Agricultural Lands Stewardship

Agricultural lands stewardship broadly means conserving natural resources and protecting the environment by compensating owners of private farms and ranches, in production, to implement stewardship practices. 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 due to pressure from urban development. For this paper, "agricultural lands stewardship" means farm and ranch landowners – the steward's of the state's agricultural lands – producing public "environmental goods" in conjunction with the food and fiber they have historically provided while keeping land in private ownership.

This strategy is focused on agricultural land (cropped and grazed land) as defined by the California Land Conservation (Williamson) Act. Other resource-based land uses, such as forestry and mining, are addressed by the Watershed Management strategy later in this volume. Agricultural land stewardship can take place on a particular parcel of land, on multiple parcels in one landowner's possession, or in an integrated manner on agricultural lands regionally or statewide. The goal of this approach is to promote sustainable agricultural practices with an economic return, while managing these productive lands for multiple benefits, including water management improvements. The following box shows examples of agricultural lands stewardship practices.

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 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 – Soils tillage 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.
- 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.

There are many ways that agricultural lands can be profitably managed. Under some circumstances, temporary land fallowing (temporarily stopping irrigation for a season or more) on a selective basis may be a stewardship practice depending on site-specific conditions, and landowner and community interests. For example, temporary land fallowing, sometimes called crop-idling, is a drought response or water banking strategy for which DWR and others have provided financial compensation to participating landowners. Land fallowing is also an agronomic practice to benefit the soil or for other management purposes. Payments to farmers could be used on farm-related investments, purchases and debt repayment, or may be spent or invested outside the community.

Land Retirement and Land Conversion

In some cases, choices are made that permanently remove land from agricultural use and from private ownership. Public acquisition of the land for nonagricultural uses is one example. In addition, land conversion occurs where landowners voluntarily choose to sell their property for urban development (see the Urban Land Use Management strategy). In this context, neither land retirement nor land conversion are stewardship practices.

In some areas, stopping irrigation on a permanent basis may be considered for farmlands with drainage problems related to soils that are not well-suited for irrigation. The risk of selenium exposure to fish and wildlife is reduced when irrigation on land in the drainage problem areas is permanently stopped. This reduction in drainage water will reduce the volume that needs disposal and may reduce downstream pollution. These lands provide opportunities to allocate water to other agricultural lands. The land could be support other beneficial uses such as grazing and dry land farming (see Rainfed Agriculture in the Other Strategies section of Volume 2). The lands also may be managed as upland habitat or wildlife refuges, depending on the goals and terms of the conservation easements.

Integrated on-farm drainage management (IFDM) can be use 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 eliminate 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 an alternative to retirement of agricultural lands.

Current Agricultural Lands Stewardship Initiatives

Agricultural lands stewardship is not a new concept. Under various names, it has been practiced and encouraged by the United States Department of Agriculture (USDA) through the Natural Resource Conservation Service (NRCS) and various non governmental 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. Since governmental land acquisition programs can only affect a small portion of agricultural lands, 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 which fit the stewardship model (see following box). Many public programs provide technical assistance on what crops to plant, and how to plant, cultivate and irrigate them. Other technical assistance includes advise on 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 due to urban development (see the Urban Land Use Management strategy). And finally, there are programs which limit or cease commercial agricultural use to promote wetlands and other wildlife sensitive areas, while keeping lands in private ownership and stewardship.

Initiatives that Exemplify Agricultural Lands Stewardship Strategy

- Proposition 50 Ecosystem Restoration Program's Proposed Working Landscapes Grants. Allocated not less than $20 million dollars "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 resources.
- US Natural Resources Conservation Service's (NRCS) New Conservation Security Program. Offers incentives and rewards to growers who implement resource conservation plans for parts or all of their lands. The USDA Federal Wetland Reserve Program (WRP), Conservation Reserve Program (CRP) and the Grasslands Reserve Program (GRP) offer incentives for each acre set aside. Wildlife Habitat Incentives Program (WHIP) provides up to seventy-five percent cost-share to reimburse participants for installing practices beneficial to wildlife.
- CA Department of Water Resources (DWR) Flood Protection Corridor Program. Grants for nonstructural flood management that enhance wildlife habitat and/or protect agricultural uses on private lands.
- CA Department of Fish & Game (DFG) Private Lands Management Program. Offers ranchers and farmers an opportunity to increase their income by improving habitat for wildlife through fishing and hunting.
- CA Wildlife Conservation Board Rangeland, Grazing Land & Grassland Protection Act of 2002. Grants to prevent rangeland conversion to more intensive uses, and to improve grazing and wildlife.

