem intrusive to the private landowner but essential for those responsible for environmental protection and restoration programs.

Issue 22 Funding. California has traditionally received proportionally less funding for USDA Farm Bill's conservation provisions relative to its agricultural standing, the value of the threatened resources and the population served. Although California farmers and ranchers provide more than 13 percent of the nation's food and fiber, they historically receive less than 3 percent of federal farm conservation funding.² Commodity support programs influence stewardship management. California is dominated by specialty crops rather than traditional price-supported commodity programs. The funding inequities of the Farm Bill will become increasingly apparent in the future as production of California cotton, alfalfa, irrigated pasture, and possibly rice decreases and as specialty crops increase.

Issue 23 Regional Cooperation. Without regional cooperation, private landowners may be frustrated in reaching their management goals by adjacent operations or watershed activities that do not contribute to better management for environmental functions and values. These values include protecting and reestablishing riparian corridors or water quality within a watershed.

Issue 24 State Policy Goals. In general, land use is a local planning issue subject to local regulation. Statewide planning goals or restrictions may be seen as an intrusion on local governmental powers. Second, is the conflict between private property and public commitments? Many landowners prefer programs such as the Williamson Act because these are temporary land-use restrictions that landowners can ultimately "opt out" of if they later decide to sell land to development and the asking price justifies the cancellation penalty. As a result, many landowners are wary that they may lose future economic opportunities by committing to permanent restrictions. Likewise, the public may be unwilling to fund the necessary incentive (rental, technical assistance, etc.) programs essential to successful stewardship without a clear understanding of long-term benefits from such programs.

Issue 25 Changing Demographics of Farmers, Farms. As farm stewards age, and lacking a new generation of farmers to take the reins, there is a shift toward larger and smaller farms, the former held and managed by commercial interests with non-resident managers, the latter being a collection of smaller boutique farming operations. Mid-size, owner operated farms, meanwhile, are vanishing. At the same time, some farming families are diversifying, creating vertical integration of production, processing, packaging, marketing, with the new generation filling the administrative roles, as well as the farming roles.

Recommendations to Promote and Facilitate Agricultural Lands Stewardship

Recommendations set forth in the California Water Plan Update 2005 and new and updated recommendations will be organized in the following fashion in the California Water Plan Update 2009. Under each recommendation will be suggestions for responsible parties to implement recommendation, timelines when appropriate, and pertinent performance measures. Recommendations will be summarized in a table that lists a summary of the recommendation, lead entity for implementation, timeframe for implementation, and performance measures.

I. Recommendations for State Action

A. Institutional and Leadership Recommendations

- i. Resource and Food and Agriculture Secretaries, in consultation with U.S. Environmental Protection Agency, Department of Interior and U.S. Department of Agriculture, should assess Agricultural Lands Stewardship assistance, information and regulatory programs, their effectiveness and level of coordination. This assessment should be done by the end of 2010. The Performance measure is the completion of the assessment report that addresses the issues listed below.
 1. The assessment should address need for better coordination between regulatory and assistance programs, as well as between assistance and information programs of both State and federal agencies. Recommendations should include mechanisms for improving coordination among State assistance programs; opportunities for leveraging State, federal, and local resources to address Agricultural Lands Stewardship issues on a local and regional basis. Recommendations should also address ways for voluntary assistance programs to better help growers meet State resource regulatory mandates. The latter recommendations should include actions for better coordination between State and federal assistance and regulatory programs.
 2. The assessment should address the need for a statewide Agricultural Lands Stewardship leadership and coordination entity, such as a governor-appointed council or the reinvention of the former Resource Conservation Commission.

B. Regulatory and Process Recommendations

- i. State funding and staff should be made available through collaboration with the U.S. Department of Agriculture's Natural Resources Conservation Service, Resource Conservation Districts and appropriate non-profit conservation organizations to develop one-stop shop local and regional-level permit coordination and assistance programs. California Environmental Protection Agency and the Resources Agency should implement this recommendation through use of bond funds, redirection of staff and use of existing local capacity-building programs such as the

Department of Conservation's Watershed Coordinator Program. This recommendation should be implemented immediately. Performance measures include reduced cost, time and liability for landowners to implement Agricultural Lands Stewardship practices and strategies.

- ii. State Resource protection regulations should be amended to allow qualified third party verification that grant funding to assist landowners comply with regulations are spend appropriately and effectively, and to collect monitoring data in a manner that protects landowner confidentiality and enables federal participation in conservation actions that assist with regulatory compliance and the development of data on the effectiveness of Agricultural Lands Stewardship practices. Regulatory agencies, particularly the Air Resources Board, the Regional Water Resources Control Board and the Department of Fish and Game should assess regulations and need for amendments in the near term, and propose changes for mid-term achievement of this recommendation. Performance measures would include greater State and federal collaboration in assisting landowners meet regulatory requirements; sufficient data on the effectiveness of Agricultural Lands Stewardship practices in meeting resource protection regulatory requirements; and, an increased level of participation among private landowners in State grant programs intended to assist regulatory compliance.
- iii. The CALFED Bay-Delta Program should seek to make funding available as bond funds allow to support regional development of safe harbor agreements under both State and federal Endangered Species Acts that facilitate Agricultural Lands Stewardship practices that enhance working lands habitat improvements that include regulatory assurances that "no good deed will go unpunished." The Sacramento River Conservation Area Forum, the San Joaquin County Resource Conservation District and private initiatives on large farms and ranches in the state provide examples of the benefits of funding that removes the jeopardy from landowners for taking advantage of conservation funding. CALFED Bay-Delta Program should target bond funding for its Ecosystem Restoration Program, as funding is available. Performance measures would include an increased number of landowners and working land acreage integrating wildlife habitat enhancements under the regulatory assurances of State and federal Endangered Species Acts.
- iv. The Resources Agency is facilitating the development of a Bay-Delta Habitat Conservation Plan/Natural Community Conservation Plan to provide regulatory assurances and incidental take permits for water agencies to pump water from the Delta while also implementing a conservation plan to protect Endangered Species Act- listed fish species. The Resources Agency should offer similar leadership where needed to implement Integrated Regional Water Management Plans where Agricultural Lands Stewardship is a key component of the regional plans. This is a mid-term recommendation pending adequate staff resources and bond funding availability. A performance measure would be increased implementation of Agricultural Lands Stewardship practices that improve terrestrial and aquatic habitat and species diversity.

C. Financial and Technical Assistance Recommendations

- i. A partnership between the Resources Agency and the U.S. Department of Agriculture's Natural Resources Conservation Service should be formalized to build on existing needs assessments to perform a gap analysis of Agricultural Lands Stewardship needs and existing program resources to meet them. The analysis would become the basis for development of a strategy for the use of existing and new bond measure funding, existing General Fund conservation programs and federal conservation programs to fill the identified gaps. The analysis and strategic funding plan should be conducted under the leadership structures recommended in (I.), above. The analysis and strategy should be conducted pursuant to an executive directive or via a legislative proposal, or both immediately, with a product completed before the next water plan update. The performance measures would be increased funding for Agricultural Lands Stewardship for top priority resource issues; increased State and federal coordination of funding; and better information upon which to allocate available funding to meet the most important Agricultural Lands Stewardship needs of California.
- ii. The Resources Agency, the Department of Food and Agriculture and the California Environmental Protection Agency should establish a Farm Bill Interagency Agreement under which California establishes an ongoing presence in the debate over conservation provisions of reauthorized Farm Bills, and in the annual appropriations of funding for conservation to meet California needs as identified by the assessment and strategy of recommendation (i.). This recommendation should be carried out in consultation with the Natural Resources Conservation Service and appropriate farm and conservation interest groups and non-profits. The interagency agreement should be consummated immediately, building on the current collaboration over the reauthorization of the 2002 Farm Bill. Performance measures would include Farm Bill Conservation Programs that better meet California's conservation needs and working lands regional farming, economic, geographic conditions that distinguish California from the commodity crop states; increase funding for California conservation programs consistent with the strategic plan recommended in (i.) above.
- iii. The Governor should establish a coordinated conservation land acquisition program that is based on a preference for maintaining working lands in private ownership using conservation easements. Currently, there are a number of State and federal easement programs for wildlife, agricultural lands, grasslands, forestlands, floodplains and scenic and recreational open space. These programs need better coordination to assure that the highest priority resource lands are protected and that the lands protected are conserving multiple values at once. The funding gap analysis and strategic plan should include an identification of needs for resource land acquisition programs and seek State bond and federal farm, highway and wildlife easement funding to acquire the highest priority agricultural lands (among others) that also help to accomplish drought preparedness and flood

management goals. This executive action should occur immediately, tied with the implementation of recommendation (i.), above.