The following three examples describe a range of stewardship programs including an active stakeholder process, a federal incentives program, and a statutory "land retirement" program.

The CALFED Working Landscapes Subcommittee

The Bay-Delta Public Advisory Committee (BDPAC) established a Working Landscapes Subcommittee to advise the BDPAC in the formulation of a working lands management approach for Bay-Delta Programs. The Working Landscape Subcommittee seeks to provide the BDPAC 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 contributing to the fulfillment of and in accordance with the CALFED Record of Decision to restore ecological health and improve water management for beneficial use of the Bay-Delta system while minimizing impacts 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 and include technical assistance, financial incentives, and both temporary and permanent set-aside payments for various purposes.

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.

Central Valley Project Improvement Act Land Retirement Program

One of the provisions of the 1992 Central Valley Project Improvement Act authorized purchase, from willing sellers, of agricultural land and associated water rights and other property interests which receive Central Valley Project (CVP) water. All lands selected for retirement will likely be located south of the Sacramento-San Joaquin Delta, in locations where drainage conditions and water quality are poor. The program is expected to retire a total of about 100,000 acres of irrigated farmland.

The U.S. Bureau of Reclamation (Reclamation), in partnership with the U.S. Fish and Wildlife Service and the U.S. Bureau of Land Management, are the responsible Federal agencies for implementing the CVPIA Land Retirement Program. These agencies initiated the Land Retirement Demonstration Act to address concerns about the scope and degree of potential impacts of retirement on wildlife, drainage volume reduction, socio-economic impacts, and the overall cumulative effects of changing irrigated lands to non-irrigated use.

Potential Benefits

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 best management practices to protect the health of environmentally sensitive lands, improve water quality, provide water for wetland protection and restoration, 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 best management practices are attractive since they don't rely on construction of major facilities.

Agricultural land stewardship can be part of a regional strategy of 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 of land use. It also can minimize fragmentation of agricultural lands by development that can decrease productivity and harm the ecosystem.

Potential Costs

Agricultural lands stewardship is a cost-effective way to sustain our agricultural land base while accomplishing complementary objectives. Three questions must be asked in determining potential costs: 1) What are the direct costs for supporting stewardship programs? 2) What are the common cost

measurements for a wide spectrum of environmental values? 3) What current level of investment is needed to anticipate future needs and their costs?

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 places a value on healthy communities (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.

Annual costs of managing the lands to avoid environmental impacts need to be quantified. Any program that stops irrigation will have to provide for the cost of establishing permanent vegetative cover that is appropriate to the area, sometimes using temporary irrigation. In many cases this may be a significant start-up cost and will also require maintenance. Additional costs may include program development, administration, and mitigation of local and regional socio-economic impacts.

Despite interest in programs that temporarily or permanently stop irrigation, relatively little comprehensive analysis has been completed on the cost-effectiveness of these programs. In one study, Stroh (1991) compares the costs of meeting drainage goals through five drainage management schemes: stopping irrigation, treatment, evaporation, dilution, and ground-water pumping. Findings suggest that stopping irrigation can be a cost-effective solution to meeting a drainage objective, but only under a limited set of conditions (such as high selenium in soils which makes drainage solutions expensive).

Experience suggests that many California agricultural lands owners may participate in some agricultural lands stewardship programs if the annual rents they receive are in the $100 to $200 per acre range. A new Farm Bill Conservation Security Program is intended to pay the landowner an annual payment for conservation benefits identified in their conservation plans. Annual payments are estimated for each qualified landowner to range up to $45,000 per year.

Major Issues Facing an Agricultural Lands Stewardship

There are major issues related to improving agricultural lands stewardship in California.

Landowner Concerns

Landowners are concerned that environmental programs that help growers improve habitat may create species' taking by attracting rare, threatened and endangered species. Thus some landowners are reluctant to be involved with government agencies, even though some of these agencies may provide assistance to help compliance with real regulatory requirements.

Although many landowners request "safe harbor" assurances for voluntary local programs, Federal Endangered Species Act (FESA) assurances can only be granted by the US Fish Wildlife Service and the National Marine Fisheries Service. In order to determine what type of species must be covered and possible protective measures which 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 transparency of farm activities supported by public resources and certainty, when they participate in voluntary programs designed to meet regulatory goals and standards. In addition, there is landowner confusion regarding what type of "assurances" can be provided. A common landowner 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.

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 part because the management to assure compatibility must be tailored to local circumstances and then monitored and assessed. In order to justify public investment in stewardship, there must be accountability in terms of monitoring.