- iv. Funding for Agricultural Lands Stewardship programs should be made available on a voluntary participation basis, but with allocation of funding based on priority conservation needs (recommendation i., above) and regulatory compliance needs. Financial and technical assistance should be in the form of grants, cost-share, regulatory relief and tax incentives. Most financial and technical assistance should be contingent on a meaningful and feasible level of landowner contributions.

D. Data and Research Recommendations

- i. The U.S. Department of Agriculture's Agricultural Resource Service, UC Cooperative Extension, and the U.S. Department of Agriculture's Economics Research Service should conduct cost-benefit analyses for Agricultural Lands Stewardship practices. California State government leaders should request that funding be directed or appropriated from the federal and State budgets to conduct such research. This is essential research if limited conservation assistance funding is to be spent effectively. Further, if a regulatory approach to working landscapes natural resource issues is to be collaborative, depending on conservation planning and the use of certified best management practices, regulators must be assured that practices employed to improve water and air quality or improve biodiversity, are documented as effective. Recently, the University of California at Davis, Sustainable Conservation and U.S. Department of Agriculture's Natural Resources Conservation Service have collaborated to document the costs and benefits of conservation tillage systems. This research should be implemented immediately. Performance measures should include increased confidence in Agricultural Lands Stewardship practices as exemplified by greater State and federal funding to support their use by growers; and, increased use of certification programs to assist growers comply with environmental regulations.
- ii. Agricultural, conservation and food safety organizations and agencies should continue to identify and support needed research on the causes of food contamination to determine the extent to which Agricultural Lands Stewardship practices play a role. When research identifies food contamination risks from conservation practices, further research should be supported to adapt existing or develop alternative conservation practices that protect water and air quality, for example, while lowering the risk to food safety. Identification of research needs should be continued under the leadership of the University of California and industry and funding found immediately to support research and extension. Performance measure: known risk of common conservation practices; reduction of risk from modified or alternative conservation practices.
- iii. The U.S. Department of Agriculture, California Energy Commission and Air Resource Board and others should support research of Agricultural Lands Stewardship practices and strategies with respect to net greenhouse gas emissions and carbon sequestration, including the cultivation of alternative

E. Climate Change

- i. Recommendations of the Climate Action Team's agricultural work group should be incorporated into financial and technical assistance programs, particularly those of the U.S. Farm Bill's conservation programs. Assistance programs should support only agricultural practices and crop systems that result in lower greenhouse gas emissions as determined by a life-cycle analysis of a practices carbon budget.

F. Floodplain Management and Agricultural Lands Stewardship.

- i. The Legislature and Congress should appropriate bond and Farm Bill funding, respectively, to continue floodplain protection easement programs that allow conjunctive agricultural uses. As much flexibility for crop selection under easement agreements should be allowed to avoid limiting grower response to market signals, and profitability of farming. At the same time, growers should assume the risk of growing high value, permanent crops on flood easement-restricted croplands. The latter recommendation may require immediate changes to statutory or regulatory rules affecting floodplain easement programs. Performance measure: increased participation by growers in floodplain corridor protection grant programs.

G. Water Conservation, Water Rights and Water Transfers

- i. State and federal water providers should reward conservation by their customers through the use of conservation incentives in water delivery contracts, such as by increasing the water delivery priority to those growers practicing water conservation Agricultural Lands Stewardship measures.
- ii. The Department of Water Resources and US Bureau of Reclamation should establish a water transfer oversight entity that assures that water transfers will not result in a long-term negative impact on the state's food production capacity, or adversely impact rural community economics. The protection of soil health and enhancement of wildlife habitat should be considerations in approving water transfers. For example, temporary crop idling for water transfers should be designed to contribute to a crop rotation system that includes fallowing to build soil moisture and organic carbon content, and provide conjunctive wildlife habitat for such species as the Giant Garter snake. Transfers should reserve sufficient water on transferring lands in order to establish a cover crop.

H. Education, Demonstration and Outreach

- i. The U.S. Farm Bill should be amended, and appropriations made, to support a return to farmer-to-farmer education, demonstration and outreach on successful conservation programs. The Environmental Quality Incentives Program once included funding for such work. This authority and needed funding should be returned to the Natural Resources Conservation Service as part of its conservation operations and technical assistance budgets. Every Farm Bill conservation program should include funding to not only document program effectiveness, but to share information about the programs and their supported practices with other growers through educational materials, field demonstrations and workshops. This recommendation should be implemented immediately and in the near and long-term as U.S. Department of Agriculture's budget appropriations are made each year, and as Farm Bill reauthorizations occur every five or so years. Performance measure: A greater awareness among working landowners of conservation programs, and greater demand for U.S. Department of Agriculture's conservation program funding and technical assistance.
- ii. State grants that support Agricultural Lands Stewardship should likewise include a requirement that each grantee document project success and share lessons learned and successes with other growers and granting agency managers. This recommendation should be implemented, as bond authorities allow, immediately. Performance measure: greater demand among stakeholders and agencies for funding of effective Agricultural Lands Stewardship practices and strategies, and the requirement that such funding includes funding for demonstration and outreach.
- iii. The Department of Conservation's Farmland Conservancy Program's funding for planning grants should be expanded in support of recommendation II.A and B, below. The Administration should work with the legislature to see to bond measure appropriations that support the Conservation Farmland Conservancy Program, specifically for its planning grants. This recommendation should be implemented immediately and in the long-term as new bond measures are placed on the ballot. See performance measure for recommendation II.A.
- iv. The Department of Food and Agriculture and the Department of Conservation should seek funding to support an interagency technical outreach team to facilitate the transfer of technology with respect to agricultural land protection via agricultural conservation easements. The team would work with county planners and agricultural commissioners by sharing information on innovative farmland protection programs and ordinances in other counties. The team would also educate landowners about the tax, estate planning, and other benefits of agricultural conservation easement. This recommendation could be implemented immediately through an interagency agreement and a minor reallocation of staff resources. Performance measures: transfer of successful agricultural land protection

programs to other counties; a greater demand for agricultural conservation easements and the funding to purchase them.

II. Recommendations for Local Action

- A. Integrated Regional Water Management Plan applications for funding should embody Agricultural Lands Stewardship components where the region addressed by the plan includes agricultural lands. This recommendation should be implemented immediately if it is not already. Performance measure: Integrated Regional Water Management plans are comprehensive and integrated, including supportive Agricultural Lands Stewardship measures and strategies where appropriate.
- B. Counties should adopt agricultural general plan elements and designate supportive agricultural districts that enhance Agricultural Lands Stewardship on high priority, productive agricultural lands. These districts should focus regulatory assistance through county agricultural ombudsmen. These districts should also be the focus of local agricultural infrastructure investment, marketing assistance, and the development of Agricultural Lands Stewardship practices and strategies in cooperation with local, State and federal agricultural conservation entities. Districts should also be the focus of land protection instruments, such as the Williamson Act and agricultural conservation easements. Other strategies to enhance agricultural resources locally should engage such resource organizations as resource conservation districts, the American Farmland Trust, and Agricultural Future Alliances (via the Agricultural Innovations Network), and be integrated with IRWMPs and HCPs where appropriate. This recommendation should be implemented over the long-term as each county general plan is updated. Performance Measure: Number of general plans that include comprehensive plans for the sustenance of local agricultural working landscapes.

Selected References

The following references were drawn from the 2005 California Water Plan update. These and other references to support the narrative and recommendations of this chapter will be included in the 2009 California Water Plan Update. References will be organized according to reference type (e.g., agency and non-profit organizations); and, sections of this Resource Management Chapter (e.g., recommendations or issues). Both policy and research papers will be included to document basis for issues identified and for recommendations. Examples of Agricultural Lands Stewardship approaches from other states will also be included.