Complex Regulations and Programs

Institutional regulations and programs are a complex maze and sometimes in conflict. Agricultural landowners may be discouraged when developing a stewardship program that is crosscutting and encompassing water and soil conservation with 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.

Funding

California has traditionally received proportionally less funding for USDA Farm Bill's conservation provisions overall relative to its agricultural standing, the value of the threatened resources and the population served. California is dominated by specialty crops rather than traditional price-supported "Program" that receive most conservation programs money in other states. 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.

Regional cooperation

Without regional cooperation on regional issues, private landowners may be frustrated in 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.

Reports on Land Retirement Do Not Agree

Existing reports on land retirement do not agree about the extent, if any, of the loss of agricultural productivity, loss of revenue to the local communities, loss of a way of life, and regional and statewide socio-economic effects. There may be additional maintenance costs to mitigate, or to avoid, environmental impacts. Specific soil stabilization and crop management may be required if the lands continue to be farmed without irrigation. Stopping irrigation may have effects on neighboring agricultural lands, including introduction of new wildlife species, weeds, pests, illegal dumping of refuse, complication of water and water rights issues, and alteration of physical resources such as soils, groundwater, surface waters. Stopping irrigation may result in water applications for urban use out of the area.

There are concerns whether stopping farmland irrigation on a temporary or permanent basis may have an adverse effect on the local tax base, community businesses and farm related jobs, especially when labor and other services have a large percentage of low income and disadvantaged groups. Some have suggested that if a significant amount of land is retired it may also have a statewide influence on the tax bases, economies, and food production and security. On the other hand, others have provided information that suggests larger, external forces may be the primary influence on these negative trends in agriculture.

State Policy Goals

There is the tension between state and local control. 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 tension between private goals and public commitments. Many landowners prefer programs such as the Williamson Act because these are temporary land use restrictions which 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.

Recommendations to Facilitate Working Lands Stewardship

The following recommendations can help facilitate an agricultural lands stewardship strategy:

1. The state should collaborate with rural and agricultural organizations and coordinate with local RCDs to provide private landowners financial incentives and access to educational resources through appropriate public and nongovernmental programs that explain and demonstrate the benefits of agricultural lands stewardship and ecosystem restoration.
   - Demonstrate that stewardship programs can help landowners be good stewards without compromising landowner rights.
   - The program should emphasize that it is voluntary, flexible, and incentive-based strategy.
   - Provide "success" stories to resource managers and environmental organizations to demonstrate that private stewardship can achieve desired environmental benefits.
   - Provide economic information regarding the advantages and disadvantages of land stewardship to compare with other investment choices.
2. The state should create a directory that identifies the appropriate state agency for coordination, implementation. These agencies should provide staff support for landowners participating in multiple environmental goals and local conservation initiatives. Among other, these should include the Department of Conservation's Watershed Coordinator, Natural Resource Conservation Service programs, Resource Conservation Districts cooperative program, and other programs. The agency should identify opportunities to further institutional coordination, assist landowners in applying for grant funding, and facilitate multiple stakeholder planning and implementation.
   - Ensure consistent, dependable and adequate funding for stewardship assistance, especially the USDA Natural Resources Conservation Service, the agency that has traditionally provided this kind of assistance.
   - Assist landowners with endangered species issues.
   - Document environmental results with accepted standards, criteria and protocol while respecting private land ownership.

3. The state should help landowners implement agricultural lands stewardship plans. Greater state participation would help direct federal funds toward landowner participation and technical assistance.
4. The state should evaluate the socio-economics effects of agricultural lands stewardship, including a comprehensive assessment of:
   - Regional changes in agricultural production inputs and farm income (including income received from land and water payments) as the result of temporary land fallowing or permanent stopping of irrigation
   - "True cost accounting" – costs and benefits over long-term and including maintenance - for stewardship management approaches
   - Habitat restoration (including financial on-farm investments and increased recreational opportunities)
   - Annual maintenance expenditures

   Use the evaluation as guidance for maintaining the economic stability of local community continuity, including potential reductions in jobs, tax base, and community and commercial production.
5. The state should increase scientific studies to assess the environmental, ecosystem restoration and agricultural benefits of agricultural lands stewardship programs. The state should continue research on sustainable agriculturally-based economies. The state should continue monitoring and assessing positive and negative effects of habitat restoration, temporary fallowing and permanent stopping irrigation, including improved air and water quality and associated costs.

Information Sources

- Private Lands, Public Benefits, Principles for Advancing Working Lands Conservation, National Governors Association/Center for Best Practices www.nga.org
- Stewardship America www.privatelands.org
- CA Department of Food and Agriculture www.cdfa.ca.gov
- EPA National Agricultural Compliance Center www.epa.gov