California Department of Conservation Division of Land Resource Protection for “Williamson Act”, Farmland Mapping and Monitoring Program, Watershed Grant Coordinator Program, Watershed Council, California Farmland Conservancy Program, Resource Conservation District liaison, and other programs (www.conservation.ca.gov)

California Department of Food and Agriculture, Office of Environmental Stewardship programs (www.CDFA.gov)

California Department of Water Resources, California Floodplain Management Task Force, December 002 State of California, General Plan Guidelines, 2002

National Governors’ Association Center for Best Practices. 2001. Private Lands, Public Benefits: Principles for Advancing Working Lands Conservation, Available at <http://www.nga.org/Files/pdf/01022PRIVATELANDS.pdf>

Stewardship America (www.privatelands.org)

US Environmental Protection Agency, National Agricultural Compliance Center (www.epa.us.gov)

USDA Natural Resources Conservation Service, Field Office Technical Guide (of conservation practices), (http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=CA)

Box #-2 Examples of Agricultural Lands Stewardship Practices

- **Wetland Restoration** – Wetland acreage improves water quality by filtering out pollution and sediments. It also helps flood management by slowing the flow of water. Healthy wetlands are indispensable for recharging underground aquifers and providing specific wildlife habitat.
- **Shallow-Water Wildlife Areas** – Shallow water areas provide habitat and water for wildlife. Temporary rice field habitat also provides resting and feeding grounds for waterfowl and shorebirds and related terrestrial species. Rice field flooding speeds the decomposition of rice straw, reduces air pollution, improves soil fertility and helps with the decomposition of agricultural chemicals.
- **Windbreaks** – Rows of trees or shrubs along field boundaries help control soil erosion, conserve soil moisture, improve crop protection, provide livestock shelter and wildlife habitat, reduce drainage water, and increase carbon sequestration (removal of carbon dioxide from the atmosphere).
- **Irrigation Tailwater Recovery** – Collection, storage and transportation facilities help capture and reuse irrigation runoff water to benefit water conservation and off-site water quality. [See Chapter 3 in Volume 2, the Agricultural Water Use Efficiency strategy]
- **Filter Strips, Grassed Waterways, Contour Buffer Strips** – These are practices to reduce erosion and provide water quality protection, with some wildlife benefits depending on management.
- **Conservation Tillage** – Tillage of soils increases water infiltration and soil water conservation, reduces erosion and water runoff, sequesters carbon, and improves soil ecosystem and habitat quality.
- **Noxious Weed Control** – This practice establishes self-sustaining populations of “control organisms” to control or prevent weed infestations. Mowing, discing, plowing, and grazing are some of the practices that can be used for noxious weed control.
- **Riparian Buffers** – Areas of trees, shrubs, and grasses adjacent to streams or drains help filter runoff by trapping sediments, nutrients, and pesticides. Riparian buffers also provide wildlife habitat.
- **Livestock Access** – This practice restricts or controls livestock access to surface waters to reduce sediment and nutrient nonpoint source pollution.

Box #-3 Initiatives that Exemplify Agricultural Lands Stewardship Strategy

- Proposition 50 Ecosystem Restoration Program's Proposed Working Landscapes Grants. Allocated not less than \$20 million "for projects which assist farmers in integrating agricultural activities with ecosystem restoration." These funds could be used as "matching funds" with the Farm Bill, thus leveraging State money with federal money.
- USDA Natural Resources Conservation Service
- Conservation Security Program offers incentives and rewards to growers who implement resource conservation plans for parts or all of their lands.
- Conservation Technical Assistance Program provides technical assistance to design and implement stewardship practices.
- Wetland Reserve Program offers incentives to restore wetlands in order to replace marginal croplands to help restore the biological diversity of plant and animal species, particularly, migratory waterfowl.
- Grasslands Reserve Program provides rental payments and easements on working grasslands in exchange for protection against conversion to other land uses.
- Farm and Ranchland Protection Program is used to secure easements to prevent conversion from agricultural land to urban land use.
- Wildlife Habitat Incentives Program provides up to 75 percent cost-share to reimburse participants for installing practices beneficial to wildlife.
- Department of Water Resources Flood Protection Corridor Program. Grants for nonstructural flood management that enhance wildlife habitat or protect agricultural uses on private lands.
- Department of Fish and Game Private Lands Management Program. Pays ranchers and farmers to improve habitat for wildlife through fishing and hunting.
- Wildlife Conservation Board Rangeland, Grazing Land and Grassland Protection Act of 2002. Grants to prevent rangeland conversion to more intensive uses, and to improve grazing and wildlife.
- The Farmland Mapping and Monitoring Program (FMMP). Managed by the DOC, produces maps and statistical data used for analyzing impacts on California's agricultural resources. The maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance.