COMPENSATING LANDOWNERS FOR CONSERVING AGRICULTURAL LAND

Papers from a California Conference December, 2003

Community Studies Extension
Department of
Human & Community Development
University of California, Davis

California Legacy Project

Edited by
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COMPENSATORY OPTIONS FOR CONSERVING AGRICULTURAL LAND

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ACKNOWLEDGMENTS

This list of credits and "thank-yous" is long. We start with the obvious suspects–the paper presenters and commentators who gave so much intellectual value to our conference and whose work is represented here. We then add the 70 or so other invited participants in the conference, mostly Californians, who listened carefully (even taking notes in many cases), but also gave back in spirited questions and discussion.

The key support that made the publication of this post-conference collection of papers and commentary possible was provided by the California Legacy Project of the California Resources Agency. Our special thanks go to Madelyn Glickfield, Assistant Secretary of the Resources Agency in charge of the Legacy Project, for believing in the worthiness of our endeavor, and to Jay Chamberlain, also of the Legacy Project, who worked with us from the beginning in the organizing of the conference.

Funding for the conference itself and for several related projects came from a number of sources: (1) the Soderquist Fund of the UC Davis Foundation; (2) the American Farmland Trust; (3) the California Department of Conservation; (5) the California office of the Natural Resources Conservation Service of USDA; and (5) the Farm Foundation. Our special thanks for the early funding from the UC Davis College of Agricultural and Environmental Sciences that initiated the planning process for the conference.

Most of the heavy lifting that put the organizational details together was accomplished by Laurie Treacher of the UC Agricultural Issues Center and Jeff Woled of the UC Davis Community Studies Extension, a part of the Department of Human and Community Development. The conference panels were recorded and summarized by Mica Bennett, John Speka, and Nora De Cuir.

Nora De Cuir, Al Sokolow, Jeff Woled

INTRODUCTION: THEMES AND IDEAS

Compensatory Options for Protecting Working Landscapes

Al Sokolow and Nora De Cuir

INTRODUCTION: COMPENSATORY OPTIONS FOR PROTECTING WORKING LANDSCAPES

Al Sokolow and Nora De Cuir

Much of California's farmland is contested ground, with agriculture and urbanization competing for the same acres. The competition is especially intense in this state that leads the nation both in farm production and annual population increase. Considering the vast agricultural landscape of the state, how serious is the problem of converting farmland to homes and other urban uses? Public discussion is not always a good guide to understanding the issue; it tends to simplify and exaggerate as expressed in frequent media references to "paving over farmland." Hype aside, there certainly is a serious problem in the long term in maintaining the farmland base, if we consider the cumulative effects of conversions, the type and location of agricultural acreage lost, and the land use inefficiencies in how urban expansion occurs. Currently about 50,000 acres of California farmland are converted to urban uses every year; almost 600,000 acres were converted in the 12-year 1988-2000 period. (Table 1) As proportions of the state's total of 27 million acres of privately owned agricultural land, the conversion rates seem low—a little less than two-tenths of one percent annually, or about 2.2 percent over the recent 12-year period. These numbers, however, mask some parts of the full story including a higher conversion rate for the best irrigated cropland than for grazing land and the retirement from agricultural use of other lands for habitat restoration and other natural resource uses.

Table 1. California Agricultural Acres Converted to Urban and Built-up Uses, 1988-2000 (Calculations based on FMMP data)

Prime Cropland	86,454
Other Cropland	158,817
Grazing Land	135,566
"Other Land" (previously in agricultural use)	241,103
Total Converted	621,940

Source: Farmland Mapping and Monitoring Program, California Department of Conservation

By no means is farmland conversion a newly recognized problem in California. For almost 50 years, since shortly after World War II, the issue has been addressed through extensive deliberation and public policy development, statewide and in individual communities. Indeed, California probably began paying attention to the loss of farmland earlier than any other state. It also has the most extensive menu of farmland protection policies and tools in the nation, a rich potpourri of regulatory, market-based, and other measures. What has been formally inserted into the policy books through state legislation and local ordinances, however, does not necessarily produce the intended preservation results. Implementation–the actual application of farmland protection policies to particular urban projects–is an inconsistent process from community to community and over time in particular counties and cities. Market forces reflecting the demand for land for homes, stores, and other urban uses tend to dilute the best land preservation policies and the best political intentions.

This collection of papers seeks to turn the discussion and policy considerations over farmland protection in a new direction, away from the conventional emphasis on planning and regulatory measures. It focuses rather on the role of agricultural landowners as the central actors in the maintenance of working landscapes. In particular, these papers concentrate on compensatory programs and techniques that pay agricultural landowners, in cash and/or with tax credits, for foregoing development or otherwise engaging in conservation practices on their farmland. Such benefits recognize society's interest in maintaining productive farms and ranches in private ownership, for the broad benefits provided communities and regions in open space, habitat, and other natural resources, as well as for the production of food and economic gain. Compensatory programs give landowners a market-based method for keeping their properties in agriculture, an alternative—although not usually equally profitable—to selling for development. Compensation is an important incentive for landowners, motivated either by land preservation sentiments and/or the desire to retain ownership for future family generations. Such programs complement rather than replace planning and regulatory approaches to farmland protection, adding a landowner-friendly component to the mix of preservation tools.

Landowner compensation programs are increasing in use and funding. Two actions that point to this growing popularity are the 2002 U.S. Farm Bill that greatly boosted federal funding for conservation payments to landowners and the growth of agricultural easement programs and accomplishments throughout the nation.

LESSONS FROM OTHER STATES: THE SACRAMENTO CONFERENCE

With its commendable history and menu of policies and techniques, California is a national leader in state and local government efforts to protect farmland. However, it does not have a monopoly on good ideas in this area, especially in stimulating landowner participation in land preservation programs through compensation and other methods. California can learn a lot from innovations and research carried out elsewhere.

In fact, the great majority of the 19 papers in this collection were written by researchers and practitioners from other areas–Colorado, Florida, Georgia, Illinois, Maryland, Michigan, North Carolina, and the District of Colombia. Some papers report on new compensatory techniques or twists in existing programs, other present the findings from research on landowner views and experiences or on public preferences for protecting farmland. The compensatory techniques (tax preferences, conservation payments, easements, etc.) covered in these papers are found throughout the nation, although the conference discussion highlighted their application in California.

All papers and other material in this collection (summaries of two panel discussions and wrap-up comments) were initially presented to the conference, *Compensatory Options for Conserving Agricultural Land*, held April 14-15, 2003 in Sacramento, California. Organized by the Agricultural Issues Center of the University of California, this research and policy conference brought to Sacramento more than a dozen out-of-state experts to address and interact with a predominantly California audience. The 95 participants included farmers and ranchers, state and federal conservation program managers, local government officials, non-profit group leaders, and university researchers. Support for the conference and its spinoff projects came from several sources: California Resources Agency, American Farmland Trust, Soderquist Fund of the UC Davis Foundation, California Department of Conservation, and UC Davis College of Agriculture and Environmental Sciences.

In addition to this collection of papers, a major product of the conference (when combined with related work) will be a guidebook on compensatory options for California landowners, supported by the National Resource Conservation Service (NRCS) of USDA and the Farm Foundation.

COMPENSATORY TECHNIQUES AND PURPOSES

Four major types of compensatory techniques are represented by the papers in this collection. As identified in Table 2, they are (1) assessing farmland for property tax purposes according to use rather than market value (preferential taxation); (2) encouraging landowners to engage in conservation practices through sharing the cost of land improvements; (3) temporarily retiring farmland from production to restore soil quality and other natural resources; and (4) removing the development rights from agricultural properties by purchasing easements from the owners.

Table 2. Compensatory Approaches and Programs

Program	Details
PREFERENTIAL TAXATION FOR FARMLAND–PROPERTY TAX RELIEF	
Williamson Act	Farmland under 10-year renewable contracts is assessed at use-value rather than market value. Administered by counties with state providing partial payments to offset local property tax losses.
Farmland Security Zone Program	A later version of the Williamson Act that involves longer (20 years) renewable contracts and larger property tax reductions for landowners.
COST-SHARING FOR CONSERVATION PRACTICES	
Environmental Quality Incentives Program (EQIP)	Financial and technical assistance to farmers and ranchers to implement conservation practices that enhance soil, water and other natural resources. Contracts are 1 - 10 years in duration. Administered by NRCS (Natural Resource Conservation Service, USDA).
Wildlife Habitat Incentives Program (WHIP)	Financial and technical assistance to farmers and ranchers to develop habitat for wildlife. Agreements are generally 5 - 10 years in duration, though contracts for more than 15 years can be negotiated. Administered by NRCS.
Conservation Security Program.	New NRCS program created by the 2002 Farm Bill. Rewards stewardship efforts and provides incentives for resource enhancements. Agreements are 5-10 years in duration.
COST-SHARING FOR TEMPORARILY RETIRING FARMLAND FROM CULTIVATION	
Conservation Reserve Program (CRP)	Maintenance, cost share and rental payments for 10-15 years to plant long-term cover on sensitive lands to reduce soil erosion.. Administered by the Farm Service Agency, USDA. Not a major programs in California.
Wetlands Reserve Program (WRP)	Financial and technical assistance to landowners for retiring wetlands from agriculture. 1 year cost-sharing agreements, as well as 30-year and permanent easements. Administered by the NRCS.
Grasslands Reserve Program	New NRCS program created by the 2002 Farm Bill. Rental agreements and easements for conserving grassland, rangeland, and pasture land. Rental agreements are 10, 15, 20 or 30 years in duration. Easements are for 30 years or are permanent.
ACQUISITION OF DEVELOPMENT RIGHTS ON AGRICULTURAL LAND	
Agricultural Easement Programs	Permanently restricting development land by purchasing development rights (or accepting landowner donations for tax benefits) on agricultural land, while leaving intact all other rights of private ownership. Easement programs in California are operated by local and regional land trusts and a few open space districts, with funding from state, federal, and nonprofit foundation sources.

Compensatory programs also vary in their policy purposes. Preventing the urbanization of farmland is the primary and explicit goal of some programs, including the Williamson Act and most agricultural easement activities. Other programs also have the retention of productive farms as at least an implicit purpose, although the emphasis is on preserving natural resources, primarily soil and water quality. Included in this category are the NRCS cost-share programs, such as EQIP and WRP, that compensate landowners for engaging in conservation practices. Still other programs focus on using farmland to protect habitat, such as the Wildlife Habitat Incentive Program managed by NRCS.

MAJOR THEMES AND KEY ISSUES

Organized around six major themes, the papers in this collection probe into several different dimensions of the compensatory approach to preserving agricultural land, focusing both on the details of specific programs and more general or comparative issues.

1. The California Setting. Mary Nichols, California Secretary of Resources, identifies areas in which state government can complement federal and local efforts to conserve the state's rich agricultural resources. A key state activity is the California Legacy Program, described by Nichols as "a long-range planning effort to ensure that the State's investments in conservation are made as wisely as possible."

2. The Public Values of Maintaining Working Landscapes. Beyond food and fibre production, agricultural lands have multiple benefits worthy of public support. Esseks sets the scene by identifying a number of such attributes and describing methodologies for quantifying their public values. Important questions about land conservation priorities and public willingness to fund landowner compensation are raised by Norris and Dorfman, respectively. Feitshans examines the menu of farmland protection techniques, highlighting the interaction of regulatory and compensatory tools.

3. Landowner Perceptions and Experiences. Farmers and ranchers are the key participants in the compensatory programs examined in this collection, yet they frequently are ambiguous about conservation goals, public funding, and program mechanisms. Skepticism about the role of government is a common view. Klonsky, Sokolow, and the Landowner Panel discuss how California landowners look at these subjects. Marshall and Seidl analyze the importance of land attachment values in landowner decisions to sell easements. Kraft examines landowner motivations to participate in the CRP and other federal conservation programs.

4. USDA Conservation Programs. Several decades before property tax preferences and conservation easements became popular, the land preservation techniques, the Soil Conservation Service (now NRCS—the Natural Resources Conservation Service) of USDA pioneered in providing conservation incentives to agricultural landowners. Helms examines the evolution of these programs, culminating in the 2002 Farm Bill. Lawrence compares the purposes and mechanisms of the various NRCS programs, noting their multiple objectives: soil protection, preventing urban conversion, restoring wetlands, enhancing habitat, and regional variations in their application. Flach considers the consequences for assistance to landowners of the requirement in the 2002 Farm Bill that much of the delivery of technical services handled by NRCS staff be shifted to private sector providers.

5. Agricultural Easements. Still a relatively new technique as applied to agricultural land, the removal of development rights through conservation easements is evolving in several directions. Medvitz chronicles his and his famliy's experiences in negotiating the sale of an easement on their ranch, a story

that shows how landowner desires for flexibility in future commodity production can conflict with the preservation views of funding agencies. A short summary follows of the perspectives of the two agencies that processed the McCormack Ranch transaction, as presented by conference panelists. The other papers in this section examine the potential for alternative time and payment schemes for implementing easements. Daniels reviews recent experiences with term or less-than-perpetuity easements. Zurbrugg considers the legal dimensions of less-than-perpetuity easements. Bowers examines the record and prospects of installment payments to landowners as an alternative to one-time cash payments.

6. New Ideas: Empowering Landowners. Finally, this collection explores new ideas for engaging landowners in a more proactive manner in conservation efforts. In the summary of Evans' conference keynote comments, several landowner-oriented strategies are outlined for maintaining working landscapes that include a mix of preservation and development actions. The strategies are illustrated by a Florida case study. Carlson and Renkert both show how local groups of landowners acting collectively can preserve large landscapes by using the profits from limited development to protect other portions of their combined properties.

FINAL THOUGHTS

By implication this collection of papers accepts the assumption that private ownership, supported by compensatory programs, is compatible with the long-term protection of working landscapes. Not as clear is how the separate interests of landowners and the general public both can be maximized in such programs, a match that requires meaningful compensation to the landowners along with a high degree of accountability in the use of public funds. Most of the papers directly address this central issue. The non-market benefits of farmland and ranchland, landowner views and experiences, and the specifics of particular programs are all part of the equation.

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1. THE CALIFORNIA SETTING

Sustainability and Sustenance: Protection and Stewardship Opportunities for California's Agricultural Lands

Mary Nichols

SUSTAINABILITY AND SUSTENANCE: PROTECTION AND STEWARDSHIP OPPORTUNITIES FOR CALIFORNIA'S AGRICULTURAL LANDS

Mary Nichols

It is an opportune time to share ideas and strategies for enhancing conservation opportunities for agricultural landowners while also providing them with financial benefits. Some of you must wonder how I could say such a thing when California is facing its worst budget crisis in a generation, when the country and much of its resources are focused on a war in the Middle East, and our country's budget surpluses of the year 2000 have been inverted and are projected to be mounting deficits for as far as the eye can see.

I haven't even mentioned the usual statistics that you all in this field know so well – that California has lost farmland at the rate of 50,000 acres per year, and most of it is our very best farmland. That water we have been counting on, whether from Sierran snowpacks or interstate agreements, no longer looks so reliable. Combined with such disparate threats as high gasoline prices, historically low markets for California's specialty produce, and recent changes that will put new and heavy requirements on farmers to meet air and water quality rules, it's hard to avoid the conclusion that California's agricultural producers are challenged as never before.

But sometimes it takes a crisis to come together in a coordinated way and to change "business as usual." We now have the opportunity to mobilize the incentives to change business as usual on agricultural lands and thereby to make the business of agriculture far <u>better</u> than usual, from the point of view of sustainability.

MAKING CONSERVATION PAY

An important part of making agriculture truly sustainable in California is figuring out how to "make conservation pay." Clearly, several important "farm products" are left out of the annual reports of our state's 300 or so crops: the environmental "products" farms can generate.

Many farms "produce" clean air and clean water, as do many of our private forest and range lands. Many farms support healthy wildlife populations. We are increasingly finding opportunities to weave working lands into the matrix of habitat types, including reserves and corridors, that undergird state and local endangered species recovery efforts. Working lands, in many cases and should in most cases, be a conservation resource California.

Farmers are perhaps the greatest "resource" of all in those working lands. As a conservationist myself, I have increasingly come to see farmers as true entrepreneurial conservationists – people who take risks to manage environmental inputs to produce outputs. I believe we could do a far better job of tapping both the entrepreneurial spirit and conservation ethic of farmers to improve the environmental outputs of farmland to achieve sustainability on California's agricultural lands.

For that reason, I've been working with my departments, especially Conservation, Fish and Game, and Forestry, and in concert with our partners at the USDA and in non-government organizations to improve

our capacity to deliver non-regulatory or compensatory programs to farmers. These include conservation easement programs, grants, technical assistance, planning efforts, and management agreements.

Promoting the use and coherent application of the diversity of state and federal conservation "compensatory" programs is really just the first step in an effort to "monetize" the environmental goods and services produced on farms. Compensating landowners for the costs of environmental improvements on their properties does, in fact, create an "income stream" from conservation. We are looking at such techniques as removing fish barriers, improving riparian habitats, restoring wetlands, and implementing wildlife friendly agriculture. While many people have been thinking about and working on such efforts for many years, I believe we now have a rare opportunity to begin to implement these efforts on a larger scale.

FEDERAL PROGRAMS

One of the major factors creating that opportunity, of course, is the 2002 Farm Bill. That law provides incredible resources for working lands conservation and the first hints of a shift in the nature of agricultural subsidies. Of course, I'm speaking about the Conservation Title generally and the Conservation Security Program (CSP) specifically. That latter program creates a farm entitlement program based on environmental stewardship. While it remains to be seen what exact format the CSP will take, and how other new programs like the Grassland Reserve Program will take shape, even the more traditional conservation title programs in the 2002 Farm Bill (such as the Farmland Protection Program, Wetlands Reserve Program, Environmental Quality Incentives Program, and the Wildlife Habitat Incentives Program), when combined with state and private resources, provide us with an unprecedented opportunity to advance conservation on our working lands.

The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) is shouldering much of the responsibility for implementing the conservation title of the Farm Bill which provides the largest congressional authorization of resources for conservation on private lands in history. I have worked hard to ensure that the State, too, can increasingly shoulder some of that responsibility. With our existing partnerships as examples, and new opportunities created by Congress in the form of Technical Service Provider rules in the 2002 Farm Bill, we're taking up that responsibility in earnest.

The Resources Agency, in collaboration with our sister agency, the Department of Food and Agriculture, has been actively participating in the development of rules so that those emerging programs can be appropriate to the unique context of California. We are also working to educate our departments about the systems and approaches used by NRCS, and working to identify areas of overlap and collaboration between our state and federal missions. Our goal is to forge more and better partnerships to get more resources to farmers to carry out conservation on the ground for priority resource concerns.

Our statewide conservation assistance programs are critical to the State's end of the bargain. California has numerous grant, cost-share, and assistance programs for private landowners, not to mention preferential taxation rates for farmland, and state Purchase of Development Rights programs for farmland, grazing land, and oak woodlands, including rangeland. In fact, we have more state "compensatory" programs than any other state in the country.

Adding coherence to these efforts, and integrating our efforts more seamlessly with those of our partners in the USDA, will be of the utmost importance in the coming years. Increased collaboration is certainly

of increased importance during tight budget times. We need to be able to deliver as much resource enhancement as possible out of each public conservation dollar – state and federal – spent in California. We believe that our state's investments, the capacity of our departments to provide high quality technical assistance to landowners, and the financial and technical resources of private NGOs speaks volumes about California's commitment to conserving and stewarding working lands.

However, we need more. The sheer size of the challenges – farmland loss to urban and rural residential development, along with the water, air, and wildlife challenges I alluded to at the beginning of this talk – will require more federal resources, and more coordinated state resources, along with redoubled commitments from our partner NGOs.

Part of the reason that the Farm Bill conservation programs are so over-subscribed in this state is the fact that we're far down the list of beneficiaries: California ranked 16th in the country for conservation title dollars in 2002.

Even more indicative of California's poor positioning is the fact that our state NRCS is woefully underrepresented in terms of technical assistance infrastructure and on-the-ground personnel.

For example, there are 3.5 times more NRCS staff and 7.5 times more NRCS field offices in Kansas, Illinois, and Iowa – three states with a combined agricultural value equal to California's. While there are many deserving states, surely California, with the largest agricultural economy in the country, the largest population, the greatest number of endangered species in the continental U.S., not to mention the epic challenges in both air and water quality among a long list of other superlatives, is among the most deserving.

We believe that our state's needs, commitment of resources, and evolving institutional capacity all argue for more federal conservation resources flowing to California. It also argues for us to mobilize more of our technical staff to work cooperatively with NRCS to implement these programs.

WORKING ACROSS PROGRAMS

Let me turn for a moment to some institutional issues. One thing that the Davis administration has done is to work hard to re-build our relationships across agencies and departments working on working lands conservation issues. We inherited a highly balkanized (or "stovepiped") system of highly compartmentalized conservation programs.

Individual landowners, by and large, are not as fascinated by the nuances of programs as are bureaucrats and academics. In my experience, farmers and other landowners really want to know how to get assistance to do the good practices, e.g., easements, re-vegetation, habitat enhancements, erosion control, restoration, that they have planned for their properties.

That is the reason that we're working across programs and in partnership between the state, federal and local government, and with private organizations, to help landowners achieve conservation on their lands. While pundits like to compliment California on being "cutting edge" (and I certainly believe we <u>are</u> on the "cutting edge" about many things) in this instance, we have much to learn from others.

States like Missouri and Arkansas have shared their insights with us about implementing wildlife programs on private lands, and in the room today are experts from Florida, North Carolina, Illinois, and Colorado. The Resources Agency helped to sponsor this meeting in part because, indeed, we have much to learn.

One of the lessons that we've heard from other States and seen confirmed on the ground with our own most successful programs, is that where the State is a full partner in developing and implementing projects, those projects are better and have more lasting results for farmers, wildlife, and people living downstream.

Especially noteworthy have been our state and federal collaborations on the Farmland Protection Program, the Conservation Reserve Enhancement Program, and the Wetlands Reserve Programs. By working cooperatively across several state and federal departments, we have not only helped achieve conservation results consistent with farmers' operations, but we also have helped achieve far better conservation and "returns on investments" than could have been accomplished without working together. These are the types of successes we want to build on.

Starting by improving and expanding these collaborative programmatic efforts and ending with fully fledged markets for conservation products, we can help sustainable practices become standard business practices.

THE CALIFORNIA LEGACY PROJECT

Spending each conservation dollar as wisely as possible has been a hallmark theme of the Davis administration. This is why I launched a new planning initiative called the California Legacy Project when I became Secretary. Housed in the Resources Agency, this is a long-range planning effort to ensure that the State's investments in conservation are made as wisely as possible. Most people, if they think about public conservation investments at all, tend to think about the acquisition of sensitive habitat or important park lands. However, since the project's inception, I have recognized the importance of public and private investments in the environmental sustainability of farms, forests, and rangelands.

For the past year, we have worked in earnest to develop our working lands component of the Legacy Project and we are beginning to get results. Through a significant outreach effort, we are communicating the opportunities of the state and federal programs to local conservation practitioners throughout the state, including Resource Conservation Districts, farmers, ranchers, forestland owners, commodity groups, and others. We are also increasing our knowledge of what can be achieved on working lands in various parts of the state. Similarly, through a massive inreach effort, we have redoubled our efforts to educate our departments about the opportunities for implementing cooperative non-regulatory programs in conjunction with NRCS and local groups.

In fact, much of our efforts over the past year to add coherence to state programs, to participate in the federal rulemaking processes, and to communicate stewardship needs and opportunities has been spearheaded by the Legacy Project.

Over time, those efforts will be aimed at trying to ensure the right fit between the conservation objectives of landowners and programs to achieve conservation on the ground, and particularly in places where it

can help meet our most important statewide priorities. The State, through its many programs, has the ability to help wed strategic conservation planning to locally led conservation.

In the meantime, we continue to work hard to improve the institutional capacity of our departments. As Farm Bill programs are finalized, and our outreach produces a clearer picture of the types of programs that work well for farmers including the conditions under which they can help achieve priority resource concerns, we will be well prepared to assist in delivering those programs on the ground.

REGULATIONS AND CONSERVATION

Part of my job is to be a regulator, and indeed it is my charge to uphold the state laws protecting the public health, safety, and welfare. Those laws will always define the baseline for conservation in the State. Of course, we need far more than just regulations to advance the ball toward improved sustainability.

But we continue to face considerable challenges in harmonizing regulatory requirements with the objective of improving the delivery of these incentive-based conservation programs. For instance, regulations that have been created over the years may need to be improved in order to enable landowners to carry out conservation or restoration activities on their properties. In some cases, it has been easier to pay for conservation than actually break ground on restoration projects because of unintentional regulatory roadblocks.

To help address this concern, the Resources Agency has recently produced a report outlining ways to remove some of the regulatory barriers to restoration activities on private lands. That report was based on the real life work and efforts of a conservation group, Sustainable Conservation, and the NRCS. I'm pleased to say that we are already moving forward on the policy front to implement changes recommended in that report. As Secretary for Resources, one of my responsibilities is overseeing the California Environmental Quality Act, a position I've used to initiate the drafting of a categorical exemption to CEQA for small-acreage restoration activities. This is one of the recommendations of that report.

While we are very enthusiastic about the opportunities for improving conservation on private lands, we must make sure that private lands stewardship programs are implemented in ways consistent with our State and federal regulations, including the Endangered Species Act(s). Safe harbor agreements and related tools are among the ways that we can help ensure that landowners are not disproportionately impacted when they carry out agricultural stewardship activities.

On the State side, we have recently updated our own Fish and Game Code's "safe harbors" program for agricultural operators, and are looking forward to working with producers who wish to take advantage of that program. As Farm Bill funding accelerates, we will continue to pursue options to ensure consistency between Farm Bill stewardship efforts and the state and federal Endangered Species Act(s).

THE FUTURE OF SUSTAINABLE FARMING

There is no question that the challenges farmers face in keeping their lands in production are formidable, and the environmental challenges are at least equally formidable. Farming "business as usual" is changing whether we like it or not. By effectively using the programmatic and market tools that are the subject of this meeting, the future of farming can indeed be a sustainable one.

It's not always easy to take a step back from the challenges of the day to fully embrace the opportunity of a generation. I believe that one such opportunity is available for us to grasp now and that is to utilize conservation programs to provide farmers the wherewithal to generate an income stream from sustainable practices. If, through this process, we succeed in turning conservation into a farm commodity, we will not only save the family farm and our agricultural heritage, we will ensure the continuation of the mosaic of benefits that agriculture produces for California.

2. THE PUBLIC VALUES OF MAINTAINING WORKING LANDSCAPES

Estimating the Income, Environmental, and Social Benefits of Agricultural Conservation Easements from the Perspective of Local Stakeholders

J. Dixon Esseks, Richard C. Owens, Charles A. Francis, Steven E. Kraft, and Dennis Schroeder

Meshing Compensatory and Regulatory Approaches in the Preservation of Farmland

Theodore A. Feitshans

Are Public Funds Being Spent to Preserve the Farmland that the Public Wants to Preserve?

Patricia E. Norris, B. James Deaton, and Brian P. Foley

Is There a Private Market for Farmland Preservation?

Jeffrey H. Dorfman, Bethany Lavigno, John C. Bergstrom, and Barry J. Barnett

ESTIMATING THE INCOME, ENVIRONMENTAL, AND SOCIAL BENEFITS OF AGRICULTURAL CONSERVATION EASEMENTS FROM THE PERSPECTIVE OF LOCAL STAKEHOLDERS

J. Dixon Esseks, Richard C. Owens, Charles A. Francis,
Steven E. Kraft, and Dennis Schroeder
Presented by J. Dixon Esseks

When a farm is being considered for an easement purchase, and local taxpayers must pay all or much of the bill, some politician, journalist, or other person with the public's ear will probably ask, "What's in it for the local community?"

We recommend answering that question by, first identifying the likely local beneficiaries of the proposed purchase and, then trying as well as possible to estimate in dollar terms the benefits they may realize if the land is retained in agricultural use. Among such beneficiaries whose stakes the paper discusses are: owners of adjacent or nearby land that may become more valuable for farming or residential use because development is prohibited on the subject parcel; local travelers driving, biking, walking, or boating past the farmland in question who may enjoy its scenery; local residents who may find recreational opportunities (e.g., hunting, fishing, bird watching) on it; consumers who may purchase fresh fruits, vegetables, or other products raised on that land; owners and employees of local businesses providing goods and services to its farmer(s); users of downstream land and water who may experience less flooding and/or pollution if the land is not converted to homes or commercial uses; and taxpayers who—though having no direct or indirect contact with the particular parcel being considered for an easement—may value farmland preservation for its "non-user" benefits like protection of wildlife habitats, archeological sites, "rural heritage," and other community values.

This paper addresses a practical question that faces many advocates for local programs of purchasing agricultural conservation easements (PACE). When a farm is being considered for an easement purchase, and local taxpayers must pay all or much of the bill, some politician, journalist, or other person with the public's ear will probably ask, "What's in it for the local community?"

We recommend answering that question by, first identifying the likely local beneficiaries of the proposed purchase and, then trying as well as possible to estimate in dollar terms the benefits they may realize if the land is retained in agricultural use. Some of the identified values derive from conventional exchanges of goods and services, while others are non-market "ecosystem services" whose worth society is just beginning to recognize and try to measure. Our paper suggests ways to assign values to several types of benefits, as well as explaining why other important types may not be amenable to dollar-and-cents valuations, but can nevertheless be estimated systematically.

Ideally, the analysis will be applied to several contiguous farm parcels. Benefits for flood control, wildlife habitat, and other values may be greater, not just because of the total quantity of land, but also because of synergistic possibilities when a second or third parcel provides a necessary complement to the first.[1] However, at the launching of a new PACE program, only a single parcel or farm may be the issue. Even after the program is established, a proposed easement with a particularly high price tag may generate enough public controversy that a carefully argued comparison of benefits to that cost is needed.

BENEFITS BY TYPE OF LOCAL STAKEHOLDER

Our literature search identified various types of potential local beneficiaries besides the current owners of the land at issue and any future owners.[2] To avoid "double-counting," the latter two groups should be omitted from the benefits analysis. The easement payment to the present owners would otherwise be considered both as a cost and a benefit. Similarly, at least part of the payment may be double-counted if the analysis were framed to include future owners. Unless hobby farmers or estate buyers bid up the price of farmland without development rights (Nickerson and Lynch 2001), the purchase price of the PACE land should be reduced by some or all of the value of the rights that were removed at the time of the easement sale.

Of the many types of local stakeholders, here are the nine we have chosen to discuss, given the limited space for this paper:

1. Operator(s) of the working agricultural land being considered for the local PACE program.
2. Owners/operators of adjacent or neighboring land that may become more valuable for farming or residential use because development is prohibited on the subject parcel.
3. Local travelers driving, biking, walking, or boating past the farmland in question who may enjoy its scenery.
4. Local residents who may find recreational opportunities (e.g., hunting, fishing, bird watching) on the farmland being considered.
5. Consumers who may purchase fresh fruits, vegetables, or other products raised on that land.
6. Owners and employees of local businesses providing goods and services to the subject farming operation.
7. Owners and users of land downstream in the watershed who may avoid nontrivial flood damage or flood-avoidance costs because storm water runoff from the subject parcel is less than if the same land were developed for housing.
8. Users of downstream water—surface or ground—who may avoid the costs of pollution, delivered via surface runoff or through leaching into groundwater (such as construction-derived sediment, lawn chemicals, and human waste from septic fields) because the subject parcel remains in farm use rather than converted to housing.
9. Local residents having no direct contact with the subject land or the consequences of how it is managed (e.g., the amount of stormwater runoff), but who may value farmland preservation for its protection of wildlife habitats, archeological sites, "rural heritage," and other community values (see Table 1).

Limitations. Dollar measurements of some benefit types—such as those in groups 7 through 9—may not achieve acceptable standards of validity. Those types may be better assessed using physical indicators appropriate to the ecosystem services provided (e.g., for "Maintenance of water quality and quantity," there could be comparisons of storm water runoff and/or of the potential risk of pesticide residues in surface water, under agricultural and housing uses [Bjorklund et al. 1999: 277]).

Not discussed in this paper are services that, though of great significance for human health or economic welfare, are difficult to apportion to individual farms or groups of contiguous parcels such as climate stabilization and temperature moderation (Daily, 1997). For some or many local communities, our inventory of stakeholders may be inadequate. Omitted, for example, are members of the development industry who would benefit if adjoining land were rezoned for residential or commercial use. Another limitation to the analysis is that we do not examine the easement's various costs including the purchase

price and the administrative expenditures leading up to the purchase and required afterwards (e.g., annual monitoring to determine if the easement's conditions are being observed). However, a paper of this size must have a fairly modest focus, so we examine nine types of potential local beneficiaries of agricultural conservation easements.

1. Operators of the Subject Agricultural Land. The farmers or ranchers of the land to be protected have an obvious income interest in the proposed easement, and they may not be the current or likely future owners. They could be operators who presently rent the land and need it to keep their farm businesses viable. An American Farmland Trust publication (Ferguson and Cosgrove 2000) profiles a number of farm families who have made very good use of the business opportunities provided by Vermont's farmland conservation program. However, we prefer to count the income derived from management inputs in "the value-added" category discussed later in the paper for the stakeholder group number 6, Local Providers of Agricultural Inputs.

2. Owners of Adjacent Land and Other Nearby Properties: Farmland. How one parcel of land is used may significantly affect the value of adjacent and other nearby properties. Agricultural rents on those parcels may decrease because of nearby housing development. Operators may avoid renting them or expect a discount because of the problems often encountered when farming near non-farm residences including trespassing that damages crops, vandalism of farm equipment, and complaints about farm odors, noises (e.g., late-night harvesting), dust, chemical drift, and other actual or perceived nuisances (Esseks and McCallister 1986; Lisansky and Clark 1987; Handel 1999). Conversely, rents may increase or at least remain stable when an easement on adjacent land precludes nuisance-causing development.

Estimating Differences in Agricultural Land Rents: If records of local agricultural rents are available, there may be the bases for pertinent comparisons, i.e., the rents charged for pairs of parcels of sufficiently similar sizes, shapes, slopes, and soils, but with one of the pair situated next to residential development and the other located without such neighbors.

Another benefit that owners of adjacent farmland may enjoy is its attractiveness for future purchases of conservation easements. Many PACE programs give priority to farmland contiguous with parcels already under easements (Hellerstein et al. 2002). The advantages of preserving large contiguous blocks include the just-mentioned reduced chances of conflicts with non-farm neighbors and also the greater likelihood of economies of scale, as well as retaining in one area enough clients to support viable agribusiness services (Daniels 1998).

Owners of Adjacent Residential-use Land. Homeowners often pay more to live next to or within view of permanent open space. For example, Handel (1999: 65) found that vineyards on the edge of the City of Napa "provide the open space ambience for adjacent urban neighbors, and those houses sell for higher prices than similar ones down the street."

The amenity benefit may not be limited to immediately adjoining land. A Maryland study estimated that, if easements preserved a hypothetical 10-acre parcel "located in the center of a low-density residential development," the home sites would increase in value by $10,403 to $52,014 for every acre of protected open space, depending on that development's density (cited in Libby and Irwin, forthcoming: 14).

Estimating Dollar Value of the Residential Amenity Benefit. When the number of buildable homes on neighboring land is kept insignificant by firmly entrenched zoning or other land use restriction or perhaps by natural resources constraints (e.g., insufficient potable groundwater or adverse topography), there would be no point in estimating the enhancement in property values due to a nearby parcel of protected farmland. However, if many new building lots are likely (let us say at least 10), the residential amenity benefit may be worth predicting. An appropriately experienced appraiser may be able to predict the likely values of homes with and without the nearby protected farmland. A feasible alternative to appraisers' estimates might be the application of "contingent valuation" techniques that measure consumers' willingness-to-pay (Mitchell and Garson 1993). Since a professional appraisal or a contingent valuation exercise is likely to be expensive, its cost should probably be left to the direct beneficiaries, i.e., the owners of the adjacent land. The latter may need the analysis to determine how to proceed with marketing their land.

Whatever the estimation technique used, we recommend that the predicted amenity value *not* be considered as a benefit to offset the cost to taxpayers of the agricultural conservation easement. In fact, residential development on adjacent parcels may seriously undermine an easement's effectiveness. As mentioned earlier, many PACE programs aim to purchase the development rights for several contiguous farm parcels (Hellerstein et al. 2002), in part to promote economies of scale and also to avoid conflicts between farmers and non-farm neighbors over odors, dust, etc. Daniels and Bowers (1997: 167) warn, "If a PDR [purchase of development rights] program is weakened by inappropriate zoning, easements may be purchased on only a few farms that then become isolated among developed properties."

3. Local Travelers Enjoying Scenery. A type of stakeholder benefit that we do recommend as counting against easement costs is the enjoyment of viewing farm scenery. The land being considered for an easement may be situated along relatively well-used public rights of way—roads, walking/biking paths, and/or waterways—and may be visually very attractive. Conversely, the subject parcel could be obscured by trees or hills or simply too far away to be appreciated, or it could consist of uninteresting or ugly land (i.e., strewn with trash, rusted equipment, or other eyesores).

Some states have identified agricultural landscapes that deserve to be preserved (Olson 1999). In the absence of already developed inventories or to supplement them, local communities may use their comprehensive planning process to designate the views they wish to protect. Alternatively, they may conduct special rating exercises, such as by convening a focus group of citizens to evaluate photographs of candidate fields and associated farm structures. In rating ten photographed farmland scenes, a Georgia focus group of urban/suburban residents "reacted positively to wooded areas, livestock and animals, farm buildings, topography, and irrigation equipment and negatively to other types of farm equipment, old farm buildings, silos and harvested areas" (Patterson et al., 2001: 1).

Estimating Monetary Value of Agricultural Scenery to Potential Viewers. Here are some suggested steps for estimating the monetary value of preserving agricultural scenery:

- The first step would be to ask a focus group or a random sample of adults interviewed in their homes to look at a set of photographs representing experiences they might have, some of which they pay for and some, like viewing farmscapes from a road, for which there is normally no charge. If the valuation exercise focuses on other fee-less experiences that citizens may enjoy, like visiting a municipal or county park, the exercise should be more beneficial to public policy makers than if it focused exclusively on farmland. More data will be gathered, and there will not be the risk of

bias resulting from considering just one kind of recreational activity. Among the fee-paying experiences might be buying and eating a well known brand of candy bar or drinking a can of soda.

- Then the surveyed citizens would be asked to assign a dollar or cents value to the fee-less experiences, including viewing from public roads several different farmscapes, in comparison to the cost (given to the respondents) of the candy bar or soft drink. Participants would be told that, if the farmland views were not important to them, a zero valuation was perfectly acceptable. Also declared to be valid would be small valuations, like a penny to ten cents.
- To arrive at the yearly value of an agricultural viewscape, the average monetary value assigned to that view by the surveyed citizens (let us say 50 cents per trip past the site) would be multiplied by an estimate of the total persons likely to pass that scene in a year's time. That estimate could be derived from mechanical traffic counts for the relevant road. Alternatively, volunteers interested in farmland preservation might do traffic counts by hand. Roads used by large numbers of commuters would produce the highest counts.

4. Local Residents Enjoying Recreation on Agricultural Land.

Fee-paying Recreation on Farms. In a study of the interdependency between rural and urban areas, Butler (2002) inventoried a sizable number of recreational and entertainment experiences that city and suburban residents may enjoy on farms and ranches: "hunting, bird watching, hiking, u-pick activities, boarding horses and horseback riding, or family attractions like a 'maize-maze,' a pumpkin patch, hayrides, gardening classes, dinner in the garden, music in the barn, or overnight accommodation" (p. 8). Libby and Irwin (forthcoming) used the term, "agri-tainment" when discussing the willingness of tourists in Ohio to "pay for the chance to stay at a farm, help with farm chores, enjoy family style Amish meals and generally experience the Amish farm life . . ." (p. 8). Among the fees reported for hunting rights on farmland have been $8,000 a year for use of duck blinds, $150 a half-day for quail hunting (Libby and Stewart 1999), and $600 a day for "access to prime deer habitat" (Libby and Irwin: 9). Among Internet listings of the hourly charges for horseback riding on farmland were rates of $18 and $23.[3]

Estimating the Dollar Benefits of On-farm Recreation: Many or most owners of farmland proposed for conservation easements may not be selling hunting rights or in other ways inviting visitors to recreate on the land. Sokolow and Lemp (2002) concluded from their studies in California that worry about tourists interfering with farm operations or suing if they are injured (or imagine they have been hurt) causes most farmers interested in easement programs to reject public access. Applicant owners who do allow it should be asked to provide data on the last two years' gross receipts and to estimate, at least roughly, the proportion of total clients who are local. Let us say that the farmer and family operate a horseback riding business and that about 75 percent of their riders are local rather than weekend visitors from governmental jurisdictions that do not help to pay for the PACE program. Presumably, the worth to the local clients of that land remaining in agricultural use should equal at least what they pay for the horseback rides. The full monetary value might include, besides the per-hour fees, the costs of traveling to and from the farm (Goulder and Kennedy 1997).

There may be nontrivial numbers of persons who enjoy recreation on the subject farmland *without paying fees*. Residents surveyed in a sample poll could be asked to assign dollar values to a day of hunting, a morning of fishing, or afternoon of hiking (for three examples), either in generic terms or in response to photographs of farmland like the subject parcel. But of course the survey sample would need to include sufficient respondents who actually hunt, fish, or hike.[4]

Alternatively, if the farmer or land owner has reasonably accurate counts of the non-fee-paying visitors, analysts could assign a *minimum* value to each visit equal to the likely cost of driving a private car to and from the farm. For example, the farm might be an average of 3.5 miles from the center of the nearby large town's five major residential areas. Round-trip travel costs by car would then be 3.5 multiplied by 2 and then by some acceptable per-mile value for owning and operating a car. The American Automobile Club provides this information by region, broken down into operating and ownership costs (finance, insurance, license, etc).[5] Let us say that 60 cents is the region's per-mile average cost. Multiplying 7 miles (3.5 X 2) by 60 cents gives us a minimum value of the recreation visit to the farm in the sense that, if the visitor did not value the recreation as worth at least the cost of traveling, he/she would not bother to go there.

5. Local Consumers of Fresh Fruits, Vegetables, and Other Agricultural Products. A national survey of registered voters conducted in June 2001 found that 70 percent of the total of 1,024 respondents said they had bought something in the past year "directly from a farmer, such as from a farmer's market or at stand at a farm or ranch."[6] Another direct marketing channel for local farmers may be "community supported agriculture," that is, subscription services whereby consumers contract with farmers for regular supplies of produce and/or other food that is delivered to their homes (Imhoff 1999). Area farmers may also supply local consumers indirectly through local grocery stores.

Another nontrivial category of local "consumers" may be farm operators and/or agricultural supply firms. They may buy—from the farm being considered for a conservation easement—livestock, grain for feed, and other inputs for agriculture.

Estimating the Dollar Value of Local Sales from the Subject Farmland. Presumably, for tax purposes the farm operator keeps sales records in some detail, including what was sold to commercial buyers and the proceeds from any on-farm stand or other direct marketing. The local components of those sales would represent, at least in gross terms, the monetary stakes those customers have in keeping the subject farm in agricultural production. Adjustments to those estimates would be needed if significant amounts of the sales to local stores were re-exported to outside the community, or a non-trivial proportion of direct sales is to out-of-area customers. An example is when the farmer delivers organically grown vegetables to restaurants several hours away.

6. Local Providers of Agricultural Inputs. Virtually all agricultural producers in this country purchase some inputs such as seeds, fertilizer, equipment, fuel, pesticides, bank loans, and labor. Although consolidation in the input sector and Internet purchases have regionalized much of this activity, some inputs are still likely to be obtained from local suppliers. Collectively, these suppliers may comprise an important group of direct stakeholders for a PACE program. Strongly interested in the viability of these input providers may be a group of indirect stakeholders — farmers who have no intention to offer any of their own land to the program but who fear the loss of seed dealers, equipment repair shops, and other essential agribusiness services if too much farmland is converted. When local suppliers close down, costs of services may increase, promptness of service may worsen, and producers may begin to disinvest in farming. Out of what has been called an "impermanence syndrome," they cease to repair fences, keep up drainage tiles, maintain the sizes of livestock herds, and in other ways sustain the productivity of their operations (Conklin and Lesher 1977; Nelson 1998).

Estimating the Value of a Farm's Purchases of Local Inputs. Production costs per acre may be substantial. For mid-to-late season sweet corn in Pennsylvania, they were estimated to total $1,155 an acre in the year 2000.[7] For loose leaf lettuce production in California in 1996, they consisted of $482 per acre in pre-planting costs, $1,091 in cultural costs, and $2,730 for harvesting (Takele, Aguiar, and Walton 1996). By contrast, for field corn in the country's Heartland Region, the corresponding per-acre estimates for 2001 totaled to only $250.[8]

In any effort to aggregate the dollar value of different kinds of local stakes in preserving a farm parcel, we need to avoid double-counting. Accordingly, if the subject land produces local sales of feed grains, fruits, vegetables, ornamental crops, etc., we should subtract estimates of the cost components of those sales already counted for the previous category of stakeholders, "Local Consumers." Let us say that local sales are produced by about 25 percent of the total acres planted to sweet corn grown on the farm being considered for an easement. A cannery in the next county buys the other 75 percent.

The value to local businesses and workers from the remaining three-quarters of total acreage may be calculable, using an input-output model like IMPLAN (Mulkey and Hodges nd). With data on output revenues, purchases of inputs, and the proportions of the latter supplied locally, IMPLAN estimates (among other things) how changes in one "industry" (e.g., "Food Grains") affects other industries (such as "Agricultural Chemicals") in the same county, group of contiguous counties, or state. The input-output estimates of interest for this part of our paper are those for "value-added," that is, the decreases in wages, salaries, and investment income that local citizens experience when a business like a farm closes. The value-added payments represent local stakes in that closure—money that would otherwise have remained in the local economy rather than the farm expenditures that end up in the hands of businesses located out of the area (like manufacturers of fertilizers). For example, when IMPLAN was applied to Brown County, Wisconsin, it estimated that 40 cents of every dollar that agriculture paid to local construction firms was value-added, while for a dollar going to transportation, utilities, and communications, the corresponding value was 60 cents (Deller et al. 1993).

"Multiplier" Effects: Construction workers and others serving farms may spend most of their earnings locally. The subject farm's fertilizer dealer may also buy most of his/her household goods locally, as well as purchase business inputs from local sources (such as a bank or vehicle maintenance shop). In other words, the subject farm's payments to input suppliers circulate, and their impacts multiply.[9] After an input-output model estimates these "multiplier effects," the analyst can present the full stakes that local input providers have in retaining land in agricultural use.

7. Owners and Other Users of Downstream Land.

Stakeholders for Retaining the Farmland's Capacities to Prevent or Reduce Flooding. Flood damage results from the volume and velocity of stormwater runoff or snow melt. Farmland being considered for a conservation easement may help downstream users of land to avoid the costs of flooding or of installing flood control structures. While individual PACE parcels may not be large enough to make a significant difference for many parcels below them in their watershed, even modest-sized farmland can absorb or detain enough stormwater to prevent substantial damage to its immediate neighbor or to land a parcel or two away. Unless it has steep slopes, pasture land should be effective in reducing runoff. Cropland can also be helpful if applied to it are appropriate conservation practices (e.g., reduced tillage, contour cropping, and terraces). Arnold and Gibbons (1996) cite an EPA study predicting that:

- about 10 percent of the rain runs off when the land is in "natural ground cover" [or well-managed pasture],
- the runoff proportion increases to 20 percent when impervious surfaces range from 10 percent to 20 percent (low-density housing), and
- it climbs to about 30 percent if the imperviousness varies from 35 percent to 50 percent of the total surface.[10]

Who can be hurt by the increased runoff when farmland is converted to housing? In a survey of 281 farmers operating next to rural residential subdivisions in three urban-edge counties of the Chicago Metro region, 19 percent of the sample reported that stormwater runoff from the adjacent homes caused nontrivial yield losses (Esseks and McCallister 1986).[11] In those cases, too many square feet of the subdivisions consisted of rooftops, driveways, patios, horse barns, subdivision roads, and other impermeable surfaces, relative to any stormwater management structures that had been installed.

Downstream residential properties may also be negatively affected. According to the estimates listed two paragraphs earlier, switching a 50-acre field from pasture use to low-density housing would result in a 10 percent-point increase in runoff. For a 3-inch rainfall over 24 hours, this change translates into an additional 54,450 cubic feet of runoff, other things being equal.[12] In the absence of some natural detention capacity (like a wetland) or artificial structures (a pond), that much extra runoff may cause significant erosion or flooding damage in the downstream residential area.

Estimating Savings from Prevention of Flooding. As a first step, the analyst should consult with a hydrologist knowledgeable about his/her area for help in framing the analysis. Is the subject farmland large enough to look for differences in downstream flood or erosion damage beyond only adjacent and other nearby properties? The next step would be either to apply some very general rules[13] for comparing runoff from farmed versus residential uses or to employ a site-specific tool like the Natural Resources Conservation Service's procedures described in its Technical Release 55 (TR-55).[14] These procedures incorporate data on 24-hour rainfalls and measures of soil and ground cover as proxies for both "potential maximum retention after runoff begins" and of "losses before runoff begins."[15] After using the formula to estimate flows given the current agricultural uses, the analyst adjusts it for the higher level of impervious surface attributable to building houses at a density that experts consider likely.

If the difference is substantial and neither natural nor man-made protection is likely to be available to the nearby properties, the area of flooding should be estimated. In the case of farmland, the operators may know from past storms which parts of their fields are particularly vulnerable. The area estimates may be based on the sum of those parts plus some multiplier to account for the greater volume of runoff. Lastly, the number of acres likely to be affected are multiplied by the expected revenue per acre that would be lost and the result converted into an annual average. Among the operators in a 1982-83 Illinois study cited earlier who reported crop losses due to stormwater runoff from nearby subdivisions, the median estimated loss was $200 per year and the 75th-percentile value, $431 (Esseks and McCallister 1986).

Alternatively, the hydrologist who is consulted may recommend against dollar estimates. The value of avoided damages may not be linearly related to differences in stormwater flow. Instead, significant damage may occur only after a "critical threshold" is reached (Farber et al. 2002). Therefore, this kind of potential benefit to an agricultural easement may be best left in physical terms, e.g., the difference in runoff during peak storm events if the land is retained in well-managed agricultural use compared to

the estimated flow under the most likely housing scenario. Any applicable proviso about threshold levels should also be included.

8. Local Users of Downstream Water.

Types of Benefits: Reduced Delivery of Sediments. If farmland is retained in agricultural use, landowners and other users of downstream water may enjoy benefits other than flood control including reduced delivery of sediment and chemicals in the runoff water. In other words, even if the amount of water draining off the subject parcel does not increase, the pollution of that volume may worsen because of housing development. Heimlich (2001) discusses a sediment delivery model for which one of the three predictors is "land cover." Residential use may yield more sediment overall because of the absence of cover during construction time, which could be lengthy depending on the total number of units built and the expected build-out rate, which is a proxy for the time land is without sufficient surface cover.

Another predictor is "the flow path length from the field to the nearest stream" (Heimlich 2001: 19). For example, if the path is long enough (or the build-out sufficiently quick), the volume of sediment delivered to the watershed may be little different or even less than if the land were kept in farming. A third predictor is the land's slope. It may be gentle enough that little soil erosion occurs. However, if the formula indicates significantly more erosion under the most likely development scenario, it may be worth trying to estimate the cost savings from the land remaining in agriculture. For example, a 100-acre parcel might be close enough to a recreational lake or trout stream that sediment-loaded runoff during a prolonged construction period would cause substantial damage.[16]

Reduced Delivery of Chemical Pollutants. Stormwater runoff carrying fertilizers and herbicides used on residential lawns may become a serious pollution consequence of housing built on former agricultural land. But since farming on the same land probably also uses pesticides and chemical fertilizers, a net benefit from agricultural use would require less quantity or toxicity per acre. Farmers generally are more informed on the importance and safety as well as appropriate levels of fertilizer and pesticide to apply. They must be certified to apply restricted-use products.[17] They also tend to have a large economic stake in decisions about levels of application, unlike most urban dwellers. The latter typically face no requirements for education on use of pesticides and their safety.

From a water quality perspective, an organic farm should be superior to housing, unless the residential development proposed for the same land included very good barriers to chemicals entering streams (e.g., vegetated swales and ponds for extended detention [Ewing 1996]). Best management practices on non-organic farms can also minimize chemical-laden runoff. Tippett and Guglielmone (1993) report the findings of an Illinois study that compared instream nutrient concentrations given different widths of vegetated buffers along the streams. If the buffers were less than 100 feet, the model predicted a 140 percent increase in nitrates under urban use compared to the level from farming, while buffers of 200 to 400 feet reduced the increase to 55 percent, and a range of 400 to 1,000 dropped it to 20 percent. The estimated changes were negligible only when the buffer exceeded 1,000 feet.

Estimating Costs Avoided from Sediment and/or Chemical Runoff. The farm parcel being considered for an easement may be too small or far from a stream or other body of water to promise much savings in sediment removal. As mentioned above, sediment delivery varies indirectly with the length of the "flow path." However, that distance may not be great, and records of public works departments or recreational agencies may show that in similar situations housing development on farmland leads to

Table 1. Estimating local benefits of proposed agricultural conservation easements by type of local stakeholder and by type of benefit (excluding the land's owner).

Type of Local Stakeholder	Type of Benefit	Annual Value of Benefit
The operators of agr. enterprises on the subject land	Net income from those farming or ranching businesses.	Estimate it from interviews with current operators; but avoid including it also for the stakeholder category, "Local providers of agricultural inputs" (see below).
Owners of adjacent or nearby agricultural land	Such land's rent may be higher than if development and related nuisances for agriculture occurred on the farmland being considered (FBC) for a conservation easement.	A significant difference may be found if existing records or new data-gathering permits comparisons of rents for pairs of parcels similar to the FBC and its neighbor(s).
Local travelers enjoying scenery	The FBC may offer travelers attractive scenery viewable from public roads, walking or biking paths, or waterways.	Average weekly users of all right-of-ways multiplied by 52 (weeks) and by the average value per trip attributed to that kind of view by participants in a local focus group or in-person survey.
Local residents enjoying recreation	FBC may be open for on-site recreation (hunting, fishing, hiking, horseback riding, bird watching).	Average of past two years' fees for recreation on the FBC, plus estimates of the value of any fee-less recreation (e.g., such persons' average cost of driving to and from the farm)
Local consumers of fruits, vegetables, and other products	FBC may produce locally purchased fruits, vegetables, sod, livestock feed, and/or other products.	Average of past two years' local sales of products raised on the FBC.
Local providers of agricultural inputs to the farm or ranch under review	FBC's operator or owner purchases goods (seeds, fertilizers, pesticides, equipment, fuel, etc.) and services (farm management, grain storage, banking, custom harvesting, etc.) from local providers.	After adjustment for the value of local inputs counted above for "Local consumers," a computerized input-output model estimates the locally retained value of the FBC's payments for labor (including from the operator), seed, chemical, and other inputs.
Owners/users of downstream land	Less stormwater runoff may be predicted, given the FBC's water absorption and/or storage capacities, compared to runoff estimated from land if developed for housing.	Estimated annual dollar value of flooding costs (damage to properties or infrastructure) that are *avoided* because storm water runoff is expected to be less. Or, in the absence of adequate cost records, only the differences in physical flows (e.g., cubic feet of water) are estimated
Users of downstream water	Less water pollution from sediment, chemicals, and/or wastes (human or animal) may be predicted, given the expected management practices for the FBC, compared to pollution estimated from land if developed for housing.	Estimated annual dollar value of downstream pollution costs (e.g., dredging of sediment, loss in fish harvests) that are *avoided* because water pollution is expected to be less. Or, in the absence of adequate cost records, only the differences in physical flows (e.g., cubic feet of water) are estimated
Non-user benefits to the broader community	Among residents with no direct contact with the FBC, there may be satisfaction from protecting wildlife habitats, preserving rural "history and heritage," or achieving other civic benefits.	Randomly sampled households are surveyed about how much, if any, they would be willing to be taxed extra per year to achieve such benefits. Then the average of their responses is multiplied by the full number of households from which the sample was drawn.

costly dredging of streams and lakes or cleaning out of culverts and other drainage structures. Those costs should be converted to a per-acre average for as many years as the likely duration of the bond used to finance an easement—let us say, 30 years.

A search of records may also find nontrivial costs from chemical-laden runoff, such as fish kills in a recreational stream or lake. Nitrogen in water stimulates the growth of algae that when it dies and decomposes, it uses up oxygen which fish and their food plants need.[18]

Although there may be no recorded dollar losses, the extent of savings in chemical-polluted runoff may be estimated such as by random water samples taken before and after a similar farm parcel was converted to housing. Policy makers may prefer to have benefits denominated in dollars rather than physical units of pollutants. However, poorly based monetary estimates would be worse than no estimates.

9. Local Residents Valuing "Non-user" Benefits. So far in our inventory of the potential beneficiaries of an agricultural conservation easement, we have focused on local stakeholders who come in direct contact with the subject parcel or with the consequences of how it is managed. They include its operator, the owners of neighboring land, and persons who may enjoy its scenery from a public right of way, may hunt on it, hike there, eat fresh produce grown there, earn money from owning or working at a business providing inputs to that farm, or avoid flood damage to their own properties or sediment build-up in, or chemical pollution of, water courses they use (because the subject farmland is upstream from them and environmentally well managed).

However, though lacking direct contact with that farming operation, sizable "non-user" groups within the local population may have a conscious or latent interest in preserving it. They may, for example, state in a survey that they value farmland preservation as a means to protect the locality's "heritage and history" (Furuseth 1987, p. 55), because it preserves wildlife habitat (Kline and Wichelns 1996), or since it helps to curb urban sprawl (Krieger 1999). In the absence of direct contacts, there is no chance to record market exchanges, such as when residents pay for fruit at a farm stand, or to infer monetary savings, such as when we use records of past flood damage to estimate costs avoided if the land were to remain in agricultural use.

Instead, we may survey representatives of the broader community about how much they would be willing to pay in extra taxes to achieve the non-user benefits. Either with carefully structured focus groups or with random samples of citizens interviewed in person, there is the opportunity to provide information, including photographs, that the participants need in order to make informed statements of willingness-to-pay. Rather than questioning respondents exclusively about agricultural conservation easements, the focus group or survey should query also about the dollar value to participants of other policy objectives, such as improving public education, fighting crime, and expanding the system of public parks (Krieger 1999). If farmland preservation were the sole purpose being evaluated, citizens might agree to be taxed for it only in order to avoid appearing negative to their focus group facilitator or survey interviewer.

The participating citizens may be asked to evaluate more than one amenity attribute for farmland being considered for protection, such as its potential for providing both wildlife habitat and protection for groundwater (Kline and Wichelns 1996). The contingent valuation literature should guide analysts as they aim to elicit reliable, valid willingness-to-pay estimates from a sample of residents (Mitchell

and Carson 1989). Among the pitfalls to avoid are over-counting of benefits and over-stressing citizens' capacity to deal simultaneously with varied benefit conditions.[19]

CONCLUSION

This paper argues two main points: that local stakeholders for agricultural conservation easements should be identified and their stakes estimated in dollar terms as validly as possible. Skeptics, as well as citizens inclined to support public expenditures for farmland protection, need to know the relationship, at least in broad terms, between the costs of easements and their likely benefits. Counting both types of values in dollar terms facilitates that comparison. Benefits inherently difficult to monetize may be included in the ninth type we discussed, where citizens are asked to assign a dollar value to a set of "non-user" outcomes of PACE programs.

Our list of nine types of stakeholders is not meant to be exhaustive. Nor is the inventory of benefits per type. Omitted, for example, was a farm parcel's possible contribution to taking carbon dioxide out of the air and storing it for long periods of time (Eve et al. 2002). If a local community is dissatisfied with this paper's categories, they should add and subtract or start from scratch. But not to (a) identify the values they seek from a PACE program, and (b) make a serious effort to determine how well a particular parcel of land achieves them risks selecting the wrong farms to preserve while better ones go unprotected.

Most of the benefits we discussed are contingent on good management of the agricultural land. Few people may find scenic value in a farm field marred by erosion gullies or strewn with rusted equipment. Similarly, the farm may have a stream full of trout, beautiful woods, and plentiful game but be completely closed to fishermen, hikers, and hunters. A farmer motivated neither by good stewardship nor fear of regulatory enforcement may cause more chemical runoff into nearby streams and fecal pollution than even a sizable rural subdivision with extensive grass lawns and individual septic systems on the same land.

Finally, while we recognize that assumptions must be made on the specific values for different benefits, these can be improved by consulting local experts and by using focus groups or surveys of citizens. We offer a framework for analysis that hopefully will generate fruitful discussion of both the concept and the suggested methods for measuring the income, environmental, and social values of preserving land for agricultural use.

FOOTNOTES

[1] For example, a species of wildlife may require a variety of habitats to survive. Contiguous tracts, especially with protected corridors between them, may provide the necessary variety that a single farm does not (Copsey 1993).
[2] Especially useful sources about the amenity values of farmland are: Bergstrom 2001; Bromley, 2000; Hellerstein et al. 2002; Libby and Irwin (forthcoming); Libby and Stewart 1999; and Olson 1999.
[3] See, for example, the listing for a Wisconsin farm: www.redridgeranch.com/ride.htm [accessed January 4, 2003).
[4] An earlier section of this paper discussed estimating the dollar value of driving past scenic farmland. Presumably, almost all members of the focus group would have past experiences of that kind with which to frame their estimates for the subject parcel.

[5] Automobile Club, Southern California. *Your Driving Costs in Southern California*. Available at www.aaa-calif.com/members/corpinfo/costbrch.asp [accessed February 18, 2003].
[6] American Farmland Trust. Center for Agriculture in the Environment. 2001. Protecting our most valuable resource: Results of a national public opinion poll. Available at www.aftresearch.org/farmbill/ [accessed May 16, 2003]). When the sample was expanded later that summer to 2,216 respondents, the percentage was 69 percent.
[7] This was the amount estimated when the corn was harvested by hand. The machine-harvested cost was $1,019 per acre (Pennsylvania State Cooperative Extension, *Agricultural Alternatives*: http://agalternatives.aers.psu.edu/crops/sweet_corn/index.htm. [accessed January 12, 2003]). In an e-mail message dated February 14, 2003, Professor Michael D. Orzolek of Pennsylvania State University provided the crop year for these cost estimates.
[8] The land's rental rate is excluded because it is paid to the owners, and in this part of the paper we are interested in payments to other stakeholders. Also not included is the "Opportunity cost of unpaid labor," because we are focusing on actual payments. The source is USDA Economic Research Service, "Data: Commodity costs and returns," available at http://www.ers.usda.gov/Data/CostsAndReturns/data/current/C-Corn.xls [accessed December 26, 2002].
[9] A report by USDA's Natural Resources Conservation Service used IMPLAN to estimate the employment, sales, and value-added effects of converting 1,000 acres of rice production to wetlands (Ransom and Buland 2000). Separate multipliers were calculated for (a) the food grains industry (including its operators, landowners, and workers), (b) businesses outside that industry but serving it like maintenance and repair, and (c) "households and institutions affected by the initial loss in Food Grains total sales" (p. 24). The model estimated that, "For each dollar of lost rice sales, 76 cents of value-added (income) is lost in the Food Grains Sector . . . 8 cents is lost in a ripple effect to other businesses in the Region, . . . [and] 32 cents of income is lost to households" (p. 25).
[10] Imperviousness above 50 percent may indicate apartment houses or commercial uses.
[11] Not all surveyed farmers were downstream of the subdivision. Many were upstream. Sixteen percent of the total sample reported problems with damaged drain tiles and ditches that they attributed to the subdivisions.
[12] If a three-inch rainstorm fell on 50 acres of farmland, and the runoff ratio were as low as 10 percent because of pasture and other permanent cover, the estimated runoff would be 54,450 cubic feet. If, because of housing development, the ratio increased to 20 percent, the runoff would also double to 108,900 cubic feet.
[13] By "general rules," we had in mind the US EPA runoff ratios cited by Arnold and Gibbons (1996) discussed above.
[14] Technical Release 55 (TR-55) presents simplified procedures for estimating runoff and peak discharges in small watersheds. USDA, Natural Resources Conservation Service. 1986 *Urban Hydrology for Small Watersheds.* p. 1-1. [Washington, D.C.
[15] Urban *Hydrology*, p. 2-4.
[16] The American Farmland Trust worked with other conservation organizations, including Trout Unlimited, to purchase conservation easements to farmland along a creek in Wisconsin that was threatened with development and that offered particularly good habitat to brown trout (*American Farmland: The Magazine of American Farmland Trust.* 2002. Trout benefits from well-managed farms. Summer. pp. 5-6).
[17] See, for example, information on California's regulatory program: California, Department of Pesticide Regulation, *Licensing and Certification Program*: Available at www.cdpr.ca.gov/docs/license/liccert.htm [accessed February 20. 2003].
[18] US Environmental Protection Agency, Mid-Atlantic Integrated Assessment, *Eutrophication.* Available at http://www.epa.gov/maia/html/eutroph.html [accessed December 28, 2002].
[19] In a contingent valuation survey of water benefits, respondents were encouraged to consider such potential reasons for valuing water quality as if they, themselves, used freshwater for fishing, boating, swimming, picnicking, or birdwatching and "I get satisfaction from knowing other people may use and enjoy freshwater" (Mitchell and Carson 1989, p. 343).

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MESHING COMPENSATORY AND REGULATORY APPROACHES IN THE PRESERVATION OF FARMLAND

Theodore A. Feitshans

There is a large body of law governing agricultural land preservation. Historically, programs were voluntary with compensation provided as an incentive to participate. Compensation based programs remain very important, but there is a trend toward adding regulatory components to the mix of legal tools. These tools include agricultural districts, right-to-farm laws, conservation easements, purchase of development rights (PDRs), transfer of development rights (TDRs), use value taxation, agricultural area zoning, and environmental regulations that encourage farmland preservation. No successful farmland preservation program can rely on any one type of legal tool. Some mix of voluntary and involuntary, compensatory and regulatory tools is required. It is more important than ever before to understand the full range of compensatory and regulatory programs available and the interactions between them. Agricultural district programs vary greatly from state to state.

INTRODUCTION

Approaches for preserving farmland are best viewed as a continuum ranging from voluntary incentive-based programs to command and control regulation. Most farmland preservation programs use a mix of voluntary and regulatory approaches. Even those programs that are generally considered voluntary incentive-based programs contain regulatory elements. Likewise, political unpopularity, constitutional constraints and practical considerations of enforcement dictate that there are few or no farmland preservation programs based upon a pure command and control regulatory approach. It is unlikely that any program representing either end of the spectrum exists.

Farmland preservation is a term for which there is no precise definition. Broadly defined, even the commodity support programs that are revised with periodic farm bills could be seen as farmland preservation programs in that these programs provide the essential supplements to income that a majority of U.S. farmers require to remain in agriculture. Without doubt we would see a shift toward lower cost producers abroad were these programs to cease. The land would then either be fallow or shift to other uses such as forestry, recreation, or industrial, commercial or residential development (Blank 1998). Nonetheless, farmland preservation needs a somewhat tighter definition if it is to have any use at all. For the purposes of this paper, farmland preservation approaches have keeping farmland in that land use as a stated goal. Farmland preservation is often confused with open space preservation and indeed such programs may overlap. Both have as their goal the prevention of urban or suburban development of selected tracts or areas. They differ in that open space programs have as their goal only the prevention of development while farmland preservation programs seek not only to prevent development but to retain land in active farming.

Voluntary farmland preservation programs include statutes that restrict the right of neighboring land users to maintain nuisance actions, cost-share programs designed to help farmers pay the costs associated with a host of environmental regulations, a variety of temporary and permanent conservation easement programs, property tax abatement programs, and voluntary agricultural district programs. Regulatory programs include agricultural area zoning, mandatory agricultural districts, growth boundaries, and transfer of development right programs. This paper will examine voluntary approaches first, then regulatory approaches, and conclude with a discussion of how these programs can be meshed.

LEGAL TOOLS FOR FARMLAND PRESERVATION

Use Value Taxation and Other Tax Benefits. Most states have programs that allow farmers to pay reduced taxes on their agricultural real estate. Under these programs farmland is taxed at its value as farmland rather than at its fair market value (Smutko 1999). Typically, these program are voluntary with farmers opting in through an application process. In some states these programs are free standing and in others they are tied to agricultural district programs. The requirements for these programs vary from state to state. Most require that land be used in horticulture or farming, that there be a minimum number of acres, and that good husbandry be employed. Almost all of these use value programs have rollback or penalty provisions that require any farmer who converts the land to a non-qualifying use pay not only tax on the fair market value in the year of conversion but also taxes foregone for some period of years prior to the conversion event. The number of years in the rollback varies from state to state (Colligan 2001).

Use value taxation programs for property tax relief should not be confused with the use value program for relief from federal estate taxes. I.R.C. section 2032A provides that property used in a farm or other closely held business may be valued for purposes of the estate tax at the value of that property as used in the farm or business rather than at its fair market value. The value of a gross estate (for decedents who died in 2002) can be reduced by up to $820,000. With the top estate tax rate in 2002 set at 50%, this reduction in the value of the gross estate can be instrumental in helping a family keep its farmland for the next generation. To use the program, the executor or administrator of the estate must make an election to participate and each heir with an interest in the property must sign a contract with the IRS under the terms of which they agree to the recapture of the tax from them should the land be converted to a non-qualifying use or an owner become non-qualifying during a ten year recapture period. (Harris, 2001)

Owners of farms may also avoid selling property to pay taxes by using I.R.C. section 6166 to make installment payments of the estate tax due. The decedent's interest in the farm or closely held business must have exceeded 35% of the adjusted gross estate for the heirs to qualify for this program. For the first five years principal payments are deferred with only interest due. Over the remaining ten years principal and interest payments must be made. Interest rates are highly favorable compared with borrowing the money from a private lender (Harris 2001). A summary of tax benefits that support farmland preservation may be found in Table 3.

Right-to-Farm Laws. All states have right-to-farm laws (Hamilton 1998). Right-to-farm laws are designed to protect farmers from nuisance suits. A nuisance is a category of tort that involves an unreasonable interference by one landowner with the right of another landowner to use and enjoy his or her property. An extreme result of a nuisance suit is that the farmer is forced out of farming as a result of a court injunction to cease certain practices. Most right-to-farm laws were enacted by state legislatures as the result of a 1972 Arizona case involving a real estate developer and a large cattle feedlot. The developer bought land adjacent to a large feedlot because the land was cheap. The developer then sued the feedlot owner in nuisance and requested that the court enjoin the further operation of the feedlot. The purpose of most right-to-farm laws is to reverse the common law coming to the nuisance rule. Under the common law, the fact that the plaintiff's land use was second in time (the plaintiff came to the nuisance) does not prevent the landowner's use, which was first in time, to be found to be a nuisance. There are other forms of right-to-farm laws such as those that require pre-filing mediation. Mediation is a form of alternative dispute resolution that is considerably cheaper than litigation. Where employed,

it allows landowners the opportunity to resolve their differences without resorting to court (Richardson and Feitshans 2000).

Agricultural District Programs. Agricultural district programs vary greatly from state to state. These programs are typically voluntary but may be regulatory in nature. Even with voluntary programs there may be considerable variation as to whether the farmer can opt out after having joined a district. The benefits of districts also vary greatly. In some states only those farms that have opted to participate in an agricultural district receive the benefit of the right-to-farm law and use value taxation. In other states these programs are not tied together. Most agricultural district programs provide participants in an agricultural district program with some form of official representation in county or other local government. This may be the only official voice that the local agricultural community has in local government. As such, it can be crucially important to ensuring that the needs of agriculture are included in local government decision making. There may also be limitations on adverse governmental actions (e.g., adverse zoning decisions and related enforcement decisions, *Township of Franklin v. Hollander*) and the authority of local governments to regulate agriculture, limits to condemnation, notice (record or otherwise) to potential buyers of property in close proximity to an agricultural district, and limitations on the ability of local governments to assess fees for infrastructure improvements such as construction of water and sewer lines (Hellerstein, et al. 2002).

Planning. Planning is a key component of any approach to farmland preservation. Unlike open space preservation or preservation of land with unique or historic features, farmland cannot be preserved in isolation. Maintaining viable agricultural production on farmland depends upon preserving the infrastructure of agriculture. The infrastructure of agriculture includes adequate roads without excessive congestion for moving equipment from one tract of land to another, and adequate roads for moving products to markets and inputs to the farm. This infrastructure that is external to the farmland itself will not be preserved unless adequate concentrations of farmland are maintained so that those supplying farms or buying from farms can maintain adequate incomes. Many jurisdictions have incorporated farmland preservation within their overall land use planning process (Thompson 1999).

Conservation Easements. A conservation easement is a deed restriction that limits the use of property to uses compatible with conservation purposes stated in the instrument that created the conservation easements. A conservation easement may be created for a term of years or in perpetuity. To receive full federal income and estate tax benefits a conservation easement must be perpetual. Perpetual conservation easements that have been created under the Conservation and Historic Preservation Agreements Act will generally meet all requirements of federal tax law. The Conservation and Historic Preservation Agreements Act is a uniform model act that has been adopted in many states. In those states that have not adopted a version of the model act, creation of a conservation easement that meets the requirements of federal tax law may be more difficult, especially if there is any doubt as to whether the easement lasts in perpetuity.

Conservation easements may be either donated or sold. They may be held by either a unit of government or a private non-profit land trust established in compliance with I.R.C. section 501(c)(3), which section permits the donor to deduct any donation as a charitable contribution subject to certain limitations contained in 26 U.S.C.£170(b). Creation of a conservation easement follows the same format as any real property transaction. The landowner must disclose known title defects, security interests in the property, marital status, and the existence of any known environmental hazards on the property such as hazardous waste. The agency receiving the conservation easement must cause an abstract to be prepared

to ascertain good title and perform due diligence as to any environmental hazards on the property. In addition to these basic requirements for any real property transaction, the agency receiving the conservation easement and the landowner must assure that the easement will be in perpetuity and that it is established for a conservation purpose. IRS regulations define the acceptable conservation purposes. Any reservation of rights by the landowner, e.g., the right to build an additional dwelling for a child who wishes to join the farming operation, must not undermine the conservation purpose of the easement and must not violate the IRS regulations. Of particular importance to farmland preservation the IRS regulations suggest, but do not definitively state, that some pesticide practices as well as some forestry practices such as clear cutting will fatally undermine the conservation purpose (26 U.S.C.£170(h); 26 C.F.R.£1.170A-14).

Conservation easements are created by a deed that is recorded in the land records of the county or parish where the property is located. The deed should set forth the physical boundaries of the property that is subject to the easement and the applicable state law under which the easement is created. The easement must also set forth the restrictions on the use of the property and the right of the agency or land trust holding the easement to enter the property at reasonable times for purposes of monitoring compliance with the terms of the easement. The restrictions upon the uses of the property must be set forth with specificity that includes any reservation of rights by the landowner. The restrictions should be such that commercial agriculture is feasible. Special attention should be given to the unforeseen affects of changes in markets or technology. Special attention should also be given to the need to maintain adequate income opportunities. This may include provision in the easement that permit outdoor recreation activities such as those typically associated with agritourism. Agritourism is the best financial opportunity for farms in many parts of the United States. These activities include nontraditional activities such as corn mazes, petting zoos, and hosting of corporate events. A conservation easement that is overly restrictive will limit income opportunities.

A well-drafted conservation easement should also address stewardship and enforcement issues. Stewardship includes monitoring of the property for compliance and education of the landowner (and in particular subsequent landowners) about compliance and conservation. Stewardship also includes reviewing and approving proposed changes in use in accord with the terms of the conservation easement. It also includes warning the landowner to correct violations of the terms of the conservation easement. Ultimately, if the landowner fails to comply with the terms of the easement, then it is the duty of the agency or land trust that holds the easement to bring a legal action to force the landowner to comply with terms of the easement. A well-drafted conservation easement may include provisions for the use of alternative dispute resolution to resolve issues between the landowner and the holder of the conservation easement. Typically, the alternative dispute resolution clause will provide for either mediation or arbitration. Alternative dispute resolution is generally cheaper than litigation and results in less bitterness. Since the relationship between the landowner and the easement holder is ongoing, alternative dispute resolution can be useful to promoting a healthy relationship. Most disputes do not arise with the landowner that donated the easement but these often occur with subsequent owners. These subsequent owners may neither understand the terms of the easement nor the conservation values that are protected by it. Agencies or land trusts that hold easements generally conduct landowner education to help avoid disputes.

For donated conservation easements the charitable deduction is calculated as the fair market value before application of the easement less the fair market value of the property after application of the easement. The full appreciated value of the property rather than the basis (what was paid for the

property plus adjustments) of the property is used in calculating the value of the donation. Thus a portion of the charitable deduction is attributable to capital gain that will never be subject to taxation. For sales of conservation easements, the taxable gain is calculated in much the same way with a reduction for the portion of the basis in the property that is allocated to the conservation easements. If the conservation easement is applied to the entire property, all of the basis may be applied to the conservation easement up to the fair market value of the property. If the conservation easement is applied to only a portion of that property then the basis is allocated between the portion to which the easement applies and the other portion to which no conservation easement applies.

Many easements are created as a bargain sale with the conservation easement priced at less than fair market value. The difference between the fair market value of the easement and the sale price of the easement is the amount that is deductible as a charitable deduction. The proceeds from the bargain sale less any basis allocated to those proceeds is taxable as a capital gain. Charitable contributions that exceed the annual percentage limitations on deductions may be carried over for up to five years (26 U.S.C.£170).

Most states also allow a deduction for the donation of a conservation easement so there is a charitable deduction on the state income tax return as well as the federal. North Carolina and Virginia allow a tax credit for the donation as well as a charitable deduction. The North Carolina tax credit has an annual cap, but unused credit can be carried over for up to five years. The Virginia credit is transferable. The easement also reduces the fair market value of the remaining property so that property taxes will be lower. Some states have laws that specifically require the taxing authorities to consider the easement as a factor affecting valuation. Where use valuation is available, the impact of donating an easement upon property taxes may not be significant since the property was already taxed at its value as farmland.

There are also federal estate tax benefits associated with conservation easements. Rather than donating a conservation easement during life, the easement may be donated through the estate either under the terms of the decedent's will or by mutual agreement of the heirs. The charitable deduction is then applied to reduce the taxable gross estate. The value of a property to which a conservation easement has been attached either during life or at death may be reduced by 40 percent for purposes of valuing it in the gross estate. This reduction in valuation is limited to a maximum of $500,000.

There are easements created under law other than versions of the Conservation and Historic Preservation Agreements Act or its equivalents. Those that may be created under the 2002 Farm Bill are of particular note. The Wetlands Reserve Program (WRP) allows farmers to enter into 1 year cost-share agreements or 30 year or perpetual easements. Cost-share money is available for wetlands restoration under either the 30 year or the perpetual easement. The Farm and Ranch Lands Protection Program (FRPP), formerly the Farmland Protection Program, also provides funds for the purchase of 30 year or perpetual conservation easements. The Grassland Reserve Program (GSP) pays for long-term contracts or easements to protect grasslands. While conservation easements under these 2002 Farm Bill programs may benefit active farms by providing income and by improving compliance with existing environmental regulations, neither the WRP nor the FRPP are designed to place easements on working farmland. The easements are placed upon land, that while part of the farm tract, that is peripheral to the farming operation. By contrast, the GSP is designed to protect land that is actively used for grazing. In addition to the 2002 Farm Bill there are additional statutes such as the Migratory Bird Hunting Stamp Act and section 404 of the Clean Water Act under which conservation easements may be created. Conservation easements are used under section 404 of the Clean Water Act to protect wetlands that are created or

restored to provide mitigation for wetlands that are destroyed pursuant to a permit issued under section 404 of the Clean Water Act. Conservation easements created under laws other than the Conservation and Historic Preservation Agreements Act generally do not provide the tax benefits that were discussed above (Feitshans 2002).

Purchase of Development Rights (PDR) Programs. Local governments operate most PDR programs with states taking the subsidiary role of providing financial resources and technical support; a few states (Connecticut, Delaware, Massachusetts) operate their own programs. Such programs purchase conservation easements on properties that fit with the governmental unit's open space and farmland preservation program. Since government resources are generally scarce, most of these programs concentrate on perpetual easements as a means for maximizing the effectiveness of scarce resources. However, there is no requirement that PDR programs use perpetual easements exclusively. Governments that lack funds to purchase conservation easements on a current basis may lease the development rights to lands that they wish to preserve. Generally these leases of development rights will include an option to purchase a conservation easement by some future date. A few PDR programs allow for purchase of development rights for a fixed term as well as for perpetuity. Governments seldom purchase fixed term conservation easements because the transaction costs for such easements are almost the same as for perpetual easements and the purchase price of such easements is often not significantly lower than that of perpetual easements. Nonetheless, purchase of fixed term conservation easements might fit within a land use plan that calls for staged development of selected agricultural areas.

PDR programs are generally voluntary; however, it is certainly possible to use the government's eminent domain powers to compel the sale of development rights. Few, if any, PDR programs include compelled purchases of development rights, although PDRs may also be compelled as development mitigation.

PDR programs can provide significant tax benefits to farmers. If the governmental unit operating the PDR program has the requisite authority, it can purchase the conservation easement with an instrument in the nature of a municipal bond and the sale can be structured as an installment sale with the landowner receiving interest only for up to 30 years. Since the instrument is in the nature of a municipal bond, the interest payments are free of both federal and state income taxes. The principal is taxable in the year paid so the installment method may be used to spread payments to take advantage of lower tax rates available at lower income levels. To summarize, the original landowner receives tax-free income and the continued right to farm the land. The landowner (or heirs, if the landowner dies before the end of the contract) receives tax-free income for the remaining term of the bond as a continued right to farm the land. If the landowner dies before all principal is received under the contract, subsequent principal payments are income in respect of a decedent and taxable as a capital gain to the extent that basis is exceeded.

A landowner that sells his development rights outright may also qualify for a tax-free like-kind exchange under I.R.C. section 1031. It is possible for a conservation easement to be exchanged for a fee simple interest in other real property. Thus it is possible for a farmer to sell his development rights to a government through a PDR program, continue farming the land that is now subject to a conservation easement, and use the proceeds to acquire additional land in a transaction that is entirely tax free. This may be done not once but multiple times by selling a conservation easement on the newly acquired property and so on with additional properties. Thus, a farmer may use proceeds from a PDR program to considerably expand the land that he is using for his farming operation. The IRS regulations under

I.R.C. section 1031 are complex and applied without flexibility so tax advice from an experienced professional is essential to the successful conclusion of any tax-free exchange (Feitshans 2002).

Agricultural Area Zoning and Urban Growth Boundaries. Zoning is a powerful regulatory tool used to ensure that incompatible land uses are not located adjacent to each other. The overall goal of zoning and the source of its public support is to enhance property values. Zoning is conducted through ordinances that group like land uses in areas or zones. Zoning has been found to be constitutional as long as it is applied even handedly. No property owner is entitled to the highest and best use of his property; an owner may only expect that his property will retain a reasonable amount of economic value.

Forms of agricultural area zoning vary greatly from one jurisdiction to another. All are designed to preserve an area within which agriculture is the predominant land use. The two primary types are exclusive agricultural zoning and non-exclusive agricultural zoning. The former is very unpopular with farmers because it denies them the possibility of "cashing out" - the possibility of selling the farm for far more than its agricultural value and retiring on the proceeds. For that and others reasons, it is less commonly used than non-exclusive agricultural zoning.

Non-exclusive agricultural zoning is less draconian than exclusive agricultural zoning. Other uses are discouraged through minimum lot sizes and restrictions on commercial and industrial activities. Setting the lot size is often problematic. If the minimum lot size is too small, residential development may proceed with very low density. Such low density can contribute to sprawl with the concomitant result that additional farmland is lost to low density residential development.

Some agricultural area zoning schemes also include urban growth boundaries that are designed to prevent sprawl onto land designated for agriculture. Programs that include growth boundaries will have strict limitations on any development beyond the growth boundaries. Landowners of property that is located beyond an urban growth boundary have typically seen precipitous drops in the values of their property after institution of the urban growth boundary (Thompson 1999).

Transferable Development Rights (TDRs). TDRs are rights to develop property that may be bought and sold by landowners. A prerequisite to a TDR program is the existence of comprehensive zoning and a receiving area and a sending area. The receiving area is one in which the governmental authority has determined that higher density growth is desirable. The sending area is one in which a lower density than that for which the property is zoned is considered desirable. Landowners in the sending area may sell their development rights to a landowner in the receiving area who then uses those rights to increase the development density beyond that which the zoning already allows. The landowner in the sending area that sells his development rights is then prevented from developing his property to the limits of the zoning through the application of a conservation easement to the affected property. One of the difficulties to establishing a TDR program lies in developing and maintaining an adequate market in the TDRs. TDR programs are typically used only in densely populated areas (Feitshans 2002).

FARMLAND PRESERVATION PROGRAMS IN PRACTICE

It has been suggested that what is needed is a "hybrid" approach to farmland protection (Thompson 1999). Such an approach meshes voluntary and regulatory approaches. To craft a hybrid approach it is helpful to know the motivations and demographic characteristics of landowners that have already

protected land from development. There are only limited studies of these issues; however, a North Carolina study of non-industrial private forest landowners determined that those who donate easements are different from the population of such landowners overall. Differences include higher educational attainment, larger land holdings, and higher incomes. Those who donated easements are also more likely to have acquired their property by purchase (Gaddis 1999). The two most important factors (cited by about 90% of the survey respondents) motivating these landowners to donate easements were protection of the land from development and protection of green space. Protection of wildlife habitat (77%) and recreation (63%) were the next highest motivations for donations. Income or estate tax advantages were the only other motivation chosen by over 50% of the respondents (Gaddis 1999). Since this survey was confined to forest landowners, it is not directly applicable to owners of farmland. However, its conclusion that non-monetary factors are considerably more important than monetary factors is consistent with the author's experience working with owners of farmland on farmland preservation issues. With such a high level of non-monetary motivation among landowners, their voluntary participation can be expected to substantially reduce governmental expenditures. The remainder of this section will explore actual examples of programs that mesh the voluntary approach with the regulatory.

Pennsylvania. Pennsylvania has preserved more acres of farmland and more farms than any other state (Pennsylvania Bureau of Farmland Preservation 2003). Pennsylvania has established the State Agricultural Preservation Board whose duties include overseeing all farmland preservation efforts. Pennsylvania has a voluntary agricultural district program through which districts called Agricultural Security Areas (ASAs) are created. Participation in an ASA is voluntary. An ASA is established through petition to township supervisors by farmers who wish to participate. After the ASA is established, additional land can be added at any time. The entire ASA is subject to review every seven years. Benefits of participation include special consideration regarding the application of local ordinances, nuisance actions and condemnation actions by state and local authorities.

Participants in ASAs are also eligible to participate in Pennsylvania's PDR program. The Pennsylvania Agricultural Conservation Easement Purchase Program was created in 1988 to allow the state, county, and local governments to purchase conservation easements. The State Agricultural Preservation Board distributes state funds, approves and monitors county programs, and approves specific conservation easement purchases. Properties offered for conservation easement purchase are rated based upon land quality, stewardship, and the likelihood of conversion. Farmers may choose between three payment options: lump sum, five-year installment, and long-term installment. Interest paid on the installment obligations is treated for income tax purposes in the same manner as interest on tax-free municipal bonds.

The Clean and Green Program is Pennsylvania's use value program. It is administered by local taxing authorities and requires that the land remain in a designated use that may include agricultural use, agricultural reserve, and forest reserve. Tax is based upon the designated use rather than fair market value. The purpose of the program is to preserve agricultural land, forestland, and open space. There is a seven-year rollback and interest penalty for landowners that convert to a use other than the designated use.

Maryland. While Pennsylvania elected to use voluntary approaches, Maryland elected to use significant regulatory elements in addition to the voluntary elements. Chief among these are agricultural zoning

(Pennsylvania also authorizes such zoning by localities) together with urban growth boundaries. Montgomery County, Maryland is noted for its program (Thompson 1999). To mitigate the impact of its urban growth boundary, Montgomery County also uses a TDR program. Despite the mitigation provided by the TDR program, the regulatory restrictions on land in Montgomery County's agricultural area dropped by as much as eighty percent after the restrictions were imposed (Feitshans 2002). The program has withstood legal challenges. Maryland also has voluntary programs that include use valuation and very active PDR programs.

No other Maryland county has even begun to approach Montgomery County's level of protection. Despite such a high level of protection, Maryland has lost 2 acres of farmland for every acre that it has protected (Thompson 1999). Of course, it must be recognized that this may be success given the intense development pressures in the Washington area, the lack of regional coordination, and public policy interests (Epstein 1997).

The *Washington Post* recently reviewed programs that protect land from typical suburban housing development (Whoriskey 2003). The *Post* found that although half of the land surrounding Washington, D.C. is now protected, development has not stopped. Density limits resulted in much of the land protected being converted to "estates" or hobby farms. Montgomery County's land in farms has dropped from 106,000 acres in 1982 to 77,000 acres in 1997. Moreover, the *Post* noted that the protected land had lead to "leapfrogging" whereby agricultural reserves were bypassed and growth sprawled further from the city center. Furthermore, the *Post* concluded that land use restrictions had pushed up real estate prices and reduced the supply of affordable housing.

CONCLUSION

A wide range of legal tools are available to protect farmland. A number of these, such as use valuation and other tax programs, voluntary agricultural districts and PDR programs are voluntary. Regulatory programs include agricultural zoning and urban growth boundaries. The mix of programs used will depend on the relative preferences of the voters for regulation versus voluntary programs. The availability of enforcement resources will also be a factor in the selection of regulatory versus voluntary programs. While voluntary programs may require significant monitoring and enforcement resources, that requirement will generally not be as great as for regulatory programs. Table 1 is a matrix of farmland preservation tools and the types of entities that typically use them. Whatever the mix of programs that are employed, there remains a question of long-term effectiveness so long as the public demand for quiet, single family neighborhoods remains and agriculture lacks profitability without massive federal subsidies. Table 2 summarizes the factors that are supportive or detrimental to successful farmland preservation efforts.

Table 1. Matrix of Entity Types and Programs

Entity type / Program	Local govt.	Local taxing authority	Private land trust	Zoning board	Local planning dept	State hwy dept	Water/ sewer authority	USDA	State/ dnr	State taxing authority	IRS	S&W/ Dist
TDR	x			x	x				x			
PDR	x		x		x			x	x			
Conservation Easement	x		x		x			x	x			x
Planning	x			x	x	x	x		x			x
Agricultural District	x											x
Right-to-Farm	x								x			
Use value taxation		x		x	x				x	x		
Estate tax preference										x	x	
Charitable deduction									x	x	x	
Tax credit										x		
Water/ sewer planning	x				x		x	x	x			
Roads	x				x	x						
Zoning	x			x	x							
Urban growth boundary	x			x	x				x			

Table 2. Factors that Support/Detract from Successful Meshing of Regulatory and Compensatory Programs

Supportive Factors	**Detrimental Factors**
Regional comprehensive planning that includes roads, water and sewer	Jurisdictional patchwork: roads, water & sewer independently planned and implemented
Consistency across statewide & local comprehensive plans	Fragmented infrastructure ownership including roads, water & sewer that may be privately owned
Coordination among local, regional & state governments	Intense development pressure
Cooperation among local governments & between local, regional, and statewide agencies	Local funding heavily property tax-based
Containment of development to designated areas	Lack of state revenue sharing/unfunded mandates forced upon local governments
Supportive state, regional & local institutions & legal structures	Strong local autonomy (home rule)
Collaboration including public participation and landowner & public education	Arbitrary use of regulatory & eminent domain powers/lack of public & landowner participation
Equitable sharing of the revenue base between jurisdictions	Polarization of interest groups
Popular (voter) commitment	Lack of popular (voter) commitment
Economic development, planning & conservation integrated across local, regional & state governments	Fragmented implementation of economic development, planning & conservation
Consistent funding including rewards to communities that participate in state plans	
Critical mass of agricultural operations and supporting businesses	
Local agriculture economically viable	
Local markets for locally grown agricultural products	
Adequate insurance available	

Table 3. Summary of Tax Benefits Supporting Farmland Preservation

Real property tax	- Reduction in Farm Market Value (FMV) upon application of a conservation easement either through donation or sale reduces the appraised value. Some states specifically require that the existence of a conservation easement be considered in the valuation of the property. (*Note bene:* Application of a conservation easement does not always reduce the FMV of a property.) - Use value programs permit property to be taxed at its value in agriculture rather than FMV.
Federal income tax	- Charitable deduction for donations of conservation easements to governmental units or private land trusts. Subject to percentage limitations with 5-year carryover of excess contribution allowed. Deductible amount equal to FMV before application of the conservation easement less FMV after application of the easement. (A similar analysis is applied to bargain sales of conservation easements.) - Conservation easements are real property for the purposes of the like-kind exchange rules under section 1031. Therefore a conservation easement may be sold (as part of participation in a PDR program) and the proceeds exchanged for a fee interest in other real estate without triggering any tax liability. - Conservation easements may be sold under the terms of an installment sale. Gain is spread over multiple tax years reducing the tax rate. If the installment sale is to a qualifying governmental unit interest paid on the principal may be tax free. - For purposes of calculating the gain on the sale of a conservation easement the basis is generally allocated between the conservation easement and the remaining fee, unless the affects the entire property, in that event the entire basis is allocated to the conservation easement. - Treatment of TDRs for tax purposes will depend on how state law characterizes the interest. Most likely the sale of a TDR will be treated as the sale of an interest in real property with the basis allocated between the fee and the TDR.
State income tax	- Many state income tax systems track the federal and results would be similar to those for the federal. North Carolina and Virginia allow a tax credit for qualifying donations of conservation easements. The Virginia tax credit is transferable.
Federal estate tax	- Conservation easements may be donated at death by will or by agreement of all heirs with an interest in the property. The value of the donation is calculated in the same manner as an *intervivos* donation. The value of the donation is treated as a dollar for dollar deduction from the value of the gross estate. The estate is further permitted, subject to certain limitations, to reduce the value of the property subject to conservation easement by 40% subject to a limit of $500,000 on the total amount of the reduction in valuation. - Land used in a farm business may have its valuation reduced to reflect its use in agriculture rather than its FMV. For decedents that died in 2002 that reduction in value is limited to $820,000. The heirs must sign a ten-year recapture contract with the IRS under the terms of which they assume personal liability for any foregone should recapture be triggered by conditions that result in disqualification. - Estates that use land in a family farm business may also qualification for installment payment of any estate tax due over a 15-year period. Terms, including the interest rate, are quite favorable.
State estate tax	- Many states have adopted estate taxes that piggyback on the federal and that result in no additional tax due. For states that do not there is much variation. If the estate tax repeal becomes permanent many states are likely to review their estate tax systems.

(April 2, 2003 version)

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ARE PUBLIC FUNDS BEING SPENT TO PRESERVE THE FARMLAND THAT THE PUBLIC WANTS TO PRESERVE?

Patricia E. Norris, B. James Deaton, and Brian P. Foley
Presented by Patricia E. Norris

Public interest in farmland preservation is strong, but obtaining agreement about how and where to protect farmland is difficult. One popular farmland preservation tool, Purchase of Development Rights (PDRs), requires states to establish criteria by which farmland preservation funds will be allocated across alternative parcels of agricultural land. If we have a limited public budget to support farmland preservation, which farmland should be preserved? An understanding of public preferences for farmland preservation and the benefits it offers is key to designing effective policies that allocate public funds to preserve farmland that provides preferred benefits. Evidence from previous research and evaluation of state policies and programs suggest that the approaches used to allocate public funds for PDR programs may not adequately reflect public interests.

INTRODUCTION

Farmland preservation is a hot topic in Michigan. If you ask a random sample of Michigan residents whether the state is losing farmland to development, chances are that nearly every person in the group will answer yes. If you ask this same group whether the loss of farmland is a concern that warrants a public policy response, you are less likely to get agreement. Agreement is even less likely if you ask the group where, if the state works to preserve farmland, preservation effort should be focused. Finally, you will get the least agreement of all if you ask what policies should be used to reduce farmland loss.

These same responses could be anticipated in almost any state in the U.S. This diversity of opinion is reflected in the broad array of state programs addressing agricultural land resource issues. One increasingly popular farmland preservation technique is PDRs, or agricultural conservation easements, from agricultural land owners. This is an approach which addresses farmland preservation objectives while preventing dissension over the restriction of ownership rights. According to American Farmland Trust[1], 19 states have funded the purchase of agricultural conservation easements, and at least five more have authorized a state program. The federal farm bill has also authorized the expenditure of federal funds for PDRs on agricultural land. However, even with agreement on how agricultural land should be preserved, there remains the question of which agricultural land should be preserved. An understanding of public preferences for farmland preservation and the benefits it offers is key to designing effective policies that allocate public funds to preserve farmland that provides those preferred benefits.

WHY PRESERVE FARMLAND?

Gardner, in 1977, suggested four general reasons for concern about farmland preservation: food security, local economic benefits of agriculture, the efficiency of development patterns, and concerns about environmental amenities. Each of these reasons remains part of current debates about farmland preservation. However, recent research suggests that the focus of public attention on farmland preservation may reflect slightly different objectives.

Concerns about food security have been revisited regularly since 1798 when Thomas Malthus first described the dilemma posed by a population growing faster than the food supply. However, despite

varied views on our agricultural capacity, the fact is that we have continually substituted physical, biological, and intellectual capital for land and labor in agriculture. Fewer people produce more food on less land than ever before. Little evidence exists to suggest that we are running out of productive innovations. Although land goes out of agriculture, the land remaining in agriculture is farmed more intensively. A 1990 Resource Conservation Act study concluded that, at least through the year 2030, the increasing supply of food will outstrip the increasing demand, resulting in increasing downward pressure on commodity prices and land values (Libby 1993). Analyses of 1997 and 2001 NRI data suggest that land use change does not represent a threat to the nation's total food production (USDA, NRCS, 2001; USDA, NRCS, 2003).

Despite confidence in our capacity for food production, the loss of specialty agriculture remains a particular concern. Much of the specialty fruit and vegetable production in the United States occurs in states that are experiencing the most rapid rates of land development. Many states have specific niches for specialty commodities. Michigan is the largest producer of tart cherries in the U.S., ranking second in the production of celery, and ranking third in apple and asparagus production (Kleweno and Matthews 2000). While producers of many of these products have benefitted from growing local markets created by growing populations, competition for land and water resources has, in some cases, cut deeply into production areas. In a 1997 report on farmland loss, the American Farmland Trust included two areas in western Michigan, primarily fruit and vegetable production areas, among its list of the 20 most threatened farmland areas in the U.S. (Sorensen, Greene, and Russ 1997).

A growing interest in locally grown food may represent a new twist on concerns about farmland preservation and food production. A central theme in community food systems research and outreach programs is access to locally grown food, produced on locally-owned farmland. Consumers are increasingly concerned about how their food is produced. Food that is locally grown by persons known to the consumers using production methods understood by the consumers is increasing in demand. Among those studies that have evaluated the importance of agricultural production objectives among preferences for farmland preservation, the provision of locally grown food has arisen as the primary production concern (Dukes and Aull-Hyde 2002; Kline and Wichelns 1996).

The economic impact of agricultural land conversion is a concern in areas where local economies are highly dependent upon agricultural activity. The USDA Economic Research Service has defined as farming-dependent those counties which derive 20 percent or more of their total labor and proprietors' income from farming (Cook and Mizer 1994). A broader view of economic dependence on agriculture considers income from the total food and fiber system. If a county hosts one or more industries that support agriculture (for example, farm input production and distribution or food or fiber processing and distribution) that county may be more dependent upon agriculture as a whole. The importance of farmland preservation to that economic activity will depend upon the extent to which the supporting industries rely upon local or regional farm production activities (Kelsey and Farrigan 2001).

There is some evidence that concerns about the local farm economy reflect a desire to maintain the agricultural sector because of values placed on protecting farming as a way of life rather than strictly the economic contributions of the sector (Duke and Aull-Hyde 2002; Kline and Wichelns 1996). The heritage value of local agriculture and protection of family farms have been highlighted as important reasons to preserve farmland in several studies (Bergstrom, Dillman, and Stoll 1985; Boyle et al. 2001; Furuseth 1987; Halstead 1984; Krieger 1999; Norris and Deaton 2002), and have been ranked as more important than standard economic goals.

Farmland preservation is one of many issues nested in discussions of growth management. Limiting pressures on local financial resources caused by population growth and changes in land use is widely cited as an important objective of farmland preservation programs (Heimlich and Anderson 2001). Research suggests that a more compact spatial pattern of development will save taxpayer dollars (Burnett et al. 1997). Targeting agricultural land preservation is common among those states with policies to manage growth patterns (Zinn 2002).

The preservation of open space and containment of development have been expressed as important benefits of farmland preservation in several studies (Rosenberger 1998; Norris and Deaton 2003; Kline and Wichelns 1996). In many cases, the scenic quality of open landscapes is valued (Duke and Aull-Hyde 2002; Kline and Wichelns; Bergstrom, Dillman, and Stoll 1985). The desire to maintain a rural landscape, rural character and rural lifestyles figures prominently in the importance of open space (Hellerstein et al. 2002).

Finally, a widely cited problem associated with urbanizing land use patterns is the perceived loss of ecological services provided by farmland, forests, and other open landscapes. When asked about the importance of farmland preservation, residents in several states have told researchers that loss of environmental and natural amenities ranks equal to or higher than loss of agricultural production capacity as a basis for concern about farmland loss (Kline and Wilchelns 1996; Rosenberger 1998; Halstead 1984; Duke and Aull-Hyde 2002). Ecological amenities include things like wildlife habitat, natural areas, surface and ground water quantity and quality, and air quality. Clearly, not all farmland, or agricultural management practices, will provide the same environmental amenities. Where the objective of farmland preservation activities is preservation of environmental amenities, the location of the farmland may be an important element of preservation programs. Provision of environmental amenities may change, however, as management, production technologies, market forces, or land ownership change.

STATE OBJECTIVES FOR FARMLAND PRESERVATION

All 50 states have some form of farmland protection program, ranging from zoning to Right-to-Farm Laws, to differential assessment, to programs that lease or purchase development rights from agricultural land owners. Hellerstein et al. (2002) reviewed language from state farmland preservation laws to investigate stated legislative objectives associated with farmland preservation. For the 41 states with specific language reviewed, the objectives most commonly cited include:

- Protection of open space - 31 states
- Protection of access to locally produced food - 30 states
- Protection of scenic values - 30 states
- Protection of the state's agrarian culture/heritage - 27 states
- Protection of wildlife habitat - 23 states
- Protection of other environmental services - 20 states
- Protection of water resources - 19 states
- Protection of agricultural viability/contribution to agricultural economy - 17 states
- Protection of forest resources - 17 states.

Table 1 compares the legislative objectives with the evidence provided by researchers who have investigated reasons why people support farmland preservation programs. In general, public farmland preservation objectives appear to be reflected in statutory language that authorizes various state-level

farmland protection programs. Research suggests that the public is interested in food production and the availability of locally grown food, as well as the protection of an agricultural community and heritage; similarly, state legislators have posed protecting the economic viability of agriculture, protecting access to locally grown food, and protecting agricultural heritage as principal objectives of their farmland preservation programs. Where research suggests a general public interest in protecting open space and managing growth across the landscape, states have offered protection of open space and scenic values as reasons for farmland preservation. Finally, research suggests that ecological amenities, in general are important public objectives of farmland preservation. State legislatures have specifically identified protections of wildlife habitat, forest resources, water resources, and other environmental services as objectives of farmland preservation programs.

Summarizing arguments for farmland preservation into four general categories (protection of local food production, protection of local agricultural heritage; growth management and preservation of open space; and protection of ecological amenities) captures most, though not all, reasons generally given for why public policy should address farmland conversion. The capacity of farmland to provide locally grown food, a local farm economy, a preferred landscape, and ecological amenities will vary depending on the location of the land and the type of farm operation that is being preserved. In addition, while the location of the farmland is fixed, the type of farm operation may change over time. The uses of surrounding land may also change over time. These are important issues from a policy perspective. If we have a limited public budget to support farmland preservation, which farmland should be preserved?

CRITERIA FOR ALLOCATING FUNDS IN PDR PROGRAMS

The design of state PDR programs requires that criteria be developed to assist program managers with determining which farmland should be preserved. In some states, the enabling legislation specifies criteria that should be used in evaluating alternative parcels of land. In other states, criteria have been established based on interpretation of legislative intent and deliberation of how that intent could be satisfied.

The study by Hellerstein et al. (2002), combined with additional review of state statutes and program guidelines, describes the criteria used by states in their PDR programs. Table 2 summarizes the principle criteria used by 17 states. By far, the two most common criteria are “soil quality or productivity” and “the degree to which the farmland is threatened by development.” The next most important criteria are “cost effectiveness” and “whether the farmland is in an area where other, complementary growth management or farmland preservation tools are in use.” The fifth and sixth most common criteria are “whether the farmland is important in terms of its contribution to the economic viability of agriculture in the area” and “whether soil conservation practices and other indicators of land stewardship are used on the farm.” The remaining criteria, rounding out the list of the most common characteristics of farmland parcels used by states to prioritize their purchases of development rights, include: “proximity to other protected areas,” “environmental or natural resource importance,” “parcel size,” and “provision of open space or scenic value,”

An important policy issue is the extent to which these criteria result in allocation of state PDR funds to those areas which can provide the benefits associated with farmland preservation that are sought by the general public. In Table 3, each of the criteria is assigned to one or more farmland preservation objectives that it would appear to satisfy. Each of the objectives indicated by state statutes is assigned to one of

the four broad types of reasons cited by the public for preserving farmland. Then, the potential ability of each criteria to address each objective is indicated.

Of course, how well the various criteria address the objectives is a function of the actual indicators or measures that are used to determine whether the criteria is satisfied. For example, most states using "soil quality" as a criteria use USDA information on soil type, soil capability class, and whether soils are prime and unique or locally important soils as indicators. To measure the "degree of development threat," states use indicators like proximity to publicly available water and sewer lines, number of non-farm homes with a particular distance, rate of change in farmland acreage or rate of change in developed area. However, states treat development threat differently. Some states target those areas with the greatest pressure, while others specify that the most threatened areas will receive less consideration than areas with moderate development pressure.

The "degree to which the preservation effort is complemented by other programs" is generally decided based upon local planning and zoning activity, or, where they exist, the relation/proximity to agricultural districts. Indicators for the "stewardship" criteria include whether the farm has an active conservation plan or an evaluation of farm management practices by the local conservation district. For most states, "cost effectiveness" is based upon the cost of the development rights, the size of the parcel, and the extent to which there are matching funds or the owner is willing to donate a portion of the rights.

The criterion that considers "importance to the agricultural sector" is one that is measured in a range of different ways. Some states consider gross sales as a measure of importance and contribution, while others consider both social and economic contributions. In some cases, importance is a function of whether the farmland is involved in production of specialty crops that could not be grown elsewhere.

Given the various types of indicators that the states use for particular criteria, three criteria appear to address all four of the main reasons for farmland preservation: 1) "whether the farmland being considered for preservation is located in areas where other, complementary programs (e.g., agricultural zoning, agricultural districts, growth management) exist"; 2) "the proximity of the farmland to other areas that have been preserved"; and 3) "the parcel size." The existence of complementary programs and the proximity to other preserved farmland both serve to enable economically viable agricultural operations that face minimal conflicts from neighboring, non-agricultural uses. They also serve to increase the amount of open space protected and, as a result of minimizing fragmentation, could be expected to further wildlife habitat protection efforts. Preserving larger parcels also minimizes risks to agricultural viability and addresses the amount of preserved open space and the habitat fragmentation issue.

Two of the criteria could be expected to target farmland that would address the objectives of local food production and local farming economy. The general criteria of "relative agricultural importance of the parcel" (which could be a function of productivity, location or management) might be expected to indicate the potential for future agricultural viability. "Soil quality" is an indicator of potential crop productivity. (Management skills could enhance or limit the degree to which these two criteria accurately address the objectives. Productive soils cannot assure viability if limited owner/operator management skills limit success, and current economic viability could be affected by a change in management.)

Three of the criteria appear to address only one of the four general objectives of farmland preservation. The contribution of the parcel in terms of "open space and scenic value" directly addresses those

objectives. Both “stewardship” and “the presence of environmentally sensitive areas” indicate the potential for the farmland to provide ecological services. “Stewardship” reflects past management practices that would enhance the environmental assets of the farmland, and targeting the “presence of environmentally sensitive areas” suggests that the parcel offers benefits associated with wetlands, wildlife habitat or other natural features.

Two of the criteria used to evaluate parcels for PDR programs do not directly address any of the primary objectives for farmland preservation. Rather these criteria, “cost-effectiveness” and “degree of development threat”, address the level of overall impact the program expenditures might have. For example, purchasing development rights in areas where the difference between use values and fair market values is small would enable limited funds to be applied over a larger area. Cost-effectiveness might also consider whether the farmland owner is willing to donate some of his/her development rights to complement public expenditures. The degree of development threat is also an indicator of how far the limited funds could go. A greater demand for developed uses of land suggests that the difference between use values and fair market values is large. Development threat be considered as an indicator of the potential for future agricultural viability and the local production of food, but without consideration of other necessary conditions for agricultural viability, those objectives might not be met. In particular, if development threat is sufficiently high, dollars targeted to purchasing development rights for farmland may simply succeed in preserving small islands of open space while development consumes the surrounding area. In this kind of environment, the preserved land is much less likely to support viable agricultural operations over the long run.

As described by Hellerstein (2002), states use a combination of these criteria and most have point or ranking systems by which certain criteria are weighted more heavily than others. For example, Maryland uses a point system allocating points to individual criteria:

Near other easements or restricted land - 25 pts.
Presence of environmentally sensitive land - 25 pts.
Importance to agricultural community - 20 pts.
Soil productivity - 15 pts.
Consistent with county plan and zoning - 10 pts.
Parcel size - 5 pts.

The degree to which the combination of criteria and ranking systems account for farmland preservation objectives will differ between states. Table 4 shows the relative ranking of the commonly used criteria highlighted in this review for ten states. Using these rankings, a simple average ranking across all states is derived using, for each criteria, the sum of ranks across all states divided by the number of states using the criteria. On average, for all ten states, the relative importance of the ten criteria considered are:

Rank	Criteria
1	Soil quality
2	Proximity to other protected areas
3	Development threat
4	Other complementary programs in area
5	Scenic/open space
6	Cost effectiveness
7	Importance to the agricultural sector
8	Parcel size
9	Stewardship
10	Environmental/natural resource importance

This information is provided in Table 5, along with a summary of farmland preservation objectives addressed by each criteria. Generalizing across all states, soil quality is the most important criteria for allocating funds for purchase of development rights on agricultural land. This result means that states are focusing, foremost, upon retaining agricultural economic activity and the production of local food. (However, it is also possible that soil quality is widely used because it is information that is easily available from published soil surveys). The attention to where other protected acreage is in relation to parcels being considered for development rights purchase and the extent of other, complementary programs broadens the impact of the programs and increases the likelihood that, in some way, all four of the primary objectives for farmland preservation are addressed. However, states tend to focus on development threat, which is not likely to specifically address any single farmland preservation objective.

Beyond targeting preservation of large blocks of land by focusing on other protection programs or proximity to other protected parcels, there is limited attention to the environmental importance of the land under consideration. While wildlife habitat protection, environmental services protection, water resource protection, and forest resource protection figure prominently in states' objectives for preserving agricultural land, land stewardship and environmental and natural resource importance are, on average, the least important of the criteria used by the ten states.

CONCLUSION

The extent to which states use selection criteria for allocation of their purchase of development rights funds that address stated farmland protection objective varies considerably. Hellerstein (2002) suggested that legislative farmland preservation objectives appear to vary depending upon the region of the country and the relative scarcity of different resource values. This observation may raise the question of whether, despite legislative language specifying farmland preservation objectives, criteria are selected based on the relative scarcity of different resources or activities, rather than on articulated objectives.

An area for further investigation is the specific indicators that states are using for their selection criteria. The potential for conflicts between objectives and actions becomes even greater if the indicator selected is simply not a good measure for the specified criteria. For example, among the criteria established by Michigan's Purchase of Development Rights statute, productive capacity of farmland suited for production of feed, food and fiber is the most important. Since the inception of the Michigan program, the program managers have used soil quality (including attention to prime and unique soils) as the indicator of productive capacity. However, a recent proposal is that gross agricultural sales become the

indicator of productive capacity. This is problematic in areas with extensive concentrated poultry, dairy and swine operations and/or greenhouse and nursery operations. Gross sales may offer little or no indication of the amount of productive land base available.[2]

One additional issue of importance is the extent to which farmland preservation funds are allocated based on criteria that are subject to change. The most significant example at present concerns areas where development rights have been purchased in the interest of open space preservation and scenic values. In some locations, diversified row crop farms have made the transition to concentrated livestock production or have significantly expanded their operations and the buildings associated with the operations. The potential for public backlash over the change in the landscape is a policy issue that has yet to be addressed.

Table 1. A Comparison of State Farmland Preservation Objectives Identified in Studies of Farmland Preservation Preferences

	Preferences			
Farmland Preservation Objectives	Food production / Locally grown food	Agricultural economy/heritage	Growth management / Open space	Ecological amenities
Protect economic viability of agriculture	●	●		
Protect access to locally grown food	●			
Protect agricultural heritage		●		
Protect open space			●	
Protect scenic values			●	
Protect wildlife habitat				●
Protect forest and water resources				●
Protect other environmental services				●

Table 2. Principle Criteria Used to Priortize Farmland in 17 State Purchase of Development Rights Programs

State	1	2	3	4	5	6	7	8	9	10
California	●	●	●	●				●	●	
Connecticut	●	●	●		●			●		
Delaware	●			●	●		●			
Kentucky	●	●				●			●	
Maine	●	●		●	●					●
Maryland	●	●	●	●	●	●	●	●	●	
Massachusetts	●	●	●		●		●	●	●	●
Michigan	●	●	●	●						
Montana		●	●					●		
New Jersey	●	●		●			●			
New York	●	●	●		●	●	●		●	
North Carolina	●					●				
Ohio	●	●		●		●				
Pennsylvania	●	●		●	●	●	●	●	●	●
Rhode Island	●	●	●		●	●		●		●
Utah				●						
Vermont	●	●	●			●	●			●
Number of states:	15	14	9	9	8	8	7	7	6	5

1) Soil quality; 2) Threatened by development; 3) Cost effectiveness; 4) Complemented by other programs; 5) Importance to the agricultural sector; 6)Stewardship; 7) Proximity to other protected areas; 8)Environmental/natural resource importance; 9) Parcel size; 10) Open space/scenic value. Source: Hellerstein et al.; various state statutes and regulations.

Table 3. How State Criteria for Targeting PDR Funds Match Farmland Preservation Objectives

Farmland Preservation Program Objectives ● Protection of:								
	Local Food Production and Agricultural Economy			Landscape/Growth Management		Ecological Services		
Criteria	Local food production	Economic viability	Agrarian culture and heritage	Open Space	Scenic values	Wildlife habitat	Water resources	Environmental services
Complementary programs in the area	●	●	●	●		●		
Proximity to other protected areas	●	●		●		●		
Parcel size	●	●		●		●		
Importance to the agricultural sector	●	●	●					
Soil quality	●	●						
Scenic/open space				●	●			
Stewardship						●	●	●
Environmentally important areas						●	●	●
Cost effectiveness								
Development threat								

Table 4. Examples of Selected States' Ranking of Criteria and the Implications for Addressing Farmland Preservation Objectives*

Primary Objective(s) Addressed	Criteria	KY	ME	MD	MA	MI	NJ	OH	PA	UT	VT
All	Complementary programs in the area	3		4		2	4	1	3	3	2
	Proximity to other protected areas			1	1		1	2	4		2
	Parcel size	4		5	3		5		5		2
Local Food Production and Agricultural Economy	Importance to the agricultural sector		2	2	4				7		
	Soil quality	1	1	3	1	1 **	2	1	1	1	1
Landscape Management	Scenic/open space		3		4						
Ecological Amenities	Stewardship	5						3	6		3
	Environmentally important areas			1	4						
	Cost effectiveness	2			4	4	6			2	
	Development threat		1		2	3	3	1	2		2

* Only the criteria considered in this discussion are included in this table and ranked relative to one another. Other, less common criteria that may be ranked above or below these criteria by different states include: located near other agriculture, extent of on-farm investments, currently farmed, and community support.
** Michigan's first criteria is productive capacity of the land. Soil quality has been used as the primary indicator of productive capacity, but a proposal has been made to use gross sales from the farm instead.

Table 5. Relative Emphasis on Parcel Selection Criteria by Ten Standard States Implementing Purchase of Development Rights Programs, and the Implications for Meeting Farmland Preservation Objectives

Rank	Criteria	No. of States	Objectives Addressed
1	Soil quality	9	Local food production, agricultural viability
2	Proximity to other protected areas	6	All
3	Development threat	6	
4	Other complementary programs in area	8	All
5	Scenic/open space	1	Landscape management
6	Cost effectiveness	5	
7	Importance to agricultural sector	3	Local food production, agricultural viability
8	Parcel size	6	All
9	Stewardship	3	Ecological amenities
10	Environmental/natural resource importance	2	ecological amenities

FOOTNOTES

[1] As of July 2002, California, Colorado, Connecticut, Delaware, Kentucky, Maine, Maryland, Massachusetts, Michigan, Montana, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Utah, and Vermont had funded development rights purchases (American Farmland Trust). Arizona, Florida, Iowa, Minnesota, and Virginia have authorized such expenditures (American Farmland Trust; National Conference of State Legislatures).

[2] The problem is magnified in Michigan where future livestock production is uncertain because of high levels of soil phosphorus that will limit future land application of manure.

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IS THERE A PRIVATE MARKET FOR FARMLAND PRESERVATION?

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Presented by Jeffrey H. Dorfman

Could a privately run farmland preservation program be successful? Small-scale surveys of farmers and citizens in Georgia suggest the answer is yes. A significant percentage of farmers in the northern half of Georgia, where considerable growth pressure exists, are willing to sell their development rights and permanently protect their farmland at very reasonable prices. Citizen survey responses indicate voluntary financial support would be sufficient to fund the program at a rate of 35,000-50,000 acres per year. The survey results also indicate that dedicated-source funding for government-run farmland preservation programs is an idea that should be examined in order to increase the funds available for such efforts.

INTRODUCTION

Farmland (forestland and open space) preservation is a hot topic in more and more states around the U.S. as growth pressures add demand for development of farmland and open space in areas that have been traditionally rural. Many programs exist for farmers to realize some monetary gains from preserving their farmland in its undeveloped state. However, with the exception of transferable development rights (TDR) programs, the money is often in the form of government payments or government tax benefits (either credits or deductions). This paper will examine the possibility for successful farmland preservation programs (unrelated to TDR programs) based on voluntary private funding.

Open space and environmentally sensitive lands are often preserved in the U.S. and other countries on the basis of private funding. Organizations such as The Nature Conservancy buy the land or the development rights, guaranteeing the permanent protection of the land in an undeveloped state. Such programs have not been particularly directed at farmland, instead focusing on water and habitat related concerns. These programs tend to use private money (exclusively or mostly) either from citizen members or corporate donations, to fund their land preservation efforts. The extent of governmental involvement is generally limited to the income tax deduction awarded to the donors in recognition of their charitable donation.

In contrast, farmland preservation programs have focused on federal and state funding to compensate farmers for the loss of future potential gains from selling for development uses. About twenty states fund farmland preservation programs, along with federal programs funded by the USDA. The dichotomy between the major funding mechanisms for preservation of "natural" lands and farmland raises an inherent question about the reasons for the difference.

If farmland preservation funding comes mainly from government sources, is it because there is little private, voluntary support for it? Is this the method of last resort? If there is no voluntary private support for farmland preservation, one could rightly question the wisdom of governmentally funded programs directed toward such efforts. Alternatively, it may be that farmland preservation programs make economic and welfare-enhancing sense. Americans may just need more information describing the benefits (economic and environmental) of farmland preservation before they support such efforts. These questions will all be examined in this paper.

METHODOLOGY

To answer these questions, surveys of Georgia farmers and citizens are being conducted. Responses from Georgia farmers will allow investigation of the "supply of preserved farmland" from Georgia farmers. To clarify this supply further, we will distinguish between willingness to supply farmland for preservation to a private group versus supply to a state agency. Citizen surveys will pose questions designed to elicit their willingness-to-pay for farmland preservation dependent on the mechanism used to fund the program: a voluntary private group funded by membership dues, a voluntary public program funded by specialty license plates, or a public program funded by mandatory taxes.

The results elicited from the surveys will determine if a private market for farmland preservation could be successful. The results will also allow estimation of the difference in price and quantity preserved depending on the preservation mechanism: public vs. private and mandatory vs. voluntary. By combining the results of this research with those from Ahearn et al. (2000), we will shed light on the public's demand for farmland preservation, how strong it is, and what are the characteristics driving that demand.

THE SURVEYS

Survey results reported here are from pre-test surveys, albeit a fairly large-scale pre-test, that is the beginning of a larger survey effort on this question. Surveys were mailed to 252 Georgia farmers. The farmers were selected under a cooperative agreement with the Georgia Agricultural Statistics Service and complete anonymity of those surveyed was maintained. The sample frame specified was that farmer participants should own a minimum of 300 acres of land be located north of a line roughly from Columbus to Macon to Augusta, Georgia. Twelve surveys were returned with bad address, and 75 were returned. Of the returned surveys, 72 were usable for the purposes of this preliminary study, yielding an effective response rate of 30% (72/240). Because this survey is considered a pre-test version for a larger mailing later this year, no follow-up postcards were employed. Given the lack of a follow-up, this response rate seems satisfactory. Examination of the demographic variables provided suggests rough equality between the sample and the population of Georgia farmers.

The question posed to farmers took the form of a yes/no dichotomous choice question. Farmers received one of two versions, portraying either a hypothetical private or public farmland preservation program. The private version was worded as follows:

"A private organization in your county is purchasing development rights to farmland in order to permanently protect farmland from development. This group would like to buy the development rights to 100 acres of your farm. You could farm exactly as you do now, and could still sell the land to another farmer, just not to someone who wants to develop it for houses or businesses. In exchange for the development rights to 100 acres of your farm, the group is offering $3,000 per acre. Would you agree to this transaction?"

The only difference between the above question and the public program version is the replacement of "A private organization in your county" with "The State of Georgia," and "group" by "State." Farmers were offered bids of $1,500, $3,000, or $5,000. Thus, there were a total of six survey versions, with survey versions randomly assigned to addresses.

A follow-up question then offered a second bid amount based on the answer to the first question, higher for those who answered no and lower for those who answered yes. These follow-up questions looked like the following examples:

> "If yes, would you have sold the development rights for $2,000 per acre?"
>
> "If no, would you have sold the development rights for $4,000 per acre?"

These second offered amounts were $1,000 and $2,000 for the initial $1,500 bid, $2,000 and $4,000 for the initial $3,000 bid, and $4,000 and $7,500 for the initial $5,000 bid. Along with the willingness-to-sell questions, farmers were also asked for some standard demographic information and basic details about their farms.

The "citizen" surveys were pre-tested on randomly selected people at Georgia Square Mall in Athens, on the street in downtown Athens, and on the street in downtown Conyers. A total of 141 completed surveys were obtained, 76 using a $20 program price and 65 using a $50 program price. Participants in this pre-test survey were asked for basic demographic information, including membership in outdoor and environmental groups, and then one of the following three farmland preservation willingness-to-pay questions (here using $20):

> "A group of people in your county is forming a private farmland preservation organization. Each member will pay annual dues of $20 for the next five years and can contribute additional money. All the money will go towards permanently protecting farmland in your county from being developed. The group's goal is to be able to preserve 100 acres of farmland per year. Would you join this group and make the contribution? Yes [ ] No [ ].
>
> The State of Georgia is going to sell a new license plate to fund a farmland preservation program. The license plate will have a small picture of a pasture and barn. The tag will cost an annual payment of $20 in addition to the standard car tag fees for the next five years. The money will all be committed to farmland preservation programs in your county with a goal of preserving 100 acres of farmland per year. Would you buy one of these license plates? Yes [ ] No [ ]
>
> The State of Georgia is considering holding a referendum this June to begin a dedicated-funding farmland preservation program. If the referendum passes, every taxpayer would pay an additional annual payment of $20 on his/her state income taxes for the next five years whether they voted for the program or not. All the money would go toward farmland preservation in your county with a goal of preserving 100 acres of farmland per year. Would you vote in favor of this program? Yes [ ] No [ ]"

These three questions were formatted to provide willingness-to-pay information from three program types: private and voluntary, public and voluntary, and public and mandatory. By including these three formulations, we can statistically identify the different demands for farmland preservation based on public vs. private programs and voluntary vs. mandatory funding mechanisms. If we only asked public-voluntary and private-mandatory, we could not be sure whether different support levels were due to public vs. private or voluntary vs. mandatory.

PRELIMINARY RESULTS

Raw responses from both surveys are presented in Tables 1 and 2. The farmer survey responses in Table 1 show considerable willingness-to-sell development rights and preserve their farmland, even at fairly low offer prices. Slightly more than 3,000 farmers in the North and Middle Georgia regions who own a minimum of 300 acres are included in the survey's sample frame. Thus, even at a low offer price of $1,500/acre for the development rights, the survey results suggest approximately 1,050 farmers would participate in a farmland preservation program designed to enroll 100 of their acres. That would yield an impressive 105,000 acres of preserved farmland, equivalent to 164 square miles.

Table 1. Farmer Willingness-to-Sell Percentages

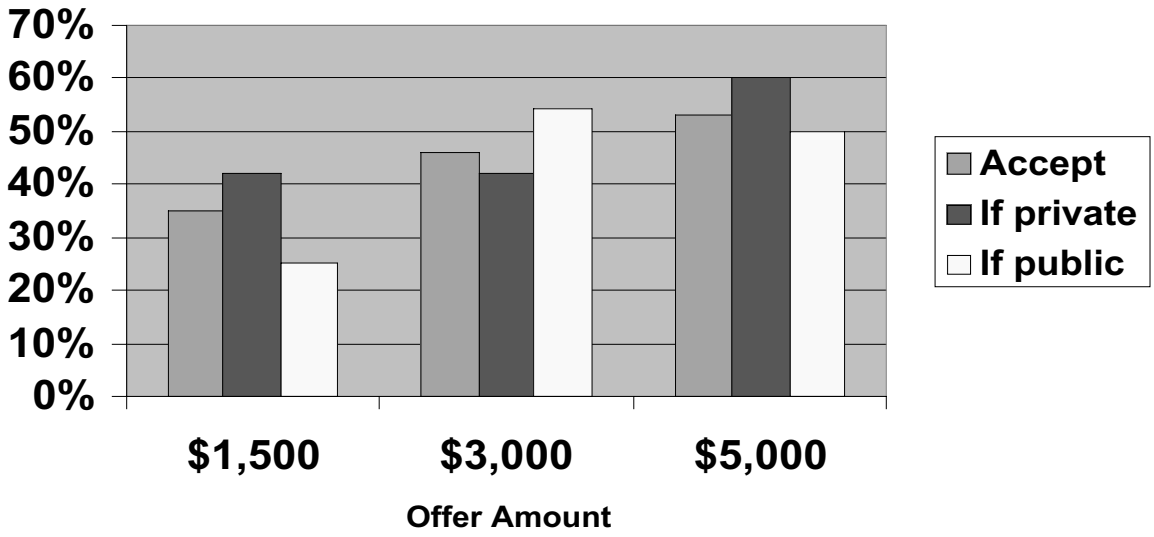
	Initial Offered Amount		
	$1,500	$3,000	$5,000
Acceptances	7/20	16/35	9/17
Percent	35%	46%	53%
If yes, would you accept	$1,000	$2,000	$4,000
Accepting/total	1/7	3/16	5/9
If no, would you accept	$2,000	$4,000	$7,500
Accepting/total	2/13	5/19	1/8
Acceptances, private	5/12	9/22	3/5
Percent	42%	41%	60%
Acceptances, public	2/8	7/13	6/12
Percent	25%	54%	50%

There is a clear increase in the acceptance rate as the offer price increases. At $5,000, slightly more than half of the farmers were willing to sell the development rights to 100 acres of their farmland. Of the farmers who rejected selling their development rights at that price, only 1 out of 8 would have agreed to an offer price of $7,500. Farmers' answers to the second offer questions are interesting, but the samples are so small in many cases, that it is dangerous to draw too much in the way of conclusions. It is worth noting, however, that 7 out of 17 farmers (42%) rejected both an initial offer of $5,000 per acre and a second offer of $7,500 per acre for the development rights to 100 acres of their land. This suggests that a significant core segment of farmers exist who are unlikely to sell their development rights at any price.

The numbers in Table 1 also reveal farmer attitudes toward the "ownership" of the farmland preservation program. That is, do farmers care if it is a privately or publicly run program? Numbers in Table 1 suggest that farmers don't care who runs the farmland preservation program, only how much money they get paid per acre. These results seem strong enough to remove any hesitation to start a private farmland preservation program based on worries about farmers' willingness to participate. This finding makes perfect sense when one considers that in most public farmland preservation programs, the

conservation easement that prevents future development is held by a private land trust, not by a government entity. Thus, farmers are used to a public-funded, private administration mix of involvement in farmland preservation programs.

Figure 1. Farmer Willingness-To-Sell Rates



The chart shown above as Figure 1 displays these results graphically and makes clear both the farmer indifference to form of program management and increasing willingness-to-sell in response to an increase in the offered amount.

Finally, answers to additional questions on the farmer survey were analyzed for insight into characteristics that might be associated with farmers' willingness to sell their development rights. Examination of these other responses suggests that farmer's are more willing to sell their development rights when they get a higher percentage of their family income from farming. This makes sense because these farmers are more likely to be full-time farmers who expect and want to keep farming for a long time, perhaps for generations. Part-time farmers are more likely to be hobby-farmers holding the land partly in anticipation of selling it for development when the price is right. The second association found in the survey results is that farmers with medium land holdings (about 300-700 acres) are more willing to sell their development rights than farmers with larger land holdings. This is somewhat surprising, particularly since full-time farmers are likely to own more land. It could be a result of larger-sized farms not needing the cash flow from selling their development rights and preferring to maintain their option to sell later.

The citizen survey responses are shown in Table 2. First examining the two columns on the left shows that people have a very impressive willingness to pay for farmland preservation at a reasonable cost. Faced with a $20 annual price to help preserve farmland, 59% of the survey respondents overall (45 out of 76) were willing to pay to preserve farmland in their county. However, the percentage was significantly

dependent on the form of the program and payment mechanism. At 46%, support was much lower for a private voluntary program. An increased 63% were willing to participate in the public voluntary program by buying a special license plate at additional cost. Finally, a very impressive 70% would vote in favor of a mandatory publicly administered program. The increasing support for public and mandatory programs is surprising. Perhaps people did not have the necessary trust in the private group that was unnamed and described as newly forming. The increase in support for the mandatory program suggests that people are more willing to support the concept when they know that others will have to pay as well. This could be because they think a mandatory program will be better funded and hence more successful, or that a mandatory program carries more of a connotation of worthiness. Also, they may support the mandatory program to avoid free-rider problems.

Table 2. Citizen Willingness to Support Farmland Preservation

	$20 Annual Cost		$50 Annual Cost	
	Percent Supporting	Total Responses	Percent Supporting	Total Responses
Private voluntary program	46%	26	50%	22
Public voluntary program	63%	27	64%	22
Public mandatory program	70%	23	81%	21
Overall	59%	76	65%	65

The idea that public, mandatory programs gain higher support levels due to people's beliefs that they are more likely to succeed is borne out by the results from respondents who faced a $50 price tag for the programs. The percentage of people willing to pay for all three program versions increased with the increase in price, a surprising result. This does not imply an upward sloping demand curve (as it might seem), since the "good" being offered is identical and different people are answering the questions. The result may arise because people feel the higher-priced program has a better chance of being successful. The results don't really translate into a region-wide demand curve for farmland preservation, but more properly an ability-to-pay curve representing the number of acres, which can be afforded by the program at different prices. This ability-to-pay curve does slope downward like a demand curve because at higher prices fewer acres can be preserved with the same amount of money.

More important, we again find the same bias in favor of a publicly run, mandatory program. While the support levels appear high enough to make a private farmland preservation program viable, a public program could clearly generate far more funding with significant public support for a mandatory assessment to generate that funding.

POTENTIAL MARKETS

There are roughly six million people living in the region in which farmers were surveyed. Projecting the potential funding pool from the results shown in Table 2 implies a minimum annual funding level of $55.2 million for a private voluntary program with a $20 annual participation cost ($20 x 6,000,000 x 46%) and a maximum annual funding level of $243 million for a public mandatory program with a $50 annual tax level ($50 x 6,000,000 x 81%).

Going back to the farmers' reported willingness-to-sell responses, we can compare the funding needed to accept these farmers' offers. At the low offer price of $1,500 per acre, the estimated 105,000 acres offered for preservation would cost $157 million. At the high end (initial) offer price of $5,000, $795 million would be needed to purchase the development rights offered on 160,000 acres.

These rough calculations suggest a private market could exist, as well as there being strong potential for successful public markets. The private voluntary program with a $20 annual membership cost would generate enough funding to preserve the 105,000 acres offered at $1,500 per acre over the five year period that was posited to the people surveyed (5 x $55.2 million = $276 million > $157 million). This would also exceed the 100 acres per year in farmland preserved per county that was promised.

Alternatively, the public, mandatory program would generate more than sufficient funding to preserve the 160,000 acres on offer for $5,000 per acre. In fact, in both these cases, the farmlands could be preserved in about three years.

Another possibility would be to stick with the privately run voluntary program, but with the $50 annual membership cost. This would generate an estimated $152 million annually, which would be enough to preserve the 138,000 acres offered at $3,000 per acre over a three year period, or could preserve the 160,000 acres offered at $5,000 per acre in a six year period (admittedly, slightly different than the five year period posed in the survey).

FUTURE ANALYSIS

Early survey results have provided evidence that farmland preservation can be successfully accomplished using privately run voluntary organizations for funding sources. The results also suggest that dedicated-source public funding would greatly increase the support of current farmland preservation programs above funding levels achieved through the legislative and appropriations process. The planned full farmer survey results will be used to construct an estimated supply curve for farmland preservation, both for privately and publicly run programs. Similarly, the larger citizen surveys to follow will allow estimation of the demand for farmland preservation by society (and society's ability-to-pay curve). At this point, we do not have enough data to implement a precise statistical model.

Another potential topic is to compare the fiscal cost of a governmental program for farmland preservation to its fiscal benefits. Repeated studies have consistently shown that farmland provides a fiscal surplus to local governments, while residential development is a fiscal drain (American Farmland Trust, 1992; Dorfman, et al., 2002). Given the willingness of farmers to sell their development rights for figures as low as $1500 per acre, it is likely that in some cases, a local government would be better off paying the $1500 than letting that acre become the site for residential housing.

CONCLUSIONS

Given the limited funding that has been available from state and federal sources, private funding of farmland preservation could be the force that allows the farmland preservation movement to gain momentum and preserve a quantity of land large enough to make a significant impact on the future of the rural landscape.

Performing the extrapolation of these results based on a tiny sample in one town, suggests that private voluntary funding could be sufficient to preserve over two million acres of farmland per year nationally. That is of the same magnitude as all the farmland preserved nationwide up to this point in time. While this number clearly has huge uncertainty attached to it, it certainly provides an incentive to proceed with the full-scale survey and additional exploration of the feasibility of private farmland preservation programs.

Further research is also needed to determine if people's bias in favor of publicly run, mandatory farmland preservation programs holds in larger more diverse samples. While the early results suggest that private voluntary programs can still generate sufficient funds to administer a farmland preservation program of significant size, the funding gap hinted at between private and public programs is very large, and cannot be easily ignored.

Finally, perhaps the most important result discovered so far is the potential for dedicated-source public funding. If the societal support shown here is anywhere near reality (when the votes count), the pace of farmland preservation could be accelerated tremendously by taking advantage of the concept's popularity to design a designated-source of funding.

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3. LANDOWNER PERCEPTIONS AND EXPERIENCES

WHAT CALIFORNIA FARMLAND OWNERS LIKE AND DON'T LIKE ABOUT COMPENSATORY PROGRAMS FOR CONSERVATION

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Presented by Al Sokolow

This paper summarizes the findings of a survey of landowners in six California counties. The purpose of the survey was to discover what landowners think about receiving compensation for conservation purposes that benefit the public. The landowners, participants in one or both of California's Williamson Act programs, were queried about their reasons for or against participation in conservation programs, including USDA and NRCS programs. The landowners were also asked their views on easements and their duration, and the cost to public benefit relationship of conservation programs. The responses showed a limited degree of interest in easement and NRCS programs. This was attributable to insufficient information, loss of control, and low compensation. However, landowners do believe that public benefits justify spending tax dollars for conservation purposes.

Farmers use their properties in two distinct but overlapping ways–to generate income and manage the land as a natural resource. Both the economic and stewardship aspects of farming are recognized by a number of programs with different arrangements that compensate landowners for the public benefits of maintaining the land in agricultural use.

As compared to regulatory methods, such as zoning and urban boundaries for preserving farmland, compensation techniques, of course, are more landowner friendly. They are voluntary and economically rewarding and they signify a partnership between landowners and the governments that fund most conservation programs. Achieving the appropriate balance between private and public benefits, however, is a continuing issue in such tax-supported programs.

Landowners in California and elsewhere have access to a variety of compensatory programs offered by federal and state governments and non-profit organizations. While there are common features that apply nationwide, especially for federally sponsored arrangements, program availability and use differ from one state to another. Landowners have choices because the programs are numerous and diverse. There are differences in specific purpose, details of funding and duration, and sponsoring organization. Although purposes overlap, some programs concentrate on preventing the conversion of farmland to urban uses, others call for agricultural practices that conserve soil and water resources, and still others emphasize the value of farmland in providing habitat and other environmental goods.

What do California farmland owners think about receiving compensation for conservation purposes, what motivates them to participate or not participate in such programs, and what do they prefer as to the details of funding, duration, and landowner requirements?

This report addresses these and related questions, using the first findings from a recently conducted mail survey of 276 landowners in six counties. All are enrolled in either of the two versions of the Williamson Act, California's program for reducing the property taxes for land that is placed under no-development contracts for fixed but renewable periods of time. An original purpose of the study was to examine landowner reasons for enrolling in the Farmland Security Zone program, the more recent version of the Williamson Act that provides a larger tax benefit for landowners in return for longer

contracts. But the research also provides a vehicle for looking into the broader conservation experiences and perspectives of California farmers including their participation in other compensatory programs. A first-cut review of questionnaire responses produces these generalizations:

- While all respondents have their land enrolled in the Williamson Act, participation and interest in other compensatory programs is very limited.

- The limited availability of programs and funding is likely an important explanation, but the personal reasons given by landowners for not participating in other programs include insufficient information, loss of control, low compensation, and lack of interest.

- Not surprisingly, tax benefits are the dominant reason for enrolling one's farmland in either version of the Williamson Act, with keeping the land in farming mentioned by a few respondents. For other programs (including potential sale of an easement), reasons to participate include a mix of economic and resource protection motivations.

- Suggesting the option of less than perpetual duration only marginally increases the proportion of landowners who indicate they would be interested in selling an easement.

- In commenting on specific features of natural resource and easement programs, landowners prefer short but renewable contract periods, the use of agricultural value as the basis for compensation, and minimal conservation requirements or restrictions.

- Three-fourths of responding landowners agree that the public benefits justify spending tax dollars for conservation purposes. Asked to assign priorities to different conservation purposes, respondents rank "prevent urbanization" as their top choice and "provide open space" as their lowest priority.

SAMPLE AND METHODOLOGY

Six counties are represented in the sample, two in the Sacramento Valley, three in the San Joaquin Valley, and one in coastal California. All six are among the leading counties in the number of acres and individual farms enrolled in the FSZ program, the basis for their selection for this study (Table 1). These counties also contain substantial land in the SWA program.

Table 1. Williamson Act Acres in Sample Counties, 2002

Region and County	FSZ Acres	SWA Acres
Sacramento Valley		
COLUSA COUNTY	30,629	203,423
GLENN COUNTY	63,226	330,490
San Joaquin Valley		
KINGS COUNTY	242,415	404,774
MADERA COUNTY	38,873	453,757
SAN JOAQUIN COUNTY	55,945	457,581
Central Coast		
MONTEREY COUNTY	13,447	678,090

FSZ=Farmland Security Zone; SWA=Standard Williamson Act

Including a pilot stage of 100 persons, a total of approximately 663 agricultural landowners in the six counties were sent 8-page questionnaires in late 2002 and early 2003. Almost equal numbers of landowners were selected in each county from the two versions of the Williamson Act, the Farmland Security Zone (FSZ) and Standard Williamson Act (SWA) programs. Names (including addresses and other information) were randomly selected from the records of Williamson Act landowners maintained by Assessor's offices in the six counties. Usable returned questionnaires as of the end of February, 2003, totaled 276, a return rate of 46% (for both the combined sample and its FSZ and SWA portions) when duplicates and other unusable forms are eliminated.[1]

The questionnaire included a mix of close- and open-ended questions. Respondents were encouraged to volunteer comments as well as answer check-off items. As well as background information about the landowners and their farms, the questionnaire inquired about: (1) participation in specific compensatory programs; (2) reasons for participating or not participating; (3) preferences for time, funding, and landowner requirement features in programs; (4) potential interest in selling an agricultural easement; and (5) general views of conservation program purposes.

COMPENSATORY OPTIONS

The respondents to our survey are split almost equally between those with farmland enrolled in the standard and newer versions of the Williamson Act program, California's policy mechanism for reducing property taxes on farmland. The standard (SWA) program, in place for 37 years, provides use-value rather than market-value assessment of farmland restricted from development for 10-year renewable contracts. The newer Farmland Security Zone (FSZ) program, legislated in 1998, increases the property tax break by 35% under longer, 20-year renewable contracts. Participation in either version is voluntary, both on the part of local governments (mostly counties but a few cities) to establish programs within their jurisdictions, and on the part of individual landowners to enroll in available programs.

Participation in the SWA is widespread throughout California's agricultural areas, encompassing about half of all California farmland, 15.2 million acres in 51 of the state's 58 counties. Participation in the newer FSZ is less extensive, with only 565,000 acres enrolled in 18 counties as of 2002.

Agricultural landowners also have the option of taking part in three other kinds of compensatory programs:

(1) Programs that focus on preserving soil and other land resources. They compensate landowners for certain conservation practices, including the retirement of land from cultivation for certain time periods. Most such programs are administered by the Natural Resources Conservation Service (NRCS) of USDA. Those most widely used by California landowners include the Environmental Quality Initiatives Program (EQIP), the Wetlands Preserve Program (WRP), and the Conservation Reserve Program (CRP). The 2002 U.S. farm bill expanded funding for these programs and added new ones.

(2) Programs that compensate landowners to give up their development rights by placing perpetual easements on their land have a different kind of conservation objective–the prevention of farmland conversion to urban use.

(3) Still another type of compensatory option, not directly examined in this study but overlapping with other conservation purposes, is to pay farmers (through fee purchase or easements) for the habitat or

other natural resource values of their land. As administered by federal and state government environmental agencies and non-profit organizations, this purpose is not compatible with farmland that is intensively cultivated.

LEVELS OF PROGRAM PARTICIPATION

While all respondents have their land enrolled in the Williamson Act, participation and interest in other compensatory programs is very limited. Slightly more than 10% reported current enrollment in NRCS and related conservation programs (Table 2) and only two landowners reported having easements on their land.

One likely explanation for low participation in NRCS and easement arrangements is limited funding and access to these programs. As compared to Williamson Act enrollment that benefits landowners through reduced property taxes, the other programs make direct cash payments through appropriations by Congress in the case of NRCS, and funds from state government, federal government, non-profit foundations, and local revenues in the case of agricultural easements. It is relatively easy for interested landowners to enroll parcels in the Williamson Act, with the great majority of California counties (and a few cities) offering contracts and with minimal eligibility requirements (although enrollment fees can be high in particular counties). By contrast, NRCS programs in California are directly funded and have tougher eligibility standards, including landowner preparation of conservation management plans.

Table 2. Landowner Participation in Natural Resource Conservation Programs

Number of Landowners Participating in Natural Resource Conservation Programs			
Program	FSZ	SWA	Combined
EQIP	8	4	12
WRP	4	1	5
WHIP	—	2	2
PFW	2	—	2
Other	7	4	11
Total in 1 or more	20 -14.6%	9 - 6.4%	29 - 10.5%
None	117 - 85.4%	131 - 93.6%	248 - 89.5%
Total	137	140	277

FSZ = Farmland Security Zone; SWA = Standard Williamson Act
EQIP= Environmental Quality Incentives Program; WRP=Wetlands Reserve Program;
WHIP=Wildlife Habitat Incentives Program; PFW=Partners for Wildlife

California landowners have limited access to agricultural easement programs, because there are few such programs in the state. Local non-profit land trusts are the principal operators of agricultural easement programs in this state, unlike the Eastern states with substantial easement activities where county and other local governments are the principal managers. Less than a dozen land trusts are active in the farm easement area, and they are concentrated in central coastal counties with only two operating in inland counties. Most of California's agricultural areas, in fact, lack local programs including most counties in the Central Valley (Sokolow 2002). Also, as compared to well-funded Eastern programs, California's programs generally do not receive local tax revenues and tap a relatively small pool of state funds.

Program access and funding, however, are not the only explanations of varying rates of landowner participation in compensatory arrangements. There are incentives and disincentives specific to individual landowners. We asked survey respondents several questions about why they do or do not participate in particular programs. As elaborated below for each of the three types of programs, landowners are motivated to participate or not participate by combinations of economic and non-economic factors.

PARTICIPATION: PREFERENTIAL TAXATION

Not surprisingly, reduced taxes are the dominant reason why California farmers enroll their land in Williamson Act contracts. Combining responses from landowners in the FSZ and SWA versions of the program, about 90% of respondents cite tax benefits.[2] But 20% also mention the desire to keep their parcels in agriculture and avoid urban conversion. One landowner volunteered this comment:

> "I believe that good farmland should remain farmland. One day we won't have enough farmland to produce feed if we don't take care of it. I want my land to grow crops, not houses. The ground that is not fertile can grow houses." *–FSZ, Kings County*

Despite the popularity and ease of enrollment of the Williamson Act, landowners are not always convinced that enrollment in either version of the program makes sense for their particular situations. We have two indications of this: (1) Comments by SWA owners as to why they did not "upgrade" their enrollment to the newer and more economically beneficial (but also more restrictive) FSZ program available in their counties. (2) Comments by landowners who have other farmland not enrolled in either version of the Williamson Act.

Among the SWA landowners in the first category, the striking finding is that very few report knowing much about the FSZ option. Only 34% of such landowners who returned a supplemental questionnaire sent in March, 2003 responded positively to a question about their familiarity with the new program.[3]

Two interpretations of the majority "unfamiliar" responses are possible, varying by degree of knowledge: Either a "no" response implies not having any information at all about the FSZ, or it suggests insufficient information about program details.

Seventy-five landowners in the survey (38 in the FSZ and 37 in the SWA) have other farmland not enrolled in the Williamson Act. Most of the 17 respondents who give reasons for not enrolling their other parcels cite the potential of earning income from the development of this land, sometimes expressed as "keeping our options open." In some cases the nonenrolled parcels are more strategically located in relation to the direction of urbanization than the enrolled land.

The potential development option also is expressed in responses to an open-ended question about "...features of the FSZ/SWA program you particularly dislike?" Only 17 respondents in total (7 FSZ, 10 SWA), 6% of the combined sample, replied to this question, suggesting overwhelmingly positive views or at least minimum dissatisfaction with the program. Most common responses concerned: (1) the inability to sell small portions of the restricted parcel for income or to build additional family homes; (2) county fees and other costs for enrolling; and (3) property taxes not as low as expected. Interestingly, three landowners used the question to volunteer positive views about the program.

PARTICIPATION: NATURAL RESOURCE PROGRAMS

Environmental goals and farm production/economic benefits are virtually equal in importance as reasons for enrolling in natural resource programs, according to the small number of respondents who participate in these arrangements (Table 3).

> "To help air quality and the environment and provide food, water and habitat for waterfowl in the winter, particularly in a dry year. I really enjoy housing the thousands of geese and ducks that come. I do not hunt, just watch." *–FSZ, Glenn County*

> "EQIP enabled us to afford to install sprinkler irritation in our almonds"
> *—FSZ, Madera County*

Why do so few landowners participate in the natural resource programs? Table 3 notes that the most common reason, cited by 35% of respondents, is lack of awareness or insufficient information. Less common were specific negative perceptions of program features led by loss of control (14%) and limited compensation (8%). Disinterest, in fact, may be the top factor, considering that

Table 3. Landowners' Reasons for Participating or Not Participating in Natural Resource Programs (Multiple Responses)

Reasons for Participating			
	FSZ	SWA	Combined
Enjoy Waterfowl	2 (10.5%)	0	2 (6.9%)
Environmental Benefits	10 (52.6%)	3 (30%)	13 (44.8%)
Money	7 (36.8%)	7 (70%)	14 (48.3%)
Other	3 (15.8%)	3 (30%)	6 (20.6%)
# respondents	19	10	29

Reasons for Not Participating			
	FSZ	SWA	Combined
Not aware/ not enough information	26 (38.8%)	26 (32.9%)	52 (35.6%)
Compensation too low	6 (9.0%)	6 (7.6%)	12 (8.2%)
Loss of farmland	4 (6.0%)	4 (5.1%)	8 (5.5%)
Legal barrier	5 (7.5%)	—	5 (3.4%)
Excessive time & effort	4 (6.0%)	2 (2.5%)	6 (4.1%)
Loss of control	9 (13.4%)	12 (15.2%)	21 (14.4%)
Not interested	5 (7.5%)	7 (8.9%)	12 (8.2%)
Distrust of government	—	3 (3.8%)	3 (2.1%)
Other	14 (20.9%)	25 (31.6%)	39 (26.7%)
# respondents	67	79	146

FSZ = Farmland Security Zone; SWA = Standard Williamson Act

102 landowners (41% of the 248 not enrolled in natural resource programs) failed to answer this set of questions and 12 respondents who did answer cited this reason. In volunteered comments on the reasons for not participating and in response to a separate question about program features "disliked," some landowners elaborated on different themes:

(1) Difficulty of Understanding Program Usefulness

"Since we are trying to survive financially due to competition with foreign produce and cheap food prices, we would need to compare the 'profit' to us of these programs."
–FSZ, San Joaquin County

"I'm overwhelmed by information and will not be able to evaluate such programs until I retire. I receive, unsolicited, every week 250 e-mails, 120 pieces of advertising mail, 20 requests for donations, 15 bills and 3 tax forms. Also 22 newspapers and 10 free magazines."
–FSZ, Madera County

(2) Superiority of Landowner Stewardship

"As a rancher I already feel I take care of the land. I firmly believe cow feed comes before fairy shrimp. We always protect wildlife and habitat. We do our best to keep the water clean. I do not feel that I have to be a tree hugger to love the land." *—SWA, Glenn County*

(3) Wrong Priorities

(Referring to EQIP) "All needs are not addressed, only those that 'fit' into the operations or the advisory or controlling board in our district. It is heavily weighted with foothill ranchers, not valley farmers." *–FSZ, Glenn County*

(4) Governmental Intervention

"I don't trust my government not to change the rules once our deal is done!"
–SWA, Colusa County

"Do not wish people who own no land and do not make a living off the land telling what is best for my property."
–SWA, Glenn County

PARTICIPATION: AGRICULTURAL EASEMENT PROGRAMS

Although only two of the landowners in our sample of 276 have easements on their farms, a much larger number have opinions about the merits of employing this compensatory technique. Most are negative about the **potential** sale of easements. Following a brief explanation of the technique, respondents were asked, "Would you consider selling an easement on some or all of your farmland at an appropriate time?" "No" outnumber "Yes" responses by a margin of 129 (54%) - 96 (40%). Another 12 (5%) landowners are recorded as "maybes."

As to reasons for potentially selling an easement (Table 4), the minority in favor of the technique give similar emphasis to conserving agricultural land (including rural landscape, habitat, food security, and family farming values) and economic benefits (cash and tax credits). Easements are also seen by a few as an appropriate method for compensating farmland owners for the public benefits of keeping their

land out of development. Volunteered comments suggest that conservation and economic considerations are frequently interwoven.[4]

Table 4. Preferences for Farmland Easements

Variable	FSZ	SWA	Combined
Willing to sell easement to protect farmland?			
Yes	44 (38.3%)	52 (42.6%)	96 (40.5%)
No	64 (55.7%)	65 (53.3%)	129 (54.4%)
Maybe	7 (6.1%)	5 (4.1%)	12 (5.0%)
Reasons for potentially selling easement (Multiple Responses)			
Protect ag land	16 (53.3%)	12 (30.0%)	28 (40.0%)
Money	12 (40.0%)	12 (30.0%)	24 (34.3%)
Protect food supply	1 (3.3%)	1 (2.5%)	2 (2.9%)
Ag viability	4 (13.3%)	—	4 (5.7%)
Other	2 (6.7%)	20 (47.5%)	22 (31.4%)
# of respondents	30	40	70
Reasons for not selling easement (Multiple Responses)			
DK/ No information	5 (12.8%)	2 (6.7%)	7 (10.1%)
Distrust of government	5 (12.8%)	3 (10.0%)	8 (11.6%)
Loss of control	15 (38.5%)	7 (23.3%)	22 (31.9%)
Keeping options open	4 (10.3%)	2 (6.7%)	6 (8.7%)
Other	13 (33.4)	17 (56.7%)	30 (43.5%)
# of respondents	39	30	69

FSZ = Farmland Security Zone; SWA = Standard Williamson Act

> "Because it could provide long-term protection for the land and put cash into the landowner's pocket." *–SWA, Madera County*

> "Simply a way to preserve the land without having to sell to pay debt or distribute to heirs." *—FSZ, San Joaquin County*

Negative responses cite a variety of reasons for not selling an easement, with the most common concerning the related factors of "loss of control" and "keeping options open" (Table 4). Other mentioned reasons include distrust of government, limited information, inadequate compensation, and loss of property rights. Fewer respondents than we expected added comments about perpetuity on their questionnaires ("Perpetuity is not acceptable." *–FSZ, Glenn County)* although it is apparent that the permanent duration of easements is the basic element in many of these negative comments.

> "I like having all my options open. In a global economy we may not be able to compete and we (will) need to develop land to highest use." *–FSZ, Monterey County*

Anticipating that the dominant obstacle to landowner support for the easement technique would be its perpetual nature, we inserted a follow-up item in the questionnaire about the potential of selling an easement for "less than perpetuity in duration." This option only moderately increases support for easement sales. With 47 fewer persons (190 total) responding than to the initial question (237 total),

"yes" answers increase to 46% from the 40%. Negative responses drop to 50% from the initial 54%, with 7% "maybes."

ISSUES OF PROGRAM DESIGN

In deliberating about whether to participate in particular compensatory arrangements, landowners are sensitive to the details of these programs, especially the mix of benefits and limitations. To tap these perceptions, the survey asked respondents to indicate their preferences for three types of program features: (1) the timing or duration of enrollments; (2) the basis of compensation; and (3) landowner requirements imposed as a condition of enrollment. We applied these questions to natural resource and easement programs. Fewer landowners generally responded to these questions about program design than to other parts of the questionnaire. Since responses came largely from landowners who are not enrolled in these specific programs, the results are hypothetical in nature.

Time/Duration. Respondents generally prefer relatively short periods for enrolling their farmland in compensatory arrangements, as compared to the time periods currently in place for specific programs. For natural resource programs, the average contract length cited in the survey is 8.6 years with a range of 1-50 years. The average length for a term easement (less than perpetuity) is 15.2 years with a range of 1-99 years. These preferences are generally shorter than the comparable actual time periods of 5-15 years for NRCS cost-share programs and perpetuity for easements.

Still, most respondents by far support giving landowners the option of renewing their term enrollments. Renewable terms for natural resource programs are favored over fixed terms by 120-16.

In the case of less-than-perpetuity easements that are subject to nonrenewal, under what conditions would termination be justified? Most respondents who answered this hypothetical question referred to circumstances that could reduce the profitability of the farm operation, such as incompatibility with surrounding land uses, or death and other family changes. A few wrote that termination should be at the discretion of the landowner. When an easement is terminated, should the landowner pay back all or a portion of the economic benefits (cash, tax reductions) received? Only 44% of respondents to this question supported repayment. Volunteered comments ranged widely in the degree of support or opposition of repayment, from avoiding a "free ride" and "maintaining an inherent disincentive to develop" to "a lease is a lease; when you lease a car does the dealer pay you back at the end of the lease?"

Compensation. What should be the basis of compensating landowners for participating in natural resource programs? Survey respondents were offered a range of choices and allowed more than one selection. Some of the choices represent the payment arrangements of specific conservation programs. The dominant choice–the only one selected by a majority of respondents to the question–is the agricultural value of the land. Least favored, at 35% or less of responses, are cost-sharing and bidding arrangements. Moderate support is expressed for two options that focus on natural resource values, including providing landowners with bonus payments for land located in sensitive environmental areas.

Landowner Requirements. Compensatory programs usually impose certain restrictions or requirements on participating landowners. These may include certain conservation practices or temporary retirement from cultivation for natural resource programs and restricted building. In connection with natural resource programs, survey respondents were given seven types of requirements to review. The only choice checked by a majority is the

least restrictive of all, simply relying on landowners' "regular stewardship practices" (landowner discretion). Least favored are inspections by program managers and restoration requirements.

> "Most everyone I know lives on the land that they work. Eat, sleep, drink water from a house well on the land. What better stewardship could be had? No agency or group, that is for sure!" *—FSZ, Madera County*

CONSERVATION VIEWS

A final set of survey questions covered landowners' general views about the conservation purposes and benefits of compensatory programs. Probably because of the general and less program specific nature of these questions, they generated more volunteered comments than other parts of the questionnaire.

Asked to score on a 1-3 scale the importance of eight different conservation purposes, respondents ranked them (average scores) in the descending order listed in Table 5. Preventing urbanization is the top priority, although economic and food security purposes score higher than natural resource and conservation practice purposes. Clearly least favored on this list is the use of "greenbelts or open space as a public amenity," a top reason among urban populations for preserving farmland.

Yet, three-quarters of respondents agree that "public benefits justify spending tax dollars for conserving agricultural land," even though urban taxpayers pay the overwhelming bulk of these funds. This question stimulated a large number of volunteered comments. Those supporting the public benefit assertion include:

Table 5. Ranking of Conservation Purposes, by Mean Scores

Variable	FSZ	SWA	Combined
Prevent urbanization	2.65	2.69	2.67
(# Responding)	(109)	(108)	(217)
Maintain local ag economy	2.59	2.52	2.55
(# Responding)	(92)	(92)	(179)
Economic benefits to farmers	2.46	2.53	2.49
(# Responding)	(106)	(99)	(205)
Ensure food supply	2.49	2.46	2.48
(# Responding)	(100)	(100)	(200)
Preserve farm landscape	2.29	2.37	2.33
(# Responding)	(80)	(84)	(164)
Save endangered species	2.08	2.12	2.10
(# Responding)	(92)	(95)	(187)
Stimulate good conservation	2.11	2.01	2.06
practices (# Responding)	(99)	(92)	(191)
Provide open space	1.78	1.66	1.72
(# Responding)	(93)	(90)	(183)

Notes: Purposes were rated 3 (Very Important), 2 (Important), or 1 (Less Important). There was no response option for "not important." FSZ = Farmland Security Zone; SWA = Standard Williamson Act

"The farmer should not be required to shoulder the burden of conserving farmland for the benefit of others (urban interests, environmental ideology, etc.). To NOT compensate is to deny the private property rights of a farmer." *–FSZ, Glenn County*

"If we, the owners, go to some expense and live a life to preserve countryside, wildlife, habitat, and everyone wants to drive down my road and see the cows, the flowers, the trees...it benefits the public. Would they rather see wall to wall houses or a big corporation gobble it up? Every day is Earth Day on my ranch." *–SWA, Colusa County*

Although relatively small in number, negative comments about the use of public funds for farmland preservation strongly reject a governmental role in this area:

"Eating, wearing warm clothing seems like a mighty fine public benefit to me. All we need is a fair price for our commodities. Leave our lands alone and we will benefit the rest of you." *–SWA, Glenn County*

"Just let me farm. We don't need a handout." *–FSZ, San Joaquin County*

The final open-ended survey item, asking respondents to supply "other thoughts about conservation options for California's agricultural landowners," generated volunteered comments from 61 landowners on a diverse set of issues. Most frequently mentioned is the perception that economic conditions result in an uncertain future for California agriculture. Other clusters of comments include: (1) the imperative to reduce the loss of prime farmland; (2) letting market forces rather than government determine the disposession of farmland; (3) the threat of development in particular areas; (4) the diminishing supply of water for farms; (5) problems in implementing the Williamson Act; and (6) the need for a politically unified agricultural community in California.

A few respondents offered specific criticisms or suggestions about individual programs, such as the following:

"Most of the wildlife programs do not adequately compensate landowners who control land in the most needed areas for the benefit of wildlife. Only very marginal lands are brought in under present USDA programs. We could do much better." *"–FSZ, Glenn County*

"Farmland preservation programs must be carried out on an area wide basis. If development is allowed to surround a preserved area, then agricultural production is limited because of the encroachment of urban development. Dust, odor, noise, and drift will limit the use of the remaining or preserved farms." *–SWA, Glenn County*

"Sustainable farming is the ultimate conservation, since it includes water, diversity, and health of the land. But sustainability is seldom mentioned in this context. I think a program that would gradually implement sustainability would be the most important next step–a sense of the whole, not the bits and pieces of it." *–FSZ, Colusa County*

CONCLUSIONS

The major finding of this initial analysis of a survey of 276 California agricultural landowners is how few participate in conservation programs beyond the two versions of the Williamson Act. As well as low levels of

participation in NRCS and conservation easement programs, small numbers of survey respondents even view positively the potential of enrolling in such programs.

Limited program availability is certainly a major reason for these patterns of low participation. As compared to the widespread availability and ease of enrolling in the Williamson Act in past years, enrollment in NRCS and easement programs is limited by funding, limited access, and eligibility requirements. But the landowner motivation to seek out such opportunities frequently is missing. Key factors in this absence of motivation are the lack of information and simple disinterest. A surprisingly large number of landowners participating in the standard Williamson Act program reported that they lacked information (or perhaps were even unaware) on the Farmland Security Zone version of the program available in their counties, despite the fact that the newer version offers higher tax advantages in return for longer contracts.

Serious farming in California is a complex business and we can speculate that many other practical issues (profitabilily, markets, water, regulations, paperwork, etc.) are much more dominant than land conservation on the daily agendas of these landowners. Still, many of them have decided opinions about the merits and consequences of receiving compensation for conservation practices and avoiding conversion to urban uses, as indicated in responses both to specific and open-ended questions. Some argue strongly for better preservation of California's prime farmland, others say that the private markets, not government, should be left to deal with these matters. Still, others comment more broadly on stewardship and agricultural sustainability. How such views can be sorted out to develop a meaningful picture of landowner conservation preferences, one that is useful to the design and management of compensatory programs, is a continuing job.

FOOTNOTES

[1] Cases were eliminated from the sample if addresses and ownership had changed from the assessor's information or owners were too elderly or ill to respond.

[2] Many of the respondents owning farms in the SWA portion of the program who replied to this question may not have been the owners at the time of original enrollment, since the program was established 37 years ago and most contracts statewide currently in place were initiated before the mid 1970s. On the other hand, virtually all of the FSZ respondents to the survey were the landowners who enrolled their properties since this version of the program was legislated in 1998.

[3] Because the appropriate questions were mistakenly omitted from the original survey, we sent a separate short questionnaire in March, 2003, to these respondents. The supplemental questionnaire contained four questions inquiring about: (1) familiarity with the FSZ program; (2) sources of information; (3) whether enrollment in the FSZ was considered; and (4) reasons for not enrolling.

[4] This finding parallels the results of several studies of agricultural landowners who sold easements which note the interaction of preservation and economic motivations. See Elconin, 1997; Maynard, 1998; Rilla, 2000.

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FARMER VIEWS OF FARMLAND CONSERVATION AND STEWARDSHIP IN CALIFORNIA

Karen Klonsky, Rachael Goodhue, and Guillaume Gruere
Presented by Karen Klonsky

Farmers in the Sacramento Valley and Central Coast of California participated in focus groups to ascertain their views about the positive and negative impacts of agriculture and their attitudes towards government intervention to protect farmland and enhance farm income.

Besides producing food and fiber, positive benefits from agriculture production include the viability of rural communities, open space, biodiversity, cultural heritage, flood prevention, wildlife habitat, and scenic landscape (Bohman et al. 1999). This "multifunctionality" of agriculture is increasingly important in the design of agricultural and rural policy including the regulation of agricultural production. Ideally, the objectives emphasized by multifunctional policies should reflect social preferences across all functions of agriculture. Social preferences for benefits from agriculture and for avoiding externalities are undoubtedly different across geographic regions and between stakeholders.

METHODOLOGY

Our project examined social preferences in California for three objectives: (1) reducing the negative environmental externalities produced by agriculture, (2) preserving farmland, and (3) protecting the open spaces currently used for agricultural production from urban or suburban development. We used focus groups to establish our evidence and we conducted a series of focus groups in two locations, Winters in the Sacramento Valley and Watsonville on the Central Coast. In each place we had three groups of five to ten participants: a group each of farmers, town/city residents and rural residents. In each of the focus groups, participants were asked to describe any interactions they had with agriculture in their area. They were then asked about the positive and negative aspects they perceived from agriculture, their wish list for farmland in their county for the next ten to thirty years, and to define open space. Finally, they were asked to compare two government programs with the goal of reducing the negative impact of agriculture. The first takes agricultural land out of production (following the model of the Conservation Reserve Program) and the second provides financial incentives for farmers to adopt environmentally friendly practices (following the Environmental Quality Incentives Program). In this paper we present the results just of the farmer groups.

FOCUS GROUP RESULTS

Farmers in Winters felt that any government program to alter farmers' behavior was an inappropriate use of tax money because agriculture already provides multiple amenities. They immediately mentioned the importance of agricultural land providing wildlife habitat (Table 1). They argued that the presence of farmland was a benefit to people from the cities who come out to the country on the weekends for drives or bicycle rides. To them, viewing the farmland is equivalent to access to farmland; farmland is synonymous with open space. The farmers also talked about food security, and about the risk of shifting farmland into wildlife habitat which would take the land out of production. Food was viewed as a necessity, but parks were viewed as a luxury. The farmers in Watsonville only mentioned wildlife as one of several benefits. They considered farming as providing a range of services from land care to

maintaining open space, reducing development growth, and providing employment opportunities. Also, agriculture appeared to them as the main support for fresh air, water, and oxygen.

When asked about the negative impacts of farming, the farmers of Winters instead began to talk about the problems that farmers now face. These included difficulty in making a living, low margins, access to water, farmer dependence on government subsidies, problems due to the enforcement of the Endangered Species Act, and the omnipotent threat of development. They finally did mention problems of soil erosion, loss of topsoil, air pollution, salt build-up, and groundwater depletion. Their wish list included better services from the county including fire and water services, preventing garbage from being dumped on farm property, and slowing development even though they owned land that had potential for development.

The Watsonville farmers revealed similar feelings about the benefits of agriculture. They talked about maintaining open space and providing peace and quiet (Table 2). They also talked about the positive physical impacts such as reducing erosion, keeping down weeds, and reducing the risk of fire. There was a long discussion about whether farming increased or decreased flooding. Like the Winters farmers, they talked about farms providing employment. Wildlife habitat was mentioned, but did not get the attention that it did in the Winters group. The cited negative aspects of farming included pesticides, methyl bromide, runoff, salt build-up, low quality labor, and noise. The problem of salt build-up is serious in the Santa Cruz area, but it is not a problem in the Sacramento Valley. Therefore, it is not surprising that it was mentioned by one group and not the other. Other Watsonville comments pertained to ways of improving profitability from farming. The Watsonville farmers talked quite a bit about international trade and factors affecting price received, particularly criticizing NAFTA and GATT. At the same time they were in favor of tariffs. None of these marketing and policy issues came up with the Winters farmers, when the discussion concerned the possibilities of agritourism, more organic farmland, and keeping land in agriculture.

When asked to compare the two government programs, CRP and EQIP, both groups of farmers expressed skepticism as to whether or not government programs have ever been successful in achieving their goals. Both groups were concerned about the preservation of farmland but preferred to see farmland preserved through the renewed profitability of agriculture rather than expensive government programs. They also expressed concern with programs being too complicated and having too much paperwork. Several farmers emphasized reducing the number of complex regulations that prevent them from "breathing" in their activity. Others reluctantly said that government payments to subsidize agriculture were all right if that was what it took to keep farmers on their land.

Watsonville farmers had no experience with either CRP or EQIP while farmers in Winters appeared to be more familiar with these programs and more supportive of them. Watsonville farmers were concerned with farmers getting paid something for nothing. Further, they did not want to become dependent on government programs that could change with the whim of legislators in Washington. The farmers in Watsonville said they only wanted a fair price for their commodities and did not want government support. In the same breath, they said they wanted mandatory country of origin labeling and protection from low price competition from overseas.

CONCLUSIONS

Based on these results, we suggest some direction for multifunctional policies in agriculture in California. California's rural landscape is likely to change quickly. Some programs already encourage farmers to voluntarily enter into contracts to keep their land in agriculture. In the Sacramento Valley, farmland preservation is defined as a public priority to reduce the expansion of cities and towns. This also includes improving urban planning to accommodate population increase while maintaining the agricultural nature of the valley. Residents and farmers agree on these common objectives. Public policy related to zoning and right-to-farm ordinances will likely prioritize these goals. However, the public seems to prefer spending public money for the reduction of negative environmental externalities, for either more stringent regulations of agricultural production or to support the use of less intensive practices. This does not follow the farmers' interests, who would prefer to reduce the regulatory pressure and let the farmers be the stewards of the land.

The preservation of farmland as a multifunctional objective may not be perfectly compatible with an increase in environmental regulation. This conflict is present between pressure groups at the legislative level, where farming groups and agriculture interest group compete with environmental groups. This situation may lead to a separation of public preferences from public policy. To design multifunctional policies in California, it is necessary to account for the diversity of landscapes and environmental conditions. Local authorities could help make the state policies respect this diversity of objectives.

It is also clear from the focus groups that farmers are wary of any sort of government interventions. In particular, some farmers may be unwilling to participate in any sort of farmland preservation program regardless of its design. While we did not ask about farmland protection programs per se, the attitudes of some farmers to government intervention of any type came through loud and clear. Farmland protection programs, while extremely effective in many situations, are only one of several tools to preserve farmland.

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Table 1. Responses from Farmers in Winters

Benefits from Agriculture

- Open space for people from the city
- Plants use carbon dioxide and produce oxygen
- Farms produce beneficial insects
- Provides employment
- Food and food security
- Wildlife habitat

Negatives from Agriculture

- Groundwater pollution, salt build-up
- Runoff into rivers and waterways
- Air pollution
- Threat to endangered species and vernal pools

Wish List

- Less regulation
- Better fire and water services from the county
- Slow down residential development
- Farmers improve their soil and not deplete it
- Positive profit margins, direct marketing with no middle men
- Stop exotic pests from entering the U.S.

Definition of Open Space

- No houses
- Rural, outside of town
- All open space is farmland because of grazing on public land
- Farmland is a subset of open space
- Public access to farmland would have too much liability

Attitudes Towards CRP and EQIP

- Too much paperwork
- Both imply that government knows best how to use land
- Best management is grazing and burning but not allowed by CRP
- Want voluntary incentives not regulation

Attitudes Towards Government Programs

- Programs should keep farmers solvent
- Should pay farmers for endangered species on their land
- Big farmers get all of the benefits
- Just taking money from one person and giving it to another
- Programs are more regulation and take away independence

Table 2. Responses from Farmers in Watsonville

Benefits from Agriculture

- Maintains open space
- Provides peace and quiet
- Maintains roads and stops erosion
- Keeps down weeds, reduces fire risk
- Keeps land from going wild
- Wildlife habitat
- Provides employment

Negatives from Agriculture

- Runoff, pollution, erosion
- Salt build-up in the soil
- Pesticides in the ozone
- High influx of immigrants

Wish List

- Less regulation
- Repeal NAFTA and GATT
- Voluntary compliance with ESA
- Mandatory labeling – country of origin
- As much farmland as possible
- Agritourism, get the public involved
- More organic

Definition of Open Space

- No houses
- No paved roads
- Not farmland. A lot of land with no houses that can't be farmed
- Farmland is open space
- Farmers should get paid for holding open space and supporting wildlife

Attitudes Towards CRP and EQIP

- Paperwork too difficult, bad experience with disaster assistance
- Too much waste in bureaucracy
- CRP pays farmers for worthless land
- CRP benefits go large land owners
- Paid out of higher taxes and then have to pay taxes on benefits

Attitudes Towards Government Programs

- Repeal NAFTA, GATT and ESA
- Need access to markets
- The only way to raise farm income is with tariffs
- Prefer selling development rights to income subsidies
- Selling development rights wouldn't work because of restrictions on growth in Santa Cruz County
- Government buys poor land that isn't used for farming anyway. Bad idea

LANDOWNER EXPECTATIONS AND EXPERIENCES WITH CONSERVATION EASEMENTS

Andrew Marshall, Dana Hoag, and Andrew Seidl
Presented by Andrew Seidl

This study recognizes an agricultural landowner's non-market attachment value and focuses on the factors that contribute to a landowner's economic reservation price or willingness-to-accept (WTA) perpetual conservation easement placement. An agricultural landowner is more likely to settle for a lower conservation easement price with a conservator when the attributes that each seek to protect overlap. At the same time, recognition of landowner attachment values may substantially improve a landowner's probability of gaining scarce funding and actually placing an easement. A survey of Colorado landowners who placed easements or who considered them and opted not to place them is used to increase our understanding and to illustrate the approach. Survey results indicate that landowners do incorporate attachment type values into their reservation price since they expected and realized such property goals. The primary difference between respondents with easements, and those without, was the weight and recognition given to market and non-market attributes of land ownership. Landowners who placed easements demonstrated higher levels of attachment value than society recognized and held lower expectations about the financial rewards from conservation easements than did landowners who did not place easements. Landowners may be better served by utilizing a land agent whose mission most clearly matches the landowner's attachment values. This would yield superior allocation of scarce public funds by capturing more fully the non-market values of the landowner and saving public expenditures with a lower landowner reservation price.

LANDOWNERS AND CONSERVATION EASEMENTS

The conversion of crop, pasture and forest land into residential development is a widespread phenomenon throughout the United States. Counties located in isolated but amenity-rich areas are confronted with issues similar to those experienced by counties near growing urban areas (Heimlich and Anderson 2001). Current and presumed future community preferences help guide local elected officials to make informed decisions about the use of these lands. Urbanization has focused public concern on the significant loss and subsequent increased scarcity of high amenity public interest values (*PIVs*), such as open space and wildlife habitat, on the urban fringe formerly associated with farmland.

A conservation easement (*CE*) agreement is an increasingly used conservation policy instrument that responds to the agricultural land market's failure to recognize a positive occurrence of natural amenity externalities (Wiebe et al. 1996; 1997). A *CE*, alternatively known as an Agricultural Conservation Easement (*ACE*), establishes a non-possessory partial interest in agricultural land as a means of attaching public amenity values to the landscape. While this type of public policy would seem to benefit agricultural landowners through consideration of complementary production of amenity values with productive agricultural uses, certain economic questions arise with respect to landowners' long-term trade-offs with permanently restricted agricultural lands. However, very few studies have examined easements from the landowner's perspective.

Conventional economic research in agricultural land-use policy has tended to focus on society's willingness-to-pay (*WTP*) for protection and capture of non-market amenity values associated with private convertible agricultural lands via stated consumer preference surveys (e.g., Kreiger 1999; Loomis

et al. 2000; 2003). The appraisal and finance literature likewise has focused on agricultural land's market-based growth residual value beyond pure agricultural returns as society's relevant conservation easement price. Together, these approaches hold that society's non-market value gained with protection is best proxied by a landowner's market based opportunity cost of development.

The approach of this study is to recognize an agricultural landowner's non-market *attachment* value and focus on the factors that contribute to a landowner's economic reservation price or willingness-to-accept (*WTA*) perpetual conservation easement placement. A survey of Colorado landowners who placed easements or who considered them and opted not to place them is used to increase our understanding and to illustrate the approach. What we learn from this exercise could help identify landowner amenity values, and provide insights for improving strategies for landowner negotiations and conservation easement settlement prices with qualified conservation organizations.

AGRICULTURAL LAND PROTECTION RESEARCH

Formal economic and financial research of agricultural land protection policies is widespread. Economic investigations have tended to focus on the collective demand for agricultural land's *PIVs*, while the finance and appraisal literature has focused on developmental land-use values. In particular, Capozza and Sick (1994) and Capozza and Li (1994) have shown that agricultural land is a real asset that carries a value that can be captured if it is converted to a more intensive use. The "option to convert to urban use value" is nearly equivalent to a financial "real option." The choice or ability to exercise this rent can be used to estimate the market price of agricultural land. However, these studies assume that the value of agricultural land is simply a capital asset investment and its market price is composed of only three capitalized market components: urban rents (a function of population and location characteristics), agricultural rents, and conversion costs. Tegene et al. (1999) follow this strategy and extend economic modeling of convertible agricultural land as an investment opportunity and focus on valuation of the option to convert as equivalent to a conservation easement value.

No account is made for the presence of landowner amenity values on agricultural lands. These studies simply model a conservation easement value as the market-based difference between the relevant market price of agricultural land and its pure agricultural value. This implies that all of convertible agricultural land's residual growth value is derived from more intensive land use rents gained with conversion. Yet, the economic literature suggests that agricultural land derives part of its market value from an additional non-consumptive component. Stewart and Libby (1994) report that landowners derive an intrinsic enjoyment from the location or quality of land. A landowner satisfaction study conducted by Elconin and Luzadis (1998) in the northeastern U.S. concluded that the motivation for conservation easement placement was primarily triggered by personal attachment to the land, a sense of altruism and commitment to stewardship. Their lowest levels of satisfaction were observed in tax and financial matters. This type of value can be represented as a non-market value vector of amenity attributes landowners claim as attractive for agricultural land ownership.

CONSERVATION EASEMENT EXCHANGES

Since conservation easement placement involves protection of non-market *PIVs*, valuation is paramount to measuring social welfare gains for both fairness and efficiency. Therefore, a landowner's conservation easement reservation price needs to reflect their true *WTA* protection rather than their *WTA* development. A landowner's attachment or private interest value within the market price of agricultural land introduces

a greater hurdle value to conversion since this value is lost along with agricultural rents when agricultural land is converted. However, a landowner retains this value when the agricultural land is protected, thereby lowering its reservation price for protection, which in turn provides reasoning for the scope of consideration accepted by landowners for permanent conservation easement placement.

Simply put, an agricultural landowner is more likely to settle for a lower conservation easement price with a conservator when the attributes that each seek to protect overlap. At the same time, the recognition of landowner attachment values may substantially improve a landowner's probability of gaining scarce funding and actually placing an easement. Given the scarcity of public funds, a competitive bid process between landowners likely reveals true WTA, but standard appraisal techniques fail to measure this reservation price.

Legally, easements must have a legitimate conservation purpose that provides a "public benefit." The IRS considers public benefits to include habitat protection, open space, scenic lands, certain historic buildings or lands (with a National Historic designation such as civil war battlefields, etc.), providing public recreation or other public values identified in the Internal Revenue Code. The Code also requires *CEs* to be perpetual to qualify for any potential tax benefits. While land trusts and governments work toward various goals, they all work under the legal requirements of the Code. Societal benefits of *CE* placement focus on the protection and production of *PIVs* flowing from agricultural land, such as open space, scenic vistas, wildlife protection, water conservation, or agricultural preservation (Table 1).

A COLORADO SURVEY

Permanent conservation easement agreements in Colorado have become an attractive means for protecting convertible agricultural land and their use continues to expand across the state. As of 2000, there were thirty-eight active land trusts operating throughout Colorado, primarily at the community or county scale. This is almost three times the number of land trusts in operation a decade ago (Colorado Coalition of Land Trusts 2001). Concurrently, state level financial support for agricultural land protection has increased significantly with the formation of Colorado's Great Outdoors Trust fund (GOCO). Since its inception in 1994, GOCO has used $57.6 million in lottery money as part of $243.8 million spent for fee purchase of 91,162 acres and $26.3 million in lottery proceeds as part of $85.3 million spent on conservation easements on 107,717 acres (Obmascik 2001). Among GOCO's four principal priorities is open space protection that includes strategic agricultural lands. Municipalities, county, state and federal governmental agencies account for additional open-space protection. Taken together, estimates of annual public expenditures for land conservation in Colorado are approximately $100 million (Carlson 1999). While public policy objectives of conservation easement placement may be quite varied in capturing assorted public interest values, their occurrence is almost exclusively observed on private agricultural lands.

As public interest grows for land-use restrictions, economic questions arise about their effect on Colorado landowners and their private agricultural land. Interest in conservation easements is particularly strong. While there is a wealth of information on how to establish easements (e.g., Bick & Haney 2001; American Farmland Trust - http://www.farmland.org), much less information is available from landowners themselves. Both landowners who have placed easements and those who have chosen not to might have information that would be useful to pass on to other landowners, land trusts, and governmental agencies involved in agricultural land preservation activities.

In the spring of 2000, a targeted, non-probability sample of Colorado landowners was surveyed about their conservation easement experiences. The sample area focused on Colorado's rural mountain valleys that contain high levels of public interest values and that face genuine development pressure. In addition, this area was chosen for its concentrated set of similar types of landowners with conservation easement experience. The sampling proceeded in two distinct stages. In the first stage, the Cooperative Extension of Colorado State University and state land trust personnel familiar with local conservation easement efforts identified landowners with easement experience. In the second stage, we identified other Colorado landowners with easement experience by asking for names from the first group that we interviewed.

In-person interviews were conducted with four landowners in stage one. Equivalent to a focus group study, these respondents answered the basic survey, while helping us organize and re-focus our relevant questions. The second stage involved sending a mail survey to a composite sample of twenty-two additional landowners. These landowner's names were collected from a snowball sampling technique, where each person interviewed identified others that they knew of who had placed or considered placing an easement. The mail survey was sent with a cover letter followed by a reminder letter approximately five days after the first mailing. A subsequent phone call was placed one week after the reminder letter was sent to encourage completion of the survey and to mitigate any survey response problems.

The mail survey was divided into four sections. All respondents answered Section I - *Background Information*. Respondents were separated in Section II - *Your Conservation Easement*, between those who completed and those who did not complete a conservation easement, and asked about their decisions accordingly. All surveyed respondents answered Section III - *Expectations*, while only respondents who placed a conservation easement answered Section IV - *Outcome*.

RESULTS

The final survey response rate, incorporating both interview stages, was 78 percent of the 26 people contacted. Of completed and returned surveys, 61 percent had placed a conservation easement against their property, while the remaining 39 percent had considered but had not placed an easement at the time of the survey.

Producer profiles. With the emphasis on a homogeneous landowner sample, Table 2 shows that all respondents stated their primary enterprise was a cattle and hay operation. While 78 percent surveyed have owned their property for more than twenty-five years, only half indicated they were full time operators. As a result, only 28 percent of all respondents earned at least 75 percent of their total income on their agricultural property. When respondents were separated by placement, only 9 percent of easement holding respondents owned the subject property for less than 25 years, compared to 43 percent of respondents who did not place a conservation easement (Table 2).

In an effort to establish *PIVs* occurring on agricultural lands, surveyed landowners were asked to describe and rank possible non-market amenity values located on their easement property. By defining what interest values a landowner recognizes as unique and important from the public's perspective, inferences can be made about possible matching amenity vectors between landowners and land agents. Table 3 describes stated societal *PIVs* for both sets of respondents. Rankings were based on a five point Likert scale with the association of greater importance at 5.

To address the conservation easement pricing decision discussed above, Table 3 indicates what values agricultural land has that someone else, such as a trust or taxpayers would be willing to pay to protect. Open-space and natural areas were the most significant *PIVs* identified, followed by a productive agricultural value. Landowners identified both non-consumptive uses (such as scenic beauty or wildlife viewing) and market productive uses of their agricultural lands as important and found them to be complementary rather than conflicting. Other non-biophysically based valuable features of agricultural lands, such as educational and historical values, were much less frequently identified as important.

Interestingly, "agricultural values" ranked second along with traditional public amenities. This indicates that landowners understand the public's interest in their amenity values, but they may be naïve about the public's interest in preserving their agricultural value relative to other publicly held values. Studies support that the public cares about agricultural values (e.g., Loomis et al. 2003) but there are far more open space conservators than those targeting agriculture. Not only are differing land attributes valued differently by the public, but many valuable land attributes are interdependent, bundled, or highly correlated with other land attributes, contributing to potential difficulties in ascribing value to a particular hedonic feature of agricultural preservation.

Your Conservation Easement. Sixty-one percent of respondents had placed a conservation easement at the time of the survey. The remaining thirty-nine percent had considered but did not place an easement on their property at this time. Table 4 describes basic information collected for each easement agreement, for easement holding landowners. All easements were permanent, placed between 1994-2000, held by private, non-profit land trusts, and were sold in bargain sales (landowners received tax benefits instead of cash for a portion of the value).

Table 4 also shows some typical conservation easement statistics. Placement averaged 72 percent of total landowner acres. Respondents stated that they incurred an average $11,320 of transactions costs at their time of placement. This represented an average of $23 per easement acre. In addition, landowners expended an average 169 hours over a 19-month period to complete the contract. In terms of value, conservation easements averaged 51 percent ($2,071/ac) of corresponding land value ($4,061/ac) and 65 percent ($1,365) of the easement value at the time of the contract. Surveyed values are all pre-tax total values based on placement prior to year 2000 (when Colorado tax credits became available).

Easement holding respondents were next queried about the significance of the technical resources required. Landowner-incurred transaction costs are an upfront fixed cost of easement placement. Therefore, landowners were asked to rank the significance of technical resources typically involved in easement placement. Table 5 illustrates that landowners found land appraisal to be the most significant transaction cost incurred. Surprisingly, both baseline inventory and environmental surveys were the least significant resources utilized. An explanation for their insignificance may be in part that the land agent (trust or government agency) may have incurred these costs.

The counterpart to Section 2 concerned respondents who did not complete placement of a conservation easement on their property. These landowners were questioned separately in this section to discover for what reasons a conservation easement was considered but not placed. Table 6 shows that financial limitations were the primary reason for not completing an easement. Both insufficient funds for purchase and limited utilization of income and estate tax deductions were the primary reasons stated. It should be noted that the vast majority of landowners who considered placement prior to year 2000 would have been ineligible for any state tax credits, which changed in January 2000.

Respondents without an easement were also asked to rank alternative issues for not completing a conservation easement agreement. Table 7 ranks and further illustrates that lack of funding for easement purchase was the primary stated reason for not completing an easement. Respondents said that "technical requirements" were not an important issue in deciding not to complete the placement of an easement against their property, even though transactions costs amounted to greater than $11,000 (Table 4).

Expectations. All landowners were queried about their initial expectations prior to placement of a conservation easement in meeting their property goals. This identified what market and non-market factors landowners held for ownership. Table 8 describes these initial expectations and motivations for potential conservation easement placement. Maintaining agricultural use and improved estate tax liability were the most desired overall goals. Respondents who did not place a conservation easement were more aggressive on financial goals, perhaps reinforcing the idea that those seeking to maximize their own goals were not as successful because the public is more interested in the non-market goals such as saving natural amenities.

The landowner goal of "maintain agricultural use" ranked as a much higher personal goal than "preserving wildlife habitat", but landowners thought the public would weigh them equally (Table 3). Still the basic tenet of "prohibiting development" is an area where easements can be made more efficient since the landowner's values complement social values. For less similar amenities, conservators may need to pay separately for wildlife protection, since prohibiting development does not necessarily ensure good wildlife habitat and results in a greater landowner conservation easement reservation price. Landowners of this type have a greater conservation easement reservation price to overcome, given less mutual attachment overlap with conservators.

The survey also asked about landowner expectations with regard to the form and amount of compensation expected with easement placement. Table 9 describes both landowner's expectations and actual outcomes in consideration for placement. Respondents were split on expected financial consideration. When separated between actual placements and non-placement, only 18 percent of landowners with easements expected to sell their easement for a price, whereas 57 percent of landowners who did not place an easement expected to sell their conservation easement value and 89 percent expected more direct financial benefits than they were offered. More than half of the respondents who did not place easements would still consider placement if adequate funding were available.

The lesson learned by those who placed easements is that society is willing to pay more for selective non-market amenities than for the landowner's personal goals of "improving financial and estate taxes." As shown in Table 10, non-market attachment property goals were the most attained and respondents clearly stated that financial improvements were the least improved property goal. This is counter to their expectations prior to placement given initial high expectations for financial and economic improvement goals (Table 8). Thus the landowners who placed easements recognized and valued their amenity improvements with corresponding societal interest values from their easement placement.

Those landowners who placed easements did manage to retain complementary benefits from attributes that the conservators were willing to pay for. Respondents held that "land use maintained" was the foremost goal met (Table 10). Therefore, maintaining the ability to farm was seen as important to grantees, but the profitability of farming was not. Financial improvements were the least realized outcome as compared to high expectations by landowners (Table 8). Thus, landowners with relatively

greater *attachment* values had a better experience with conservation easements than those who chose placing a conservation easement for predominately financial reasons.

Outcome. The final section of the survey focused on evaluating conservation easements for their effectiveness. Easement holding respondents appraised issues and their influence on the outcome from easement placement. Table 10 illustrates landowner rankings for actual property goals attained. While agricultural uses were maintained, both income and estate tax improvements were the least cited goal met. Financial improvements, such as estate tax savings, or improved income, were the least attained property goal, yet they were one of the most cited expectations. Landowners more often attained public values in open-space and maintained land use. Nevertheless, landowners who placed an easement were satisfied with the experience (Table 11). Landowners who were more focused on financial gains tended not to place easements after considering them.

Overall, landowners with a conservation easement were very satisfied in meeting their property goals, though respondents with little previous experience also cited difficulty in placement. Table 12 shows the issues that significantly influenced easement placement. Surveyed landowners stated that confidence in a land trust was the most significant issue influencing their placement. No other issue was especially identified or dismissed. Thus many external factors played a role in easement construction and placement.

CONCLUSIONS

Landowners incorporate both market and non-market factors into their conservation easement value or reservation price. Survey results indicate that landowners do incorporate attachment type values into their reservation price since they expected and realized such property goals. The primary difference between respondents with and without placement was the weighting and recognition between market and non-market attributes influencing land ownership. When conservators recognized "maintaining a land-use" as important and landowners desired "maintaining a viable agricultural use," then a portion of private and public amenities complementarily overlapped, enough so to improve exchanges and yield conservation easement placement. However, the relative proportion of attachment value and personal financial goals is important. Landowners who placed easements demonstrated higher levels of attachment value that society recognized and held lower expectations about the financial rewards from conservation easements than did landowners who did not place easements.

Landowners expected and attained their long-term property goals with conservation easements placed on their property. But the goals they expected when they started looking at easements, which were financial in nature, tended not to be the same ones that they thought were most satisfying in the end. Thus, motivations for land protection stemmed more from tenure than from financial improvements. This can be seen in many places throughout the survey. First, expectations when placing an easement were different than the outcomes cited as beneficial after placing easements. Second, only 18 percent of those people placing easements expected to be paid fully for the easement, while 57 percent of those who backed away from the easements expected to be financially compensated. Half of those landowners who did not place an easement at the time of the survey would consider placement if full funding became available.

One important lesson from the survey results is that landowners do not fully understand what to expect when they start considering an easement agreement. The costs in both time and money can be high, and financial compensation is *not* the main reward. Perhaps new incentives to direct more income to

those people placing easements will make a difference. However, it may be equally true that most easements will come from landowners most interested in donating or receiving partial payment for protecting the attractive non-productive features that so many farms and ranches nurture.

Improved valuation and negotiation between a landowner and conservator is achieved by recognizing the possible complementary overlap of landowner's non-market attachment values and conservator's *PIVs* captured within a conservation easement agreement. This realization may explain the growth in the number of differing land trust organizations in operation. These trusts vary not only by location but mission. Landowners may be better served by utilizing a land agent whose mission most clearly matches their attachment values. This would yield superior allocation of scarce public funds by more fully capturing the non-market values of the landowner and saving public expenditures with a lower landowner reservation price.

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Table 1. PIVs Protected by U.S. Land Trusts

Land *PIV*'s Protected	% of Land Trusts Protecting	Land *PIV*'s Protected	% of Land Trusts Protecting
Wildlife habitat	76.6	Historic and cultural	46.2
Forests	70.5	River corridors	35.3
Open space	69.5	Ranch land	34.3
Watersheds	64.3	Mountains	34.3
Wetlands	60.4	Hillsides	33.8
Scenic views & roads	55.7	Lakes	32.9
Ecosystems	55.2	Urban Land	28.9
Farms	51.0	Prairies	27.6
Greenways	50.3	Archeological sites	25.7
Recreation and trails	49.0	Deserts	15.8

Source: Adapted from J. A. Gustanski, Land Trust Interviews, **(**1996-98) as quoted in Gustanski and Squires, 2000, p. 21.

Table 2. Landowner Background

		Completed (n=7)	DNC (n=7)	Total (N=18)
Primary Enterprises				
	Cattle and Hay	100%	100%	100%
Family Tenure on Property				
	25 Years or Less	9%	43%	22%
	26 - 50 Years	36%	14%	28%
	Greater than 50 Years	55%	43%	50%
Landowner Description				
	Full time -Primary	55%	43%	50%
	Full time w/ Secondary Job	18%	14%	17%
	Own -self manage	0%	43%	17%
	Own -hire manager	27%	0%	17%
Income derived from property as a percent of total income				
	Less than 25 percent	36%	43%	39%
	25 to 75 percent	27%	43%	33%
	Greater than 75 percent	36%	14%	28%

Table 3. Estimated Public Interest Values Identified by Landowners Occurring on Their Property

N=18	Low significance (1-3)	High significance (4-5)	Mean score
Other - open space	0	100%	5.0
Natural areas or viewsheds	6%	94%	4.6
Agricultural values	6%	94%	4.4
Wildlife habitat	11%	89%	4.4
Riparian/water resource value	22%	78%	4.2
Recreational values	44%	56%	3.6
Historical values	56%	44%	3.2
Endangered species habitat	67%	33%	2.9
Educational values	89%	11%	2.3
Forest values	94%	6%	2.1

Table 4. Conservation Easement Statistics (N=11)

Landowner Conservation Easement Placement			*Percent*	
Completed a conservation easement			61%	
Did not complete			39%	
Land trust affiliation				
Local			27%	
State			45%	
National			27%	
Compensation for placement				
Donated			35%	
Sold			35%	
Combination			29%	
	Unit	*Average*	*Min*	*Max*
Easement acres placed per property	ac	2,224	141	10,486
Easement as a percent of total property acres	%	72	14	100
Transactions cost per completed easement	$	11,320	2,070	29,240
Estimated transactions costs per easement acre	$/ac	23.0	1.8	71.0
Transactions cost as a percent of easement value	%	1.3	0.4	3.2
Time spent to place a conservation easement	hrs	169	12	800
over a period of months	months	19	6	36
Conservation easement value per easement acre	$	1,968	133	5,674
Easement value as a percent of appraised market price	%	51	23	80
Expected compensation as a percent of easement value	%	65	30	90

Table 5. Estimated Significance of Technical Resources Utilized (N=11)

	Low Significance 1-3 <=avg	Very Significant 4-5 >avg	Out of 5 Mean Score
Land appraisal	27%	73%	3.9
Time commitment	45%	55%	3.6
Stewardship endowment	55%	45%	3.3
Legal and title fees	73%	27%	3.0
Baseline inventory assessment	82%	18%	2.6
Environmental survey assessment	82%	18%	2.3

Table 6. Reasons Cited for Not Placing a Conservation Easement (N=7)

	Percent
No funds available for purchase-of-development rights (PDR)	56%
Did not help goal of reducing estate tax	22%
Insufficient landowner income to utilize available income tax credit	11%
No agreement reached on conservation easement value	11%

Table 7. Issues in Decision Not to Complete a Conservation Easement (N=7)

	Little Importance 1-3 <=avg	Very Important 4-5 >avg	Out of 5 Mean Score
Funding constraint: donation rather than PDR	50%	50%	4.0
Future land value changes	50%	50%	3.3
Transactions cost required	67%	33%	2.7
Positive impacts on neighbor	100%	0%	2.3
Family goals	75%	25%	2.3
Technical requirements	100%	0%	1.8
Negative impacts on neighbor	100%	0%	1.3

Table 8. Landowner's Primary Goals for a Conservation Easement Agreement (N=18)

	Percent
Maintain viable agricultural use	33%
Improve estate tax burden	24%
Improve financial position/leverage assets	24%
Prohibit development/maintain open space	9%
Improve environment and wildlife habitat	9%

Table 9. Expected Form of Consideration for a Conservation Easement

	Completed	DNC	Total
Donate (n=6)	36%	29%	35%
Sell (n=6)	18%	57%	35%
Combination (n=5)	45%	14%	29%

Table 10. Cited Property Goals Met by Conservation Easement Placement (N=11)

	Somewhat 1-3 <=avg	Fully 4-5 >avg	Out of 5 Mean Score
Land use maintained	0%	100%	4.8
Open space protected	20%	80%	4.2
Environment improved	30%	70%	3.7
Reduced future uncertainty	50%	50%	3.6
Improved property income	70%	30%	3.1
Improved estate taxes	70%	30%	2.9

Table 11. Conclusions with Conservation Easement Placement (N=11)

	Low 1-3 <=avg	Extreme 4-5 >avg	Out of 5 Mean Score
Prior Experience with Conservation Easement Placement	67%	33%	2.8
Difficulty in Conservation Easement Placement	40%	60%	3.4
Satisfaction with a Conservation Easement	10%	90%	4.4

Table 12. Issues that Influenced the Outcome of Conservation Easement Placement (N=11)

	Low Significance 1-3 <=avg	Very Significant 4-5 >avg	Out of 5 Mean Score
Confidence in land trust	18%	82%	4.2
Easement design fit needs	36%	64%	3.7
Sale of easement: (PDR)	36%	64%	3.5
Amount of time needed to complete	45%	55%	3.5
Donation of easement	45%	55%	3.3
Level of technical resources required	45%	55%	2.6
Positive impact on neighbors	64%	36%	2.6
Multi-generational family considerations	55%	45%	2.5
Initial knowledge of easement laws/requirements	73%	27%	2.5
Amount of transactions costs incurred	82%	18%	2.4
Expected future land value changes	55%	45%	2.3
Negative impact on neighbor	82%	18%	1.5

WHY LANDOWNERS PARTICIPATE IN CRP AND OTHER FEDERAL CONSERVATION PROGRAMS: INSIGHTS FROM RECENT SURVEYS

Steven Kraft, Christopher Lant, Timothy Loftus, and Keith Gillman
Presented by Steven Kraft

What motivates agricultural landowners to take part in federal land programs such as the Conservation Reserve (CRP) and Wetlands Reserve (WRP) Programs? A number of surveys of Midwestern landowner in recent years have examined landowner participation in these programs. Among the key influences on decisions to enroll or not enroll in such programs are: farmer believes land qualifies for the program, proportion of family income from agriculture, number of visits to the NRCS office, farm assets relative to liabilities, and total farm income. Some of the studies we summarize in this paper targeted landowners in the mid 1990s already enrolled in the CRP, but whose contracts were reaching maturity and who were faced with renewal decisions. We also examine decisions to place eligible land in riparian filter strips, an option in the CRP with significant water quality benefits. The findings of landowner studies from the Midwest are summarized and interpreted in light of conservation policies affecting California and other areas.

INTRODUCTION

With the passage and signing of the 1985 Food Security Act, the USDA once again became actively involved with programs designed to retire land from production agriculture for ten years or longer periods of time. Through the 1990, 1996, and the 2002 Farm Bills, these programs have been modified and expanded. The principle programs have been the Conservation Reserve (CRP) and the Wetland Reserve (WRP). In lieu of cropping their land, landowners receive yearly or lump-sum payments from the USDA to compensate them for the crops not grown. A number of studies since 1986 have assessed landowners' participation in these programs, including the factors influencing landowners' decisions to submit program applications. These studies have taken place in watersheds located in Iowa, Illinois, Wisconsin, Missouri, and Indiana. Using sources including soil maps, USGS topographic maps, wetland inventories, among others, landowners were identified who had land resources making them eligible for the programs. Alternatively, in a number of instances, landowners were surveyed who were already participating in the programs. Since there are a number of studies that were reviewed, there is variability in the research techniques used. These range from personal interviews through mail surveys of sampled landowners. In a number of instances, rather than sampling, the entire population was surveyed. From these studies, we can gain valuable insights applicable to landowner behavior in farmland protection programs that are designed to remove the development rights from farmland.

Rather than reviewing the individual studies in detail here, we examine overall the general factors of concern to landowners as gleaned from the published research as well as extensive personal interviewing of landowners. We discuss landowner motivations as identified through statistical analysis of survey data, focusing on those variables that appear to be particularly relevant farm land protection programs. As background, brief descriptions of the CRP and the WRP programs are presented. Some of the data are from surveys which were conducted while these programs were in their formative stages. Thus, they reflect issues and alternatives relevant to program implementation which might not have been included in the published rules guiding the respective programs.

BACKGROUND: THE CRP AND THE WRP

Title XII of the 1985 Food Security Act established the CRP. The program was designed to retire highly erodible land for ten-year periods of time from crop production. In exchange for placing their land in the CRP, landowners received an annual rental payment from the federal government. The program was justified as means to reduce soil erosion and sedimentation and increase other environmental benefits, while also reducing the production of agricultural commodities and farm income support payments. Initially, the CRP had an enrollment goal of 45 million acres. Over time and three intervening farm bills, the CRP has gone through many changes. Rather than just concentrating on highly erodible land, the CRP now embodies an environmental benefits index that integrates a number of distinct environmental factors, e.g., water quality, wildlife habitat, etc. Over time rental rates have increased in some parts of the country. Currently, under the 2002 Farm Bill, the CRP has a goal of 39.2 million acres and authority to increase spending to $1.5 billion over 10 years over the April 2002 baseline. A major focus of the program is to enroll riparian lands as filter strips (see Farm Service Agency 2003 and Economic Research Service 2003).

The WRP was also initially authorized in Title XII of the 1985 Food Security Act. Like the CRP, the WRP is a voluntary program. The purpose is to "restore, enhance, and protect wetlands" (Natural resource Conservation Service 2003). Under the 2002 Farm Bill, landowners with land qualifying for the WRP can enroll their lands through permanent easements, 30-year easements, or restoration cost-share agreements. Since 1985, the WRP has gone through a number of significant modifications, although it continues as one of the few land-retirement programs that includes long-term easements (see Natural Resource Conservation Service 2003 and Economic Research Service 2003 for more specifics).

GENERAL FACTORS INFLUENCING LANDOWNERS

We first consider a number of general factors that are reflected in the specific studies that are discussed later. First, it is important to realize that most owners of agricultural land view their land as a productive asset to be used in combination with other fixed and variable inputs to provide at least some minimally accepted level of income. The land with its variations in quality is a factor of production to be allocated to those uses in which it earns its highest returns. This allocation is done within the context of the other productive assets on the farm, the technologies they embody, the managerial abilities of the owner, and the external world of prices and policies. Unlike the world of economic theory, based on profit maximization assuming perfect information, many landowners are engaged in what Simon (1955) referred to as "satisficing" behavior–given their limited information endeavoring to obtain an acceptable level of return from their productive assets. Producers are also interested in maintaining as much flexibility in their operations as possible. This permits them to respond to unexpected changes in prices, yields, growing conditions, and governmental policies. Programs that are viewed to reduce flexibility will be evaluated very severely. Additionally, landowners are concerned with how placing land in such programs impacts the continued functionality and profitability of other capital investments made in the farm operations, e.g., tile drains, drainage ditches, etc. The data also suggest that conservation is not necessarily the most important goal for land owners and farmers nor does it rank very high given their multiple goals. Rather the data from a 1986/87 survey show that for landowners and producers in southern Illinois, the most important goals were financial growth (39.5% of the respondents), survival (28.6% of the respondents), maintaining a rural life style (23.3% of the respondents), and conservation (1.8% of the respondents) (Kraft et al. 1989). Data from another survey ten years later, reflect similar

goals: maximize profit (23.5% of the respondents), maintain rural life style (23.5% of the respondents), pass the farm on to next generation (20.6% of the respondents), and soil and water conservation (14.7% of the respondents) (Lant et al. 2001). The focus of the landowners is on the use of their productive resources, e.g., land, labor, capital, to fulfill financial and lifestyle goals. Program designers and implementors need to integrate this focus into their policies.

While landowners view their land as important productive assets, their land also plays a number of other significant roles for them. First, for many landowners, their land represents an important portion of their personal wealth. Just as importantly, this wealth is seen as critical to many landowners in terms of yielding a flow of income adequate to support them in their retirement. The land plays a central role in the owner's estate and retirement planning. Consequently, programs impacting the value of the land must be seen from the perspective of the implications they have for the wealth and retirement income. Second, as a corollary to the preceding and as reflected in the goals from the 1996 work above, land plays a critical role not just in retirement planning for the owners but also in estate planning - the passage of the land as a productive asset from one generation to the next. Finally, the land plays a central role in assessing the relative strength of a landowner's balance sheet - his/her assets relative to liabilities. In the modern world of agriculture, the strength of a producer's balance sheet is one of the items assessed to determine the credit worthiness of the operator and his/her ability to finance the operation with operating loans. Long-term retirement programs that significantly reduce the value of productive land can have a direct impact on the ease with which landowners can secure operating loans. When viewing land-retirement programs or farmland protection programs based on removing development rights from the land, we need to be aware of how these programs impact the multiple roles that land plays in the financial portfolio of the owner. For many owners, these roles that land plays are the perspectives the owners use in determining if they should participate in the specific programs.

One final general point derived from studies on the CRP, WRP, and riparian filter strips within the CRP is that these programs are not "self adopting." The programs require proactive strategies to market these long-term retirement programs to owners. Program managers cannot assume that information about the programs is readily available and that it will circulate freely throughout the community. Esseks and Kraft (1988) found that frequently there has been a disconnect between the personnel of the implementing agencies in terms of what is needed to advance a program through effective marketing and what eligible, nonparticipating landowners tell surveyors. In many instances, eligible landowners lacked basic information about parameters of the programs they had eligible land for. The informal information channels do not seem to get program specifics to eligible participants, e.g., level of payments, eligibility criteria, program mechanisms, use options for the subject land, etc. Rather, the programs seem to require a concerted form of marketing that is frequently referred to as "industrial marketing" – direct interaction between the landowner and the program implementor during which the landowner is shown how the program will fit into their existing operation given their existing suite of resources and their financial position. In many instances, given the parameters of the program, during this interaction the program is tailored to meet the unique needs of the specific landowner (see Kraft et al. 1989 and Esseks and Kraft 1989).

Data in Table 1, indicate that awareness of the programs can increase participation by 50%. Similar results have been found by Esseks and Kraft (1988; 1989), Lant et al. (1995a; 2001), and Loftus and Kraft (2003). Most frequently, awareness of the programs comes through formal direct contact with personnel of the conservation agencies. As the amount of contact with the staff of the Natural Resource

Conservation Service (NRCS) or the Farm Services Agency (FSA) increases , the greater the awareness eligible landowners have of the programs and the greater their willingness to participate. However, there was not an aggressive strategy for many of these programs to market them as they were implemented. Rather there was the expectation that with news about the policies in official announcements, information about the programs would readily flow through the agricultural community. Frequently, this did not happen (see Esseks and Kraft 1988; 1989). In summary, program managers need to adopt a proactive marketing program that tailors the specifics of the program to the needs of the particular landowner involved.

SPECIFIC VARIABLES INFLUENCING LANDOWNERS–SUMMARY OF SURVEY RESULTS AND INSIGHTS

Data in Tables 1 to 5 are illustrative of results from surveying landowners with land eligible for programs like the CRP and the WRP. These data present a number of reoccurring themes that we believe are relevant when considering farmland protection programs. We discuss these themes from two perspectives. One that we might call perceived "opportunity costs" to the landowner, i.e., costs that derive from no longer having complete control over all of the use rights associated with a parcel. Hence, the landowner is no longer free to consider the complete range of uses to which the land may be allocated. The second we might term "transaction costs" for the landowner, i.e., costs which are incurred as a consequence of dealing with the process of entering land in the respective programs.

The data in Tables 2-5 all speak to the perceived costs in reduced managerial flexibility resulting from placing land in such programs. In Table 3, for example, 44.9% of the respondents indicated they would be unwilling to enroll land in long-term easements because it would reduce their managerial flexibility. 60.5 percent responded that they did not want to deal with the loss of control over their eligible land. In table 5, the data show 52.8% of the respondents would not place land in the CRP and easement programs because "the long-term nature of these programs reduces my flexibility to adjust land uses to changing economic circumstance." Additionally from Table 5, 56.8% of the respondents "expect[ed] to earn more producing on the eligible land than the amount proposed as a yearly payment."

A second form of "opportunity cost" to the landowner is the implications of his/her involvement for their continued eligibility for and participation in (a) USDA programs and (b) USDA program-based revenue. While the survey data got at this point indirectly, Table 3 shows that 9% of the respondents were concerned about the impact of participation on their eligibility for market transition payments under the 1996 farm bill. From an earlier survey, data in Table 5 report that 33.1% of the respondents with eligible land were concerned about the impact on their base acres (pre-1996) for commodity programs.

A third form of cost that is a corollary to the first one mentioned is not only a perceived loss of control over land-use decisions but this is frequently coupled with a distaste for dealing with the federal government. Data in Tables 2, 3, and 5 all speak to this cost that has elements of both an opportunity and a transaction cost. For example in Table 2, 72.5% of the respondents with land eligible for riparian filter strips said they were unwilling to enter land in the program because "[they] do not want the hassle of a long-term contractual arrangement with the federal government" while 38.2% said "filter strips will reduce flexibility to change land uses as economic conditions warrant." Table 3 shows that the top two reasons selected by respondents for being unwilling to enroll eligible land in long-term easements pertain to these issues of loss of control and the hassles of dealing with the federal government. The

second and third reasons listed in Table 5 underscore these costs as well. A variation on this that is related to the "transaction costs" to be discussed below is the interface between what landowners have traditional construed their property rights to be and how they perceive these rights to changed or are compromised as a consequence of an easement. Table 5 indicates that 41.9% of the respondents mentioned "I consider governmental control over the uses to which I put my land to be a violation of my property rights" as a reason for not enrolling their land in the CRP and easement programs.

A fourth "opportunity cost" that came out in the surveys as well as during the personal interviews was the impact long-term easements would have on the sale value of the involved land as well as the impacts it would have for persons inheriting the land. Table 5 captures at least part of the these concerns. For example, 38.3% of the respondents indicated they would not place land in the CRP or an easement program because "enrolling in the CRP would decrease the sale value of the farmland involved." 35 percent said the CRP "places too many restrictions on the operator who inherits the farm." Considering farmland protection programs that remove the development rights from parcels of land, these same concerns could well be involved. Even though the landowner has received a payment for the value of the development rights that have been transferred from the land he/she might still be very concerned about the impact of this on the ease of selling the land or on the future options open to heirs.

Another form of "opportunity cost" related to land retirement programs that is important, but not directly reflected in the data in the tables is the loss of potential for continual appreciation in the value of the development rights after the landowner has sold them. This is a concern with the potential for the loss of income and/or wealth. During our personal interviews with landowners regarding long-term easements, the concern frequently came up regarding the future value of the land and how an easement impacted the owners ability to capture any increase in value.

Insights about "transaction costs" derive less from specific survey questions and more from the personal interviews conducted and reported on in Lant et al. 1995a; 1995b. For the first area of significant transaction costs, there is extensive survey data to support the insights. As reported above, large majorities of the surveyed landowners mentioned the costs of dealing with the governmental bureaucracy implementing/ running a complex program. The survey data indicate that the dealing with personnel of governmental agencies represents a very real costs to land owners. This is reinforced by the references to the hassles of a long-term contractual arrangement with a unit of government. Not only are there the costs of enrolling in the program per se, there are the very real transaction costs of being subjected to the monitoring and enforcement of easement provisions.

During the personal interviews reported in Lant et al. (1995a; 1995b), landowners were asked to tell the interviewers what they would expect to be paid for a long-term easement of their land eligible to protect groundwater recharge areas, riparian filter strips, or wetlands. We observed that landowners had a very difficult time in arriving at meaningful, i.e., one based in economic or financial rationale, values. Their difficulty underscores the problematic nature or complexity of dealing with easement programs. That is, will landowners understand the process of determining the value for an easement in relation to the land market? Is this process transparent and acceptable to the landowner?

Another issue that came up during these interviews and which was raised repeatedly by the interviewees was the actual mechanics of how easement payments would be made and how they related to (a) income tax liability and (b) property taxes. Landowners were very interested in whether the easement payments would be made in a lump-sum or a series of annual payments. Not only were there the tax

issues involved, there were questions regarding the integrity of government to actually meet its obligations to payoff the easement.

Another critical area of transaction costs that was addressed was the cost to the perspective participant of obtaining information about the basic parameters of the program, e.g., value, payment size and structure, obligations on the part of the land owner, monitoring and enforcement. As indicated above, these costs can be significant and do have a direct bearing on program participation.

Finally the data in Tables 1 and 4 identify a number of specific variables that are significant in affecting the willingness of landowners to place land in programs like the CRP and WRP. First, there is a significant positive relationship between contact of the landowners with the agency personnel. As discussed before, this has impact on the knowledge the landowner has about the mechanics of the program, whether his/her land is eligible for the program, and most likely reduces the landowner's perceived transaction costs in dealing with the program. However, this does not necessarily reduce the unwanted hassles the landowner expects to experience as a consequence of participating in the program. Second, the longer the length of contract, the less willing landowners are to participate. This captures at least some of the concerns landowners voiced regarding their loss of flexibility in their operations and the hassles of dealing with the government. Third, generally the greater the percentage of family income from agriculture, the less willing farmers are to participate. This probably reflects the reduction of the inherent flexibility needed for the operational side of the business. From the standpoint of farmland protection programs that rely on transferring development rights from the land with the landowner retaining management over the agricultural uses of the land, this is a relationship that needs to be tested for its relevance. Fourth, the greater the asset to liability ratio, the less likely landowners are to participate. The financially stronger landowner has less of an incentive to capture the revenue stream from the payments associated with programs like the CRP and WRP. However, for farmland protection programs, these same landowners might be interested in realizing the value of their development rights and investing this in other income generating activities. This again is an important variable to analyze in relationship to these programs.

SUMMARY

These studies suggest a number of key points that policy makers and program managers need to consider when designing farmland protection programs based on transferring development rights. First, it is important to realize that for most owners of agricultural land, their land is viewed as a productive asset being actively managed to provide at least some minimally accepted level of income. Consequently, it is incumbent on the program managers to explain the range of use options still available to landowners after development rights have been transferred. Furthermore, land and land values play critical roles in (a) financially underpinning the existing farm operation, (b) retirement planning, and (c) estate planning. As programs are developed for farmland protection, explicit plans should be made in working with landowners regarding how the transfer of development rights affects their financial portfolios in the short and long run.

The program managers need to put in place proactive strategies to market these long-term retirement programs to owners. Program managers cannot assume that information about the programs is readily available and that it will circulate freely throughout the community. Such strategies will frequently require one-on-one interaction with landowners. As part of this interaction as well as in design of the program, specific attention will have to be given to those areas of opportunity and transaction costs

detailed above. These costs are real and can become significant barriers to the success of the farmland protection program.

The specific variables identified above influencing landowner participation need to be evaluated within the context of farmland protection programs based on transferring development rights. These variables indicate a number areas that will have to be validated in terms of relevance. However, we do know they have been significant for other land retirement programs.

Finally, to the extent possible, the more simple, more flexible and/or the shorter term of the easement/ agreement, the greater the likelihood of the landowner accepting a long-term easement.

Table 1. Results of Logistic Regression Explaining Probability of Enrolling Eligible Streamside Land in Filter Strips (CRP).

	Regression coefficient	**Level of significance**	**% Point change**
Variable			
Farmer believes land qualifies for the CRP	2.8150	0.0020	50.5 increase
Proportion of total family income from farming	-3.9080	0.0150	22.8 decrease
Visits to NRCS—1996	0.3810	0.0980	11.7 increase
Proportion of farm owned debt-free	-3.6440	0.0760	10.6 decrease
Total market value of farm	0.0000	0.0660	
Eligible filter strip hectares are drained	1.2390	0.1370	
Cropland hectares Constant	0.0040 2.0930	0.2580 0.2830	
Observations correctly predicted: 81.4%. Number of observations: 59. McFadden pseudo R2: 0.38.			
% Point change column: affect on probability when the change in variable value is from the 25th percentile to the 75th percentile: ‘‘farmer believes land qualifies...’’ from no to yes, ‘‘proportion of total family income from farm...70% to 90%,’’ from 5% to 50%, ‘‘...farm owned debt-free’’ from and ‘‘number of visits during the year to the local NRCS office’’ from 0 to 2.			

Source: Loftus and Kraft, 2003

Table 2. Reasons Respondents are Unwilling to Enroll Eligible Streamside Property in the Filter Strip Component of the CRP.

Reason	% Respondents[a]
Do not want the hassle of a long-term contractual arrangement with the federal government	72.50
Filter strips reduce flexibility to change land uses as economic conditions warrant	38.20
Establishing filter strips would interfere with activities on other croplands	18.60
Eligible land is too productive as cropland to convert to filter strips	17.60
Filter strips are too expensive and time consuming to maintain	11.80
Too expensive and time consuming to establish plants or trees on the filter strips	4.90
Filter strips would interfere with my obligations to the drainage district to which I belong	2.00
[a]Respondents could choose more than one reason; therefore, sum of numbers is greater than 100	
Number of respondents: 102.	

Source: Loftus and Kraft 2003.

Table 3. Reasons Respondents are Unwilling to Enroll Eligible Acres in Long-term Easements.

Reason	% Respondents[a]
Sacrificing control	60.50
Hassle of working with the federal government	58.70
Managerial flexibility reduced	44.90
Reduction in eligibility for market transition payments	9.00
Long-term easements are expensive and troublesome	6.60
Land is too productive to set aside	6.00

Source: Lant et al. 2001

Table 4. Results of Logistic Regression Predicting Probability of Enrolling CRP Acres in Long-term Easements Expiration of Contract in Cache River Watershed.[a]

	Regression coefficient	**Level of significance**
Variable		
Length of easement term	-0.0132	0.0000
Whether haying, grazing, timbering are allowed	0.913	0.0000
Participated in USDA commodity programs in 1996	-1.21	0.0001
Acres of cropland	-0.005	0.0002
Age of farmland owner	-0.0333	0.0020
Years of education	0.109	0.0063
Number of visits to NRCS in 1996	0.172	0.0099
Proportion of farm debt-free	0.0121	0.0105
Proportion of household income from farming	0.0136	0.0106
Whether farmland owner is retired	-0.824	0.0182
Number of visits to extension service in 1996	0.121	0.0952
Constant	-0.831	0.3698

[a]Percent correct prediction: 74.6%;
number of observations: 528

Lant et al. 2001.

Table 5. Reasons Given for Not Enrolling in the CRP and Easement Programs.

Reason	% of Respondents[a]
I expect to earn more producing on the eligible land than the amount proposed as a yearly payment	56.8
The long-term nature of the programs reduces my flexibility to adjust land uses to changing economic circumstances	52.8
I do not like the hassle of government programs	49.9
I consider governmental control over the uses to which I put my land to be a violation of my property rights	41.9
Too few acres would be eligible to make it worth my while	40.3
Enrolling in the CRP would decrease the sale value of the farmland involved	38.3
Enrolling in the CRP places too many restrictions on operator who inherits the farm	35.1
I would lose base acres for commodity programs	33.1
Enrolling in the CRP would adversely affect the financial status of my farm	26.8
I expect to earn more from renting out the eligible land than the amount proposed as a yearly payment	20.8
Enrolling in the CRP would interfere with my relationship with the farm tenant	16.7
N=360	
[a]Respondents could select more than one reason, hence numbers add to more than 100%	

Source: Lant et al. 1995a

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WHAT WORKS, WHAT DOESN'T: LANDOWNER REACTION PANEL

Chuck Bacchi
The Bacchis operate ranches in El Dorado and Sacramento County. They lease property near El Dorado Hills as well as in the Klamath area for summer pasture. Chuck Bacchi is active in the Green Valley Alliance.

Perhaps agriculture is culturally unique. Agriculturalists tend to be conservative, action oriented, family oriented and suspicious of change. These qualities provide counterbalance to the rapid change of our otherwise urban culture.

Farmers do not want regulation. Instead, they desire voluntary incentives. Thus, they are generally disinterested in easements unless there is enough money offered. Perhaps if more farmers were owner-operators, they would be more willing to come to the conservation table. Also, market-based incentives can be effective.

Nicole Van Vleck
Nicole Van Vleck is an owner and manager of Montna Farms, located in Sutter County, and is a producer of rice and walnuts. Montna Farms recently sold a conservation easement to Ducks Unlimited.

I would like to talk from a rice grower perspective about easements. We sold an easement in January, 2002. The sale of an easement is a long process and there is not enough money out there. Easement holders need to be better educated about the process.

Montna Farms wanted to keep the land in production forever. However, the economics of the situation needed addressing. Regarding this, the Great Valley Center has an online calculator linked to their web site.

The idea of using conservation easements to preserve agricultural land needs to be brought to the attention of farmers early on. Our land that was placed under easement could have been developed.

It is also the case that the easement process needs to be quickened. Additionally, the escape clause in our easement deal was a key factor. Such escape clauses need further refinement in order to facilitate increased use by potential easement holders. The invasiveness of the easement and the monitoring of the property did present issues for our family. However, the monitoring has been unobtrusive. Easements do work.

Fragmentation of land trusts is an issue which needs to be tackled. It is often the case that the non-profits themselves are responsible for this.

The rice industry is prepared to take advantage of other USDA programs in the 2002 Farm Bill. While there is too much paperwork, the Farm Service Agency is very helpful. There is a lot of federal conservation money which needs to be utilized. The landpooling concepts are innovative and visionary. We do control important resources and we need to be proactive as farmers.

Russ Lester
Russ Lester grows organic walnuts in Winters, and is a native of the Santa Clara Valley.

I saw the "progress" of the Santa Clara Valley, except I will call it "rape." I challenge you to think of the perpetuity of "progress" in the Santa Clara Valley. Think of the environmental impacts of progress. This is what is happening to the Central Valley today.

My father's ranch in the Santa Clara Valley fell victim to property taxes which were greater than the income of the ranch could provide to pay. It is in cases such as these that the Williamson Act has been a powerful tool.

The speakers here have talked about having our values upside down. Food is a necessity of life and we need to make sure we protect it within our country. It is the farm economy that we need to protect. If we, as farmers, did not have to struggle, we would not be tempted to develop our land.

If you study history and travel you can see why cultures fall. It is because they do not sustain themselves. They lose their water or food source.

What is it that farmers and ranchers want? We don't want to be coddled and we don't want to be subsidized. We need conservation easements to have the flexibility to respond to market changes.

We in agriculture are struggling to do what we can to be sustainable. We need to look at the sustainability of cities and urban areas. We need to promote understanding between urbanites and farmers.

Communication is extremely important in conservation easement deals. One needs to determine the reasons for doing conservation easements. An understanding of the other parties' needs is necessary in each situation. There also exists a need to design programs that are flexible as well as scientifically based. We need to understand that as farmers we deal with the environment every day. We should be cautious of carrying capacity and overgrazing. Farmers and ranchers must be stewards of the land. Of course, there are economic motivations behind our decisions. There is always the issue of estate tax.

However, I have a lot of hope for the future.

4. USDA CONSERVATION PROGRAMS

THE EVOLUTION OF CONSERVATION PAYMENTS TO FARMERS

J. Douglas Helms

The U. S. Department of Agriculture (USDA) began making conservation payments to farmers over 65 years ago. Payments to farmers fell under three broad categories: farm income support, land retirement programs though rental or easement agreements, and cost-sharing for conservation practices. Since that time, conservation payments have been closely linked to farm income and agricultural price support programs. The current array of conservation payments evolved in an atmosphere of trying to maintain farm income during a period of increasing agricultural productivity. In recent decades, environmental and conservation groups became effective advocates for land retirement programs that have wetland, wildlife, and other environmental benefits. Research, technology, education, technical assistance to farmers, and development of a conservation ethic have all contributed to current conservation capabilities. Payment for conservation practices has been a fundamental part of this development. To use a phrase employed by soil conservationists, they payments helped "get conservation on the ground."

FINANCIAL ASSISTANCE

Agricultural Conservation Program (ACP). The U. S. Department of Agriculture greatly accelerated its conservation assistance to farmers in the 1930s. The Soil Conservation Act of April 27, 1935 (PL 74-46, 85 Stat 163) directed the Secretary of Agriculture to establish an agency to be known as the Soil Conservation Service. After President Franklin Roosevelt transmitted the "Standard State Soil Conservation Districts Law" to the governors of the states in early 1937, state legislatures started enacting state laws (Glick 1990). After local landowners formed a district, the district then signed an agreement with the U. S. Department of Agriculture. For more than six decades, trained conservationists located at nearly 3,000 field offices have provided conservation technical assistance to landowners. In response to a U. S. Supreme Court decision, the federal government also commenced providing financial assistance for conservation practices. The U. S. Supreme Court in the case of U.S. v. Butler, 297 U. S. 1 (1936) declared the processing tax and payments to farmers sections of the Agricultural Adjustment Act of 1933 unconstitutional (the case is often referred to as the Hoosac Mills decision since U. S. v. Butler reversed a District Court decision, Franklin Process Co. v. Hoosac Mills Corp., 8 F.Supp. 552). The Agricultural Adjustment Act had provided for a processor-paid tax to fund payments to participating farmers who reduced their acreage of commodity crops. With the planting season approaching, officials in USDA and Congress searched for a means to reinstate a supply control and price support program. The soil conservation provision in the act of April 27, 1935, had not been tested constitutionally. The Soil Conservation and Domestic Allotment Act (PL 74-461, 74 Stat 1148), February 29, 1936, utilized soil conservation as a rationale for reenacting a means to reduce the acreage of seven commodity crops thought to be in surplus (Hurt, 70-80). USDA and Congress hoped that a reduction in acreage would result in an increase in commodity prices. The Soil Conservation and Domestic Allotment Act (SCDA) amended the act of April 27, 1935. Essentially the new act retained the entire soil conservation act (PL 74-46), retained and amended sections of the Agricultural Adjustment Act which had not been declared unconstitutional, and added new provisions to operate the agricultural commodities program. The financial assistance for conservation portion of the Soil Conservation and Domestic Allotment Act was called the Agricultural Conservation Program (ACP). Initially it focused on shifting land from what were regarded as soil-depleting crops to soil-conserving crops. As a matter of policy, if not agronomic reality, the soil-depleting crops were seven commodity crops whose market prices USDA sought to increase. Grasses, legumes, and other plant covers were defined as soil-conserving. While the shift in land use may have satisfied Constitutional requirements under the general welfare clause, it failed to

boost agricultural prices by reducing production. In fact, surpluses grew. The Agricultural Adjustment Act of 1938 amended the SCDA and supplemented it with acreage allotments and other mechanisms to achieve the agricultural income support objective (Bowers, et. al 1984). Subsequent amendments to the SCDA added other mechanisms to operate the commodity and rural income programs. In addition to shifting land from soil-depleting to soil-conserving crops, the Agricultural Conservation Program also permitted payments to farmers for installing conservation practices such as planting cover crops, improving pasture, building terraces, carrying out irrigation and drainage, and utilizing a whole host of other practices. Typically, the government paid the farmer a percentage share of the total cost of the conservation practice. Thus, the payments came to be called "cost-sharing." Economic and social policy analysts saw conservation in the public interest; therefore, the public should contribute to the farmer's costs (Ciriacy-Wantrup 1952; Bunce 1942). During the period 1937-1996, farmers received over 14 billion dollars in ACP payments (about 90 billion in 2001 constant dollars). Until 1974, annual ACP cost-share payments exceeded the cost of all technical services provided by Soil Conservation Service staff.

Early on, various parties contested the design of the ACP program. Generally, the farmers and their organizations favored a fairly even distribution of cost-sharing funds over the countryside. They also favored the freedom of county committees and farmers to select from a broad array of conservation practices that would be cost-shared. Conservation policy analysts, soil conservationists, and later the environmental movement focused more intensely on particular practices or geographical areas.

The pendulum has swung back and forth between the competing views and methods of providing financial assistance for conservation. Soil conservationists generally opposed what they regarded as annual practices and favored what were termed "enduring practices," but the lines were not easily definable. For instance, liming was regarded by most of the soil conservation groups as an annual production practice, but it undoubtedly helped produce denser, healthier plant cover, which was beneficial for soil conservation. USDA often dealt with the seeming contradiction of paying to reduce acreage and production while other programs enhanced production. ACP was only one example of this conundrum. Many conservation practices contributed to both conservation and production. The two were not incompatible. Assistance for drainage became a particular target, because of its impact on wildlife habitat. In fiscal year 1979, the Agricultural Stabilization and Conservation Service (ASCS) which administered ACP eliminated the practices for drainage, liming of cropland, weed control and rotation seeding. In 1962, 38 percent of the funds were spent on fertilizer and limestone (Congress 1012 1965). In 1983, ASCS began restricting the ACP funding on lands eroding at less than "T," the soil loss tolerance level. ACP has been used to accelerate the adoption of conservation practices. For instance, conservation tillage practices, which included reduced tillage and no-till, became an eligible practice in 1973. Additional practices have been added as their value became recognized. Two examples were constructed wetland systems for agricultural water treatment in 1991, and riparian buffer strips in 1992.

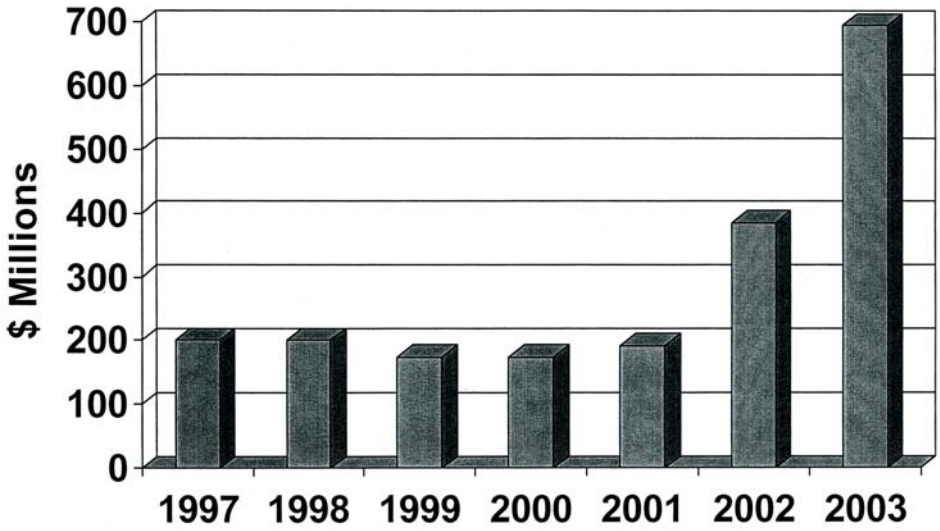
In the 1980s, USDA policies shifted the ACP funding toward targeted areas needing accelerated conservation funding. The Agriculture and Food Act of 1981 included a provision for "Special Areas." Congress, however, never funded the program. The USDA administration did accept the concept of targeting funds to problem areas. In 1982, SCS designated ten targeted areas. In 1983 the states submitted proposals for additional targeted areas. The plan was for SCS and ACP to annually devote an additional five percent of their technical and financial assistance to the targeted areas, until 25% of their funds were going to targeted areas. At the behest of producers who thought they would lose

federal resources under this system, Congress froze the allotments as they were in 1984, thereby ending the movement toward targeting. (Helms 1990).

Area and Special Financial Assistance Programs. Other smaller or regional programs have also made financial assistance payments for conservation. The Water Bank sought to slow the loss of wetlands. The Colorado Salinity Program conducted cost-share irrigation practices in the interest of reducing the salinity of water being delivered to Mexico by the Colorado River. Congress passed the Great Plains Conservation Program in response to the 1950s drought. The Soil Conservation Service supervised the cost-sharing and to it added the requirements of long-term contracting and the whole farm conservation plan. The Rural Clean Water Program cost-share practices in experimental areas in an attempt to establish causality between on-farm conservation practices and water quality.

Environmental Quality Incentives Program. In the 1996 Farm Bill, the Federal Agriculture Improvement and Reform Act of 1996, Congress replaced the Agricultural Conservation Program and other conservation financial assistance programs with the Environmental Quality Incentives Program (EQIP) (Figure 1). Although the conservation policy specialists had generally dropped "targeting" from their lexicon, the reformers won some significant victories on a new front. The law authorized the Secretary to "carry out the single program in a manner that maximizes environmental benefits per dollar expended" (§ 1240 110 Stat. 888, 997). "Maximize environmental benefits" became the operative phrase. "Targeting" was not mentioned, but the Secretary was directed to designate "conservation priority areas" which would then be eligible for EQIP (§ 1230, 110 Stat. 888, 993). USDA developed a process for local groups to apply for priority area status. Potential priority areas competed. Success in the priority designation process was at least partly dependent upon the nature and extent of the area's conservation problems. The law also authorized the Secretary to develop procedures "for determining which applications will result in the least cost to the program…and…maximize environmental benefits per dollar expended" (§ 1240B, 110 Stat. 888, 999). The Congressional conference report made clear that the expectation was for applicants to compete in the interest of the overall objective of maximizing environmental benefits per dollar expended. (Report 104-494, 388 and 391). Part of that competition involved the willingness to accept a lower than maximum allowed, cost-share rate. This aspect of the applicant process came to be known as the "bid down," although Congress did not use the term either in the law or the conference report.

Figure 1. Environmental Quality Incentives Program



Congress tried to maximize participation and promote equity among eligible producers by placing a limit of $10,000 on the cost-share for any one year, and a limit of $50,000 for any multiyear contract. Congress funded EQIP at $174 million annually. In the 1996 version of EQIP, Congress swung the farthest to date in the direction of prioritizing the land, agricultural, and resources areas eligible for financial assistance.

The 2002 Farm Bill, the Farm Security and Rural Investment Act, reauthorized EQIP through 2007. The pendulum swung back partially from the prioritizing initiatives found in the 1996 EQIP. The new law retained the language about maximizing environmental benefits, but removed the measuring-stick language "per dollar expended." Congress removed the "bid down" process by stating that least cost was no longer to be used in selecting from applications with similar environmental benefits. The law dropped the reference to "conservation priority areas." Applications from all areas of the country would be considered. The 2002 EQIP expanded the purposes of the program to read "soil, water and air quality; wildlife habitat; and surface and groundwater conservation." The new law removed the prohibition on large confined animal feeding operations. The law raised the payments limits to $50,000 for a fiscal year and $450,000 for the life of the farm bill. Significantly, Congress greatly increased annual expenditures from $174 million to nearly $700 million. The total expenditures for fiscal years 2002-2007 will be $6.16 billion.

FARM INCOME SUPPORT

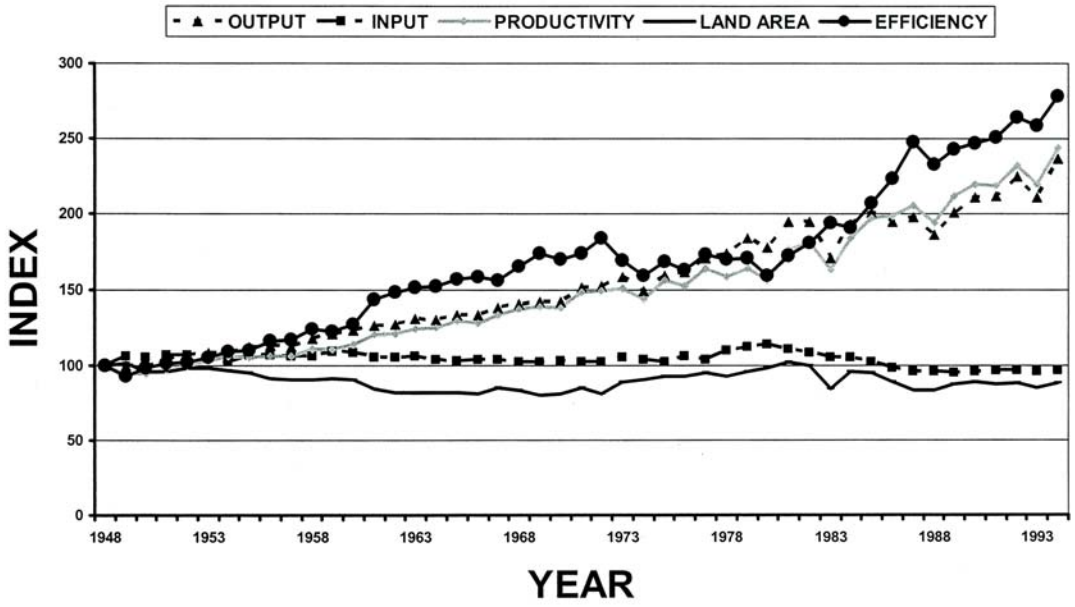
Annual Set-Aside. During the 1920s, farm incomes seemed lower and out of alignment with non-farm incomes. Beginning with the Agricultural Adjustment Act of 1933, agricultural reformers during the Great Depression promoted legislation that sought to adjust price and supply and to raise the income of farmers. Except for brief spikes of high commodity prices, payments have been in effect for nearly seven decades. Conservation is usually seen as a benefit of these programs. Prosperous or secure farmers were more likely to implement conservation than cash-strapped ones. However, some critics pointed out that the program might encourage farmers to continue farming erodible cropland that might otherwise be left idle.

To participate in commodity programs, farmers usually had to leave a certain percentage of their base acres out of production. This "set-aside" presumably reduced production of commodity crops, thereby decreasing the oversupply for which farmers received cash-support payments. In periods of low commodity supply and high demand, USDA might not require the set-aside. Program critics pointed to two deficiencies. Farmers concentrated production on the best available land, and intensified inputs, thereby mitigating the potential for constraining production. Secondly, the annual nature of the program meant that it was not particularly effective in achieving conservation objectives.

LAND RETIREMENT

Soil Bank. The agricultural historian R. Douglas Hurt employed the book title, *Problems of Plenty*, to illustrate the difficulties of trying to manipulate supply and price in an era of increasing agricultural productivity. Agricultural productivity grew dramatically after World War II as farmers produced more per acre. Farm productivity grew 49 percent between 1950 and 1970 (Figure 2). During the same period corn dropped from $8.26 to $3.91 per bushel. (Peoples 1992). Carryover of commodity stocks sometimes built to price-depressing levels.

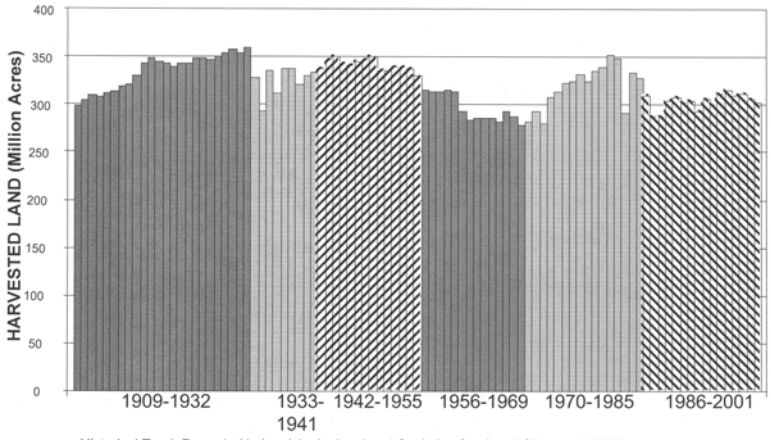
Figure 2. Productivitv and Efficiencv of Land Use



Source: *Agricultural Productivity in the United States.* Economic ResearchService, Agriculture Information Bulletin No. 740. USDA, January 1989. pp.4-6; *Historical Track Records.* National Agricultural and Statistics Service, USDA. April 2002. p. 5.

Farmers enjoyed high farm prices during World War II. After the war USDA maintained high price-support levels, and farmers responded. Carryover of commodities depressed prices, leading to greater outlays for income support. Land retirement programs were one response to this conundrum. The government used several mechanisms to take 52 million acres out of production, about 15 percent of harvested acreage, between 1950 and 1970 (Figure 3). In two instances, government instituted long-term land retirement programs as part of the solution to over production. The Soil Bank (1956-1969) and the Conservation Reserve Program (1985-present) had multiple objectives. First, the programs provided income to farmers in a climate of low prices. Second, the programs would remove land from commodity production for a term longer than the annual set-aside. Third, the program had conservation objectives. Initially, the poor stepchild of land retirement, conservation now emerged as a primary objective with its own clientele.

Figure 3. Principal Crops: Total Harvested Acres, 1909-2001



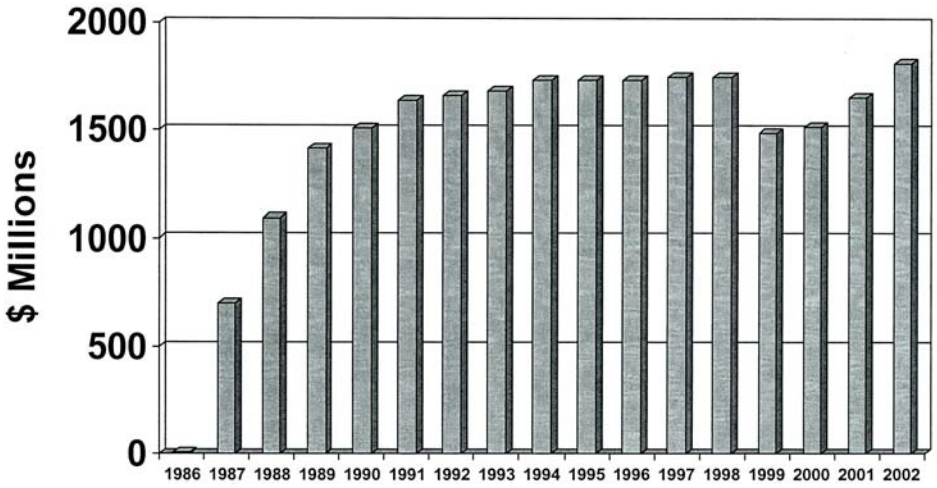
Historical Track Records, National Agricultural and Statistics Service,USDA, April 2002, p.5

Under the Soil Bank (1956-1969), the U. S. Department of Agriculture made long-term rental (3 to 10 years) payments of $2,477,000,000 to farmers. At the peak of the Soil Bank in 1960, there were 306,186 farms with approximately 28.7 million acres under contract (Final Report 1972). Most of the contracts had expired by the end of 1969. The following acreages of practices were established:

(1956-1964)	Acres
Seeding grass and legumes	18,439,006
Tree planting	2,154,428
Construction of dams and ponds for livestock water, irrigation water, and fish	6,603
Cover for wildlife	310,814
Water and marsh management for wildlife	10,493

Conservation Reserve Program. Another period of price-depressing oversupply and accompanying high government outlays for price supports in the 1980s resulted in Congress' enacting another long-term land retirement program. Congress enacted the Conservation Reserve Program (CRP) as one of several new conservation programs found in the Food Security Act of 1985. Congress authorized a long-term rental program of up to 40 million acres. Under the program, farmers could sign 10-year rental contracts and also receive payments to install conservation practices. Rentals for the period 1987-2001 totaled nearly 22 billion dollars, with some $326 million spent to administer the program (Figure 4). Conservationists and environmental groups influenced the design of the CRP more than was the case with the Soil Bank. Congress targeted enrollment eligibility to highly erodible land and other lands that posed an off-farm environmental threat (§ 1223, 99 Stat. 1354, 1509). Ranking mechanisms were used to maximize wildlife and other environmental benefits. Land retirement programs had several objectives: reducing erosion, supporting farm incomes, and reducing commodity price support payments by reducing supply and thereby raising market prices.

Figure 4. Conservation Reserve Program - Rental, Cost-sharing, and Technical Assistance Expenditures



Environmental groups and traditional conservation interests designed a program targeted to the most erodible land. They succeeded in this and the battleground shifted to the definition of "erodible land" and the erosion index to identify land eligible for the CRP. Environmental groups favored the most stringent identification while general farm groups favored a much looser construction. Cattle producers

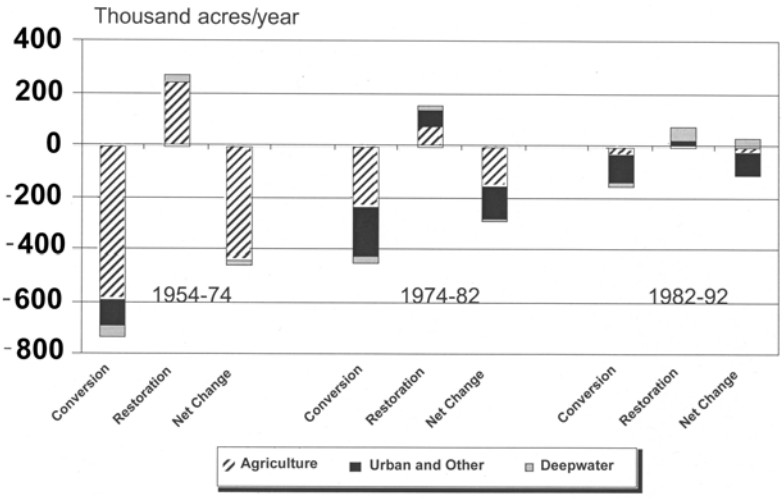
succeeded in preventing the grazing and haying of CRP land. This was seen as unfair competition with ranchers whose range and pasture land was not eligible for the CRP. The agricultural supply industry prevailed in placing a 25% cap on the amount of cropland in any one county that could be brought into the CRP (§ 1223, 99 Stat. 1354, 1509). They believed one of the lessons of the Soil Bank was that wholesale enrollments in some counties had crippled the agricultural supply and equipment businesses. Some traditional wildlife groups lobbied for measures to accentuate wildlife habitat. They generally applauded the program but decried the provisions for emergency grazing and haying, and advocated greater use of native grasses as opposed to tame grasses and legumes. At an early meeting on the implementation of the 1985 Farm Bill, Ann Robinson of the Izaak Walton League of America predicted that "The Conservation Reserve Program (CRP) will be one of the most researched agricultural programs in history…" (Robinson 1990). Specialists studying wildlife, and soil, water and air quality have borne out this prediction.

One might say that the Conservation Reserve Program has taken on a life of its own, or at least a justification of its own. It no longer relies solely on the rationale of reducing surplus commodities as its raison d'être. Wildlife, environmental, and traditional conservation groups as well as open-space advocates support it for their own reasons. Farmland owners who desired the added income stood ready to accommodate them.

The fluctuations in harvested acres of principal crops and the resulting land retirement programs are displayed in Figure 3. Acreage grew in the 1920s and declined with the implementation of the Agricultural Adjustment Act of 1933. In response to wartime demand, acreage expanded in the 1940s. USDA reduced acreage slightly in the early 1950s. Congress enacted the Soil Bank to further reduce acreage. Acreage harvested again expanded in the 1970s as high prices and demand prompted USDA to loosen acreage restrictions. Secretary Earl Butz's phrase, "plant fence row to fence row," earned an enduring place in the folklore of American agriculture. As commodity carryovers bulged, USDA resorted to the PIK (Payment-In-Kind) program in 1983, and then enacted the Conservation Reserve Program. Observers have long thought that the effectiveness of land retirement programs in reducing production was frustrated in part by farmers' ability to maintain production. Farmers tended to place the least productive land into the program and perhaps to intensity management on the remaining acres. Figure 2 provides support for this view. Dividing productivity into acres harvested provided an index of efficiency. Note the increase in efficiency as land retirement programs are implemented and the decrease as acres harvested expand.

Wetlands Reserve Program. The Wetlands Reserve Program (WRP) was authorized in the Food, Agriculture, Conservation, and Trade Act of 1990 (FACTA), and reauthorized in the Farm Security and Rural Investment Act of 2002. The development of programs to provide long-term rentals and easements to protect wetlands was the culmination of long-standing contention over the impact of government programs on the loss of wetlands. Wildlife groups had been critical of Agricultural Conservation Programs (ACP), which provided cost-sharing to farmers for water management systems including drainage. Critics also faulted the Watershed Protection and Flood Prevention Program managed by the Soil Conservation Service. Some projects caused loss of wetlands, although the amount was sometimes exaggerated. Policy changes have eliminated most projects that would occasion loss of wetlands. (Vileisis 1997) (Figure 5). The federal role in protecting wetlands expanded in the 1970s and 1980s. The Water Bank of 1970 sought to protect breeding and nesting areas for migratory waterfowl by providing payments to farmers to protect wetlands. Section 404 of the Clean Water Act of 1972 expanded

Figure 5. Wetland Conversion, Restoration, and Net Change, Contiguous States, 1954-92.

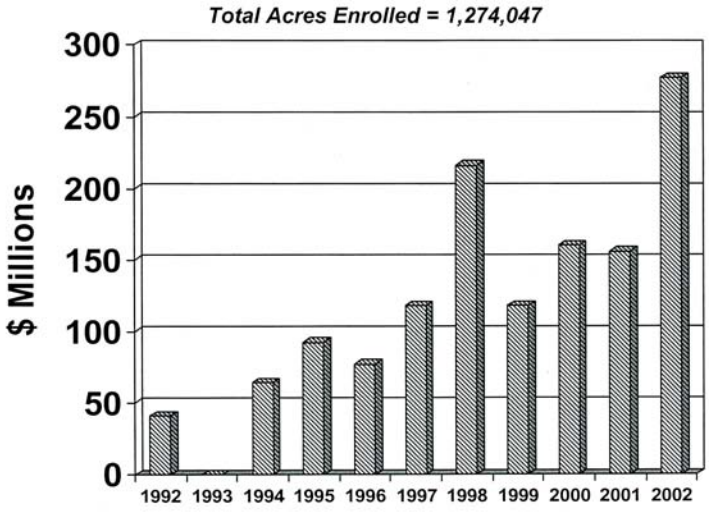


Source: *Agricultural Resources and Environmental Indicators. 1996-1997*. Agricultural Handbook 722, USDA 2003, Ch. 6.5, pp. 3-4

the Corps of Engineers jurisdiction to all waters in the United States, including wetlands. The Department of the Interior's Fish and Wildlife Service gained new authorities in monitoring wetlands in the Emergency Wetlands Resources Act of 1986. The wetlands provision of the Food Security Act of 1985 stipulated that farmers who received benefits and assistance from USDA could not drain wetlands. (Phillips, 83). The definition of wetlands and the implementation of the program proved to be particularly contentious. (Vileisis, 293-306.)

The appropriations bill for fiscal year l992 provided funds for a nine-state pilot program under the Wetlands Reserve Program authorized in the 1990 Farm Bill (Figure 6). The Midwest Flood of 1993 refocused attention on wetlands. National media questioned whether loss of wetlands in the flood plain had exacerbated flood damages. Congress usually provided funds for the Emergency Watershed Program to assist in recovery and restoration. Congress and the administration decided to utilize some funds for wetlands easements rather than restoring levees. Thus the 1993 floods accelerated the acceptance and funding of a national Wetlands Reserve Program that had been authorized in the 1990 Farm Bill (Phillips 1994).

Figure 6. Wetlands Reserve Program



CONCLUSION

During the Great Depression, the federal government, primarily but not exclusively through the U. S. Department of Agriculture, accelerated and broadened its assistance to American agriculture. Prior to the 1930s, USDA was engaged in research, marketing, statistical analysis, demonstrations, and education. State agencies and cooperative agencies such as State Extension Services had the direct contacts with the farmer. The New Deal agricultural programs reached directly to the farmer. Soil Conservation Service staff stationed at local field offices advised farmers and provided technical assistance in utilizing conservation practices. Farmers also received financial assistance in the form of price-support payments. USDA also shared the cost of conservation practices with farmers. Some of the conservation practices eligible for cost-sharing payments were strip crops, terraces, grassed watersheds, cover crops, windbreaks, wildlife habitat, and irrigation and drainage. Drainage became quite controversial for its effect on loss of habitat. Farmers, policy analysts, conservationists, and environmentalists debated which practices should be eligible for cost-sharing payments. This debate should not obscure the positive accomplishments in both a physical and an attitudinal sense. Financial assistance helped demonstrate the possibilities for conservation and made it a conventional part of farming for many. Payments for conservation helped transform the agricultural landscape.

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LESSONS FROM USDA CONSERVATION PROGRAMS: COMPETING AND COMPATIBLE CONSERVATION PURPOSES

Douglas J. Lawrence

NOTE: I would like to thank Patricia Lawrence, Peter Smith, Denise Coleman, and Kari Cohen for their comments. The material presented here does not represent the views of the Natural Resources Conservation Service.

This paper evaluates the relationship between USDA programs designed to protect farm and ranch land from conversion to nonagricultural uses and programs designed to encourage conservation of soil and water resources on agricultural land. The paper begins with a brief examination of the 1981 National Agricultural Lands Study and traces the development of USDA farmland protection programs in the 1981, 1990, 1996, and 2002 Farm Bills. Compatibilities and incompatibilities between programs and practices that preserve farm and ranch land and those that encourage conservation will be highlighted. Key statutory and implementation characteristics of conservation programs and the Farmland Protection Program are examined to identify how program statutes or Agency policy may create barriers or opportunities for conservation on private lands.

BRIEF HISTORY OF USDA FARMLAND PROTECTION PROGRAMS

Introduction. USDA conservation program have historically used a wide range of implementation tools to achieve program purposes. Arguably, the core implementation tool has been financial assistance to farmers and ranchers for conservation practice cost-sharing. The Agricultural Conservation Program was a good example of this approach. A second tool that has been used intermittently is rental payments for land retirement programs. The Soil Bank and the Conservation Reserve programs are typical of this approach to conservation. A third conservation implementation tool, the acquisition of partial interests in land or easements, emerged at the federal level in the 1990s. Among the USDA programs that have used this approach are the Wetland Reserve Program and the Farmland Protection Program (see Douglas Helms' paper from this conference entitled "The Evolution of Conservation Payments to Farmers" for greater detail on the history of conservation programs).

Although Purchase of Development Rights (PDR) programs at the state and local levels date back to the 1970s, USDA use of such programs did not materialize until the 1990s. In part, this interest in helping communities acquire development rights is based on a desire to stem the rate at which prime and important soils were being converted to non-agricultural uses. Data from the 1997 National Resources Inventory (NRI) indicated that conversion rates had increased by 79 percent. The NRI data show that the rate of conversion rose from 1,252,000 acres per year during the 1982 to 1987 period to 2,243,000 acres per year during the 1992 to 1997 period. (NRCS 2000)

National Agricultural Lands Study. In June, 1979 the U.S. Department of Agriculture and the President's Council on Environmental Quality agreed to sponsor a study regarding the availability of agricultural land, the extent and causes of their conversion to non-agricultural uses, and ways agricultural land could be protected from conservation. The resulting National Agricultural Lands Study (NALS) created a series of reports culminating with a report to the President in January 1981. (USDA 1981) Among the NALS recommendations were the following:

- Incentives should be included in federal programs to encourage development away from important agricultural land.
- The Soil Conservation Service and Extension Service should assist in developing local land protection programs.
- The USDA should establish a Land Information Center.
- Federal financial assistance should be provided to local governments to develop farmland protection programs.

Many of the NALS recommendations were implemented and have made significant contributions to protecting important farm and ranch land from conversion to non-agricultural uses. The last NALS recommendation listed above helped stimulate interest in creating federal farmland protection programs.

1981 Farm Bill: Farmland Protection Policy Act. The NALS recommendations and the publication of the Compact Cities Report (US Committee on Banking 1980), a report issued in 1980 by the House Committee on Banking, Finance, and Urban Affairs, led directly to the Farmland Protection Policy Act (FPPA). FPPA was part of the 1981 Farm Bill and had two purposes:

- Minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses.
- Ensure that federal programs are administered in a manner compatible with state, local, and private policies that protect farmland.

Although FPPA suffers from a lack of enforcement tools, it continues to monitor the activities of federal infrastructure agencies and make annual reports to Congress. The recent addition of web-based tools to help agencies comply with FPPA will improve its implementation. Some agencies, such as USDA's Rural Utilities Service, do an outstanding job of minimizing the impact of their projects on conversion of important farmland.

1990 Farm Bill: Farms for the Future Act. The 1990 Farm Bill authorized the Farms for the Future Act of 1990. The purpose of the Farms for the Future Act was to "promote a national farmland protection effort to preserve our vital farmland resources for future generations." The Act authorized the Secretary to establish and implement a program known as the Agricultural Resource Conservation Demonstration Program (ARCD). The ARCD program provided federal guarantees and interest assistance for eligible loans made to state trust funds. Under the program, the Secretary guaranteed for a period of ten years the timely payment of the principal amount and interest due on each eligible loan and subsidized the interest on such eligible loans for the first five years. The statute defined the term "eligible State" as "the State of Vermont" and "at the option of the Secretary and subject to appropriations, any State" that has such a fund. The only state that participated in ARCD was Vermont. The 1996 Farm Bill repealed the Farms for the Future Act.

1996 Farm Bill: Farmland Protection Program. The Federal Agricultural Improvement and Reform Act of 1996 (1996 Farm Bill) authorized the Farmland Protection Program. The 142 word Program (in comparison, the Environmental Quality Incentives Program provision was nearly 20 times longer) provided a great deal of flexibility for the executive branch to develop implementation protocols.

The NRCS program managers and the USDA Office of General Counsel used this broad statutory foundation to develop a truly innovative program. Unlike the older Wetlands Reserve Program, the FPP program was designed so that NRCS partnered with state or local conservation easement programs.

As a result, the FPP program shares in the costs of the conservation easement purchase, but does not incur costs associated with easement closing or monitoring. The FPP program is not a grant program; the legislation clearly authorizes the Secretary to purchase conservation easements or other interests in land. The "other interest" acquired is a contingent right in the easement; if the easement holder fails to enforce the easement, the easement reverts to NRCS. To enhance program efficiency and effectiveness, FPP is implemented through a competitive request for proposals process. By 1998, the FPP program had cooperated with 20 states and had exhausted the $35 million authorized in 1996. An additional $17.5 million was made available in 2001 through the Agricultural Risk Protection Act of 2000.

2002 Farm Bill: Farmland Protection Program. The Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) repealed the 1996 statute and amended the Food Security Act of 1985 (1985 Farm Bill) by inserting the revised FPP program into Title XII. By doing so, Congress made FPP subject to Highly Erodible Land and Wetland Conservation provisions of the 1985 Farm Bill. In addition, the 2002 Farm Bill made the changes to the 1996 statute, noted in Table 1.

Table 1. Summary of Changes in FPP Made By the 2002 Farm Bill

Topic	1996 Legislation	2002 Legislation
Eligible Entities	State and Local Governments	Expanded the definition of eligible entities to include tribes and non-governmental organizations
Eligible Land	Land Containing Prime, Unique or Other Productive Soil	Expanded the definition of eligible land to include farm and ranches containing historical or archaeological resources. Clarified that incidental forest land could be included
Matching Funds		Entity may include a charitable land-owner donation of up to 25% of the fair market value of the easement
Bidding Down		If 2 or more easements are comparable in achieving the same purpose, a higher priority shall not be assigned to an easement based on lesser cost
Conservation Plan	Requires a plan on highly erodible land (non-Title XII)	Requires a conservation plan on highly erodible land, land is also subject to FSA provisions (Title XII)
Funding Level	$35 million	$597 million

The 2002 Farm Bill also embedded a new program, the Farm Viability Program, in FPP. The Farm Viability Program is authorized to provide matching grants to state programs that help farm enterprises take advantage of markets in urban-influenced areas. Congress has not appropriated funds for this program.

Since the program's inception in 1996, 33 States have received about $101 million in financial assistance from FPP as described in Table 2. Approximately 170,000 acres on 890 farms, with an estimated cumulative easement value of nearly $349 million have, or will have, FPP easements. For every federal dollar invested through FPP, an additional $3.45 has been contributed by the participating state and local governmental entities and non-governmental organizations. The average total cost per acre is $1,820 with FPP contributing about $600 per acre. The average federal share accounts for approximately 32 percent and the state and local government and non-governmental organization share accounts for the remaining 72 percent. The top five states for FPP funding are Vermont, California, Pennsylvania, Maryland, and New Jersey. Vermont leads the nation in FPP acres protected with just under 30,000 acres. (NRCS 2003)

Table 2. Farmland Protection Program, Fiscal Year 1996 to 2002 Cumulative Summary

State	Total Obligation For FPP Funding	Easements Acquired*		Pending Easements	
		Number	Acres	Number	Acres
ARIZONA	$1,750,000	0	0	2	309
CALIFORNIA	6,943,600	17	1,482	4	1,384
COLORADO	4,617,800	12	5,243	9	4,137
CONNECTICUT	4,699,235	12	1,924	10	823
DELAWARE	4,878,700	23	7,550	26	3,132
FLORIDA	2,733,200	3	5,552	2	4,172
GEORGIA	1,095,900	0	0	4	484
IDAHO	654,000	1	680	1	1,090
ILLINOIS	1,819,430	1	99	4	752
INDIANA	901,200	0	0	3	515
IOWA	1,044,311	1	240	9	2,223
KANSAS	165,000	0	0	1	2,400
KENTUCKY	4,559,700	15	2,686	28	5,123
MASSACHUSETTS	5,316,100	35	3,320	19	977
MARYLAND	6,311,797	72	9,556	68	11,286
MAINE	1,968,900	3	458	15	2,840
MICHIGAN	5,177,800	18	2,115	7	1,624
MISSOURI	408,000	0	0	1	102
MONTANA	1,437,600	1	99	2	1,238
NORTH CAROLINA	3,219,228	8	754	13	2,952
NEW HAMPSHIRE	2,927,767	12	794	7	1,433
NEW JERSEY	5,635,728	44	7,057	24	1,937
NEW YORK	3,973,382	19	3,828	20	2,859
OHIO	1,612,800	0	0	5	1,091
OKLAHOMA	25,000	1	107	0	0
PENNSYLVANIA	6,779,116	68	13,216	38	6,507
RHODE ISLAND	3,009,300	9	788	9	712
SOUTH CAROLINA	822,950	1	191	5	255
TEXAS	462,000	0	0	1	900
UTAH	152,500	2	29	0	0
VIRGINIA	2,096,531	0	0	10	2,548
VERMONT	7,478,300	59	17,518	40	12,476
WASHINGTON	3,303,222	15	1,065	18	1,707
WEST VIRGINIA	400,000	0	0	4	555
WISCONSIN	2,961,900	16	1,859	13	1,496
TOTAL	$101,341,997	468	88,210	422	82,039

USDA CONSERVATION PROGRAMS

In addition to a variety of conservation programs, USDA administers a number of programs that are not directly linked to conservation and farmland protection, but nevertheless have an impact on conservation and farmland protection. These programs include rural development and commodity subsidy programs, as well as loan and risk management programs. To facilitate accurate analysis, this paper limits its focus to a core set of USDA conservation programs including:

- Farmland Protection Program (FPP)
- Environmental Quality Incentives Program (EQIP)
- Wetland Reserve Program (WRP)
- Conservation Reserve Program (CRP)
- Conservation Reserve Enhancement Program (CREP)
- Wildlife Habitat Incentives Program (WHIP)

EQIP. The Environmental Quality Incentives Program promotes agricultural production and environmental quality as compatible National goals. Through EQIP, farmers and ranchers may receive financial and technical assistance to install or implement structural and management conservation practices on eligible agricultural land.

WRP. The Wetlands Reserve Program provides technical and financial assistance to eligible landowners to restore and protect wetlands. The program provides an opportunity for landowners to receive financial incentives to enhance wetlands in exchange for retiring marginal land from agriculture.

CRP. The Conservation Reserve Program is administered by the Farm Services Agency (FSA) and offers annual rental payments, incentive payments, and annual maintenance payments for certain activities, and cost-share assistance to establish approved cover on eligible cropland. The program encourages farmers to plant long-term resource-conserving covers to improve soil, water, and wildlife resources. FSA provides cost-share assistance of up to 50 percent of the participant's costs in establishing approved practices. Contract duration is between 10 and 15 years.

CREP. An offspring of the Conservation Reserve Program, the Conservation Reserve Enhancement Program focuses on delivering assistance through unique state and federal partnerships that provide landowners with incentive payments for installing specific conservation practices. Through CREP, farmers can receive annual rental payments, easement payments, and cost-share assistance to establish long-term, resource conserving covers on eligible land.

A second option to enroll land is through a state-initiated enhancement program under which higher rents are paid to attract greater participation in a specified area, typically a watershed. One of 15 approved programs, the Maryland CREP combines $25 million in state funds with $170 million in Federal funds. Through March, 2001, almost 150,000 acres had been enrolled in the Maryland program. The Department of Agriculture had held back almost 3.2 million acres from the CRP total of 36.4 million to enroll land under these two options. (FSA 2003)

WHIP. The Wildlife Habitat Incentives Program encourages creation of high quality habitats that support wildlife populations of national, state, tribal, and local significance. Through WHIP, NRCS provides technical and financial assistance to landowners and others to develop upland, wetland, riparian, and aquatic habitat areas on their property.

Other USDA Conservation Programs. Other USDA conservation programs include the Conservation Technical Assistance Program (which is the NRCS base conservation program), the Forestry Incentives Program, the Agricultural Management Assistance Program (AMA), and the Forest Legacy Program, as well as two new programs: the Conservation Security Program and the Grassland Reserve Program (GRP).

The Conservation Security Program will provide financial and technical assistance for the conservation, protection, and improvement of soil, water, and related resources on tribal and private lands. The program provides payments for producers who historically have practiced good stewardship on their agricultural lands and incentives for those who want to do more. The program will not be available to farmers and ranchers until fiscal year 2004. When implemented, it is expected that the program will be complementary to the FPP program.

The Grassland Reserve Program protects grassland from conversion to non-agricultural uses or conversion to cropland. The Program uses both easements and restoration agreements to achieve its purpose. Since policy has not yet been developed for the Grassland Reserve Program, this paper will not analyze its relationship to FPP and other conservation programs. It is expected that the Grassland Reserve Program will supplement the farm and ranch land protection activities of USDA and coordination of the FPP and GRP programs will be very important.

The Agricultural Management Assistance Program provides cost-share payments to construct or improve water management structures or irrigation structures, plant trees for windbreaks, and improve water quality. It also provides payments to mitigate risk through production diversification or resource conservation practices, including soil erosion control, integrated pest management, or transition to organic farming. AMA is available in 15 states, as designated by the Secretary, where participation in the Federal Crop Insurance Program is historically low. The 15 states designated by the Secretary for 2001 included: Connecticut, Delaware, Maine, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Utah, Vermont, West Virginia, and Wyoming. AMA is budgeted at $10 million per year starting in fiscal year 2001. Funds are distributed to the applicable states using an allocation formula which is based on 29 environmental factors which characterize the resources of the state. Eleven of the 15 states that are eligible for AMA have also been long-time participants in the FPP program. In general, AMA complements the FPP program.

Two other important conservation provisions complete the suite of programs available. These provisions are the Highly Erodible Land and the Wetland Conservation provisions of the 1985 Farm Bill. In short, the Highly Erodible Land provision states that if a farmer or rancher fails to reduce erosion on highly erodible land to an acceptable level—usually twice the allowable erosion rate established by soil scientists—he or she will lose USDA program benefits. The Wetland Conservation provision states that if a farmer drains or fills a designated wetland, the farmer will lose access to USDA program benefits.

COMPARISON OF USDA CONSERVATION AND FARMLAND PROTECTION PROGRAMS

This section evaluates the relationship between the USDA Farmland Protection Program and conservation programs. The programs selected for analysis are the: Farmland Protection Program, Environmental Quality Incentives Program, Wetlands Reserve Program, Conservation Reserve Program, Conservation Reserve Enhancement Program, and Wildlife Habitat Incentives Program.

Comparison of Program Purposes. Table 3 displays the statutory purposes for the six programs listed above.

Table 3. Purposes of USDA Conservation and Farmland Protection Programs

Program	Purpose
Farmland Protection Program	To protect topsoil by limiting nonagricultural uses of the land.
Environmental Quality Incentive Program	To promote agricultural production and environmental quality as compatible goals, and to optimize environmental benefits, by (1) assisting producers in complying with local, state, and national regulatory requirements concerning (A) soil, water, and air ; quality (B) wildlife habitat; and (C) surface and ground water conservation; (2) avoiding the need for resource and regulatory programs; (3) providing flexible assistance to producers; (4) assisting producers to make beneficial, cost effective changes to cropping systems, grazing management, nutrient management; and (5) consolidating and streamlining conservation planning and regulatory compliance processes to reduce administrative burdens on producers and the cost of achieving environmental goals.
Wetlands Reserve Program	To assist owners of eligible lands in restoring and protecting wetlands.
Conservation Reserve Program	To conserve and improve the soil, water, and wildlife resources of [eligible] land.
Conservation Reserve Enhancement Program	To coordinate federal and non-federal resources to address specific conservation objectives of a state and the nation in a cost-effective manner, and to improve water quality, erosion control, and wildlife habitat related to agricultural use in specific geographic areas.
Wildlife Habitat Incentives Program	To develop (A) upland wildlife habitat; (B) wetland wildlife habitat;(C) habitat for threatened and endangered species; (D) fish habitat; and (E) other types of wildlife habitat approved by the Secretary.

In terms of statutory purposes, three of the programs are very specific. WRP and WHIP are focused on wildlife habitat and FPP is focused on protecting topsoil from conversion to non-agricultural uses. EQIP, CRP, and CREP, on the other hand, each have broad purposes ranging from soil erosion reduction to water quality improvement and wildlife habitat enhancement.

Regardless of their purposes, the two land retirement programs, WRP and CRP can contribute to helping preserve farmland through their income support. However, as discussed in the section on the geographic distribution of programs, both WRP and CRP are not widely used in states with significant farmland protection programs. In the case of WRP that may be due to natural resource conditions in those states, i.e., the relative lack of large acres of drained wetlands suitable for restoration. CRP tends to be concentrated in states with relatively low rental rates since competition for CRP funds is on a national basis. As a result, the bulk of the CRP funds are concentrated in the Plains states where FPP participation is very low.

Although FPP's purpose does not address environmental benefits, there is a growing literature supporting environmental amenities created by farmland protection programs. Hellerstein's work reveals that most state and local conservation programs have environmental amenities as a purpose (Hellerstein 2002). FPP, much like the other programs discussed here, has a wide range of economic, environmental, and social benefits that may extend beyond the program's legislated purpose.

Comparison of Program Eligibility Criteria. Table 4 provides an overview of eligibility criteria for the programs being evaluated. In general, all programs are available to farmers and ranchers and in some cases units of government are eligible; WRP is an example of this. FPP is unique in that farmers and ranchers cannot directly apply for assistance since the program works solely with state, local, tribal, and non-governmental partners.

EQIP funds would have the greatest acreage eligible for assistance. If one included privately owned cropland, pastureland, and rangeland the eligible acreage would total about 900 million. Analysis accompanying the CRP final rule estimated 230 to 240 million acres were eligible for participation in CRP. The Economic Research Service estimates that urban influenced cropland, land eligible for participation in the FPP program, amounts to nearly 100 million acres. There are no readily available estimates of CREP, WRP, and WHIP acreages.

The eligibility criteria have sufficient overlap so that all USDA conservation programs considered here are technically applicable to FPP protected land. However, issues arise concerning other easement programs, notably WRP and CREP. It is FPP policy not to enroll land that already is subject to an easement that in one way or another prohibits development. However, land with an FPP easement could participate in a WRP wetland restoration contract.

Since FPP focuses on prime, unique, and important soils, while the land retirement programs WRP and CRP focus on soils with severe limitations for production, there is an inherent complementary relationship between the programs.

Table 4. Program Eligibility Criteria

Program	Eligibility Criteria
Farmland Protection Program	Eligible land includes privately owned prime, unique, and important farm and ranch land, or farm and ranch land with archeological or historic resources subject to a pending offer from an eligible state, local, tribal, or non-governmental farmland protection program.
Environmental Quality Incentives Program	Eligible land must be used as cropland, rangeland, pasture, private non-industrial forest land, and other land on which crops or livestock are produced, including agricultural land that NRCS determines poses a threat to soil, water, air, or related natural resources.
Wetlands Reserve Program	Eligible land includes wetlands cleared or drained for farming, pasture, or timber production; certain adjacent lands that contribute significantly to wetland functions and values; previously restored wetlands that need long-term protection; upland areas needed to provide an adequate buffer or that contribute to creating a manageable boundary; drained wooded wetlands; existing or restorable riparian habitat corridors that connect protected wetlands; and certain lands substantially altered by flooding. The land must be restorable and be suitable for providing wildlife benefits.
Conservation Reserve Program	Eligible acres must have been planted or be considered to have been planted in at least 2 of the past 5 years, and must also meet at least one of the following criteria: Have an Erosion Index (EI) greater than 8, or be considered highly erodible land under the conservation compliance provisions; Be considered a cropped wetland; Be devoted to a highly beneficial environmental practice, such as filter strips, riparian buffers, shelter belts, or wetland protection areas; Be subject to scour erosion; Be located in a national or state priority area for the CRP; or Be cropland associated with or surrounding non-cropped wetlands.
Conservation Reserve Enhancement Program	Eligible land includes cropland that has been planted to an agricultural commodity for two of the last five years, hayland, and marginal pastureland adjacent to a stream or waterbody. Highly erodible lands (erodibility index greater than 15) within 1,000 feet of a stream or water body. Prior converted wetlands or areas capable of supporting wetland hydrology.
Wildlife Habitat Incentives Program	Eligible lands under the program include: Privately owned land; federal land when the primary benefit is on private or tribal land; state and local government land on a limited basis; and tribal land.

Comparison of Funding Levels and Mechanisms. About 57 percent of the major conservation program funding is associated with the CRP program, which is a dramatic shift in historic funding. Before the 2002 Farm Bill, as much as three quarters of conservation funding went to support CRP and roughly 90 percent of USDA conservation financial assistance funding was devoted to land retirement programs, CRP and WRP.

Table 5. Program Funding

Program	FY-2003 Funding Levels	Funding Mechanism
Farmland Protection Program	$100,000,000	Commodity Credit Corporation
Environmental Quality Incentives Program	$700,000,000	Commodity Credit Corporation
Wetlands Reserve Program	$290,000,000	Commodity Credit Corporation
Conservation Reserve Program	$1,600,000,000*	Commodity Credit Corporation
Conservation Reserve Enhancement Program	$56,000,000*	Commodity Credit Corporation
Wildlife Habitat Incentives Program	$30,000,000	Commodity Credit Corporation

*FY-2002 data (FSA)

Although beyond the scope of this paper, an important issue is the appropriate funding levels to achieve the best mix of conservation programs.

In terms of cost per acre the WRP program averages about $1,500, (NRCS 2003) the CRP program $43.00 (FSA 2002), CREP $125.00 (FSA 2003), and FPP about $500.00 (NRCS 2003). However, when the CRP payments are adjusted for time, the costs—assuming the land has been in CRP since 1985—would approach $900.00 per acre and will continue to increase so long as the program is active.

All of the conservation programs are funded through the Commodity Credit Corporation and the 2002 Farm Bill has authorized funding or acreage levels over the life of the current farm bill. Although the above table shows dollar funding levels for CRP and WRP, they are both acreage-based programs. The 2002 Farm Bill raised the CRP acreage cap to 39.2 million acres and authorized an annual enrollment for WRP of 250,000 acres. There are numerous advantages to having an acreage-based authorization, including the ability to protect higher value land without reducing the scope of the program. In addition, technical assistance funding for the program does not directly reduce the financial assistance available.

Comparison of Program Implementation. Table 6 summarizes the ranking criteria used by selected USDA conservation programs to fund program participants.

Table 6. Program Ranking Criteria

Program	Selection Process (Ranking or Scoring Criteria)
Farmland Protection Program	National and state ranking criteria as established in cooperation with the State Technical Committee, including development pressure, amount of prime, unique, and important soils, number and extent of cultural resources, history of entities, leveraging guaranteed by the cooperating entities.
Environmental Quality Incentives Program	Ranking criteria include: Program cost; Benefits to the environment; Soil erosion reduction, deposition reduction, condition improvement**;** Water quantity improvement and water quality improvement; Plant suitability enhancement and condition improvement; Habitat improvement; Other natural resource concerns; and Cultural resource protection.
Wetlands Reserve Program	Based on applications for participation, the State Conservationist, in consultation with the U.S. Fish and Wildlife Service and the State Technical Committee, will rank properties based on: estimated costs of restoration and easement acquisition, availability of matching funds, significance of wetland functions and values, estimated success of restoration measures, and the duration of a proposed easement with permanent easements being given priority over non-permanent easements. The NRCS may place higher priority on certain geographic regions of the state where restoration of wetlands may better achieve NRCS State and regional goals and objectives.
Conservation Reserve Program	Offers for CRP contracts are ranked according to the Environmental Benefits Index (EBI). EBI factors include: Wildlife habitat benefits resulting from covers on contract acreage; Water quality benefits from reduced erosion, runoff, and leaching; On-farm benefits of reduced erosion; Benefits that will likely endure beyond the contract period; Air quality benefits from reduced wind erosion; Benefits of enrollment in conservation priority areas where enrollment would contribute to the improvement of identified adverse water quality, wildlife habitat, or air quality; and Cost.
Conservation Reserve Enhancement Program	Depends on state and federal initiative.
Wildlife Habitat Program	NRCS selects applications based on state developed ranking Incentives processes that achieve state specific wildlife goals and objectives. Conservation districts convene local work groups to identify local wildlife habitat priorities. The local workgroups provide input to the State Technical Committee that works with the State Conservationist develop a State WHIP plan. The ranking process is derived from the priorities identified in the State WHIP plan.

As the above table indicates, the use of scoring mechanisms is common and the use of State Technical Committees in the ranking process is also common across programs. Note that CRP has a national bid pool which tends to penalize areas of the country with high rental rates, which, in turn, tends to be areas where farmland protection is an issue.

An additional issue is the lack of cross-program scoring criteria, which could help integrate the programs and expand their beneficial effects.

Comparison of Program Funding Instruments and Cost-Sharing. Table 7 presents information on conservation program cost-sharing policy.

Table 7. Program Funding Instruments and Cost-Sharing

Program	Funding Instrument and Term	Cost-Sharing
Farmland Protection Program	Conservation easement for perpetuity	Up to 50% of the appraised fair market value of the development rights. No cost sharing for conservation measures
Environmental Quality Incentives Program	Long-term contracts of up to 10 years	Statute allows up to 75% USDA limited it to up to 50% for many practices.
Wetlands Reserve Program	30 year easements Permanent easements Restoration Agreements, minimum of 10 years	100% of agricultural value of land 75% of the cost of restoration
Conservation Reserve Program	10 to 15 year contracts	Annual rental rates and up to 50% of the cost of conservation measures
Conservation Reserve Enhancement Program	10 to 15 year agreements Easements	Varies, in Maryland up 85% of conservation practice costs, rental rates, and bonuses
Wildlife Habitat Incentives Program	5 to 15 year contracts	Up to 75% of the costs of conservation measures

Only WRP and FPP make extensive use of easements to achieve their purposes. In terms of changing behavior, only the permanent easements employed by WRP and FPP have any assurance of lasting effect. The cost-share or rental payments offered by other conservation programs have some intermediate-

term effect on changing behavior during their contract life. However, once the contract has expired, the landowner is not obligated to maintain their conservation measures, unless they have some implications for the compliance provisions of the 1985 Farm Bill. Because of the size of payments, farmers and ranchers have overwhelmingly chosen easements over restoration agreements in the WRP program.

The primary issue associated with cost-sharing is centered on the EQIP program. While the 2002 Farm Bill authorizes EQIP cost-sharing of up to 75 percent of the practice costs, USDA has limited cost-sharing for many practices to 50 percent and will require justification for cost-sharing in excess of 50 percent.

Geographic Distribution of Programs. The geographic distribution of USDA conservation programs is not uniform across the United States which has implications for integrating programs. The following bullets provide a sense of the level of program funding concentration.

- About 51 percent of the FPP funding is concentrated in 11 states: Pennsylvania, Maryland, California, Massachusetts, New Jersey, Michigan, North Carolina, Kentucky, Connecticut, Colorado, and Washington.
- Over 53 percent of the CRP funds are allocated to just seven states: Iowa, Texas, Montana, North Dakota, Kansas, Missouri, and Illinois. None of these states have been significant FPP participants.
- Just over 51 percent of the EQIP program is concentrated in 14 states: Texas, California, Colorado, Kansas, Nebraska, New Mexico, Montana, Arizona, Minnesota, South Dakota, Oklahoma, Florida, Utah, and Missouri. Only California is one of the top FPP funded states.
- About 52 percent of the WRP program is concentrated in 7 states: Florida, California, Arkansas, Iowa, Louisiana, Mississippi, and Minnesota. Like EQIP, only California is listed among the top FPP funded states.

Since all programs have highly concentrated geographic funding distributions because of either regional emphasis in program eligibility or allocation equations, there may be limited opportunities for program integration in some states. In some states there is a need for income support programs like CRP or WRP to shore-up farm income in urban-influenced areas in order to help protect farmland from conversion to nonagricultural uses. In many cases these states have limited WRP and CRP funding.

It is worth noting here that two provisions of the 2002 Farm Bill may help with program integration. The Regional Equity provision may help enhance opportunities for program integration in so much as it may increase funding of the Farm Bill programs (excluding the Conservation Security Program, the Conservation Reserve Program, and the Wetlands Reserve Program) in the smaller Northeastern states. A more likely enhancement of program integration may come from implementation of the Partnerships and Cooperation provision of the 2002 Farm Bill.

CONCLUSIONS

We can draw three broad conclusions regarding the FPP program and its relationship with other USDA conservation programs. First, FPP and the other USDA conservation programs are highly compatible. Second, because of these compatibilities there are numerous opportunities for enhanced program

coordination. Third, FPP has several unique strengths that make it an important part of the portfolio of USDA conservation programs.

USDA Programs are Compatible. Although there is very little direct statutory relationship among USDA programs, the Farmland Protection Program and the other USDA conservation programs are largely compatible in terms of purpose, eligibility, and funding. This compatibility was enhanced by the 2002 Farm Bill which made the Farmland Protection Program, like the conservation programs, subject to the compliance provisions of the 1985 Farm Bill. One technical issue related to program compatibility is easement subordination, especially with respect to WRP and GRP.

Opportunities Exist for Greater Program Integration. Additional incentives are needed for the strategic use of programs at the national, regional, and local levels. The Partnerships and Cooperation provision of the 2002 Farm Bill may be an excellent opportunity to enhance program integration. Although there is limited national policy on program coordination, some state conservationists encourage program integration by giving higher priority to FPP enrolled farms during other program ranking processes. EQIP is an example of this. There may be additional opportunities to use program participation ranking processes to enhance cross-program integration. Since the FPP program, GRP, and the Forest Legacy Program share similar purposes there may be opportunities to coordinate across programs. The coordination could extend to the allocation of GRP and FPP funds to states.

USDA income supplementing conservation programs, like CRP and WRP, are not widely utilized in areas with farmland protection needs for a variety of reasons. Each of the programs evaluated has half of their funding concentrated in a few states. The decision to not fund the conservation component of AMA will disproportionately affect states with high FPP participation.

Strengths of the FPP Program. The FPP program has many strengths. First, easement-based programs like FPP are more effective in making long-term changes in behavior than cost-share or rental programs. Because of this, FPP can help ensure the long-term viability of other conservation investments because there is some assurance that the farm or ranch will remain in agricultural production. FPP is fundamentally linked to local needs because it partners with local entities. Another strength is the ability of FPP to leverage funds. Based on FPP data through FY-2002, every dollar of FPP funding has leveraged $3.45 in other funds. Administrative strengths of the FPP program include efficiencies gained through implementation with a competitive request for proposals process and administrative cost minimization achieved by placing the administrative burden associated with easement closing and monitoring on the cooperating entity. Finally, the FPP program creates a broad range of public benefits including provision of wildlife habitat, water quality protection, recharge of ground water, flood damage reduction, protection of rural heritage and culture, protection of scenic landscapes, and protection of cultural resources.

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USDA TECHNICAL ASSISTANCE TO FARMERS AND RANCHERS: THE SHIFT TO THIRD PARTY TECHNICAL SERVICE PROVIDERS

Helen R. Flach

Changes in the delivery of conservation technical assistance brought about by the 2002 Farm Bill require USDA to offer agricultural producers the option of receiving their technical assistance from third-party technical service providers. Traditionally, the USDA Natural Resources Conservation Service, formerly the Soil Conservation Service, has provided one-on-one technical assistance in conservation to agricultural producers. The shift from delivery of services by federal employees to delivery of services by the private sector will affect both NRCS employees and their clients. The literature on organizational change and organizational culture, and previous studies of the culture of NRCS and its adaptability to change, point to potential problems in the workforce as a result of the change. Employee retention and morale could be adversely affected as a result of the change. Successful approaches to the change include an awareness of the agency culture, agency history, and employee task definitions. These are translated into specific areas of concern for managers as the change is implemented. The Technical Service Provider system offers great opportunity to increase the participation of the private sector in federal conservation programs. Positive effects, including exposure to latest technology and accessibility of highly specialized skills, faster service, and more choices for clients should outweigh the negative experience of organizational change.

INTRODUCTION

Since the early days of the Dust Bowl, USDA has been a dedicated agency whose primary mission has been to provide technical assistance to owners and operators of private lands on resource issues such as erosion control, water quality and quantity, and productive capacity of the land. The USDA Soil Conservation Service (SCS) was founded in 1935 for the purpose of (1) providing information and assistance to farmers on a voluntary basis for the conservation of soil and water and (2) enhancing farm income through increased production and increased yields or through programs that compensated farmers for taking fragile land out of production.

The majority of its activities have always centered on working one-on-one with farmers who requested assistance to develop conservation plans for their farms and to carry out those plans. This technical assistance was provided through a partnership of federal conservationists and local soil and water conservation districts, which are special districts under state law. California, for example, has 43 NRCS field offices and 103 resource conservation districts. NRCS has 321 employees in California. Resource conservation districts typically have a board consisting of 3 to 5 volunteers, and may or may not also have paid staff. Together, this conservation partnership provides technical services to California's farmers and ranchers. These services have always been provided free of charge to landowners who request them. All NRCS programs are voluntary; the NRCS has no regulatory authority.

Over the years, the NRCS mission has expanded to include watershed planning, wetland and wildlife programs, air quality, land use planning to prevent conversion of farmland to other uses, and even urban and educational programs. In 1994 the agency name was changed to the Natural Resources Conservation Service, in recognition of the expanded role of resource conservation, and in 1996 its authority was expanded to include a wide range of financial assistance programs, all of which required

technical assistance. What did not change, however, was the tradition of one-on-one relationships with land owners and operators who look to NRCS as the technical experts in conservation.

The 2002 Farm Bill[1] added still more financial assistance programs, and greatly increased funding authorizations for earlier programs. However, one section in the 2002 Farm Bill will dramatically change how American farmers and ranchers receive technical assistance from NRCS, and will also change the roles of many NRCS employees. Section 1242, Delivery of Technical Assistance, states:

> "The Secretary shall provide technical assistance under this title to a producer eligible for that assistance (1) directly; or (2) at the option of the producer, through a payment, as determined by the Secretary, to the producer for an approved third party, if available."

The intent of this clause is twofold: First, the Administration wants to increase the programs and services available to farmers and ranchers, but it does not want to increase the size of the federal work force. Second, the Administration wants to maximize, wherever possible, the use of the private and non-profit sectors of the economy to perform work that has traditionally been performed by federal employees. This paper will examine the potential implications of this policy direction as it affects NRCS clients and employees, and its implications for management.

HOW WILL THE USE OF THIRD-PARTY TECHNICAL SERVICE PROVIDERS AFFECT NRCS CLIENTS?

The most fundamental requirement for third party technical service providers (TSPs) is that their work must meet the agency's established practice standards and specifications. On the surface, it would seem that it does not matter who delivers the service so long as the outcome – a properly designed and installed conservation practice or system – is the same. However, the provision of technical assistance entails not just a product (such as an installed pipeline), but also a relationship between the client and the provider. Because this relationship will supplant the traditional relationship between NRCS and its clients, it is useful to examine the characteristics of that traditional relationship:

- NRCS employees typically stay in a field office for many years, building personal relationships with farmers and ranchers in the county[2].

- NRCS employees have no budget-imposed limits on how much time they can spend with a client; if it takes longer for some than others, no explanation or budget increase is required.

- As federal employees, NRCS employees, when working within their scope of employment, are fully insured for liability in the case of errors or accidents.

- NRCS employees are required by law to respect the confidentiality of information provided to them by clients[3]. This assurance of confidentiality does not extend to third party providers.

- As federal employees, NRCS employees have a trust responsibility to tribes and provide services to tribes on a government-to-government basis.

- NRCS employees are held personally responsible for observing all federal policies relating to civil rights, equal opportunity, ethics, and environmental justice.

- NRCS employees work in an organization where they are accountable to their next level supervisor. Clients with concerns about the services they receive have access to the next level of supervision to resolve problems.

- NRCS employees are knowledgeable about program requirements and can help clients select programs that best fit their needs. Third party providers must be proficient in specific practices but may not fully understand what items programs will pay for and how to optimize chances of funding an application.

Positive effects on clients of the transition to the use of third-party technical service providers include:

- Exposure to latest technology and accessibility of highly specialized services

- Faster service, because there will be fewer federal employees to service requests. Use of TSPs will reduce waiting time.

- Clients can choose their own provider from a list of eligible providers.

In 2002, NRCS held forums across the country to engage in dialog with clients (potential third party technical service providers, and conservation partners including soil and water conservation districts), to hear suggestions and answer questions in preparation of implementing the technical service provider program. Most responses were enthusiastic or at least receptive, but there were also many questions about how such a program would work. Primary concerns were:

- The mechanisms for funding services from TSPs
- Credential requirements for TSPs
- The liability for work done by TSPs
- Quality control for work done by TSPs
- Protections for confidentiality, especially regarding requests from regulatory agencies

NRCS has published an interim final rule with request for comments at 7 CFR Part 652, effective March 1, 2003. The preamble to that rule states, "The Department . . . will not hire additional federal employees above its baseline staffing levels unless it has first sought to meet the additional demand for technical services from non-federal sources through contracts, contribution agreements, and cooperative agreements." A national web site has been established to accept applications.[4] The proposed rule suggests that TSPs are to be liable for their own work, and that any agreements for confidentiality are between the participant and the TSP. It is expected that each state will receive a certain amount of its allocation designated for use with TSPs, and this money will be specifically designated in program contracts with farmers. Farmers will select the TSPs from the web site, enter into agreements with them directly, and pay them after NRCS reimburses the farmer. Details on precise pay rates are still being developed.

HOW WILL THE USE OF THIRD-PARTY TECHNICAL SERVICE PROVIDERS AFFECT NRCS EMPLOYEES?

As the agency implements the technical service provider program, a significant role change will affect the jobs of NRCS employees. At the field office or county level, the traditional job of an NRCS district conservationist has been to establish one-on-one contact with agricultural producers to assist them in

managing natural resources on their land. This includes working with the client to plan, design, implement, and maintain conservation practices or systems of conservation practices on their land. The "hands-on" tradition of working with landowners is at the heart of the agency culture, defining "what we do" for most field level employees. For example, a 1994 survey of district conservationists found that,

- 95% stated that NRCS is the best source of technical expertise available to farmers on soil and related resources;
- 95% agreed that "The most important thing I do is to show farmers how to conserve natural resources."

These responses were highly correlated with questions related to overall job satisfaction. District conservationists who agreed that NRCS is the best source of technical expertise available to farmers were less likely to want to retire early, transfer, or resign when they received unpopular or thankless assignments. The relationships with clients were seen as central to job satisfaction; when relationships deteriorated, job satisfaction declined sharply.[5]

The transition to contracting out the primary work of the district conservationist, such as conservation planning, resource assessment, and oversight of implementation of conservation practices, will result in a radical change in the traditional role since 1935 of a district conservationist. In the literature of organizational change, a change is considered a radical change, and likely to have profound effects on an organization, when it introduces discontinuity, steers the organization in a very different direction, or reverses the direction of change. The shift to TSPs means that district conservationists will come to resemble general contractors, getting work done through a wide variety of private-sector entities, and will be more engaged in oversight, quality control, and troubleshooting than in hands-on conservation work. This is not what many employees in NRCS intended to do when they joined the organization . How they react to this change will vary by individuals, but the research on organizational culture gives us some clues as to what we might expect following such a change.

One way of defining the culture of an organization is by examining the beliefs and values that are almost universally held by its members. Core beliefs that define an organization do not change simply because the way of doing business changes, or because management directs a change. For example, Mahler[6] studied organizational stories and myths as a way of determining beliefs held by members of the organization. In her study, members adapted to changes in rhetoric and symbols to fit the current administration policy line so long as the underlying programs in the field were not changed. But when many of the jobs in the field were contracted out to non-agency people, many resigned because of the way this change limited their roles. This was because the members held strong beliefs in the importance of field experience. Thus, changes that worked against widely held beliefs were less successful than changes that worked within the existing culture.

Martin, et al.[7] also point to this indirect observation of deeply held assumptions. In a study of organizational stories that are common to many types of organizations, they found that the persistence of these stories can be attributed to deeply held assumptions about organizational life. Because it is difficult for most people to abandon the assumptions that their decision-making processes are rational and that they have personal control over events, organization members find these stories useful in explaining and justifying their beliefs. The stories become an acceptable way to express discomfort with the conflicts people encounter between organizational norms and their own personal values. In

this way, the stories satisfy and reveal some basic underlying assumptions held by the members of the organization.

One underlying assumption for NRCS is that man can reverse the damage done to nature, despite overwhelming odds. This is a belief firmly established by its founder and the real reason the agency was created. Historian Wellington Brink recounts the events leading up to the decision by the Congress to create the agency in 1935:

> "The Dust Bowl operated in a vacuum of helplessness and misinformation, without knowledge for combat, without organized will to resist, without competent opposition leadership. It was regarded as an unfortunate reality against which there could hardly be a practicable defense. The surrender was virtually complete.
>
> There was but one rebel voice booming defiance. There was but one strategist ready with a plan to lick the menace of the Dust Bowl. Out of all that great throng of scientists—soils technicians, agronomists, engineers, chemists, foresters, hydrologists, meteorologists, economists, research workers on federal and state payrolls, out of all the thousands of men and women whose work impinged on the problems of the wasting West, there was only one person who knew the answers, knew that he knew the answers, and stood ready to produce the answers. . . . Hugh Hammond Bennett was the man with the answers."[8]

But, it is important to note, the "answers" were the domain of the agency, not the domain of the throng of "experts" outside the agency. The fierce loyalty to the agency and the belief that the agency is the world's elite corps of conservationists, so typical of NRCS employees, carries with it the assumption that "outsiders" could not do it better. How, then, can we predict NRCS employees holding these cultural values might react to the directive to contract out their traditional roles?

One way of predicting the effect of the change is by looking at the extent of change in the way members of an organization define their tasks. Wilson[9] examines the types of changes that are accepted and those that are not. He found that changes that are consistent with existing task definitions will be accepted; those that require redefinition of tasks will be resisted. For example, computers are accepted when they make tasks easier and more efficient, but when they change the role of employees or threaten to eliminate the need for jobs, they are not accepted.[10] Therefore, tasks that <u>are not</u> a part of the culture will not be attended to with the same energy and resources as tasks that <u>are</u> a part of the culture. Organizations will resist taking on new tasks that seem incompatible with its dominant culture. The stronger and more uniform the culture is, the more it approximates a sense of mission, the more obvious these consequences. Tasks that are not highly valued in the organizational culture, no matter how essential they may be to organizational survival or meeting the organization's statutory requirements, will be treated and viewed as non-career enhancing. The organizational reward system is skewed away from those tasks, and tasks not central to the mission are performed poorly or starved for resources.[11] In fact, a strong sense of mission may blind the organization to changed environmental circumstances so that new opportunities and challenges are met with routinized rather than adaptive behavior.

These observations in the research literature suggest that a change that requires a significant alteration in the way members view a task may be resisted merely because it is such a departure from known task definitions, apart from however else it may affect the member. This, coupled with the understanding of the effect of the culture and how the members view their roles, are indications that NRCS management

ought to be concerned about the changing role of the district conservationist and how that change might affect its future and present workforce.

As the role of the district conservationist moves from on-the-ground conservation and personal contacts with clients to oversight of private contractors who do the on-the-ground work and assume the personal contacts, it is realistic to expect some degree of alienation on the part of the district conservationist.

As noted in the culture literature, identification with the group is associated with formation of the culture — its collectively held beliefs, socialization processes, and shared symbols and mythology. If the culture unites an organization, then a change which alienates members may be expected to impede change.

Addressing the values of the membership is one of the central themes in two works that are chiefly anecdotal: Woodward and Buchholz[12] and Watzlawick, Weakland, and Fisch.[13] Woodward and Buchholz cite the example of the disidentified employee after the transition — an employee who has lost something or someone with which he was identified, and suffers in the transition to the new state because of the loss. These and other needs lead to the conclusion that there are three things needed to bring people through change: Empathy, having someone to listen and allow without judgment expression of thoughts and feelings; Information, an intellectual understanding of what is happening; and Ideas, the opportunity to make suggestions for actions and plans. People vary in which of these they need first. What they are more likely to get, and what is more likely to hinder acceptance, is: Autocratic behavior of management in the form of suggestions, tasks, and orders which are directive in nature even if well-intended and reasonable; Avoidance, the lack of empathy and listening, the opinion that feelings and business are separable entities, or merely the neglect of feelings; and what Woodward and Buchholz call "Rah rah, the classic jumping-to-beginnings, getting the troops fired up, ignoring the problems in the rush to get the change started." These findings in the literature are useful for analyzing the management implications of the change, especially where alienation is observed to be a factor in member's resistance to implementing the change.

WHAT ARE THE IMPLICATIONS OF THIS CHANGE FOR NRCS MANAGERS?

It is inevitable that the role of the district conservationist will change. How can NRCS leadership manage this transition in order to minimize alienation, engender support for the change, and ensure smooth transition and uninterrupted service to clients? The literature on organizational change gives some guidance.

Preparing employees for the transition to TSPs. Employees are more likely to support and implement the change if they are both technically and emotionally prepared for it. This includes:

- Training in new skills that will be required, such as oversight of contractors to do conservation planning and other functions. Supervision of a contractor differs from supervision of an employee where bureaucratic norms are in place to support a supervisor's expectations.

- Reassurance through success stories and experience in similar circumstances that conservation planning can be performed by non-NRCS people. Other tasks have been contracted out in the past, but conservation planning is at the heart of what NRCS does. Many employees have a natural reluctance and doubt, on some level, that a private entity can fill this role adequately.

- Gradual rather than immediate implementation of the TSP mandate. However, the agency has chosen immediate full-scale implementation rather than pilot tests that would identify strategies for success and pitfalls for failure.

- Involving district conservationists in the activity of establishing criteria and screening candidates for technical service providers, in order to increase buy-in to the program and to improve the chances of selecting providers that will possess not only the requisite technical expertise but also have compatible goals with the agency.

- Establishing high standards for qualification and performance by TSPs, in order to reassure employees of the quality of their work.

- Keeping within the agency the functions that are most closely associated with traditional district conservationist's task roles and definitions. Although the decision has already been made to offer conservation planning as a function to be performed by TSPs, it may be years before there is actually a cadre of qualified professionals in the private sector who are able to perform this function in many counties. Until then, agency management should continue to support this function by training employees and providing technical tools to carry out these traditional functions. This development period will not only ensure the continuity of services to NRCS clients, but will also reduce the psychological alienation of NRCS employees as they adapt to this radical change in their task definitions.

Dealing with poor performance of technical service providers. Top management must articulate a willingness to support requests from state conservationists to decertify TSPs who fail to meet expectations. If the agency's record on taking adverse action against producers who are out of compliance is any indication of how the agency will deal with poor performance of TSPs, this will be problematic. NRCS is a non-regulatory agency with a culture of giving the benefit of the doubt, allowing second chances, and avoiding confrontational situations. In a 1994 survey of 1,085 district conservationists[14], 83% expressed a strong preference for giving the farmer the benefit of the doubt in cases of noncompliance; 85% said that this approach was usually successful, and 93% expressed preference for informal rather than bureaucratic means of dispute resolution.

This reluctance to use bureaucratic processes may be rooted in a lack of trust that higher organizational levels will uphold a decision of adverse action. In the same survey, when asked if they believed they would be supported in a decision of noncompliance, 9% thought their area office would not support them; 17% thought their state office would not support them, and 20% thought the national headquarters would not support them. If the agency has a history of informal resolution or avoidance of consequences of noncompliance for its clients, it is likely to take the same approach in resolving problems with technical service providers, because this strategy of informal resolution and avoidance of conflict is deeply rooted in the agency culture.

If this cultural tendency to avoid adverse action against producers extends also to technical service providers, the result will be a tension between the agency's pride in the quality of conservation technical assistance provided and the tendency to avoid confrontational situations. The agency has already demonstrated its intent to be gentle in the treatment of poor performance by technical service providers. The interim final rule establishes a maximum of three years decertification after which the agency must consider recertification,[15] whereas an employee who failed to provide adequate service would be

terminated with no obligation to rehire, a technical service provider will have the right to request recertification in as little as one year and no more than three years.

Maintaining relationships with clients. To maintain its identity as a federal agency and its constituency support, it is important for the NRCS employees to be "the face that the farmer sees" when participating in a USDA conservation program. Over time, the TSPs will assume a greater portion of the on-the-farm conservation planning and practice application workload. How can NRCS retain its position as the community leader in conservation?

When an agricultural producer indicates an interest in a USDA program or activity, the initial contact should be with a USDA employee. This initial contact is critical in establishing a client/agency relationship. As the producer's interests and needs become clear, he or she may be referred to a technical service provider as an option for receiving services, but if the initial contact was established, the relationship between the client and the agency has been established. The client then knows that the agency is the source of the assistance and has a face to associate with the agency.

For example, in California, NRCS has a long-standing positive working relationship with a wildlife-oriented non-profit organization, and has entered into a cooperative agreement with that organization to provide real estate services, biology assistance, and program promotion for the Wetlands Reserve Program. Although the relationship between the agency and the non-profit and the services provided are excellent, problems arise when the non-profit makes the initial contact with a potential program participant. The non-profit can explain a program and describe its benefits, persuading the client to apply to the program. But if the non-profit takes the application and begins providing assistance, the client may not understand that the federal agency, not the non-profit, is the source of the funding. This has actually happened on several occasions, resulting in clients who did not understand until well into the process that they had applied to a federal program and that the easement on their land would be held by a federal agency. Because of this lack of communication, the agency missed an opportunity to be recognized for its role in wildlife habitat restoration. Agency recognition is important not only for a clear understanding with clients, but also so that participants who appreciate NRCS services will communicate their needs to elected officials, who will in turn support NRCS budgets and programs. Agency recognition is important to the morale of employees for whom their agency affiliation defines their role as respected members in the local community.

To ensure that programs are understood and that the agency identification is maintained, NRCS in California now functions so that every decision and every application is handled by the local field office. The non-profit provides many valued services, but each client knows that NRCS is the source of the program funding and is the final decision maker in program implementation.

While it is preferable that NRCS take the initial application, a new initiative called E-Government will offer the opportunity to apply for programs online, without ever going to a USDA office. One challenge to management will be how to establish the agency identification with the clients who use this method of application.

The client relationship can also be strengthened by the NRCS role in oversight and monitoring of the work of the TSPs. This inherently governmental activity should not be contracted out, and should be used as an opportunity not just for quality control, but also for relationship-building. Spot checks of completed work should be used as an opportunity for personal meetings with clients, giving them the

opportunity to meet with agency personnel and give feedback on their experiences with the technical service provider.

SUMMARY

The transition to TSPs represents a substantial change in how services will be delivered to NRCS clients. This change will greatly expand the availability of technical services from the private sector and augment the work now done by federal employees and conservation districts, but it will also change some traditional relationships and present challenges for federal managers. How the agency handles this change will influence the success and the popularity of the program.

FOOTNOTES

[1] Farm Security and Rural Investment Act of 2002, signed by President George W. Bush on May 13, 2002, Title II – Conservation.
[2] In a 1994 survey of district conservationists, more than half had been in their present position for four years or more; 30% had been with the agency more than 20 years. (Source: Survey of District Conservationists, Northern Illinois University, Southern Illinois University, and Helen R. Flach)
[3] Farm Security and Rural Investment Act of 2002, Section 1244 (b), Privacy of Personal Information Relating to Natural Resources Conservation Programs.
[4] http://techreg.usda.gov
[5] Flach, Helen R. 1997. Influence of the Organizational Culture in Implementing Radical Mission Change in an Agency: The USDA Soil Conservation Service, 1985 – 1994, doctoral dissertation published by NRCS-Davis California p. 99, 109.
[6] Mahler, Julianne. 1988. The quest for organizational meaning: identifying and interpreting the symbolism in organizational stories. *Administration and Society.* 20 (3): 352 & 356. November.
[7] Martin, Joanne, Martha S. Feldman, Mary Jo Hatch, and Sim B. Sitkin. 1983. The uniqueness paradox in organizational stories. Administrative *Science Quarterly.* 28: 452.
[8] Brink, Wellington. 1951. *Big Hugh: The Father of Soil Conservation.* The MacMillan Company. New York. p. 2.
[9] Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do and Why They Do It.* Basic Books: pp. 222-224.
[10] Wilson, p. 101
[11] Wilson, pp. 102-3 and 110
[12] Woodward, Harry and Steve Buchholz. 1987. *Aftershock: Helping People Through Corporate Change*. John Wiley and Sons, Inc., New York. pp. 14-15.
[13] Watzlawick, Paul, John H. Weakland, and Richard Fisch. 1974. *Change: Principles of Problem Formulation and Problem Resolution*. W. W. Norton & Co., Inc., New York. p. 83.
[14] Survey of District Conservationists, Northern Illinois University, Southern Illinois University, and Helen R. Flach.
[15] 7 CFR Part 652, Technical Service Provider Assistance, Natural Resources Conservation Service, Interim final rule with request for comments, November 7, 2002, effective March 1, 2003, Section 652.37(a) through (c).

5. AGRICULTURAL EASEMENTS: A LANDOWNER'S PERSPECTIVE

NEGOTIATING AN AGRICULTURAL EASEMENT: A LANDOWNER'S PERSPECTIVE ON CONFLICTING PRODUCTION AND CONSERVATION VALUES

Albert G. Medvitz and Jeanne McCormack

This is a personal account of negotiating agricultural easements on two large grain and sheep producing ranches in California. In 2001-2002, the ranchers Albert G. Medvitz and Jeanne McCormack negotiated two easements with the Solano County Farmlands and Open Space Foundation (now the Solano Land Trust) for the preservation of 3,700 acres of ranch and farmland on the banks of the Sacramento River, about 50 miles east of San Francisco. The easements, finalized in August, 2002, were funded in part by the California Department of Conservation and in part through a donation from McCormack, Medvitz, and McCormack's family. From the perspective of the landowners, the negotiation process was unexpectedly difficult and time consuming. This was largely the result of differing perceptions between landowners and agencies about what is necessary to preserve the viability of agriculture as an enterprise, particularly in relation to the conservation purposes of an easement. An added complication in the negotiations were the landowners' financial and family circumstances. This case study chronicles the details of the four-year easement process from initial informal discussions to the final approval of the document, including the ranch, community, and agency contexts of the story as interpreted by the landowners.

INTRODUCTION

This paper is a personal history of negotiating two farmland conservation easements in California. It is a memoir of how we, Jeanne McCormack and Al Medvitz, negotiated conservation easements with the Solano County Farmland and Open Space Foundation, a non-profit land trust, on the two adjacent ranches totaling about 3,700 acres just southwest of Rio Vista in California. We donated one easement of about 1,800 acres, valued at $1.255 million, on Jeanne's historic family ranch to the Foundation. The remaining 1,900 acre easement was acquired by the Foundation with $1.28 million in cash from the California Farmland Program (CFCP) which is administered by the California Department of Conservation (DOC). Jeanne, I, and the McCormack family earlier purchased the Perry Anderson Ranch with the explicit intent of selling an agricultural conservation easement on the property. The cash proceeds of the easement were used to payoff outstanding loans to purchase the property and fund operational expansion, as described below. In size and other respects, the two easements are unique; they constitute (as of the date of this publication) by far the largest contiguous block of farmland placed under easements with funding from the CFCP. They also show how a large property may be saved for agriculture despite its location within a half mile of a rapidly growing small city.

Beyond these and other particulars, this case has meaning for agricultural easements generally. It illustrates what in many instances is an inherent gap between the conservation objectives of organizations that purchase easements and the economic interests of landowners in having the flexibility to adjust their farm operations in the future.

For us as sellers, the easement process did not go smoothly despite the best of intentions and knowledge by all of the actors. Negotiations began with very willing sellers and willing buyers, but the process became so difficult that we very nearly walked away from the deal and concluded it with considerable consternation and bitterness. More than four years elapsed from the initial informal conversations with

the Foundation to the final signatures on the easement in August, 2002. Table 1 presents the chronology of this story, including family and community developments that preceded the negotiations.

Table 1. Timeline of Easement Agreement Process for Perry Anderson and Dan McCormack Ranches

Abbreviations:
DOC: Department of Conservation California Farmland Conservancy Program

10/87 McCormack and Medvitz arrive in Rio Vista to begin ranching/farming with Wallace McCormack, Jeanne's father, on Dan McCormack Estate Ranch: 1,800 acres of dryland small grain and sheep production in the Montezuma Hills southeast of Rio Vista.

1990 Perry Anderson Ranch put up for sale as development property. Current lessee announces his retirement.

9/91 McCormack and Medvitz enter five year lease on a share crop basis for 1,900 acre Perry Anderson ranch.

7/94 McCormack family sells interests in Sherman Island farmland. Age and illness delay reinvestment.

95-97 McCormack joins board of directors of Foundation and begins discussions with executive director on easement possibilities of McCormack and possibly Perry Anderson.

9/96 McCormack and Medvitz lose lease on Perry Anderson, but continue monitoring its sale.

4-5/98 Real estate agent for Perry Anderson Estate contacts Foundation about possible purchase of ranch. DOC and Foundation staff visit ranch.

3/99 Perry Anderson Estate reappraises ranch and reduces price to agricultural values. McCormack income from Sherman Island sale needs to be reinvested soon. Wallace and Helen McCormack and Medvitz and Jeanne McCormack make offer.

11/99 Jeanne McCormack, Medvitz, Wallace, and Helen close purchase of Perry Anderson. Medvitz and McCormack take out large mortgage on basis of informal understanding with Foundation that there is a good possibility of selling ag easement. Farm economy itself doesn't justify loan. McCormack and Medvitz write formal letter to the Foundation expressing interest in selling agricultural easement on Perry Anderson and donating a conservation easement for the McCormack ranch.

3/00 Foundation and the DOC visit the ranches.

6/00 Foundation replies to McCormack and Medvitz stating that board would decide whether ranches met their criteria and then seek funding. Letter sets out process to be followed to completion.

10/00 McCormack, Medvitz, and Foundation meet with appraisers who promised to have final appraisal by 12/15/00. Foundation promises easement will be concluded by 6/01.

1/01 On request of Foundation, McCormack and Medvitz formally set forth agricultural uses they wish to retain in addition to normal farming activities: agritourism; conservation stewardship income; education and research center; sand extraction; one homesite per ranch plus ag worker housing, caretaker housing, and temporary housing.

5/01 Neighbors formally notified that McCormack and Medvitz are processing a conservation easement.

6/01 Final appraisals completed. (6 months behind schedule).

7/01 Rio Vista City Council and Solano County Board of Supervisors endorse the easements.

8/15 Foundation, McCormack, and Medvitz review appraisal (8/15); McCormack and Medvitz meet with Foundation Executive Director about final wording of easement and timeline (8/30); Baseline document is prepared (10/15); McCormack and Medvitz review baseline (10/21); McCormack and Medvitz get escrow letter of instruction to notify DOC (11/21).

9/01 Delays cause financial stress. Foundation executive director writes landowners' bank saying easement will be completed early in 2002. Foundation informs Medvitz and McCormack easement will be completed by January and they will be paid in February. Interest costs are approximately $150.00/day. Foundation executive director lays out schedule.

10/01 Medvitz and McCormack engage attorney to take over easement work. First draft of easement developed with language on "conservation values," prohibition of commercial equestrian activities, etc.

12/6 Executive Director, Medvitz, and McCormack, and the attorneys meet; discuss homestead areas, farmworker, and mobile housing and reserving right to earn income from habitat stewardship.

2/02 We review and corrected baseline. Meeting set for late February to finalize easements. In mid-February Executive Director asks McCormack for large portion of endowment up front before easement closed. Meeting scheduled with DOC postponed because of death in our lawyer's family.

3/02 New meeting scheduled for 3/24; McCormack writes endowment check for $30,000, believing easement is only three weeks from completion. Delay causes severe cash flow problems. Serious disputes between sellers and Foundation and DOC regarding their restrictions on number of structures on ranches related to production and Foundation's equation of agricultural with open space values.

4/02 Dispute about acreages for ag enterprise zones; Foundation offers 15 acres/ranch. We say that is not sufficient to allow vertical integration in future. Our lawyer refines language relating to income from conservation practices. Dispute with DOC over their role in enforcement of easement on donated ranch. Foundation and DOC raise issue of appraisals and acreages devoted to ag enterprise zones. Cash flow now a serious issue and interest rates devouring necessary capital. McCormack and Medvitz finally contact Foundation's Ag Easement Committee about the delays and the issue of farm and processing structures. Committee meets and agrees with our expressed need for farm buildings, areas for processing structures, and worker housing.

5/02 Members of Committee reprimanded by Foundation for interfering with negotiation process. Medvitz and McCormack consider walking away from easement and investigate alternatives. None are affordable. McCormack and Medvitz realize that they cannot walk away from the easement because of the financial hardship it would cause. They instruct attorney to accept one percent now of total acreage for processing with possibility of two percent in future.

6/02 Remaining issues: Foundation wants cap on worker housing; concern over mitigation; issue of DOC's role in enforcement of easement. New language regarding disputed issues.

7/02 More revisions of baseline reports. Final versions of easements and baselines. We sign easement documents . Foundation signs easement documents. We sign escrow instructions.

8/02 Easement closes, 14 months later than originally promised. Additional upfront financial costs are $80,000 beyond landowner expectations.

Our dissatisfaction with the process is notable because Jeanne and I are recognized advocates for the protection of farms and farmland in California. At various times, we have exercised leadership in the farming community. We also have strong environmental values. We started out as eager sellers of

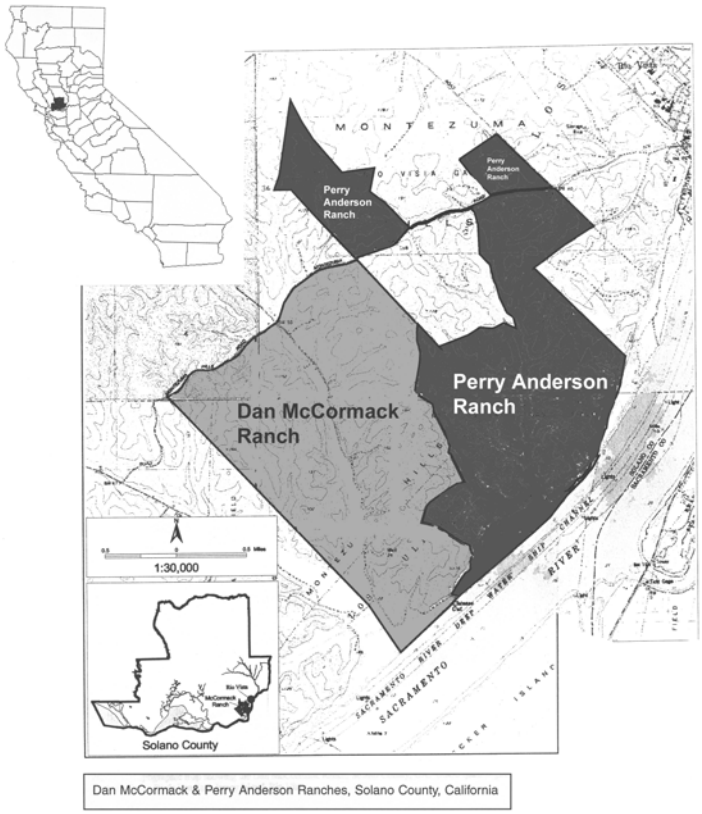
development rights. We had worked with and were close colleagues of many of the actors in the negotiations, including staff of both the Foundation and the DOC. Jeanne had served on the Foundation's board of directors and Al had contributed to its formal planning process. Al also has a history of collaboration with the DOC and had earlier cooperative collegial interactions with the top managers of its easement program. The process did end with an easement in place, but with much dissatisfaction on our part and a perceived need to continue to modify and improve the contract.

We are presenting this story because if the use of farmland conservation easements is to remain a viable tool to protect agriculture and the agricultural landscape, then the processes of implementation, which might breed misunderstanding and resentment, needs to be understood.

THE LAND: LOCATION, FARMING SYSTEM, AND ENVIRONMENT

The conservation easements under discussion in this paper are on two adjacent properties, the Perry Anderson and the Dan McCormack ranches (see Figure 1). The ranches are now under unified ownership of Jeanne McCormack, Helen McCormack (Jeanne's mother), and Al Medvitz. We purchased the 1,842-acre Perry Anderson ranch in 1999. The Dan McCormack ranch, Jeanne's and Helen's family property, is 1,865 acres. Together the two ranches occupy about 3,700 acres, a little more than six square miles (6 square miles = 3,840 acres) on the banks of the Sacramento River in the Montezuma Hills in an unincorporated area just south west of Rio Vista, a rapidly growing city in eastern Solano County. The ranches include about a two and a half miles of river frontage, with what some consider spectacular views of Mount Diablo to the south and the Sacramento/San Joaquin Delta to the east and north.

Figure 1. Dan McCormack and Perry Anderson Ranches.



A combination of demographic, economic, and political factors had protected these properties from urban development until 2002, when the easements were finally implemented. Rio Vista is about equidistant from four important and growing urban centers, including Sacramento to the north, the San Francisco Bay region to the southwest, and Stockton to the east. Greater urbanization of the area has been held off by distance from major interstate corridors, a sometimes unpleasant climate of chilly foggy winters and windy summers, and proximity to the Sacramento River and the San Joaquin/ Sacramento delta.

Up until the mid-1990s Rio Vista had a stable population of about 3,000 but has grown rapidly in recent years after the city government approved large annexations of land and several housing developments. The population now stands at about 5,000 people and is still growing.

Solano County planning policies also limit urbanization in the area, particularly the Orderly Growth Ordinance. First implemented by Measure A, an initiative approved by voters in 1984 and renewed in 1994, the ordinance limits urban development on unincorporated lands. Urban expansion, however, is still possible through municipal annexation of unincorporated land.

The ranches are located in the Montezuma Hills, a region of about 60,000 acres of dissected uplands, or rolling hills, that have remained in dryland small grain production and sheep and cattle grazing for well over 100 years. The Hills, which rise to altitudes of 250 feet above the Sacramento River, consist largely of land with soil capability ratings of III and IV. These soils absorb and hold water well and form the basis of the historic system of rotating small grains with sheep grazing. The current system of extensive dryland grain production rotated on a two or three year basis with sheep and or cattle was generally characteristic of California agriculture until the early twentieth century when the dramatic shift to higher value row and orchard crops began.[1]

Ranches in the Montezuma Hills did not make this shift in production for several reasons. The hilly landscape and the lack of prolific water near the surface make irrigated farming costly. Also, in the 1930s, extensive natural gas fields were discovered in the region and continue to be a source of income for some landowners.[2] More recently windmills for electric production dominate the landscape at the western end of the region and also generate income for landowners. Income from energy production has militated against the need to spend learning time and resources into crop diversification or of selling the land off for housing. During the past 50 years, much of the Montezuma Hills has passed to absentee landlords who are content to earn income from natural gas and windmill energy production and rent from crop sharing arrangements with farmers.

Besides the scenic landscape and a lengthy riparian border, the Perry Anderson and McCormack ranches have scattered areas where tules grow, burrowing owls make their residences, and assorted other wildlife resides as permanent residents or migrating visitors. The land has an extensive grasslands habitat populated mostly by introduced and exotic species. It serves as home to willows, alders, and native California black walnut trees. Recently we have had riparian restoration work done on the McCormack ranch using CalFed grant funds. We have also had discussions with the National Resource Conservation Service of USDA, the University of California Cooperative Extension, and other agencies about developing the environmental potential of the land to enhance the agricultural value of the ranch. We explore other forms of farming such as orchard crops, row crops, herbs, and poultry as we continue to develop our markets in lamb and goats and grains.

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THE SELLERS

Jeanne McCormack, her mother Helen McCormack, and me, Jeanne's husband, were the sellers of the easements. Jeanne's mother is a vibrant woman who married Jeanne's father in the 1930s and has lived in Rio Vista ever since. Jeanne and I are native Californians, born in the 1940s. We both have advanced degrees from Harvard University and have independently served as Peace Corps volunteers in Africa. Before turning to farming 15 years ago, I was an assistant professor and director of a physical sciences teaching laboratory at Boston University. I also consulted with non-government organizations in international development. Jeanne was a program officer at World Education, an international NGO devoted to adult education and the alleviation of poverty worldwide. She assisted women's enterprise development in Africa. We are active in farming and farm preservation organizations, including the Solano County Orderly Growth Steering Committee, and the California Woolgrowers Association. Jeanne has been a member of the board of directors of the Greenbelt Alliance, a San Francisco Bay land preservation group, and is currently serving on the board of the National Sheep Industry Improvement Center. She is a past board member of the Solano Farmland and Open Space Foundation, and I am a newly appointed board member of that organization recently renamed the Solano Land Trust. I am also a continuing member of the board of directors of the Solano County Farm Bureau, and a past board member of the California Farm Bureau Federation.

I also lecture at times at UC Davis where I have taught in the Departments of Animal Science, Human and Community Development, and the International Agricultural Development Program. I am co-editor and contributor with Alvin D. Sokolow of *California Farmland under Urban Pressure*, published by the Agricultural Issues Center at UC Davis. I am active in various professional and scientific organizations, particularly the American Association for the Advancement of Science, and speak and write on issues of population growth and land use in California, the impact of international trade on local farms, and farming and agriculture as a form of environmental management.

Jeanne is the only child of her father and mother and her father's two sisters. She was raised in a farming family in small close knit town environment.[3] Her family is prominent in local history. Her father and his cousins were active in farming, finance (through control of the local bank), and local politics. Jeanne was raised with a deep commitment to the land to her family, the local community, and the California heritage that her family helped forge from the land.

THE BUYER

The Solano Farmlands and Open Space Foundation was formed out of conflict. Reacting to a large proposed housing development about to be approved by the Solano County Board of Supervisors, voters in 1984 passed Measure A. This required voter approval for residential projects in unincorporated areas, taking such decisions away from the county Board of Supervisors. The Solano Orderly Growth Committee, formed to oppose the controversial project, was behind the ballot measure.

The campaign for proposition A was bitter and divisive. It pitted pro-growth developers and local politicians against those who wished to control sprawling development in the face of growing population. It also divided the farm community.

Another dispute about a housing project shortly emerged in the county seat city of Fairfield. Even though the development was well along in construction, the Orderly Growth Committee challenged the

project in court. The lawsuit's settlement allowed the project to continue in return for requiring new residences to provide ongoing funding for farmland protection. This led to the incorporation of the Solano County Farmlands and Open Space Foundation in 1986 as the vehicle for spending the funds. It was given this primary purpose:

> "to provide for the acquisition and preservation of open space in the Suisun Valley and other areas in the general vicinity of the City of Fairfield"….,"by identifying and designating open space land appropriate for acquisition and preservation, acquiring or directing the acquisition of such open space lands, and administering any lands so acquired."[4]

In keeping with the litigious nature of its origins, the nine member board of directors of the organization was to be composed of representatives of the various groups who were in conflict at its beginnings. They included two representatives from the city of Fairfield, two designated by the Orderly Growth Committee, and five later appointed by the new board after its formation. The latter directors included one representing the real estate development community, one with expertise in the management and operation of an open space district or trust, and three from the farming community. Later, the articles of incorporation were modified to include two directors to be appointed by the Green Valley Land Owners Association and a legal expert appointed by the board itself. The first executive director, Neil Havlik, a naturalist, was hired in 1988.

Decision making throughout the history of the Foundation has often been contentious, especially about land conservation priorities and how to achieve them. Relations between agricultural representatives and other board members were frequently strained. In some cases, farmers resigned from the board rather because they did not want to participate in implementing environmental goals that conflicted with the protection of agriculture.[5] With the exception of several small transactions, the Foundation did not acquire agricultural conservation easements until 1998. It emphasized rather fee purchases of large tracts.

In 1996, Havlik resigned and was replaced by Pam Muick, a Ph.D. biologist with some experience in the study of rangeland management. Muick's intent from the outset was to develop the farmland conservation easement component of the program. She and the Foundation board were also eager to extend open space acquisitions throughout the county.

Soon after her appointment, Jeanne and I established a friendly working relationship with Muick, assisted her in her efforts to reach out to the farming community. We helped her arrange visits to key actors and organizations in that community so that she could seek their participation in the continuing development of the Foundation. During this period, Jeanne served on the Foundation's board of directors. We began discussing in general terms with Muick the possibility of placing an agricultural conservation easement on the McCormack ranch. Later, when it became possible for us to purchase the Perry Anderson ranch, discussions began on a possible agricultural easement for that property as well.

Muick aggressively sought funding for the Foundation, not only for land purchases and easements, but also for planning and development. In 2000 the Foundation sponsored a countywide open space vision event. With a grant from the Packard Foundation, Muick led the Foundation through an extended planning process to develop plans and procedures for a countywide program for conservation easements. I was a member of that planning group.

Between 1998 and 2003, the Foundation acquired eight additional agricultural conservation easements (including ours) through donations and funding from the state's CFCP. It also continued to purchase in fee simple large tracts of hill land with funds from the California Coastal Conservancy. Although the Foundation leases such properties to ranchers to graze cattle, the emphasis is clearly on recreation and public access.

In 2003, the Solano Farmlands and Open Space Foundation legally changed its name to the Solano Land Trust

THE FUNDER

The easement for the Perry Anderson Ranch was purchased by the Foundation with funding provided by the CFCP. The other easement on the McCormack ranch was donated to the Foundation. The two acquisitions were a package deal and all concerned regarded the purchase of the Perry Anderson easement as contingent on the donation of the McCormack easement. As a result, the CFCP asserted authority over the construction of the McCormack easement. To some degree, the difficulties encountered in this story derive from the legislation establishing the state program.

The Legislation. The opening sections of the enabling legislation of the California Farmland Conservancy Program declare that the legislative purpose of using state funds to purchase agricultural conservations easements is to protect farming and ranching operations and the California farm economy (Public Resources Code section 10201-10202). It notes the intent of the legislature "to protect farming and ranching *operations* from non-farm or nonranch land uses that may hinder and curtail farming or ranching *operations."* (PRC section 10202(b); emphasis added.) Later sections also emphasize the protection of farm operations rather than simply the land. For example, section 10238 states bluntly: "The director shall not disburse any grant funds to acquire agricultural conservation easements which restrict husbandry practices." Section 10262 specifies that easements shall not prevent, among other things, the construction of farm buildings and structures, farm housing for farm families and for workers.

Still, there are sections of the CFCP legislation that also recognize the environmental importance of agriculture. For example, the Department of Conservation can make grants to "improve lands" protected by agricultural conservation easements. Improvement is defined as increasing agricultural value by protecting wetlands, conserving habitat, protecting scenic open spaces, increasing the compatibility of agricultural operations with sensitive natural areas, encouraging participation in planned watershed management, and involving agencies whose primary purpose is resource conservation (PRC section 10246).

In evaluating easement proposals, the law lists 11 sets of criteria. Three are of special interest to this discussion: (a) The quality of the agricultural land, based on land capability, mapping definitions, productivity indices, and other soil, climate, and vegetative factors, (b) Meeting multiple natural resource conservation objectives, including, wetland protection, wildlife habitat conservation, and scenic open-space preservation, (c) The conservation of the land supports long-term private stewardship and continued agricultural production (PRC section 10252).

This legislation contains within it the seeds of disagreement in defining the conditions of a conservation easement. They concern differences in understanding what is necessary to ensure the economic viability

of an agricultural establishment in California over the long term, at the same time as trying to satisfy conservation objectives.

The CFCP Organization. The CFCP is a program of the Division of Land Resources Protection, located in the Department of Conservation. The program manager of the CFCP, who has been with the unit since its inception in 1996, is Charles Tyson. He is a soil scientist with a Ph.D. from the University of California, Davis. Tyson recently participated in the two-year California Agricultural Leadership Program, a prestigious program for the development of executive and policy leadership in California agriculture. Deniz Tuncer joined the CFCP staff in 2000 and was the project manager for the McCormack/ Anderson easements, reporting to Tyson. Tyson's immediate superior was Erik Vink, Assistant Director and head of the DOC Division of Land Resource Protection. Previously, Vink was California state field director of the American Farmland Trust, the nation's leading environmental organized focused on farmland protection. He also had participated in the California Agricultural Leadership Program. In previous years, I had worked with Vink and Tyson on educational and informational projects

Our two easements, totaling 3,800 acres, constituted the largest transaction handled by the CFCP at that time. Among the 38 easements funded by the CFCP from its beginnings in 1996 to March of 2003, the only other in Yolo County exceeded a thousand acres in size.[6] Together these three properties constituted almost a third of all the land protected by CFCP easements as of March, 2003. Perry Anderson/ McCormack alone was about 22.5% of all the land protected by the CFCP. Furthermore, other CFCP funded-easements were primarily in row crops such as vines or orchards and not the grazing, small grains, and irrigated pasture that characterize our operation. At the beginning of this story, CFCP (as well as the Foundation) had little experience in placing easements on large ranch properties where the possibility of transition to higher value crops or other forms of income production was a consideration.

THE PROCESS

The interaction among the sellers, buyer, and funder began several years before the actual submission of an easement application in 1999 to the Foundation. In 1990, five years after we arrived to farm on the McCormack ranch with Jeanne's father, the neighboring Perry Anderson ranch was put up for sale as development property. At the same time the lessee of the Perry Anderson ranch, Calvin Anderson (a distant cousin of Jeanne), announced his retirement. When the agents of the Perry Anderson estate made it known they would continue to lease the ranch until it was sold, Jeanne and I took the opportunity and entered into a five year crop share contract to farm the ranch.

At that time the initial asking price of the ranch was far too high to consider for agricultural purposes. Although control of the McCormack property was firmly in control of Jeanne's elders, she and I were already committed to the idea of preserving the McCormack ranch through a conservation easement. . When the Perry Anderson Ranch came up for sale, we added to our commitment the notion of purchasing the Perry Anderson property, putting on easement on it too, and operating the two as one ranch.

Shortly after we began the lease, the bottom fell out of the lamb market. Jeanne, in particular, began the process of developing an alternative marketing system. Initially we sold boxed and frozen lamb to individuals and fresh carcasses to those few restaurants who would buy them.[7] Within a few years the effort developed into an arrangement with Niman Ranch, a processor of meats, to purchase our lambs at a modest premium in price for sale to upscale San Francisco (and later nationwide) restaurants.

As we struggled with volatile and declining prices for our main products and began to establish our own lamb feeding operation during the winter months, we learned that crucial decisions often had to be made quickly in response to dramatically changing markets and weather needs or the emergence of new technology. Our own experience plus continuing collaboration with academics and agricultural organizations solidified the view that farmland protection was pointless unless provisions were in place to allow flexibility for farm managers to maintain the farm income stream. We began to understand that there is far more to preserving the agricultural landscape from urban development than simply preventing the land from being subdivided for housing and industry. It makes little sense to preserve farmland unless there are substantial provisions to ensure that the operator of the ranch or farm will be able to adapt, sometimes very quickly, to meet changing circumstances to ensure economic viability.[8] If provisions are to be made to protect conservation benefits of a ranch, then it is essential to protect the potential of the ranch enterprise.

Family Circumstances. In 1994, a family event made it possible to purchase of the Perry Anderson ranch. In that year Wallace and his two sisters decided to sell land they owned on Sherman Island in the Sacramento/San Joaquin Delta to the state of California. The proceeds of the sale were divided equally among the three. Age and illness on the part of Jeanne's father and her aunt Helen delayed the immediate reinvestment in like properties, creating some tax risks. Over the next four years, the family attorneys and accountant collaborated with Jeanne to protect the proceeds from taxes and penalties as the family coped with its health and age issues.

In the midst of these family developments, we lost our operating lease on the Perry Anderson ranch in 1996 because of a dispute with the landlord. We continued to manage the agricultural enterprises of the McCormack ranch for Jeanne's father.

Unable to find takers for the property at development prices, by 1998 the agent for the Perry Anderson estate lowered his sights and looked around for other opportunities. He contacted the Foundation to see if it would be interested in a purchase. Muick of the Foundation and Tyson of the state program visited the property to explore the possibility of purchasing the property in fee title and then selling it off with a conservation easement. At the time, we did not know about this exploration.

Subsequently, Muick had a conversation with Jeanne in which she described the Foundation's interest in the Perry Anderson property. Jeanne told her of our desire to convince her elders to collaborate with us to buy the property at a reduced price with the easement on it. However, this approach would take an extended period to implement, tying up large amounts of capital and requiring cumbersome administrative processes, thus putting in jeopardy the reinvestment of family income from the Sherman Island land sale. Nevertheless, this information about the Foundation's interest in investing in the Perry Anderson property was an important component of our later decision to purchase that ranch when it became available.

By the following year, the Perry Anderson estate lowered the asking price to a position much closer to agricultural values. We made the calculation that with family income reinvested and a substantial loan paid off with a conservation easement, we could afford to buy the Anderson property and thus expand our farming operation. We could also protect the landscape and heritage to which we were committed. With an urgency to reinvest the Sherman Island money, Wally and his sister Helen agreed to purchase the Anderson ranch with us. The purchase would prevent the loss of assets from the Sherman Island sale and help us meet growing demand for lamb. It was understood, however, that given the continuing

problems with the farm economy, the purchase would likely not result in immediate income increases, but. would lead to added opportunities for long-term farm development and diversification. Later, all of Jeanne's elders agreed that they would donate a conservation easement on the McCormack ranch, thus preserving their property and providing for reduced estate taxes. We presumed that the donation of the McCormack easement would provide an incentive to the DOC to provide funding to the Foundation to purchase an easement on the Anderson ranch.

By 1999, conditions in the McCormack family had become quite complex. The effects of age and ill health were becoming more difficult for Wally McCormack and his sisters. We were assuming more of the financial management of the McCormack ranch. Family financial authority was turned over to Jeanne as the Anderson purchase proceeded. Within weeks of closing on the property in 1999, we formally applied to the Foundation to place easements on both the Anderson and McCormack ranches.

Taking a Risk. In order to purchase the Anderson ranch, we took out a large loan to supplement the proceeds from the Sherman Island sale. The farm economy itself did not justify such a loan, but it was a reasonable risk to purchase the property on the assumption that a conservation easement would be sold. As negotiations began to implement the conservation easements, we found it necessary to take out an additional operating loan to meet cash flow needs during the ranch expansion. Early in the process, an approximate cost-benefit analysis showed that if the easement were implemented in the time frame we had been discussing with the Foundation, the total debt burden of $1 million in real estate and operating loans could be paid off with about $100,000 of capital remaining to invest in replacing aging and unsafe machinery, building upgrades, and adding much needed fencing.

We were fully aware of the risks involved. Our thinking was that if an easement did not come through, then we could sell the property at agricultural values to pay off at least the property loan. The result would be great personal disappointment at losing an opportunity to farm and graze on a unique piece of property and also a disappointment that the long-term guarantee of protecting the ranch environment ensuring the property remain in agriculture would be lost.

Our risk assessment included an evaluation of the Foundation and its history. Despite our concerns, we took the step to ask it to purchase and hold the easements for the following reasons:

- Time pressures to reinvest family proceeds from Sherman Island in like property, and thus avoid tax penalties, were growing intense.

- With interest payments of $150 a day, the debt structure on the ranches was not sustainable in the medium term.

- No other eligible organizations were immediately available to purchase and hold a Solano easement. Seeking out and obtaining the cooperation of a land trust outside the county would be time consuming.

- We had intimate knowledge and contact with the trust and had a strong relationship with the executive director. Muick appeared to be forging a good working relationship with the California Farmland Conservancy Program (CFPC), the most likely funder of the easement purchase.

- I had some knowledge of the DOC and CFCP. I had also had a good collegial relationship with Charles Tyson and Eric Vink.

We believed that if we and the Foundation, with a sympathetic director and a board with an articulate agricultural component, could craft an easement protective of agriculture, then there was little uninformed or ill willed people could do to compromise the development of farming on the land through bad administration of the easement.

Our purchase of the Perry Anderson Ranch closed on November 11, 1999. Immediately after the closing, Jeanne wrote to the City of Rio Vista requesting that the ranch be removed from the city's sphere of influence. The city later complied. On November 16, she wrote to Muick asking if the Foundation would be interested in purchasing an easement on the Perry Anderson ranch and discussing a donation of an easement on the McCormack home ranch. The Foundation followed up by contacting the CFCP and, in March of 2000, Tyson and Muick toured the two ranches with us. In April, McCormack wrote to Muick requesting that the Foundation move forward as rapidly as possible on the easement because her elders were failing. Jeanne's father, Wallace, was 89 years old, her aunt Helen was 92, and her aunt Florence was 86. Jeanne requested that the easement be finished by the end of 2000.

Negotiations begin. On June 12, 2000, Muick responded to the April letter pointing out that she and Tyson had completed a second site visit to both ranches. She outlined the steps to be taken to complete the easement. They included: (1) developing thumbnail sketches of the properties, (2) Foundation board approval to proceed, (3) obtain pre-acquisition funding by writing a grant proposal, (4) complete an appraisal, (5) sign an option agreement, (6) draft the easement agreement while also completing a baseline study for monitoring purposes, and (7) go through the normal escrow process. The June 12 letter did not include time estimates, but our conversations with Foundation staff indicated that they estimated that the completion would be done by June 2001. This estimate included provisions for possible procedural delays.

Four months later, Jeanne and I met with Muick and the appraiser, Ron Garland, to begin the appraisal and the process to set out the conditions of the easement. At this meeting preliminary, terms were set out describing the bundle of rights we believed we were giving up. These pertained to (1) subdividing the ranches, (2) building more than three additional houses for non-ranch labor on the nearly 4,000 acres, (3) contracting with energy companies to put wind turbines on the ranches, and (4) marketing water because the Department of Conservation considers the land and water as a unified entity. We were surprised by this last item and although we agreed with the principle, it was a signal of problems to come.

Income from environmental benefits. In this and subsequent discussions, we broached the notion of earning income by marketing environmental outcomes as part of the farm enterprise. This idea has been implicit for several decades in USDA programs administered by the Natural Resources Conservation Service that compensate landowners and ranchers for engaging in conservation practices, with an increased emphasis in the 2002 Farm Bill. In recent years it also has become more popular in a variety of policy contexts, including international trade negotiations. USDA programs like the Conservation Reserve Program provide an ongoing income stream to landowners during the period of the contract. They are distinct from term easement arrangements in other USDA programs like the Wetlands Reserve Program.

I wanted to ensure that these expanded notions of farming were understood by the Foundation and included in the easement documents. There was some initial difficulties in getting the Foundation and Garland, our appraiser, to understand the concept of payments for environmental values. Muick questioned whether this would amount to double dipping, selling what is owned by one entity to another. We seemed at that point to not be able to frame an argument so that she would understand that the concept was about an income stream for managing the property in a particular way, not about overlaying one easement on another. We did not see the problem as insurmountable and so we proceeded. Including these notions later in the easement documents turned out to be a very time consuming and frustrating task from our perspective.

Clearly the Foundation and the DOC thought of their easement purchase as precluding far more than the right to build houses and windmills and prevent water sales. They saw themselves as buying rights to the environment and that the environment could be separated from the farm economy. This was a different viewpoint than held by us, the sellers, who saw environmental benefits as outcomes of farm management, and some of which could be subject to sale.

At the conclusion of the initial meeting with Garland, a revised schedule was offered. The final appraisal was to be done by December 15, 2000, the baseline documents were to be completed by February 2001, and the Foundation promised that the easement would be completed by June, 2001. In mid-January of 2001 Jeanne wrote to the Foundation setting forth those rights that we wished to retain in addition to agricultural production. These included facilities for possible agritourism development and the ability to participate in USDA or other funding programs which might provide income from environmental benefits. Al wished to retain the possibility of establishing a modest center or facility for education and research devoted to agriculture and the environment. We also specified one home site per ranch plus agricultural worker housing, caretaker housing, and other temporary housing for workers.

The process moved forward. Neighbors were notified, as required by law, final appraisals were completed on June 29 2001 (instead of December 15 of 2000) and in July both the Rio Vista City Council and the Solano County Board of Supervisors approved resolutions supporting the easements, as required by the state Public Resources Code.

During this summer, although there were delays (everyone understood this would occur to some extent, there was no immediate cause for immediate financial concern because interest payments were not due until November. However more extensive delays beyond that time would cause serious cash flow problems.[9] To ensure timely and coordinated action, the Foundation set out a completion deadline of the end of 2001.

By September, however, the delays were beginning to generate financial anxieties on our part. The Bank of Rio Vista, which had made the loan for the Perry Anderson Purchase, asked for assurances that the easement would be completed in due course. In response, the Foundation wrote a letter assuring the loan officer that the easement would be completed in early 2002.

Later that month, on September 24, the Foundation met with us and our respective attorneys to discuss the actual provisions to be included in the easement document and to set out a new time frame for tasks to be completed. Russ Lester, a farmer and member of the board of directors of the Foundation, was present at this meeting. The many issues discussed at that meeting included “the appraisal, primary

prohibited and permitted uses, baseline document, tax and estate issues, mineral rights, particularly oil and gas leases, number of gas wells on each property, procedure for well drilling, and riparian and water rights, existing buildings and domestic water wells, farm worker housing, and changes in agricultural land use."[10] Following the meeting, Muick and Harry Pollack, the Foundation's attorney, called CFCP to seek clarification of the issues discussed, particularly the timing of the baseline study. Tyson said that the study need not be completed before the recording of the easement, but that the photo work and field survey needed to be done soon. This last point seemed to add promise to an early completion of the easements.

Up to the fall of 2001, the delays in the process appear to be largely procedural. They derived more from coordinating the schedules of attorneys, assessors, boards of directors, and farmers than taking time to hash out differences. These had been taken into account in the early estimates of the easement time frame. It seemed that through coordinated action, an early 2002 closing on the easements was still possible. The buyers and sellers generally appeared to be on the same page as to easement provisions. The procedural delays, however, made much more costly later delays which resulted from substantive disagreements.

Differences over conservation values. It was at this September 24 meeting that we also first learned of the significant role the DOC/CFCP would play in crafting an easement agreement, when the Foundation staff and attorney described their interaction with CFCP to identify easement provisions.

This sense of everyone being on the same page began to dissipate in October. By then we engaged Alan Porter as our attorney to take over our part of the easement development and the first draft of the easement was prepared by the Foundation, apparently in consultation with the CFCP, and forwarded to us. This first draft immediately raised concerns. First, the language generalized "conservation values" with agricultural production. It went on to propose limits on worker housing, the location of buildings and facilities, as well as specific activities not mentioned in the appraisal which we regarded as retained rights to farm and earn income.

A prime example of the problems we encountered was the intent to prohibit the development of commercial equestrian facilities. This appeared to come out of the blue and make no sense. Historically, horses had been a component of the ranch and until the 1930s, they had been the principal means of mechanical energy to cultivate the fields. Wally, Jeanne's father, was a notable horseman in the state and often hosted rides for his friends and colleagues. Up until the year of the negotiations, the ranch had always been a home to horses, disrupted only by an outbreak of the equine disease "moon blindness" that required the disposal of the remaining four horses on the ranch. We thought that a boarding stable with associated riding trails might be a viable source of income for the ranches in addition to farming and grazing systems. Horses are clearly a farm animal, albeit not a food animal for American tastes. The Foundation reported the provision was a requirement requested by the CFCP, but could offer no explanation of the reasoning behind the prohibition.

Besides not making sense economically, the proposal seemed to be an attack on the heritage of the ranch, demonstrating the lack of appreciation held by the Foundation and the CFCP of the culture and social history of the region. Other proposed restrictions on the location of farm buildings, worker housing, and other ranch facilities also indicated a lack of understanding of the relationship of ranch infrastructure to husbandry and production.

Notably lacking, especially after the previous extended discussions, was language to ensure that environmental income could be earned from stewardship of the land. We were surprised at the extent of the differences and particularly dismayed at the notion of putting environmental values on an equal footing with the maintenance of the farm economy and about the absence of language concerning environmental income.

We were also surprised to begin the task of confronting the specific language of permitted and not-permitted uses almost a year after the process had begun and after the appraisal had been completed, in which retained rights of farming and ranching were clearly articulated. We had assumed that locations of farming (as opposed to residential) structures and facilities, including housing for shepherds in the fields with our animals, were a component of husbandry and therefore part of our retained rights. The Foundation and CFCP saw things differently; husbandry appeared to cover only direct work with the plants, animals, and the land. It seemed not to include barns, corrals, storage sheds, shop buildings, greenhouses. dairy parlors, shepherd trailers, and other facilities necessary to turn managing the fields into salable products.

Communication processes between the Foundation and us changed dramatically after the first draft of the easement was prepared. All communication, except for some procedural issues, took place through the two attorneys. We would respond and communicate on the easement agreement through our attorney Alan Porter, who would then communicate with Harry Pollack, the Foundation's attorney. Pollack would then communicate with Foundation personnel and with staff at the CFCP. Porter, Jeanne, and I were thus isolated from the Foundation's internal discussions and those it had with the CFCP.

In early December, along with our attorney, we met with Muick and Pollack, the Foundation's executive director and attorney, to discuss substantive differences in the easement. The major issues at this point were farm worker housing, mobile housing for shepherds, and earning income from environmental outcomes of the ranch. We also wished to clarify how we would all deal with the CFCP.

A practice employed in other easement negotiations conducted by the Foundation had been to identify permitted land uses on the properties and where these uses they could be located. For example, if owners wished to retain rights to construct housing, then a portion of the land would be identified as a "homestead" where home construction would take place and the rest of the land as the "farmstead," where farming would take place. The idea was to ensure that residential housing rights do not infringe on the agricultural viability of the parcel. However, none of the other easements had been of the scale as the ones we were negotiating, nor had vertical integration of processing farm products on farmlands been a feature of other easement discussions. Since we were actively engaged in exploring varieties of new enterprises to diversify the ranch, such a system of land use identification needed to take into account the varieties of support and infrastructure required by different farming systems, including the need to vertically integrate to compete in a rapidly globalizing market. For example, if for economic reasons we decided to get into fig or other fruit production, the ranch would have to house packing sheds to prepare products for shipping and the market. A winery would be appropriate if we ever decided to grow grapes, and an olive press or curing facility might be necessary if olives became a profitable venture. Greenhouses, maybe with cement floors, would be necessary if our experimental organic garden succeeded. In the not so distant future, sheep might be raised to provide important medical products and a biologically secure confinement place would be necessary.

To address our concerns, the Foundation and the CFCP offered the compromise of establishing "agricultural enterprise zones" on the ranch to locate processing and marketing facilities. We accepted the concept as a viable compromise, provided sufficient land was made available for new activities and it would not impose restrictions on infrastructure crucial for production. It needed to be understood that the location of a processing facility could have serious implications to the viability of a specific ranch enterprise. We also understood that the *entire ranch* was an enterprise and that there were certain to be conflicts about what constituted ranch infrastructure and processing. Resolving these possible future conflicts of what is and what is not processing could prove difficult with people with little farm experience.

During this discussion about enterprise zones, it was clear that the Foundation's and CFCP's highest priority of protecting "conservation values" meant maintaining the landscape. We shared the landscape value as well as a very high value on protecting the land itself, which is one reason why we entered into the negotiations in the first place. But if limiting the construction and location of new farm and ranch facilities to protect the landscape destroyed the economic viability of the farm and ranch, then the farm enterprise would disappear. The purposes of the a*gricultural* conservation easement would not be achieved.

Although we accepted the compromise, continuing negotiations about the size of the enterprise areas and what should and should not be included in them nearly ended the process. To us who live on the ranch, decisions about where to place facilities are crucial economic decisions that have much to do with the viability of a production process. It is about a five mile drive from one corner of the ranch to the other. Depending on the vehicle or piece of equipment, this take up to an hour of transport time. Even a mile or two trip to haul goods and materials from a production site to storage and processing site would make a great differences in the economics of a new enterprise. How and where and in what structures production is carried out is of as great as importance to the success of a business as what is produced. It was also the case that undue restrictions on infrastructure and processing facilities would reduce the resale value of the land as *agricultural* property, an issue which had not been considered in the appraisal.

We began to seriously question the Foundation's and CFCP's understanding of the economics and management of ranches and farms. Despite a long and extensive relationship with the Foundation's executive director and an earlier belief that the CFCP staff understood the management needs of farming and ranching, we were dealing with a process in which the other side appeared to have very limited knowledge of farming systems and heritage as they relate to environmental and aesthetic values. The constrained communication mechanisms now began to generate questions about who exactly was in charge of the negotiations. Was there dissent and difficulty in the Foundation about which we didn't know?

Alan Porter, our attorney, reports that at the time of this meeting he was also beginning to find the negotiating process frustrating. He reports his recollection that the initial negotiations with Muick and Pollack proceeded very smoothly, but as time progressed he became increasingly frustrated with the intervention of the CFCP.

Despite our concerns, we continued in the process. At the December meeting, we all agreed to a goal of completing the easement documents by the end of February 2002. We also agreed to meet with CFCP staff to discuss and resolve final differences in January or early February.

The baseline study. Frustration at procedural delays and our growing belief that the CFCP and the Foundation were not equipped to make long-term decisions about the financial viability of agriculture increased in December when the Foundation finally engaged a consultant to construct the baseline study of the ranches. This is a crucial instrument documenting the state of the ranch. It is a depiction of the ranch at the time the easement is agreed upon, and it is the basis for monitoring the provisions of the easement. It ensures that its conditions are being followed by the landowner, and it protects the landowner from inappropriate action by the Foundation. It includes a survey of land, resources, farming system, buildings, fences, etc.

When the consultant and his associate appeared on the ranches to begin the baseline study, we realized that they had little understanding of what they were inspecting. Grain bins, an important feature of wheat and barley production, were confused with silos. The function of barns and corrals were not clearly understood, and in general the farming system and its accouterments were poorly described. Over the next few months as we and our attorney reviewed the baseline documents, many of the errors and misperceptions were corrected. Ultimately an agreeable baseline document was produced. But the process further seriously undermined our trust in an institution which would have an important relationship with the land and whoever farmed it well into the future.

Over the next two months, as Jeanne and I reviewed the language of repeated easement drafts, our loss of confidence in the institutions with which we were working increased. This was due in part to the constrained nature of communication. When language was included in draft easements that seemed to be at odds with our notions or understandings, it was difficult to fathom the origins. Did it come from CFCP or the Foundation? If it came from the Foundation, did it come from Pollack, the attorney, or Muick, the executive director? Were agricultural members of the Foundation's board involved? Without this understanding and with communication only taking place through third parties, our ability to develop compromise language became very difficult and time consuming.

Furthermore, as time progressed it seemed as if new restrictions were added out of the blue without prior discussion. For example, a draft provision added by the DOC and Foundation required that agricultural enterprise areas on the ranch were all to be rectangular in shape. The reason was to provide ease of monitoring. However, the topography of the ranch demands that contours be followed and sensitive areas be avoided. This suggestion was later withdrawn, but to us, it was a serious *faux pas*.

The communication system set in place to facilitate lawyerly dialogue did not allow discussion and collaboration; rather it contributed distrust, frustration, and conflict. Unexpected proposals requiring our continuing explanation of farming and its activities continued to nourish seeds of our frustration and distrust; not distrust of integrity, but of the understanding of farming and ranching as a business.

As work continued on resolving what were now obviously deep differences regarding the form and function of the easement and as economic pressures increased in intensity, Jeanne received a phone call from the executive director of the Foundation requesting a $30,000 upfront installment on the $50,000 endowment that would be required of us at the completion of the transaction.[11] An early payment would help overcome the Foundation's then cash flow problems. Furthermore, she assured Jeanne that a settlement was near at hand and we would soon receive the easement payment from which donation would deducted in any case.

The request put us in an awkward position. The financial need to close the easement was growing intense. Interest payments were now significantly depleting projected easement proceeds. We also had our cash flow problems and such an upfront donation to the Foundation would require taking a draw on the ranch's line of credit, increasing its own interest burden. On the other hand, we did not want to offend the executive director or appear to not be helpful, especially when we were involved in resolving difficult differences. We complied, even though we believed the request was inappropriate, albeit made in good faith. This request, however, contributed to the sense that the Foundation did not understand the business components of farming or fully appreciate the financial stresses under which farmers work.

An early February death in Alan Porter's family led to a postponement of our much anticipated meeting with the staff of both the Foundation and the CFCP. It was now clear that the easement would not close by the end of February. The meeting had been scheduled for the end of March.

When our meeting with CFCP staff and Foundation representatives finally took place on March 24, it provided revealing insights into the thinking of the other parties. For example, in responding to the issue of the prohibition of commercial equestrian facilities, CFCP staff explained that they meant to prohibit structures like stadiums or rodeo grounds where large numbers of people would regularly congregate with heavy traffic and parking. That version made perfect sense to us. CFCP staff had no particular objections to riding trails or other horse riding facilities, provided they didn't blight the landscape. Furthermore they had not insisted this provision be included in the draft of the easement, but only mentioned it to the Foundation staff and attorney. However, the language remains in the easement documents without clarification.

We raised our frequent claim to retain the right to earn income from environmental outcomes, a feature in USDA conservation programs. We wished to include explicit permissive language in the document to avoid future misunderstandings and to avoid inconsistencies in the easement which requires that the land remain in agriculture. Our point of view is that farming and ranching are forms of environmental management and that managing habitat outcomes for income is consistent with an agricultural easement.[15]

Neither the CFCP staff nor the Foundation attorney or its staff seemed to have any familiarity with the policy discussions of this important issue or its relevance to the easements under discussion. After extended discussion, they continued to reject the notion that the landowner might retain control over habitat maintenance for income production.

The meeting helped to clarify, in general, the CFCP's thinking on several other issues. CFCP staff believed it legitimate to impose restrictions to preserve broadly defined conservation values, even if they impacted the economics of the farm operation. Thus the scale, location, and scenic value of the McCormack and Perry Anderson Ranches appeared to be of a higher priority than economic viability, and the CFCP did not judge the economic potential of the ranch to be very high. This appears to have been based primarily on the soil characteristics and topography of the properties. We inferred that the strategy of the CFCP and the Foundation was to include provisions in the easement that would make changing the farming system difficult so as to maintain the current landscape and environmental characteristics.

The approach the two agencies took toward future use of the property seemed to us to be a worst case approach. They appeared to be concerned that facilities and structures would be used to circumvent the

purposes of the easement in the extreme. For example, the worst case of allowing facilities for hotel or bed and breakfast facilities for agritourism would allow the construction of a large motel or hotel.

We agreed broadly with the views of the CFCP and the Foundation, but disagreed strongly on those details we believed were necessary to ensure the future economic viability of the ranch. Some of their ideas were extreme and inappropriate, for example the restriction on greenhouses with cement floors. The agreement on broad philosophical issues was sufficient for us to proceed, but the deep differences about operational concepts of farming and ranching continued to lead to disagreements over the details of easement language.

These issues continued through March and April, although the general framework of the easement document was in place. We were now experiencing serious financial pressures. In April, we took communications into our own hands and Jeanne called Ian Anderson, a respected farmer and neighbor who was a member of the Foundation's board of directors and Chairman of its Agricultural Conservation Easement (ACE) committee. She asked for help in resolving the problems of delay and the issues regarding agricultural enterprise zones and worker housing. Much to our dismay, we learned that the agricultural members of the board had been totally left out of the communication loop and had not been consulted on any the provisions of the easement. Furthermore, no consultants had been engaged to provide such expertise to the Foundation's staff.

The ACE committee met a month later to discuss the easement and recommended largely in favor of the seller's point of view. The committee recommended that 2 percent of the land (approximately 36 acres) on each ranch could be set aside for the agricultural enterprise zones as opposed the 1 percent (approximately 18) acres with possible expansion to 36 acres with permission of the Foundation desired by the CFCP. They also recommended flexibility in the extent and location of worker housing. The CFCP also wanted to site all new farm structures, including barns and corrals, in the agricultural enterprise areas. We determined that this was interference in the necessary infrastructure of the existing system of husbandry on the farm, and the committee agreed. Much to our dismay, rather than taking account of these recommendations, the Foundation attorney and executive director reprimanded the committee, despite its agricultural expertise,, for interfering in the negotiation process.

A late reconsideration. After hearing of this rebuttal, we suspended negotiations with the Foundation to review our options again. It was clear that the process had degenerated into a completely adversarial one over how much control the Foundation should have to protect its vision of conservation values at the expense of the farm.

It was very late in the game to reconsider options, but we had strong negative feelings about having been misled about the intentions of the Foundation and the CFCP. Under conditions of confidentiality, we began to interview friends and colleagues about our predicament. We also began to search for an alternative organization to take custody of the easement. We did this despite the realization that the $30,000 endowment donation would not be refundable. Other options were open, but there were uncertainties. Would the CFCP fund the easement under a new agency? The task of negotiating with a new agency would add more delay. Could we afford the loan interest and payments? In the end, the strong possibility of losing at least the Perry Anderson Ranch and possibly both ranches led to the resumption of negotiations with the Foundation and the CFCP and the attempt to get the best terms possible under the circumstances.

Over the next three months, between May and July, final language was negotiated. We signed escrow instructions in July and the easement closed in August, 2002 which was 14 months later than originally promised and, for us, nearly $80,000 over anticipated transaction costs. Much needed ranch investment would be put aside.

AFTERTHOUGHTS

From our point of view, pressures of time and finances led us to sign what we regard as a seriously impaired document. While we understand the public policy need to ensure that easement provisions are not misused or manipulated by future owners, we believe that the easements contain inappropriate provisions that unnecessarily interfere with the business of farming and ranching (Table 2). They give far too much authority over ranch decisions to an institution insufficiently grounded in agriculture, especially given trends towards the vertical integration and environmental custodianship of farms.

Table 2. Landowner-perceived Issues in the Easement Negotiation Process

Substantive Issues

1. No clear distinction of "agricultural values" over "conservation values"
2. Environmental values of the ranch as source of ranch income.
3. Activities permitted with permission of Foundation when Foundation lacks expertise
4. Prohibition of possible equestrian facilities
5. Siting of ranch buildings, worker housing, and other production-related facilities
6. Mobile housing for shepherds in the field
7. Size of area for enterprise zones
8. Relationship of farming and processing–separate or integrated? Confusion of what activities facilities are basic ranch infrastructure vs. part of "enterprise zone" activity.
9. Flexibility to allow future infrastructure facilities to accommodate unanticipated commodities

Process Issues

1. Appraisal done long before determination of prohibited activities. (Prohibited activities affect agricultural value of the land.)
2. Directing landowner-agency communications through attorneys in late stages
3. Appropriate level of involvement of DOC in setting terms of easement.
4. Limited knowledge on the part of the DOC and foundation of ranch economics, management and heritage
5. Lack of involvement of agricultural members of foundation's board of directors
6. Increased debt problems resulting from delays in completing the easement and early payment of endowment.
7. Insensitivity to ranch operations in the baseline study

We believe that the negotiation process for this easement was very seriously flawed. It was wrong to exclude members of the Foundation's Agricultural Conservation Easement Committee from the negotiating team and to locate decision making authority in the attorney. The CFCP took far too an active role and should have engaged agricultural management experts to assist in evaluating our concerns. Finally, the appraisal process occurred too early before permitted and prohibited activities were articulated. Prohibitions in the agricultural conservation easement can have important economic

consequences on the agricultural value of the land and should be taken into account in valuing the easement.

Still, we take comfort in the fact that for all of us the process is relatively new and much still needs to be learned and understood about easements and their long-term effects. We continue to choose to believe that all involved acted with the best of intentions. Because of this belief and our commitment to the idea of agricultural conservation easements, after the negotiations closed we met first with members of the Agricultural Easement Committee, and later with CFCP staff and the Foundation attorney and staff to describe our experiences and express our frustration and upset.

In our presentations to the Foundation and CFCP, we have been graciously received and listened to with respect. It was only after these conversations that we have been invited to describe our experiences to broader audiences. We wish the negotiations had gone smoothly and that the easements were more perfect documents, but that was not so. Our intent in this account is to illustrate that in spite of good will and high ideals, serious differences in understanding can lead to frustration, anger, and resentment. A more open process is needed and careful clarification of the purpose of an agricultural easement and explanations of its provisions in light of the purpose to protect the farm enterprise are needed as part of the ongoing process of negotiation. Independent agricultural expertise in farm management and the farm economy is needed by those purchasing and funding agricultural conservation easements. Finally, the closing of the easement itself should not be regarded as the end of the process. We continue to learn much about the nature of agriculture and its relationship to the environment and the economy. Periodic review of farm management technologies, new husbandry practices, market conditions, and the policy environment along with a willingness change easement terms accordingly, should be a part of this approach to agricultural land conservation. If not, easements will turn out to be the "dead hand" of the past and will harm the progress of future generations.[12]

FOOTNOTES

[1] Olmstead, Alan L. and Rhode, Paul W. 1997. An overview of the history of California agriculture. In *California Agriculture: Issues and Challenges.* Giannini Foundation. University of California. Rothstein, Morton. 1999. California agriculture over time. in *California Farmland and Urban Pressures: Statewide and Regional Perspectives.* Agricultural Issues Center, University of California, Davis, CA.

[2] There is a fair amount of sharecropping in the hills, so not all farmers reap the benefits of gas well income. Gas well income from the Perry Anderson Ranch reverts to the original estate who retained mineral rights in the sale of the property.

[3] Jeanne's immediate family at the time of her return to Rio Vista were her mother, father, his two sisters, and one of their husbands. Jeanne was the only child of five senior adults all of whom were in their seventies when we returned to the ranch. Our return was based on the notion that we would best be near at hand to assist Jeanne's family through the aging process.

[4] Articles of Incorporation of Solano County Farmlands and Open Space Foundation, Filed April 26, 1986.

[5] Some of the farmers on the SCFOSF believed the Foundation to be paying to high a price for agricultural land, thus increasing the appraised value of neighboring land. Increased appraised value an have important tax implications in estate settlements and in property taxes.

[6] These data are derived form the compilation of easement projects on the CFCP web site at http://www.consrv.ca.gov/dlrp/cfcp/stories/easement_projects.htm as of August 14, 2003.

[7] Among the restaurants who purchased lamb directly from us were Chez Panisse in Berkeley and Zuni Cafe in San Francisco.

[8] Many of these notions are included in the enabling legislation for the California Farmland Conservancy Program that was supported by the California Farm Bureau Federation when Al was a member of the board of directors.

[9] The family situation for McCormack/Medvitz, however, became quite complex. Al had returned to teaching as a lecturer in international agriculture and community development at UC Davis. In June 2001 he was hospitalized with a circulatory ailment and then in July, Jeanne's aging relatives became seriously ill. Her father died at the end of July and her aunt Florence shortly thereafter. Her aunt Helen eventually died in the fall. Jeanne's mother and her uncle Sam, Florence's husband, remain in good health. While these events were

expected, they were still difficult to cope with and, for this story, added a new dimension of settling estates. They also created a distraction that prevented us from ensuring that the Foundation acted in a timely way.

[10] Muick, Pam letter to McCormack, Medvitz et al Sept. 24 2001.

[11] The establishment of an endowment was to be considered a donation (albeit required) to cover continuing monitoring and other administrative costs.

[12] A more developed discussion may be found at Medvitz, Albert G. 2000. Testimony to the USDA Agricultural Policy Committee on Farmland Protection**.** Available at http://aic.ucdavis.edu/research/Medvitz-testimony.pdf.

NEGOTIATING AN AGRICULTURAL EASEMENT: REACTION PANEL

Deniz Tuncer
Project Manager, California Farmland Conservation Program

The primary focus of the California Farmland Conservancy Program (CFCP) is the preservation of prime farmland that is under strong development pressure. Fundamentally, the program's intention is to protect farmland as a resource. While the majority of the CFCP's work has been on prime farmland, the McCormack/Perry Anderson ranches were considered even though the ranches do not include prime farmland. A number of other factors weighed in on the decision to provide funding: significant development pressures exist on the ranches due to their proximity to the small but rapidly growing town of Rio Vista, the ranches provide scenic and open space values along the banks of the Sacramento River, and the ranches contain wildlife habitat. Additionally, this particular area of Solano County was considered a top priority of the Solano Land Trust. As a program working statewide, we rely on the priorities set by local groups as to the farmland which is most critical for protection in their area of operation. Finally, the decision to make the grant took into account the large matching component in the form of the McCormack easement, which was donated to the land trust accompanying the easement purchase on the Perry Anderson ranch.

Because of the large size, rolling topography, and lack of prime farmland, this particular project was different than a more typical CFCP grant. A main challenge was dealing with "extensive" rather than "intensive" farmland uses. A typical easement funded by the CFCP would be, for example, a smaller, flat, rectangular 200-acre plot of prime farmland, which easily lends itself to being monitored. On such a farm, a single building envelope for all farm buildings and residences is generally sufficient. Generally, on such a farm, all buildings tend to naturally be concentrated in one area anyway, and having a defined building envelope also simplifies the land trust's monitoring. This approach has the advantage of concentrating buildings in a small area in order keep the remainder of the farm available for agricultural production.

In contrast, these two ranches are extensive in area, almost three square miles each, and therefore provided challenges in establishing a baseline report and wording easement language to allow for ease in annual monitoring. The flexibility the landowners desired in order to maximize their income-producing options beyond purely the agricultural use conflicted with what the CFCP is accustomed to dealing with. Typically in an agricultural conservation easement, any buildings are either limited to building envelopes or else are only permitted the permission of the easement holder. This allows the easement holder to more easily ensure that any construction is consistent with the easement. However the landowners were reluctant to have either of these two approaches in the easement. The CFCP's concern was not with the current owners, but with subsequent landowners who could potentially attempt to abuse the purpose and spirit of the easement agreement. Because easements are perpetual documents, the long-term view is critical to think about in crafting an easement.

An example would be the number of structures built for different purposes on the farm or ranch. Unless the easement terms are explicitly specified, future landowners may opt to build numerous structures, which may or may not be consistent with farming or ranching purposes, thereby altering the intent of the easement, which is to preserve agricultural use or open space values. In any case, the ability of the land trust to monitor future farming or non-farming practices is difficult in terms of time and resources.

A good rule of thumb is to refrain from putting things into easements that you are not prepared to monitor or that you are not sure how you will be able to monitor. The CFCP and the land trust wanted to make sure that the monitoring role the land trust was agreeing to undertake in perpetuity was realistic.

Another point to be made when negotiating a deal is to allow an ample amount of time for complex issues to be sorted out and to be agreed upon. A six-month period for easement negotiations may not be a realistic time frame when negotiating such a complex deal, especially for landowners that had a number of unusual terms they wanted to see in the easement. For a document that is intended to last forever, it is critical for the participating parties to thoroughly examine all terms.

As a state program, there are certain statutes and regulations that need to be followed and certain requirements that we need to see in the easement language. Because the CFCP's role is that of a funder, not a signer of the easement, our review process may or may not include face-to-face contact with landowners. Many land trusts that we work with prefer to be the primary contact with a landowner and keep the CFCP in the background as a "silent partner." While we are happy to meet directly with landowners when so desired, we also need to be made aware of issues in a timely manner. In this transaction, the landowners' dissatisfaction with the process was only brought to our attention towards the very end of the negotiating process and once the easements had been signed.

The CFCP, as a state program, is hesitant to probe into the personal financial situation of landowners. We were not aware of the financial situation with which the McCormacks were faced, and we would never recommended that financial burdens be taken on under the assumption that a grant could be obtained to secure funding to acquire an easement. When there are issues that are dependent on a rigid time schedule, as in the case of the purchase of the Perry Anderson ranch, the CFCP should be alerted about timing issues at an earlier point in the process. In this case, the disclosure of such information came much later in the negotiations.

The final result was a success in that the easement deal was completed. Although there were difficulties throughout the negotiation period, we applaud the generosity and commitment of the McCormack family in protecting their land and taking this opportunity to share their experience with others.

Harry Pollack
Attorney, Solano Land Trust

The Solano Land Trust is a non-profit corporation which is unique in its dual purpose of preserving both agricultural land as well as open space. My role in the process was to complete the deal for the land trust.

An easement contrasts with a purchase and sale of real estate in that at the end of the deal both parties do not necessarily go their separate ways. When the agreement is considered to be "in perpetuity" the thinking must be long-term. It can be better described as "entering a partnership" than as a real estate deal which has an end point after the transaction is completed.

Another difference is that in any other kind of real estate transaction, the first step is typically to begin with a contract. A time frame is set, as well as a list of contingencies, determinations of costs, and other stipulations relevant to the deal are made. Conservation easements, conversely, do not generally begin with a contract. Instead, the process requires a "great leap of faith" from all parties concerned that a successful deal can be made. There are a great many

risks involved due to this fact, and the entire process can include many complications and issues because of this leap of faith.

The interests of the landowner and land trust are in many ways overlapping. However, they are not entirely identical. The landowner has a strong economic interest in the land which needs to remain economically viable in order for them to retain ownership. An emotional tie also exists where a desire to preserve the land and continue its use for agricultural purposes is present. However, beyond this emotional connection, there is a primary need to make ends meet. The land trust is thinking more in terms of farmland preservation and thinking less of the economic issues of the farmers themselves. In this instance, one of the main sources of conflict arose from the difference in opinion over the issue of enterprise buildings.

In the easement context, open space preservation requires the absence of buildings. There was a need to define which segment of the land was allowed to have structures placed on it and which segment was not. Through the establishment of an Ag Enterprise Zone, the landowner had the freedom to place structures necessary for ranching purposes. The difficulty in building allowance came in determining exactly how much or what part of the land would be considered an Ag Enterprise Zone.

After repeated negotiations, it was agreed that 1% (approximately 18 acres) of the land would be allowed Ag Enterprise structures with the possibility of an additional 1% later on. The process seemed routine to me but was disconcerting to the landowner in this particular case. Long-term flexibility was perceived to be a key concern.

Towards the end of the negotiations, the landowners were beginning to have second thoughts. From my perspective, this was a good thing since no easement should be entered into before the owner is fully ready. Ultimately, however, easement agreements were reached and the deal was completed. There were notable problems in the process, but through long and sometimes arduous negotiations, the deal was finalized with a document that was acceptable to all parties.

Andrea Mackenzie
General Manager, Sonoma County Agricultural Preservation an Open Space District

Certain things were never taught in planning school for which only a process of "learning by doing" may be useful. Theoretical approaches may need to be set aside in order for a participant to experience first hand what goes wrong, what goes right and what can be learned through personal interactions and other unforeseen challenges involved in the process of transacting a deal.

The Sonoma County Agricultural Preservation and Open Space District derives its funding from a 1/4-cent sales tax which generates between $17 and $18 million a year and is used to preserve land primarily through conservation easements. It has become one of the nation's leading farmland and open space preservation programs and is working hard to prove to the public that its 20 year mandate which is set to expire in 2011 is an endeavor worth extending into the indefinite future.

The topic of the panel discussion involved the idea of "strategic acquisitions" and "maximizing public benefits" when dealing with private land preservation. The three parties which participated in this particular land deal included a representative of a local land trust, a government agency funder of conservation easement acquisitions, and the landowners themselves.

The days are over when there was thought to be a "vanilla" conservation easement where the deal happens by itself and things fall smoothly and naturally into place. Complexity is the norm and a deal involving only three parties is now considered a small transaction. Deals now can include up to 5 and 6 parties facilitated by funding and leveraging issues. This increase in complexity leads to longer periods of time as well as the inclusion of a variety of inputs from the multiple participants involved. Under such circumstances, critical "forks in the road" may be encountered, requiring proactive efforts on the part of one or more players in order for the deal to reach a successful conclusion.

The difficulties in crafting this particular deal are seen as the norm rather than the exception. The good faith in which many landowners begin with (in hopes of negotiating a successful easement) involves a certain level of trust. Often landowners approach the agencies to inquire about possible deals through word of mouth." It is therefore important that negative experiences suffered by landowners in the process of entering into easement deals are minimized. Improvements in communication are important for organizations and agency members to ensure that landowners feel their needs will be addressed in an open and honest fashion. Only then will conservation minded landowners be able to maintain a level of trust and willingness necessary to participate in future easement transactions.

6. AGRICULTURAL EASEMENTS: PROGRAM ISSUES

VARIATIONS IN CONSERVATION EASEMENT DURATION AND PAYMENT OPTIONS

Tom Daniels

Note: It is not my intention to give legal advice in this paper. An attorney should be consulted by anyone considering the sale of a conservation easement and by farmland preservation administrators who wish to offer an array of easement payment options.

This paper describes and evaluates the flexibility of farmland preservation options that are possible through differing time lengths of conservation easements and different easement payment methods.

INTRODUCTION

Easement program administrators in the public and private sectors should be aware of the many options that landowners may wish to have, as administrators consider which easement payment options to offer prospective easement sellers. In turn, landowners should understand the pros and cons of different options as they decide whether to participate in a farmland preservation program, and, if so, how to structure the easement payment to best meet their personal, family, and business goals.

Easement Time Periods. A conservation easement is created through the voluntary purchase or donation of development rights. Restrictions on development are placed on a landowner's property through a deed of easement. The deed of easement is signed by the landowner (grantor) and the recipient of the easement (grantee) at settlement. The deed of easement is recorded at the county courthouse and runs with the land. If the property is sold or passed on to heirs, the deed of easement applies to those subsequent landowners (Daniels 1991, 422).

A deed of easement is a legally binding contract in which a landowner transfers an interest in the real estate to a government agency or private non-profit land trust. The recipient of the easement has the power to enforce the terms of the deed of easement, and can seek injunctive action to compel a landowner to cease and correct violations of the easement (Diehl and Barrett 1988, 92).

A conservation easement may be sold in perpetuity or for a certain period of time specified in the deed of easement, such as a 30-year easement (Wiebe et al. 1996, 22). At the end of the 30 years, the easement becomes null and void. The federal Farmland Protection Program, for instance, will fund the purchase of perpetual conservation easements or easements with a term of at least 30 years (NRCS 2002a, 1).

Some landowners are uncomfortable with the notion of perpetuity in that they are restricting the use of their land forever. They may feel they are tying the hands of their heirs or denying themselves the chance for realizing a substantial gain from the sale their land for development at some future date. In addition, some farmers worry that if they preserve their land through the sale or donation of an easement and neighbors develop their land, then it would be difficult to farm a property surrounded by development. Nonetheless, Section 170(h) of the federal tax code, allows a landowner to claim an income tax deduction only for the donation of a perpetual conservation easement (Small 2000, 56).

The value of a conservation easement is determined by a professional independent appraiser who estimates the market value of the property if it were placed on the market today and the value of the

property if it were restricted to agricultural and open space purposes. The difference between the market value and the restricted value is the value of the conservation easement. (For an alternative method of valuing conservation easements, see the section, A Note on Determining Easement Value with a Points-Based Appraisal System, at the end of this paper).

Clearly, the value of a perpetual conservation easement will be greater than the value of a 30-year term easement (Wiebe et al. 1996, 29). The landowner is giving up a greater value by foregoing the opportunity ever to develop the property for commercial, industrial, or residential uses. For instance, the Wetlands Reserve Program will pay 100 percent of an appraised easement value for a perpetual easement, but only up to 75 percent of the appraised value of a perpetual easement for a 30-year easement (NRCS 2002b, 1).

Proceeds from the sale of a perpetual easement are taxed as capital gains (Small 1987). This tax treatment enables landowners to deduct their basis in the property (the property's purchase price or value at time of inheritance plus improvements minus depreciation) in determining the taxable capital gain. A landowner whose basis is greater than the easement payment can receive the payment free of federal capital gains tax (Daniels and Bowers 1997, 157). By comparison, the tax treatment on the sale of a term easement is generally as ordinary income (Small 2000, 56).

Less Than Perpetual Easements. Term easements have been used by the federal government in the Wetlands Reserve Program and by some local governments (Wiebe et al. 1996, 3). For a 30-year easement, the Natural Resources Conservation Service (NRCS) offers 75 percent of the appraised value of a perpetual easement. Landowners also have the option of selling a perpetual easement to NRCS. The purchase of term easements by the federal government is also allowed under the federal Farmland Protection Program, and under the Grasslands Reserve Program, created in the 2002 Farm Bill.

Lancaster County, Pennsylvania offered landowners 25-year term easements when the county began its farmland preservation program in 1983. The county made an "incentive payment" of $250 an acre. About 22 landowners sold 25 year easements. Lancaster County's 25-year easements came in three forms. First, at the end of 25 years, the easement would be removed. Second, at the end of 25 years, the landowner would have to pay back the price of the easement at a 6 percent per year rate, or else the easement would automatically become a perpetual easement. This would mean that a $25,000 incentive payment would have to be repaid at slightly more than $100,000 in the 25th year in order for the landowner to extinguish the easement. Third, the landowner would have the opportunity to pay to extinguish the easement at 25 year intervals, such as $100,000 in year 25, $400,000 in year 50, etc.

Lancaster County did not enter into a term easement after 1987. Since then, offers to purchase easements have been based on appraisals of easement value and the county has offered to purchase only perpetual easements. In the 1990s, eight landowners, who had sold 25 year easements, then sold perpetual easements to the county. In the process, the landowners avoided the repayment provisions of the 25 year easements, but the prices paid for perpetual easements reflected the fact that a 25 year easement was in place.

The Town of Southampton, New York, located in Suffolk County on the eastern end of Long Island has one of the most expensive real estate markets in the entire East Coast. Yet, Suffolk County is New York's leading agricultural county with $170 million in annual farm output.

In 2002, the Town of Southampton adopted a 10-year term easement program. The town supervisors were intent upon protecting open space in the town by changing the zoning of farmland from generally one dwelling per two acres to one dwelling per five acres. Farm lenders openly said that if the downzoning occurred, they would be forced to call in some loans. This, in turn, could spur the conversion of farmland to other uses, and result in the loss of open space.

The 10-year easement program was a way for the town and farmland owners to buy time. The easement would freeze the one house per two acre zoning for 10 years, during which time the town would try to raise the funds to purchase perpetual easements on those properties. If negotiations to purchase a perpetual easement fail, the farmers, after 10 years, would have the option to develop their land according to the one house per two acre zoning. The first 10-year easement is currently under negotiation.

In November, 2002, Town of Southampton voters approved the continuation of a two percent real estate transfer tax through 2020, with the proceeds going to farmland preservation. The Land Trust Alliance estimated that this could mean as much as $200 million for the purchase of conservation easements on farmland (Land Trust Alliance, 2002, 2).

Extinguishing a Conservation Easement. Even though a landowner sells or donates a perpetual conservation easement, there are three ways that a conservation easement can be extinguished. First, the power of eminent domain is the ultimate power of government over private property. A government agency can take land under a conservation easement but only for a public purpose, such as a highway or school site, and only if the government agency pays "just compensation" (Daniels and Bowers 1997, 152). The money that a government agency pays for a condemnation of a property under a conservation easement must be split between the landowner and the holder of the conservation easement. The division of funds would be determined by the ratio of the easement price to the fee simple (market) value at the time the easement was sold or donated.

Second, the holder of a conservation easement has the responsibility of monitoring the property to ensure that the landowner is abiding by the terms of the deed of easement (Daniels and Bowers 1997, 208-209). Monitoring typically involves someone from the government agency or land trust visiting the property under easement once a year. A monitoring visit should result in a monitoring report, which includes a description of the condition of the property and any violations of the terms of the deed of easement. The monitoring report should also include photographs of existing conditions and any violations. A copy of the monitoring report should be sent to the landowner, and it is even a good idea to have the landowner sign the monitoring report.

If a government agency or land trust does not monitor a property on which it holds a conservation easement, the landowner may challenge the validity of the easement in court. A judge could conceivably determine that the easement holder is not defending the conservation purposes of the easement and could order the easement extinguished.

Although this author is not aware of a judge extinguishing an easement for lack of monitoring, there are cases that are certain to arise. For instance, Forsyth County, North Carolina purchased conservation easements on about 1,300 acres of farmland in the late 1980s. The county then abandoned the purchase program and ceased to monitor the properties under easement (Daniels and Bowers 1997, 165). Owners of those properties could have a compelling case in court, arguing that the county no longer cares about the conservation purposes of the farmland and open space.

Third, most states have provisions under which a landowner could be allowed to buy back the conservation easement. The re-purchase price would be based on a new appraisal of the value of the conservation easement.

The State of Maryland and the State of Pennsylvania have what could be called an "escape clause" in their easements. The following conditions would have to exist: a) A farm has been under a conservation easement that was purchased in whole or in part with state funds for at least 25 years; and b) The farm is surrounded by development and there are no markets for what the farm could produce (Daniels and Bowers 1997, 151).

The landowner could then apply to buy back the conservation easement at the appreciated value of the easement more than 25 years later. Maryland's state farmland preservation program began in 1977. This year, 2003, some farms will be the subject of attempts to re-purchase the conservation easement. Each re-purchase application will have to be reviewed on a case-by-case basis. Legal costs could be high, and precedents will be set.

Pennsylvania's state farmland preservation program began in 1989, so no re-purchase applications will be made until at least 2015.

The easement re-purchase provision after 25 years has both its supporters and detractors. On the positive side, the re-purchase possibility puts the burden on state and local governments to create large contiguous blocks of permanently preserved farmland. Farmland in such blocks will most likely remain viable and not become surrounded by development. The re-purchase opportunity enables farmers and local governments to correct situations in which a single farm or a few scattered farms were preserved in an area and the adjacent lands became developed. There will likely be conflicts between the farms and the non-farm neighbors, especially if livestock farming is involved. It may make little sense in such cases to tie the hands of the remaining farmers, and restrict the development of the farmland.

On the negative side, landowners may sell perpetual easements with the expectation that they or their heirs will be able to re-purchase the easement and convert the property to other, more highly valued uses in the future. Also, developers may attempt to purchase farms under easement with the intention of re-purchasing the easement. Finally, the more re-purchasing that occurs, the less faith the public will have in using public funds to acquire conservation easements as a long-term growth management and open space protection tool.

Other states have stricter standards for easement re-purchase. In Massachusetts, for instance, approval for a re-purchase requires an act of the state legislature. On the other hand, New Jersey simply does not allow an easement re-purchase option.

EASEMENT PAYMENT OPTIONS

There are five ways a landowner can receive payment for the sale of a conservation easement. A landowner should be aware of these options and consult with a tax advisor about the best way to receive payment for his or her situation. A landowner, however, should be aware that only a few state or local governments offer all five options.

A *lump-sum payment* is based on the easement value as determined by an appraisal of the current fair market value of the farm and the value of the farm encumbered by a deed of easement (see Table 1).

Table 1. Lump Sum Sale of Conservation Easement Example

250 ACRE FARM
$700,000 Appraised Fair Market Value $450,000 Appraised Value Restricted to Farming or Open Space _____ $250,000 Appraised Easement Value and Cash Paid $100,000 Landowner's Basis in Farm _____ $150,000 Taxable Capital Gain Tax Due @ 15% Federal and 5% State = $30,000 Net Return = $220,000

The sale of a perpetual conservation easement is taxed as a capital gain. This allows a landowner to subtract the basis in the property—both land and buildings (see Rev. Ruling 77-414)—in determining the taxable capital gain.

Bargain Sale of a Conservation Easement. A part cash sale and part donation of a conservation easement is known as a *bargain sale*. The cash portion of the sale is taxed as a capital gain. The easement seller can use the donation portion as an income tax deduction, but the seller must allocate basis between the sale and the donation (see Table 2). The donation portion of a bargain sale can be used through section 2031© to reduce the value of a farm in valuing the farm for federal estate tax purposes.

A government agency or land trust will offer a bargain sale in order to stretch its farmland preservation funds. For instance, the State of New York pays a set 75 percent of the appraised value of an agricultural easement. Often, farmers have donated the remaining 25 percent of the appraised easement value to complete the easement deal.

Table 2. Conservation Easement Bargain Sale Example

250 ACRE FARM
$700,000 Appraised Fair Market Value $450,000 Appraised Value Restricted to Farming or Open Space _____ $250,000 Appraised Development Rights Value $200,000 Cash Paid $50,000 Donation from Landowner $20,000 Basis Allocating basis between cash sale and donation (4 to 1), so $16,000 is deductible basis from cash portion $184,000 - $50,000 = $134,000 taxable capital gain Taxes paid (15% federal and assuming a 5% state rate = $26,800 Net cash return from Bargain Sale = $173,200

Use of a Conservation Easement Payment in a Like-Kind Exchange. In 1992, the Internal Revenue Service issued two private letter rulings allowing the use of a conservation easement payment in a tax-deferred, like-kind exchange under Section 1031 of the Federal Tax Code. Private Letter Ruling 9215049 held that a conservation easement is an interest in real estate and hence is treated as real estate.

Private Letter Ruling 9232030 held that a conservation easement payment may be used in a like-kind exchange. (See, Inaja Land case: Rev ruling 55-749, 1955-2 CB 295: Fee interest in land exchanged for perpetual water rights that are considered real property rights under California law). A private letter ruling is a response from the IRS to a specific tax question posed by an attorney on behalf of a client. The private letter ruling cannot be cited as precedent by other taxpayers, yet the ruling indicates how the IRS would likely view similar tax situations.

The private letter rulings established that a landowner who is selling a perpetual conservation easement on a property involved in business, trade, or investment, instead of receiving a cash payment for the easement, can use a "qualified intermediary" (such as an attorney, bank, or real estate agent who has not represented the landowner within the past two years) to put the easement money toward purchasing real estate. The real estate purchased can be additional farmland or other "like-kind" real estate for business, trade, or investment purposes, such as an apartment building (see Table 3). It is important to note that a check for the easement payment is made out to the qualified intermediary, not the landowner who is selling the easement.

A like-kind exchange is attractive for older farmers with a low basis who want to defer capital gains, farmers who want to use the easement payment to acquire additional farmland, or for farmers who want to diversify their portfolio with a commercial real estate investment (Daniels 2002, 1).

Variations. There are four variations of the like-kind exchange: a) the straight exchange; b) the partial exchange; c) the reverse exchange; and d) the straight exchange with a bargain sale.

The easement seller can use an intermediary to put the proceeds from the sale toward the purchase of up to three properties and thus defer capital gains tax until he or she sells one or more of the properties acquired. The value of the acquired properties cannot exceed 200% of the value of the easement value. Buyer must acquire 95% of fair market value of identified property.

Within 45 days from the date of the sale of the conservation easement, the taxpayer must identify the like-kind replacement property. Within 180 days of the sale of the conservation easement, the taxpayer must acquire the replacement property. A written contract, called an exchange agreement, is required between the landowner and the qualified intermediary. The replacement property can be transferred directly to the easement seller.

Note that the easement seller does not enter into an Agreement of Sale with the owner of the replacement property. It's pretty much a handshake arrangement until the easement seller completes the sale of the easement on his farm. Finally, it is always a good idea for a farmer who does a like-kind exchange with an easement payment to have the exchange property in mind at the time of settlement on the conservation easement.

Table 3. Like-kind Exchange with Conservation Easement Payment: Full Exchange

Conservation easement is sold on 100-acre farm (Property "A") for $300,000

- Fair Market Value of Property "A": $600,000

Basis in farm: $20,000

- Conservation Easement Sale Price: $300,000
- Taxable Capital Gain would be: $280,000
- Gains taxes due would be about: $42,000

Like-Kind Exchange:

- Value of Exchange Property: $400,000

- Owner of Property "A" trades the $300,000 easement payment through qualified intermediary for $400,000 Property "B".
- Conservation easement goes on Property "A" and the owner must take out $100,000 mortgage or come up with $100,000 in cash for Property "B".

Table 4. A Partial Exchange

Conservation easement being purchased on 100 acre farm (Property "A") for $300,000

Fair Market Value of Property "A":	$600,000
Basis in farm:	$20,000
Taxable Capital Gain:	$280,000

Like-Kind Exchange:
Value of Exchange Property: $200,000

Owner of Property "A" trades $200,000 of the easement payment through qualified intermediary for $200,000 Property "B".

Easement goes on Property "A" and the owner must pay capital gains taxes on $100,000 of easement payment not used in the like-kind exchange.

Reverse Exchange. A *reverse exchange* can be used when a landowner is awaiting settlement of the sale of a conservation easement on his or her farm. While waiting, if a neighbor's 100 acres came up for sale, the prospective easement seller could use a qualified intermediary to acquire the neighbor's farm. Upon the sale of the easement on his or her own farm, the landowner can use the easement payment (through the intermediary) to take possession of the neighbor's farm. Reverse exchanges are trickier than a straight like-kind exchange and the assistance of an experienced attorney is essential.

A like-kind exchange can be used when a landowner agrees to accept less than 100 percent of the appraised easement value. The landowner can use the difference between the appraised easement value and cash paid as an income tax deduction. The value of the deduction will depend on the landowner's income tax bracket.

To date, more than 200 like-kind exchanges with conservation easement payments have been completed in Pennsylvania. Like-kind exchanges have also been done in Delaware, Vermont, New York, New Jersey, and California (Daniels, 2002, 7).

Installment Purchases. There are two kinds of installment purchases that have been used to make easement payments to landowners (Daniels and Bowers 1997, 158-160). The simpler installment purchase allows a landowner to receive part of the easement payment each year, up to five years, with taxable interest paid on the balance outstanding each year. The method has tax advantages for landowners who have loss carry forwards or would otherwise expect an uneven income stream. This form of installment also works well with bargain sales because the donation portion can be spread out up to six years. The installment purchase with taxable interest has been used in counties in Pennsylvania since the late 1980s.

The securitized installment purchase agreement (SIPA) in effect turns the easement payment contract into a municipal bond. The easement seller receives tax-exempt interest payments each year over the life of the contract, typically 20 or 30 years. At the end of the contract, the easement seller receives the principal amount of the easement. The easement seller thus defers capital gains taxes on the easement sales price until the principal is paid.

The easement seller can sell the contract at any time on the municipal bonds market, such as in year seven in a 20-year contract, but capital gains taxes are then due. The SIPA approach was first used in Howard County, Maryland in the late 1980s. Since then, it has been used in Harford County, Maryland, Virginia Beach, Virginia, Mercer County, New Jersey, and in a few Pennsylvania counties (Farmland Preservation Report, 2002, 3).

A local government can cover the cost of the principal payment by purchasing zero coupon treasury bonds that expire in the same year as the easement contract. Interest paid to the easement seller cannot exceed the interest rate on the zero coupon bonds. Also, a SIPA cannot be funded by a local or state government through the sale of bonds. Proceeds from a tax, such as a real estate transfer tax or higher property taxes, are typically used.

An advantage of the SIPA is leveraging limited funds. The easement principal is covered through the purchase of deeply discounted zero coupon bonds. The local government then needs only to cover interest payments on an annual basis. Still, the SIPA approach is most attractive to counties that have strong financial resources. A small rural county will struggle to pay for the $100,000 in setup costs typical for a SIPA.

A SIPA can be attractive to landowners who: a) are facing a substantial capital gains tax from the sale of an easement; and b) wish to set up a stream of retirement income. The higher the tax-free interest rate on a SIPA, the more attractive as well.

CONCLUSIONS AND RECOMMENDATIONS

Landowners, financial advisors, and farmland preservation administrators should be aware of the variety of easement payment options that can be used to meet landowner goals. While there is some cost for administrators to set up installment purchase agreements, the other payment arrangements are simply a matter of having good legal advisors (like-kind exchange), flexibility in negotiating easement prices (bargain sales), and the financial muscle to offer payments in lump sum or in short-term installments. Yet, farmland preservation administrators will continue to face the challenge of making attractive offers to landowners while stretching public dollars to preserve key farm parcels.

Easement time horizons can and do vary, but the large majority of farmland preservation programs are acquiring perpetual conservation easements. Landowners should be alerted that they should not expect to defeat or extinguish a conservation easement in their lifetimes. Easements will be challenged in court, especially in Maryland and Pennsylvania where easements older than 25 years may be re-purchased by the landowners under certain conditions. Farmland preservation administrators will need to be strategic in attempting to buy easements in areas where they can create large continuous blocks of preserved farmland that will help farming to continue well in the future.

APPENDIX

A Note on Determining Easement Value with a Points-Based Appraisal System. Landowners have two major concerns with purchase of development rights programs. First is the value of the development rights and how they are determined. Second is the time it takes to negotiate and finalize the purchase of development rights. The valuation of development rights presents a host of challenges for farmland preservation programs. Currently, all state-level purchases of development rights programs use the tradition appraisal method, written by a certified real estate appraiser (Ohio is drafting a points-based system). The appraiser determines the value of development rights as the difference between the fair market value of a property and the value of the property restricted to farming and open space uses. The traditional written appraisal relies primarily on comparable sales of both unpreserved and preserved properties. The traditional written appraisal has two main drawbacks - it is time consuming and expensive.

The points-based appraisal method of valuing development rights to farmland consists of giving points for certain attributes of a farm and then multiplying the total points by a dollar value to determine an easement price per acre. The method has been used successfully in Harford County, Maryland, Montgomery County, Maryland, Lancaster County, Pennsylvania, and Skagit County, Washington. The advantages of the formula method are that easement values can be determined quickly and objectively. Landowners who are considering the sale of their development rights want to have a good idea of what their development rights are worth before they apply. The points-based appraisal method can provide that information quickly and objectively

whereas a traditional written appraisal can take several weeks, if not months, and usually only after a landowner's application has been ranked and approved by the local or state farmland preservation board.

The points-based appraisal method is flexible and can easily be changed. The points-based appraisal method can be used to reflect road frontage and distance from a public sewer and water lines which are the leading indicators of development pressure. Alternatively, the points-based system could be used to pay landowners based on the agricultural and environmental values of their farms which are soil quality, stewardship plans, wetlands, wildlife habitat, stream banks, etc.

Table 5 illustrates a sample points-based appraisal model that was drafted for an area within Lancaster County, Pennsylvania in 2000. The County has used the points-based system to mimic the traditional written appraisal approach.

Table 5. Sample Points-Based Appraisal Model

Factors			Points
1.	Size in acres	=	(100 points maximum)
2.	Soils	=	Class I and II acreage as % of total acreage x 100 Class III acreage as % of total acreage x 50 (100 points maximum)
3.	Road Frontage	=	Footage divided by 30 (100 points maximum)
4.	Proximity to Public Sewer	=	More than 1 mile = 0 points 1/2 to 1 mile = 50 points 1/4 to within 1/2 mile = 100 points Within 1/4 mile = 150 points
5.	Proximity to Public Water	=	More than 1 mile = 0 points 1/2 to 1 mile = 50 points 1/4 to within 1/2 mile = 100 points Within 1/4 mile = 150 points
	TOTAL POINTS		600 points Maximum

Table 5. (continued)

Farm Location: Distance from Public Sewer or Water				
1.	Within 1/4 mile	2. 1/4 to 1/2 mile	3. 1/2 to 1 mile	4. Over 1 mile
	a. Farm Size 100 points Maximum	Farm Size 100 points Maximum	Farm Size 100 points Maximum	Farm Size 100 points Maximum
	b. Soils 100 points Maximum	Soils 100 points Maximum	Soils 100 points Maximum	Soils 100 points Maximum
	c. Road Frontage 100 Points Maximum (3,000 feet/30)	Road Frontage 100 Points Maximum (3,000/30)	Road Frontage 100 Points Maximum (3,000/30)	Road Frontage 100 points Maximum (3,000/30)
	f. Proximity to Public Sewer 150 Points Maximum	Proximity to Public Sewer 100 Points Maximum	Proximity to Public Sewer 50 Points Maximum	No Public Sewer No points
	g. Proximity to Public Water 150 Points Maximum	Proximity to Public Water 100 Points Maximum	Proximity to Public Water 50 Points Maximum	No Public Water No points
Maximum Points per Acre Value	600 X $10 $6,000	500 X $10 $5,000	400 X $9 $3,600	300 X $7 $2,100

Note: The dollar values ($10, $9, and $7) were the values that multiplied by the total points gave per acre values close to actual written appraisal values in the Lancaster County cases. The decision of what dollar values to ascribe is a policy decision for local or state conservation easement program administrators.

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LESS-THAN-PERPETUITY
AGRICULTURAL CONSERVATION EASEMENTS

Anita M. Zurbrugg

Note: All information provided is of a general nature and it is not my intention to address the circumstances of any particular individual or entity. No one should act upon such information without appropriate professional advice after a thorough examination of the facts of the particular transaction, estate planning or other situation.

The conservation easement has become the fastest growing method for protecting land because of its flexibility, simple application as a land use tool, and promise of protecting land for future generations. Local and state governments and land trusts are increasingly using conservation easements as an agricultural preservation tool in the form of voluntary donations or purchased development rights. Conservation easements have formed the backbone of local and state purchase of development rights (PDR) programs across the country. As conservation easements grow in popularity some landowners and program managers have voiced their intrigue or conversely their concern about employing a variant of this model, the "less-than-perpetuity" or term conservation easement. When put into practice, the process of valuation and compensation to the landowner can become complicated as the term specified for an easement becomes something other than perpetual. The future of less-than-perpetuity conservation easements therefore hinges on some of the same factors that have made conservation easements designed for perpetuity so popular and desirable; namely, whether or not there exists a statutory or legal authority for their existence, their ease and flexibility in use, their ability to accomplish what they have been designed to do, and the costs and benefits they provide for the landowner and the community or public at large.

INTRODUCTION

Conservation easements have become the fastest growing method for protecting lands in part because of their flexibility, their ease of use as a land use tool, and their promise of protecting land for future generations. Land trusts and other eligible entities are increasingly using easements as an agricultural land preservation tool in the form of voluntary donations or purchased conservation easement. As their popularity grows and depending upon one's perspective, some astute landowners and program managers are intrigued, or conversely concerned, by the potential of developing less-than-perpetual or term variations of this relatively new land use tool. The degree to which alternatives to perpetual agricultural easements have a potential for use by land owners will depend on several factors, including what state enabling laws provide, how the historically new and unique concept of perpetuity within conservation easements holds up to future challenges, the valuation assigned to these easements, and resulting tax treatment less-than-perpetuity easements will confer.

This paper describes some of the legal issues that affect, and in some cases limit, the use of less-than-perpetuity agricultural conservation easements as a tool that can be used for protecting agricultural lands.

AGRICULTURAL CONSERVATION EASEMENTS–UNIQUE TOOL IN LAND USE HISTORY

Conservation easements are growing in popularity and use. Although the first conservation easement designed to permanently limit the development of land in the United States was written in the late 1880s,[1] the majority of conservation easements have been created since the late 1980s, a trend that has seen a rapid increase in the last decade alone (Gustanski 2000, 17). To illustrate, the number of acres protected by conservation easements held by private, non-profit organizations increased from 450,000 in 1990 to 2.6 million in 2000 (Land Trust Alliance April, 2003). Specifically, agricultural lands protected by conservation easements are estimated to be around 1,245,000 acres as of 2001 and almost all of these are created in perpetuity (ERS 2003).

Conservation easements are instruments designed to preserve for perpetuity, or in some cases for a designated term, lands of ecological, scenic or cultural significance. To achieve this end, they enable landowners to divide their property rights and transfer a nonpossessory interest, servitude or easement to a qualified organization (Dukeminier 1998, 753). These voluntary legal agreements are created between private landowners–grantors–and qualified land trusts, conservation organizations or government agencies–grantees–to limit land to specific uses and therefore protect it from development. Grantors may receive cash in exchange for surrendering their easements or they may receive federal and state tax benefits as a result of donating easements in perpetuity (American Farmland Trust 1997). They remain in possession of the property, free to use the land in ways not inconsistent with the terms of the easement.

Conservation easements are a unique tool in that they are created by statute, not the traditional common law.[2] They are comprised of an unusual combination of the legal concepts of equitable servitudes, negative easements in gross and real covenants (Morrisette 2001, 400). Conservation easements divide up property rights in order to pursue a goal that differs from those traditionally promoted by American property law which limits the ways in which property owners can divide up their sets of property rights (Heller 1999, 1165). Property law traditionally facilitates the maximization of the value of land for landowners to derive the highest possible economic return from their property. This contrasts with conservation easements, which are designed to restrict the range of available land use options into the future (Mahoney 2002, 771).

Agricultural conservation easements are designed specifically to protect farmland into the future. Grantors retain the right to use their land for farming and other purposes that do not interfere with or reduce agricultural viability. Farmers remain eligible for any state or federal farm program for which they qualified before entering into the conservation easement (AFT 1997). Despite their growing popularity, some agricultural landowners are hesitant to enter into a binding commitment to restrict their land forever and to willingly forego the benefit of selling their land at some time in the future when they might reap a substantial financial gain if they could sell it for development. These same landowners might be interested in entering a restrictive agreement if it were for a shorter duration other than perpetuity, even if the compensation they might receive were less.

One of the reasons for the widespread and increasing use of conservation easements is their flexibility, affording contracting parties a wide variety of negotiation and content options. From selling or donating the entire fee simple or retaining all the rights associated with a property, landowners choosing a conservation easement have a range of intermediate choices that restrict the use of the land to varying degrees depending on how the conservation easement is drafted. The length of term, or duration of the

easement, can in some cases be something other than perpetual, perhaps a term of 10 or 30 years. If the term of an easement is for a limited number of years, an easement is often called a term easement. Given the relatively young nature of the conservation easement as a land use instrument, landowners and policy makers need to be aware of the uncertain future for the term easement as a flexible tool of conserving land. This temporal flexibility is subject to various local, state and federal statutory requirements. For example, to be eligible for federal Farm and Ranch Protection Program (FRPP) matching funds, only perpetual easements have been funded to date (Lawrence 2003).

Existing Statutory Authority and Duration Limits. State legislation is needed to legitimize conservation easements because common law does not clearly provide for negative easements that run with the land in perpetuity.[3] All 50 states have a law pertaining to conservation easements but address the specificity of term of conservation easements differently. This language, to some degree, will determine the use of less-than-perpetuity easements in each state (see Appendix A). The National Conference of Commissioners on Uniform State Laws adopted the Uniform Conservation Easement Act (UCEA) in 1981. The Act served as a model for state legislation allowing qualified public agencies and private conservation organizations to accept, acquire, and hold less-than fee simple interests in land for the purposes of conservation and preservation. Twenty-one states have adopted state enabling laws based upon this model, while 23 states have drafted and enacted their own enabling laws (AFT Farmland Information Center 2001).

In designating what the conservation easement is designed to protect, most states allow for the conservation easement to preserve agricultural lands. Hawaii, Illinois, Mississippi, Missouri, New Jersey, New York and Washington are notable exceptions, in that agriculture is not explicitly stated as a recognized purpose (Gustanski 2000, 38). The statues in most of these states established a default favoring perpetual easements, meaning that if an easement is silent in its language concerning the duration, it is presumed perpetual. A few state statutes limit the duration of easements unless specifically spelled out as perpetual in individual easements (Gustanski 2000, 40-41). Others still leave the duration of the conservation easement up to the grantor and grantee of the easement, but indicate it must be spelled out in the easement document. Agricultural conservation easements are often authorized specifically within state legislation that establishes state farmland preservation programs or PDR programs, and as such they tend to specifically favor perpetuity. In fact, many of the agricultural conservation easements currently used are found in state, county, or township PDR programs and are designed with perpetuity in mind.

Are Perpetual Easements Really Perpetual? Conservation easements differ from standard land use regulation and outright purchases of land in that they are explicitly designed to restrict the range of available land use options into the future. Standard regulations and purchases that restrict future development can be altered, reversed by regulatory or legislative change, or land purchase and sale. Conservation easements, by contrast, impose significant potential costs on future generations by deliberately making non-development decisions hard to change (Mahoney 2002, 780).

Complicating the discussion of the use of less-than-perpetuity easements is whether perpetual easements are really forever. While a term easement of course terminates at the end of its stated term, perpetual easements are intended to last forever. Actually, circumstances and doctrine of law may shorten the life of a conservation easement (Gustanski 2000, 45). Given the relatively new and unique nature of the statutory and common law conservation easement, the extent of their vulnerability is likely to be challenged and the result may affect the degree to which a public benefit will continue to be accepted

and associated with their existence. In some states, easements created 25 years ago are meeting statutory terms making them eligible for termination or extinguishments if specified conditions are met (see Daniel's paper in this collection). Although generally the requirements a landowner must meet in order to terminate an easement under these conditions are very strict and carefully crafted to provide for a buy-out option or release for the landowner in only the most extreme circumstances, these agreements have not been tested to date and the effectiveness of the easement as a perpetual instrument remains to be seen.

These same concerns apply to incorporating an option of term conservation easements in a community's farmland preservation program. Although they may have provided adequate landowner compensation and protection for farmland during the contractual term, local policy makers and stakeholders are concerned that term easements contracted for 25 or 30 years may not provide sufficient protection to keep land in agricultural use. If this is the case, the public benefit originally intended and negotiated that supports a community's intent to protect its agricultural lands may not be met and may have to be reevaluated. The cost for continuing to protect the land in the event an easement expires or needs to be renegotiated, may be more than anticipated and planned for in a community's farmland preservation and planning efforts, and the short history of the use of these easements may not provide enough information to anticipate such challenges should they occur.

These issues and concerns are coming to the surface in Maryland, which legislators, policy makers and landowners with similar concerns around the country are observing with interest. During the 2003 legislative session in Maryland, lawmakers apparently concerned about the potential of easement protected agricultural lands being released from easement protection and coming back into development, considered legislation that would allow counties to negotiate with landowners to remove buy-back or escape clauses contained in the original easements that allow the termination of the easement after at least 25 years (Bowers 2003). Although current Maryland law provides that conservation easements in existence for at least 25 years that have been purchased in whole or in part with state funds may be terminated through re-purchase by the landowner, the requirements for qualifying for this buy-back provision included in the easement are substantial. In order for landowners to be able to terminate an agricultural easement, they must be able to convince their local governing body that their land can no longer be farmed profitably. Additionally, the governing Maryland Agricultural Lands Preservation Foundation (MALPF) board, along with the state secretary and treasurer, must sign off on such approval if granted by the local governing body (Md. Code Ann., Agric.§§ 2-514). Since easements negotiated at the start of the program in 1977 and approaching the end of the statutory 25-year termination clause are becoming eligible this year for this buy-back provision and exist in high growth areas in Maryland, the MALPF board is likely to be faced with addressing and administering buy-back requests with high costs and potentially precedent setting results. Even though the prohibitive cost involved may be a disincentive, the resulting decision to grant the termination may make this land eligible for development or non-agricultural use, and if so, would likely affect the agricultural preservation efforts in relevant localities.

Under the Maryland statute, the qualifying landowner may repurchase the easement by paying MALPF the difference between the fair market value and the agricultural value of the subject land as determined by a current appraisal paid for by the landowner (Md. Code Ann., Agric.§§ 2-514(f)(2)). In areas of high growth, this appreciated value may be substantial and reflective of development pressure and opportunity. If a qualifying landowner could be released from the easement and was willing to renegotiate a subsequent easement, the cost involved to do so may easily go beyond a program budget for MALPF

to reasonably absorb. Even if legislative efforts resume and prevail to authorize counties to negotiate existing buy-back or escape provisions within an easement with the landowner, the same pressures would apply at a presumably high cost to the local government body or program entity.

Although other states provide for easement term buy-back provisions within their state farmland preservation programs, the easements created under these programs are a number of years away from the triggering contractual termination mechanism and therefore the degree to which they will affect farmland preservation efforts are even more uncertain than they are in Maryland. In Pennsylvania, for example, where 25 year easement termination clauses also exist, the state program, created in 1989, is much younger. As of yet the program has not established specific regulations or provisions for addressing landowner requests for buying back their easements (Bowers 2003). Delaware's 1996 program is even younger, and the first easements won't be available for consideration for termination until 2021.

Additionally, second and third generation transfers of property are occurring for the first time, testing not only the content of individual easements, but also future landowners' comfort with the attached conservation restriction, especially as land values increase. Removing an unwanted easement is difficult if not impossible under present conditions, depending on the authoritative state legislation. However, future owners may create increasing amounts of tension affecting the vulnerability of a permanent conservation easement, especially if their understanding and comfort with the perpetual nature of the deed restriction with which they must abide is contrary to the original landowner's. The degree to which an easement can be extinguished or modified may be directly proportional to the degree to which the easement will extend into another generation or landowner who may not have the same or similar appreciation for the conservation easement limitation that runs with the landowner's property. Owners of land burdened with conservation easements will generally have strong incentives to free their land from development restrictions, especially in cases where there exists substantial differences in value between the restricted property and surrounding unrestricted property (Mahoney 2002, 774).

The duration and integrity of the easement is also directly affected by the degree to which the easement is monitored and enforced by the holder of the easement. If the purpose of the easement is to preserve land for agriculture, that value will be lost if the property owner attempts to develop the property in a manner inconsistent with the easement. Without regular monitoring, a land trust or other holder of the easement is unlikely to discover violations of the easement (Morrisette 2001, 405). Easement holders are becoming increasingly aware of the necessity and cost of this monitoring and enforcement responsibility and are starting to realistically build enforceable restrictions and potential costs within the negotiated terms of the easement contract (Anderson 1998, 3). However, easements that are not closely monitored over time increase the potential of landowners circumventing the intent and substance of the original easement.

States and Programs with Term Agricultural Conservation Easements. Only a few states sponsor programs that offer less-than-perpetuity or term easements or agreements in conjunction with compensatory benefits or options to landowners in the form of PDR programs, agricultural district incentive programs, or tax programs. California's Williamson Act (CA GOVT ' 51200) and the subsequent Farmland Security Zone (FSZ) legislation (CA GOVT ' 51296) are well known as examples of tax programs that use term agreements negotiated with a county government. For example, in the FSZ contract the landowner agrees to restrict the use of the land to the production of commercial food or fiber for a term of at least 20 years in return for being given substantial property tax incentives.[4]

Only a few states authorize compensation for less-than-perpetuity easements, and the reception of these easements by landowners has not been overwhelming to date. In 2002, the Arizona PDR program incorporated a 25-year term easement option. (A.R.S. 348-3706). Due to its relatively new status, no conclusive experience and valuation details are available. Montana created temporary legislation in 1999 that authorized perpetual or renewable term easements (M.C.A. 2-15-3320). It is likely that before the sunset clause terminates this legislation in July 2003, there may be no landowners taking advantage of the option. Similarly, in 2001, Florida created a 30-year term easement option for agricultural properties with significant natural areas (F.AS.A. 570.710). The program has placed a 10 percent limit on the dedicated funds that can be used for this purpose. The recent age of the program has not yet yielded any noteworthy program experience. In 1988, Pennsylvania created a 25-year term easement option within its state PDR program at 10 percent of the full appraised value of the parcel of land. The program was repealed in 1994 due to lack of participants. North Carolina legislation provides for a variation of perpetual easements in that a county may reconvey an easement to the owner of the land if commercial agriculture is no longer practical on the land in question (N.C.G.S.A. Section 106-744). To date, the few PDR programs that offer less-than-perpetuity easements have not been widely used.

Challenges of Term Easements to Meet Public Benefit. Given that recent history has not supported overwhelming participation in these programs, it is notable that landowners and key land use and community planning players continue to exhibit an interest in term easements. Although the majority of agricultural conservation easements are overwhelmingly written with the intent to permanently protect the subject property, especially as part of a compensatory program to pay landowners for this commitment, many landowners remain reluctant to enter into a contract for perpetuity that places limits on what they and their heirs can do with their land into the future. Consequently, landowners are often looking for compensation for commitments for something other than perpetuity. On the other hand, a community is more interested in contracting with and compensating a landowner for a permanent commitment to protect land that is in line with a community's land use and planning goals and policies and therefore more apt to align with the requisite public purpose needed to legitimize use of public funds (Quinn 1994, 243). Farmland preservation programs that compensate landowners through tax deductions for donated agricultural conservation easements or by purchasing the development rights of agricultural land are much more likely to authorize compensation for easements that permanently restrict development rather than for a contractually limited term or duration because the potential public benefit is more evident in perpetual easements. Courts are increasingly supporting sensitivity to the claims that agricultural land preservation is a legitimate public good. Federal, as well as state and local legislation, supports farmland preservation as consistent with supporting the public's general welfare.[5] However, that public benefit does not necessarily extend easily to term easements.

Direct payments made to landowners, as well as the property assessments that form the basis for the available tax benefits, are all based upon the assumption that the restrictions will prove perpetual. If what landowners are surrendering in exchange for payments and tax breaks are really promises not to engage in specified forms of development for a limited term of years, then surely their level of compensation should reflect this shorter time horizon. To assert that conservation servitudes are not permanent is, in effect, to admit that the programs amount to a government giveaway for owners of eligible lands (Mahoney 2002, 779).

At the end of the day, it may be much easier for a public body to justify the payments or compensation it has made to an agricultural landowner for longer (such as perpetual) rather than shorter term agricultural conservation easements.

Challenge of Valuing Less-than-Perpetuity Easements. The factors and basis for valuation of farmland placed under a conservation easement for perpetuity often provides a form of measurement for compensation and taxation or valuation of types of less-than-perpetual conservation easements and other agreements. This process for valuation and compensation to the landowner can become complicated as the term specified for an easement becomes less than perpetual.

Landowners can sell or donate an agricultural conservation easement to a qualified conservation organization or government body. In doing so, the value of the easement must be determined to establish a price or to calculate tax benefits that may be available under federal and state law. Federal estate and income tax benefits are generally available only to easements made in perpetuity. Direct cash compensation or indirect compensation in the form of tax benefits have fueled the popularity of conservation easements. Federal law provides for income tax deduction for charitable contributions (Section 170(h)). A donor of property must convey her entire interest in order to claim a deduction for a charitable contribution on income tax. An exception exists for conservation easements that meet the definition of a "qualified conservation contribution" which allows individuals who donate their development rights to qualified organizations to deduct the value of the donated easement from their incomes for purposes of calculating their state and federal income taxes. Federal estate tax law allows for exclusion of up to 40 percent of the value of land subject to certain perpetual conservation easements from the taxable estate of a decedent (Section 2031(c) of IRC). A term easement holder cannot qualify for these tax benefits.

Conservation easements generally reduce the fair market value of land, and therefore their use can reduce state and local property taxes assessed against the property. Property tax benefits in some cases benefit both term and perpetual easement holders, but generally the term easement holder has to forfeit some portion of the tax benefit he has enjoyed during the duration of the easement.

The value of an agricultural conservation easement is generally the fair market value of the property minus its restricted value, as determined by a qualified independent appraiser, or in some cases, as determined by a PDR program's agreed-upon point evaluation system. In general, more restrictive agreements and intense development pressure result in higher easement values.

Valuing a perpetual easement may be challenging enough in determining a price for the easement, but term easements present their own set of valuing issues when it comes to determining tax treatment. Is a "term easement" really an easement? Some may argue that it is in reality a "term agreement." A less than permanent agreement to limit development in return for compensation is the functional equivalent of a rental payment for the use of land, or a lease from development, which is generally treated as ordinary income. At what point in time does the length of an easement become a capital asset? There is no doubt that the proceeds from a sale of a permanent easement are treated as capital gains (Small 1987). A permanent easement has a generally agreed-upon value for this purpose through the qualified appraisal process, but this is not the case for a five-year term agreement. Should this be treated as if it were a rental payment?

Short-term easements provide a challenge that is less straightforward than calculating a rental payment, however, because of the public value that is associated with conservation easements designed to be permanent. What is a fair and publicly supportable compensation to the landowner for a less-than-perpetual restriction? As the term of an easement becomes shorter, the public value also declines. Although these issues have not been clearly and legally established, at some point it becomes clear that the public may not be getting its money's worth if public funds are used to compensate a landowner for a less-than-perpetual or term easement.

Standard appraisal methods may not be as effective in taking into consideration all the factors involved in determining the value for a less-than-perpetual easement. Other solutions are being examined as consideration for alternative term restrictions arise. For example, econometric methods are being developed that may offer some assistance to this end (Plantinga 2001, 63).

The Colorado Coalition of Land Trusts identifies the problem in a different manner:

> If annual payments are calculated based on the difference between the lease value of developable land and the lease value of agricultural land (or formulas based on a similar notion) then the sum of those payments over 20 or 30 years might approach, or exceed, the cost of outright purchase. On the other hand, if an arbitrarily low one-time payment is used …then farmers won't find it worthwhile to participate (Colorado 2001).

The Coalition goes on to offer a solution; to decouple estimates of the land value that is temporarily being given up from the amount of the payments going to the landowner. "By instead providing benefits in the form of economic development consulting assistance, or additional tax benefits, or access to low-cost capital, the value is in the form of actual benefits received, not compensation for foregone land use options."

Other Considerations. The practicality of using less-than-perpetuity easements is somewhat determined by its marketability as well as other factors. A potential less-than-perpetuity easement holder must determine if such an investment is fiscally prudent. In doing so the holder must assess whether or not funds invested in a term-type easement are cost effective by considering among other things: (a) the actual cost, (b) the length of the term, (c) the restrictions conveyed or implied by the easement document and (d) whether or not the easement contains some form of a right-of-first-refusal or an option to buy. These latter negotiable provisions may be an important provision to include in an easement or agreement to strengthen the concept of less-than-perpetuity easements. (Colorado, 2001).

A right-of-first-refusal (to buy the land in fee) is drafted on behalf of the holder of the easement at such time as the landowner decides to sell the property–in the case of a term easement, usually after the term easement expires. This right runs with the land and gives the holder of the term easement the right to match the purchase price if the owner ever decides to sell the property. Even though it may be very expensive to exercise such a right, this provision provides an opportunity to protect the public investment made through the term easement at some point in time. A disadvantage of relying on this provision is that both the purchase price and the purchase date will not be known until the landowner decides to sell and an offer is made on the property.

An Option to Purchase provides the holder of the easement with an option to buy a permanent conservation easement at a predetermined price at the time the easement expires, determined by the

expressed term of the agreement. Like a right-of-first-refusal, an option to purchase runs with the land, but alternatively, the purchase price is listed at the time the term easement is negotiated.

CONCLUSION

The future of less-than-perpetuity conservation easements hinges on some of the same factors that have made conservation easements designed for perpetuity so popular and desirable including their ease and flexibility in use, their ability to accomplish what they have been designed to do, and the costs and benefits they provide for the landowner and the community or public at large. The extent to which perpetual easements will continue into the future, to provide the intended public benefit for which they were designed and for which landowners were originally compensated, remains to be seen. In the interim, as long as policy makers and stakeholders at all levels continue to seek alternatives to the sometimes intimidating and unpredictable perpetual easement options or agreements offering shorter term duration to achieve mutually beneficial results are likely to develop for specific uses and circumstances.

FOOTNOTES

[1] Gustanski, J.A., and R. H. Squires eds., 2000. "Protecting the Land: Conservation Easements, Voluntary Actions, and Private Lands" *Protecting the Land, Conservation Easements Past, Present and Future,* reports that a conservation easement was written in the late 1880s to protect the parkways in and around Boston designed by renowned landscape architect Frederick Law Olmsted., at 9.

[2] Peter M. Morrisette (2001). "Conservation Easements and the Public Good: Preserving the Environment on Private Lands" 41 *National Resources Journal*, 374 "..[U]nder common law a conservation easement is not a traditional easement, a real covenant, or an equitable servitude. The common law did not recognize a restriction on land use that was not held by an adjoining landowner and that ran with the land in perpetuity, p. 381. Morrissette goes on to say "A conservation easement functions much like a negative easement in gross. A negative easement is a restriction on land use that prevents the owner of the property that the easement encumbers (referred to as the servient estate because it is the property that is burdened by the easement) from doing specific activities on this property. A negative easement always benefits another piece of property.

[3] Morrisette at 388 notes that the authors of the Uniform Conservation Easement Act (UCEA) explain that a basic goal of the UCEA "is to remove outmoded common law defenses that could impede the use of easements for conservation or preservation ends." This same holds true for state conservation easement statutes not designed after the UCEA.

[4] CA GOVT ' 51200 - The original California Land Conservation Act of 1965, commonly referred to as the Williamson Act provided that an owner of agricultural land may enter into a contract with the county whereby the landowner agrees to restrict the use of the land to the production of commercial food or fiber for a term of not less than 10 years in return for substantial tax savings (fair rental value divided by a capitalization rate specified by law). The term of the contract is automatically extended each year unless notice of cancellation or nonrenewal is given. CA GOVT ' 51296 Super Williamson Act passed in 1998 essentially increased the term of the contract to 20 years in return for landowners receiving a 35 discount on their property tax bill.

[5] The Federal Farmland Protection Policy Act of 1981 designated farmland a natural resource whose preservation is required for the general welfare of the nation (7 USCA Section 4201).

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APPENDIX A. State Statutes - Duration of Conservation Easements

STATE	Perpetual Mandatory	Perpetual by Default	Term by Default	Silent
Alabama			X	
Alaska		X		
Arizona		X		
Arkansas		X		
California	X			
Colorado	X			
Connecticut				X
Delaware				X
Florida	X			
Georgia		X		
Hawaii	X			
Idaho		X		
Illinois				X
Indiana		X		
Iowa		X		
Kansas			X	
Kentucky		X		
Louisiana		X		
Maine		X		
Maryland				X
Massachusetts				X
Michigan				X
Minnesota		X		
Mississippi		X		
Missouri				X
Montana		N/A	N/A	
Nebraska				
Nevada		X		
New Hampshire				X
New Jersey				X
New Mexico		N/A	N/A	
New York				X
North Carolina		N/A	N/A	
North Dakota N/S				
Ohio				X
Oklahoma N/S				
Oregon		X		
Pennsylvania N/S				
Rhode Island				X
South Carolina		X		
South Dakota				X
Tennessee				X
Texas		X		
Utah				X
Vermont				X
Virginia		X		
Washington				X
West Virginia			25 years	
Wisconsin		X		
Wyoming N/S				

Note: N/A = not applicable. N/S = no enabling statute

Source: T. Mayo. A Holistic Examination of the Law of Conservation Easements. *Protecting the Land: Conservation Easements Past, Present and Future*. J. Gustanski and R. Squires (eds.). Washington, D.C.: Island Press, 2000. Pp. 40-41.

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CREATIVE FINANCE IN FARMLAND PRESERVATION: USING INSTALLMENT PURCHASES TO ACQUIRE EASEMENTS[1]

Deborah Bowers

NOTE: The author is not a financial advisor and has not personally carried out the finance method described in this paper. All information presented is gathered from interviews or documents.

In areas with high land values and increasing threat of development, the potential profit from an easement sale is small in comparison to a developer's offer. Capital gains and estate taxes can eat away at the already limited profit from an easement sale, in a manner which can deter landowners from using this conservation technique. However, in several innovative programs, the easement price is paid in installments. This method, by deferring the payment of principal, reduces the amount available for taxation. The Installment Purchase Agreement provides a conservation option which is competitive with the financial benefit of development.

The State of Maryland began its farmland preservation program in 1977, offering an opportunity to farmers to sell agricultural conservation easements on their land to prevent future development. Under this program, Maryland started on a road toward protecting from development forever, what is now close to 200,000 acres of farmland all over the state.

Many farmers at first viewed the program with suspicion and were, at best, lukewarm to the prospect of the government being involved in the land market in this way. But over time, most came to see that government had always been involved in the land market, and that separating development rights from land and retiring them was just a new way of accomplishing old goals.

The program progressed steadily, but in Howard County, one of the Maryland's fastest growing counties, something began to happen that was not entirely unexpected.

HOW THE INSTALLMENT PURCHASE TECHNIQUE WAS CREATED

The building boom of the mid-1980s hit Howard County like a tidal wave, and after preserving 7,700 acres, farmer applications to the state farmland preservation program sputtered and almost came to a halt. Why? Land values, in this county that is wedged between Baltimore and Washington, D.C., had skyrocketed. Farmers, even those who had wanted to preserve their land and continue farming, found themselves in the position of having to say no because of very attractive offers from developers.

The county asked its financial advisor, a managing director in a major mid-Atlantic investment banking and brokerage firm, for a solution. He delivered an innovative finance plan for farmland preservation programs. The plan was to pay farmers in a way that shielded them from capital gains tax, thereby enabling the preservation option to compete with a developer's offer. The method is to purchase an agricultural conservation easement and pay for it not in a lump sum, as is done in most easement programs, but in installments, using an Installment Purchase Agreement (IPA).

The county enters into an agreement with the farmer for a period of up to 30 years, depending on negotiation and the particular circumstances. Under this agreement, the county pays semiannual (twice yearly) interest payments that are exempt from federal and state income tax. The remainder of the

principal is paid in a balloon payment at the end of the period, or periodically over the period. When the principal is paid, capital gains tax is payable on the principal amount only.

To understand the attraction of installment purchases, examine the primary reasons farmers sell their land or at least some of their land to developers:

- First, if a landowner accepts a lump sum cash payment from a preservation program, he or she will have to pay capital gains tax. As much as one third of a sale price is consumed by federal and state capital gains tax. This immediate loss is a significant deterrent to selling an easement compared to selling land outright to a developer, simply because the developer is offering more money. In effect, the developer's offer, in the seller's mind, pays for the farm and the tax.

- Second, many farmers whose incomes are declining are looking for money to invest, and therefore will look for the best offer simply to maximize the amount available for investment. A developer's offer will always look more attractive from this standpoint.

- Third, many farmers won't even consider a government program knowing that it will not be able to pay as much as a developer.

However, when installment-purchase becomes an option in a preservation program, farmers have to revisit the equations.

When Harford County, Maryland, began offering installment purchase agreements in 1993, the number of farmers applying to preserve their farms more than doubled. Farmers were interested and excited about the installment method because (1) they wouldn't have to pay capital gains tax for the term of the agreement, usually 20 years; (2) they knew the county would be able to purchase a greater than usual number of easements in a shorter period of time (therefore they would get their money more quickly); (3) receiving interest payments that were tax exempt was as attractive as many investments; (4) they would ultimately hold on to more of the money, and therefore receive significantly more money than they would have in the lump sum method.

ADVANTAGES OF IPAS FOR LANDOWNERS

Installment purchase agreements offer several tax advantages to landowners:

1) **Tax-exempt interest.** Easement sellers receive tax-free interest payments twice annually for the period of the agreement, usually 20 or 30 years (some agreements are for 10 or 15 years). Time periods are negotiated with landowners.

2) **Deferral of capital gains tax.** In installment purchases, under Section 453 of the Internal Revenue Code, capital gains are not recognized until the principal is received. Capital gains can be deferred for up to 30 years, or until the agreements pass to the estates, or until capital gains taxes decline and agreements are liquidated (Evergreen Capital Advisors, Inc., p. 4).

3) **Use in estate planning.** IPAs can be placed into marital trusts or used in connection with other estate-planning techniques. By deferring recognition of capital gains indefinitely, easement

sellers create the opportunity for installment-purchase agreements to pass to their estates, where federal estate taxes paid may reduce or eliminate any capital gains taxes that would ultimately be due by the heirs. Because an IPA is securitizable, heirs can sell their interests in agreements rather than the family's land as a means of paying estate taxes.

4) **Charitable tax deduction.** Easement sellers can realize deductions under section 170(h) of the Internal Revenue Code that are equal to the difference between the appraised value of the land or easement sold and the price the governmental unit pays. Such deductions can be realized over the five years after the transfers, but are limited to 30 percent of adjusted gross income. Landowners could use such deductions against earned incomes, or against capital gains they could choose to recognize by selling their installment-purchase agreements.

ADVANTAGES TO EASEMENT PURCHASERS

Advantages to local governments and other organizations that purchase easements are also to be considered. While there are certain costs involved, including the cost of paying interest, bond counsel, and advisors, the benefits to public policy goals can be substantial. These include:

1) **Leverage.** Governments use dollars to be realized over the period of the agreement to accelerate their preservation programs, purchasing farmland or open space easements today while still available.

2) **Discount purchases**. In some localities, and depending on land values and development pressures, landowners may be willing to sell their easements at prices as low as 50 to 60 percent of appraised value because of the benefits of the installment agreement.

3) **An established funding mechanism.** Many localities have taken the route of selling bonds to finance their purchase programs due to insufficient general revenues to make a meaningful number of purchases in a given year. By using installment purchase agreements, a secure arrangement is put in place, farmland preservation is affordable, and a bond sale can be forgone.

In addition to Howard and Harford counties in Maryland, other localities using installment purchase agreements include: Virginia Beach, Va., Anne Arundel County, Md., Mercer County, NJ, Burlington County, NJ, Frederick County, Md., Carroll County, Md., Lancaster County, Pa., Chester County, Pa., and four other counties in Pennsylvania.

Currently there are no California localities offering installment purchases, but the California Department of Conservation is authorized by statute to make a stream of payments when purchasing conservation easements under the Farmland Conservancy Program, according to department assistant director Erik Vink (interview, Jan. 2003). However, it should be noted that installment purchases can not be financed using bond funds, due to federal arbitrage issues, and currently the California program is funded solely through bonds.

PENNSYLVANIA STATE PROGRAM CREATES A MODEL IPA FOR COUNTIES TO USE

The Pennsylvania Farmland Preservation Bureau, a state government agency, began offering the finance arrangement as an option to county programs in 2001, following a series of workshops held around the

state.[1] The objective for the state program was to create a means for easy and inexpensive installment purchases to enhance offers to easement sellers, and leverage county funds.

To create the model enabling program, a conduit entity was set up to serve as a financing authority called the New Garden General Authority, "a body politic and corporate of the Commonwealth." The Authority acts on behalf of counties using a standard set of documents and operating procedures.

The structure of an installment purchase under the Pennsylvania program begins with a contract between the authority (acting on behalf of the participating county) and landowner for an easement purchase. The county promises to pay the purchase price before or at the end of the contract term of up to 30 years. The county also agrees to pay semi-annual interest during the term of the contract.

At this point, bond counsel provides an opinion that the interest is tax-exempt. The county's agreement to pay is a general obligation, the same as in a bond issue.

Documents in an installment purchase include:

- an agreement of sale (between county, seller, and the state)
- a copy of the ordinance of the county that authorizes installment purchase, and the resolution of the authority authorizing it
- installment purchase agreement between the authority (acting on behalf of the county) and seller to purchase the easement
- deeds of easement, from seller to authority to county
- conveyance agreement under which county promises to pay purchase price and interest

Processing Installment Purchase Agreements

The Lancaster County Agricultural Preserve Board was the first program to use the IPA option in Pennsylvania, taking advantage of the state's offer to cover closing costs for the first IPAs completed. The Lancaster County program administrator described the installment purchase as a complicated process that ended with a binder of closing documents, two-and-a-half inches thick, consisting of 21 sections. While considering the method cumbersome, she agreed that offering the arrangement to farmers would benefit the program. The Lancaster program uses both state and county funds to pay for easements.

The first step in an installment purchase agreement is to negotiate with the easement seller those terms that are negotiable, including the amount of the purchase, and how much cash is desired at closing (this can be flexible to the needs of the seller). The term of the IPA, payment dates and interest rates are standard. Interest rates are set immediately prior to closing. The rate established is the highest of: the floor rate in the agreement of sale (if county has set one); the yield on stripped-coupon U.S. Treasury obligations ("zeros"); or, the tax-exempt rate on bonds. The longer the period of the IPA, the less the cost to the county in the price of the zeros and the cost of the interest, as seen in Table 1.

Table 1. IPA Costs for Different Time Periods

IPAS: LONGER PERIOD IS BETTER FOR COUNTY IN TERMS OF COST			
Cost of one $1 Million Installment Purchase Agreement			
Term (years)	**20**	**25**	**30**
Price of zeros	$0.30	$0.22	$0.20
Cost of zeros	$300,000	$220,000	$200,000
Interest rate	6.20%	6.05%	5.70%
Interest cost	$62,000	$60,500	$57,000

In 2002, Lancaster County had funding to cover the costs of about eight installment deals. The first installment purchase the county completed is costing $22,000 per year in interest payments for a 15-year term.

Under installment arrangements, state grants can be invested in U.S. Treasury obligations called zeros, that mature in amounts that cover the principal of the installment purchase agreement. Semiannual interest is then paid from county general revenues, but, if the county prefers, both principal and interest can be covered in a different arrangement. Far greater savings are realized, however, from investing only to pay the principal and by paying the interest from general revenues annually.

APPROVAL WITHIN FINANCE COMMUNITY

One aspect of the installment purchase agreement is its acceptance and approval within the finance community. As early as 1996, the pioneering program of the City of Virginia Beach, Va., was rated by Moody's Investors Service, which assigned an Aa rating to the program in an unusual focus for the company. While the rating focused on Virginia Beach's ability to pay its obligations to landowners, the opinion implied broader approval of the installment purchase method for farmland preservation. A similar rating was issued for the installment purchase program of Mercer County, NJ.

The securitizable installment purchase agreement for farmland preservation financing was also given the Award for Excellence in Financial Management by the Government Finance Officers Association.

A CLOSER LOOK AT HARFORD AND VIRGINIA BEACH PROGRAMS

The way localities decide to pay the costs of interest and administration of installment purchases varies. In Harford County, a local real estate transfer tax was enacted specifically to finance farmland preservation through IPAs and to generate revenues for school construction. The tax generates about $4 million annually, half of which goes to the farmland program. The Harford program in operated and funded entirely by Harford County. It is not part of the Maryland farmland preservation program, nor does it receive any funds from it. This is also true of the Howard and Anne Arundel county programs.

Virginia Beach established Virginia's first farmland preservation program, creating it as an independent installment purchase program as the three mentioned above. The Virginia Beach City Council adopted the program in May 1995 and funded it with a dedicated 1.5-cent property tax and revenue from a cellular phone tax as well as a few other sources. These sources generate about $3.5 million annually.

Virginia Beach is likely the only city government with a department of agriculture and farmland preservation program. The city was the fastest growing urban area on the Atlantic coast for over two decades, losing more than half of its farmland. Fair market value for farmland spreads across a wide range, from a low of $4,100 to a high of $29,000 per acre. With values reaching this high and disappearing at such a fast pace, the use of installment purchases is essential, according to city officials. The program is paying 90 percent or greater of fair market value as determined by appraisals. The highest easement offer made has been $17,100 per acre.

The program was set up after extensive meetings of an *ad hoc* committee made up of farmers and other landowners, conservationists, business owners, local government staff and others. At least part of the reason for the program, in addition to the desire to save open space and local agriculture, was to protect the city from the costs of growth. The program has protected about 6,000 farmland acres to date.

In Harford County, a referendum was necessary to authorize the county to enter into installment purchases. A citizen's committee organized a campaign to educate voters about the purpose of a ballot question that was, at best, confusing. The ballot proposal was approved, and the county council, the elected board, then enacted the transfer tax to fund the program. For a number of years the Harford program was the fastest growing program in the nation, putting 3,000 to 5,000 acres per year under easement. It has protected approximately 35,000 acres to date.

FOOTNOTES

[1] Pennsylvania began providing money to counties for agricultural conservation easements in 1989. The program now leads the nation in number of acres preserved by a farmland protection program. The program is funded by a portion of a cigarette tax and by bond funds. In 2000 the program's current-year funding was the highest in the nation. *Farmland Preservation Report.* Jan. 2000. p. 1.

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7. NEW IDEAS: EMPOWERING LANDOWNERS

AGRICULTURAL PRESERVATION AND DEVELOPMENT ASSOCIATIONS

David L. Carlson

Effective and politically acceptable programs to preserve agricultural land must satisfy three major criteria: (1) significantly contribute to growth management; (2) protect private property rights; and (3) make only modest demands on direct financial outlays by the public. To most agricultural landowners, protecting private property rights' includes providing adequate compensation to them for not developing their most productive and environmentally sensitive lands. Most agricultural land protection projects satisfy only one or two criteria. The process is often slow, piecemeal, costly, and contentious. Widespread budget deficits at state and federal levels will make it difficult to protect large amounts of productive farmland under conversion pressure by directly compensating landowners using public funds. In contrast to programs initiated by the public sector or by land trusts, Agricultural Preservation and Development Associations (APDAs) are voluntary private associations, organized and directed by agricultural landowners. APDAs can protect large amounts of connected agricultural land while incorporating enough development for adequate compensation to landowners. This paper draws upon preliminary analysis by the Denver, Colorado law firm of Isaacson, Rosenbaum, Woods, and Levy, P.C. Key elements of APDAs are presented, together with examples from Colorado that illustrate, at least partially, the APDA approach. Related approaches of landpooling, unitization agreements, and "mega-planned unit developments" are described and briefly discussed.

THE COMPELLING NEED FOR NEW APPROACHES TO CONSERVING AGRICULTURAL LAND

The USDA Economic Research Service recently analyzed current national trends in agricultural land conversion (USDA ERS 2001). Among their conclusions is "Land development in the United States is following two routes: expansion of urban areas and large-lot development (greater than one acre per house) in rural areas." They contend that urban expansion into agricultural areas is not a threat to most farming, but could reduce production of some high-value and specialty crops. However, development in rural areas is more worrisome because of higher acreage-to-housing ratios.

The American Farmland Trust reaches somewhat different conclusions in their report *Farming on the Edge* (American Farmland Trust 1997). This study incorporates measures of farmland quality (based upon prime and unique farmland) as well as market value of agricultural production and development pressure. Between 1982 and 1992, the United States lost 4.3 million acres of prime and unique farmland to urban development. Seventy percent of the nation's high quality farmland is located in areas where development is occurring. "The United States is squandering its best quality and often irreplaceable farmland. The patterns of urban development are scattered and fragmented, thereby increasing the pressures on farmland beyond those acres actually lost."

Despite the lack of unanimity among analysts about the key dynamics of farmland conversion, dozens of states and hundreds of counties and cities are forging ahead with programs and funds to protect open space and agricultural lands. New Jersey recently passed a $1.3 billion bond issue to protect half of its remaining two million acres of open space; the other six million acres in the state are developed. Maryland and Pennsylvania implemented state agricultural easement programs in the 1970s and 1980s that generate millions of dollars annually to match local funds to protect farmland. Several counties in

Maryland and other states (including Boulder County, Colorado) have established transfer of development rights (TDR) programs to supplement the use of public funds to purchase development rights. The federal government has substantially increased its financial support for farmland protection through the 2002 Farm Bill from less than $12 million per year on average during 1996-2001 to an expected $100+ million per year for 2002-2007 (Nickerson and Hellerstein 2003).

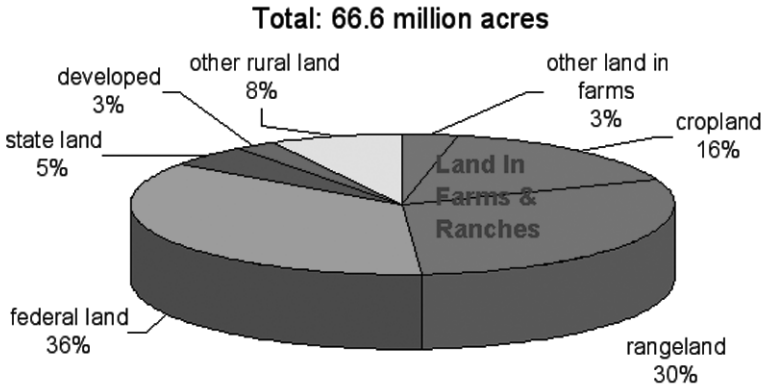
A dozen counties and several municipalities in Colorado spend more than $60 million per year to protect open space, including agricultural lands. State lottery funds generate $35-50 million per year for environmental protection and specifically earmark 25 percent for open space protection, including agricultural land. Public opinion surveys conducted by Colorado State University in 1996 and 2001 indicate that 85 percent of Coloradans support maintaining land and water in agricultural production, and prefer financial incentives rather than regulation to accomplish this (Colorado State University 2001).

Tools for farmland protection abound, including agricultural districts, conservation easements, installment purchase agreements, purchase and transfer of development rights, and clustered development. Yet less than 1.3 million acres of farmland and ranchland nationwide have been protected through purchasing development rights at a cost of $2 billion (Nickerson and Hellerstein 2003). Protected land is a tiny, tiny fraction of the 900+ million acre farmland and ranchland base in the U.S. Most veterans in farmland protection would agree that our tools and approaches too frequently are piecemeal, slow, expensive, and contentious.

AGRICULTURAL PRESERVATION AND DEVELOPMENT ASSOCIATIONS (APDAs)

Let us start with two simple ideas.
First, in many states, most privately held, nondeveloped land is in agricultural use.

Figure 1. Colorado 1997 Land Use



For example, Figure 1 displays the distribution of land use and federal-state ownership of land in Colorado. According to the 1997 *Census of Agriculture*, "Land in Farms" in Colorado comprises 49 percent of the state's land base. Federal and state agencies own 41 percent, while 3 percent is urban and

built-up lands. That leaves 8 percent in rural, nonagricultural use, including 35-acre ranchettes that no longer meet the annual sales threshold of $1,000 needed to be included in the *Census of Agriculture.*

Thus, agricultural land accounts for morethan four-fifths of the privately held, nondeveloped land in Colorado. Hence, in Colorado and other states with similar agricultural land patterns, agricultural landowners could decisively shape future growth patterns, despite their small percentage of state populations and the twin pressures of growth and environmentalism.

Second, agricultural producers have a strong history of cooperation and organization when producers have found that it is in their interest to do so. Parallel with their strong independence and individualism, farmers and ranchers have established many effective commodity and general agricultural organizations, marketing orders, cooperatives, livestock grazing associations, irrigation districts, ditch companies, and other complex structures to further their goals through cooperation with others. Still, new forms of organization and cooperation among agricultural producers and landowners will be needed in order to realize a future in which agriculture can effectively protect its land and water and the surrounding environment, and do well economically.

APDA objectives and definition. What possible organizations or legal agreements could be formed under which a group of agricultural producers could accomplish the following objectives?

(a) protect large blocks of productive agricultural land in a way that maintains a critical mass of agricultural activity in a region;

(b) compensate landowners for an agreed-upon fair level of development potential; and

(c) allow landowners to control and adjust to changing circumstances of land use and growth in their region.

In 1996, at the request of the Colorado Department of Agriculture, the Denver law firm of Isaacson, Rosenbaum, Woods, and Levy, P.C. reviewed several possible organizational structures and legal arrangements to meet these criteria, including special districts, enterprise zones, conservancy districts, irrigation companies, and voluntary private associations (Isaacson, et al. 1996). They concluded that "…voluntary private associations among ranch and agricultural landowners may be the most effective way to preserve agricultural lands throughout the State of Colorado."

They define an *Agricultural Preservation Association (APA)* as a voluntary private association of agricultural landowners formed to achieve the three objectives above. In this paper and elsewhere, the author prefers using the term *Agricultural Preservation and Development Association (APDA)* to underscore the author's view that development is not only allowed, but will be essential for most APDAs to reach these objectives.

To recap: An *Agricultural Preservation and Development Association (APDA)* is a voluntary private association of agricultural landowners formed to protect large blocks of agricultural land, receive compensation for the sale of limited development rights, and exercise control over their respective properties to adapt to changing circumstances.

APDAs are locally created and led by groups of agricultural landowners who make the key decisions. APDAs can be for-profit or not-for-profit organizations. Members typically do not give up title to their lands to an APDA. APDAs are not similar to Coordinated Resource Management (CRM) processes, which seek to involve all stakeholders on an equal footing—landowners, environmental groups, and public agency officials—within a resource area to develop consensus plans.

APDAs are most likely to emerge in areas that are experiencing growth pressure but still retain a critical mass of productive agricultural land and numbers of farm and ranch families. To protect large blocks of connected agricultural land and address growth and environmental concerns, APDAs will need to do some level of coordinated planning. To achieve their objectives and accommodate growth and environmental concerns, APDAs may interact with agricultural and natural resource specialists, land trusts, developers, environmental organizations, and government officials. To be an attractive alternative for landowners, APDAs will also need to generate compensation close to levels available to individuals acting separately.

Agreements among landowners may be informal, based upon only a handshake or verbal commitments. Complex agreements affecting large blocks of land will likely require legally binding agreements among landowners and formal proposals to local planning commissions. A complex proposal involving thousands of acres could take the form of a type of planning entity known in Colorado as a *non-urban planned unit development (NUPUD).* In such a case, the APDA may hire its own staff or otherwise obtain administrative, technical, and legal assistance. The fundamental principle is that the landowners in the APDA are the decision-makers. If the end result is a formal proposal for an NUPUD, other important public values would be protected through the public hearing process by the local planning commission.

This type of subdivision can facilitate clustering of development while maintaining the viability of agricultural activity. In Boulder County, Colorado, for example, an NUPUD is allowed an incentive of two development units per 35 acres (rather than 1 per 35 acres) if the development occurs on 25 percent of the property (or 15 percent, if the lands are designated as lands of agricultural or environmental importance). The remaining acreage (the agricultural outlot) remains in private ownership but is encumbered by a conservation easement deeded to the county.

APDA approach. Six key steps for forming an APDA are outlined below:

1. Landowners in a region meet to explore the APDA concept and discuss their preferred vision of the future of agriculture, development, and environmental resources in their region.

2. An initial set of agricultural preservation and/or development goals are formed.
   - A common unit of development may be stated: e.g., 1 “density unit” per 35 acres.

3. As participants are ready, an APDA is organized and members identified.

4. A preliminary sketch plan encompassing the members’ combined land holdings would be developed under the direction of the APDA members, consistent with APDA goals and values.
   - Plans could incorporate agricultural preservation areas, development areas, and environmentally sensitive areas.

- Land trusts, natural resource consultants, organizations and agencies, developers, and local planning staff are possible resources.
- Preliminary plans would be discussed and refined, possibly several times, until there is a consensus among members.
- Plans might incorporate important regional goals, such as affordable housing, environmental protection, etc.
- Potential sources of compensation for underdevelopment might be identified from private foundations and businesses, and local, state, and federal programs.
- Plans might include the right-of-first-refusal if a member wishes to sell land.
- Plans might include right-to-farm language in deeds of property sold.
- Plans might include facilities and services for agricultural inputs and processing to keep agricultural production viable.
- Plans may include transfer of development rights among member landowners.

5. APDA members would then formalize their agreement with these principles and their plans for implementation in a contract or other formal document.
   - Some parcels may have most of the development; others, little or none. In this case, the agreement would articulate how members would share in the proceeds of developed land.
   - Similarly, if moneys are received for open space and/or environmental protection, the agreement would articulate how such funds would be allocated.
   - Temporary/permanent easements, restrictive covenants, etc. might be used.

6. If the proposed level of development requires it, the APDA would take its plan to the county or municipality for review, public hearing and approval. If acreages are large, the proposal may take the form of a non-urban PUD (this assessment should be done early in the process. It will be important to keep government officials informed).

Discussion and two examples from Colorado. What do agricultural landowners, the environment, and other local citizens gain from this approach in exchange for this complexity? Large-scale land use planning allows for more options to accommodate many different and important goals—protect farmland and wildlife habitat, accommodate growth, and generate sufficient income for APDA members. It's difficult to do so with 500 acres; easier with 5,000 or even 50,000 acres. When individual farmers and ranchers require liquidity, they usually have limited choices: sell out completely, continue to eke out a substandard economic existence, or begin chopping off agricultural parcels for home sites, one or a few at a time. Land use planning on a large scale can significantly expand development options—recreation, housing, agricultural infrastructure, and other business and commercial opportunities—as well as protection of important wildlife habitat and corridors.

If properly structured, APDAs can capture nearly the full value of land slated for development. Instead of relying on public moneys for open space protection, revenue from well-planned development can be the chief source of compensation for APDA members not to develop their most productive and environmentally sensitive lands. Instead of APDAs selling land to developers, APDAs could hire staff or create subsidiaries that would provide this function according to the values of its members. Revenue from the sale of individual lots would accrue to the bottom line of the APDA, instead of agricultural producers now getting pennies on the dollar for selling their land for development.

This is the approach taken by the Parker Ranch, whose headquarters are located just outside the community of Waimea (aka Kamuela) on the island of Hawaii. With more than 200,000 acres, it's one of the largest working ranches in the United States. The ranch operates its own real estate division, which has platted individual residential sites for most of Waimea's expansion over the next 20 years. The ranch can do so because it owns nearly all of the land surrounding the community. The revenue from the retail sale of these individual sites accrues to the ranch's bottom line.

The notion of an APDA has emerged gradually for the author from personal knowledge and study of a number of cooperative efforts among agricultural producers, mostly in Colorado, to attempt to "do right by the land" yet "do well economically." No group of which the author is aware uses the term "APDA" to describe itself. The point of defining "APDA" and describing its components is to attempt to identify and highlight key elements of a number of cooperative efforts – no single one of which exemplifies all of these attributes.

Example 1: The Upper Elk River Valley is located 18 miles north of Steamboat Springs, Colorado. It is a first class skiing destination and growing magnet for vacation homes and 35-acre ranchettes. With 12,000 acres of rich bottomland, upland pasture, and mountain scenery, the valley provides excellent conditions for ranching and development.

Under the leadership of Steve Stranahan, operator of a dude ranch in the valley and owner of three other ranches, ranching families in the valley forged a compact in 1994 to protect 7,500 acres. This compact is thought to be the first totally private, community-wide agreement in the nation to limit such growth. The statement of principles, developed with the assistance of the American Farmland Trust and Conservation Partners, allows limited development of homesites only where it will not harm valley views or affect agricultural operations. To date, ranch families have permanently protected more than 3,000 acres by donating conservation easements on their property, while reserving a limited number of homesites for future development (American Farmland Trust 1994).

Most ranching families in the valley have grasped the principle that "more is not better." By limiting development to a few homesites with permanently protected, spectacular views, the value per homesite has skyrocketed. Along with these working ranches, the valley's land use mix includes dude ranch and low impact recreation opportunities. Dennis Bidwell, AFT's director of land protection at the time, said, "The Upper Elk River Valley experience shows that all of these uses can co-exist as long as the land resource on which they all depend is protected."

It took more than the prospect of increased land values for limited building sites to galvanize action among these ranchers. Jay Fetcher, 1997 recipient of the $50,000 American Land Conservation Award, said of his family's decision to donate a conservation easement on 1300 acres, "It has to feel good. You have to want to do it because of the land, not just for tax reasons or neighbor reasons, but because it feels good."

Formalizing their common vision through this compact, Upper Elk River Valley ranchers have achieved something together that was impossible acting alone. For, if only a few agreed to restrain development of their property, neighbors who opt for full development of their property would reap windfall profits.

Example 2: Jerome Park is a 4800-acre block of prime ranch land near Carbondale, a rapidly growing community, 26 miles from Aspen, Colorado. Nine ranching families jointly own this isolated side

mountain valley surrounded by federal land near the Crystal River and the Roaring Fork. The ranchers gather their cattle in Jerome Park each spring and fall to move them to and from high elevation public lands for summer grazing. The cattle owned by the nine families account for half of all grazing cattle in the Roaring Fork Valley (*LandOwner* 1999).

Pressures for developing and preserving this huge intact parcel were tremendous. The land was appraised at $15 million, but is home to elk, deer, bear, and other wildlife. Sixteen years ago the ranchers were approached by cross-country skiers to set up a skiing operation on the land. Over a two and a half-year period, the families hammered out a consensus plan to protect their agricultural activities and wildlife and to receive some cash upfront plus retain rights for future limited development. Skiers now use 450 acres of trails each winter, and hunters, hikers, and horseback riders may cross the property to reach adjacent public lands.

Under this agreement, the families continue to own the land jointly and use it as before for ranching. Development is limited to 14 five-acre homesites (in 1999, these sites were valued at $500,000 apiece). The remaining development rights were sold to Pitkin County, which leveraged $1.3 million of its local open space funds with $4.2 million from Great Outdoors Colorado. GOCO was created by a state constitutional amendment in 1994 and receives between $35 and $50 million per year for open space and environmental protection from its share of state lottery revenues. The permanent easements are held jointly by Pitkin County and the Colorado Cattlemen's Agricultural Land Trust.

The Jerome Park example illustrates important features of the APDA concept. First, the agreement balances preservation and development over a large parcel of ground while keeping agricultural operations intact. Second, the agreement was negotiated with other stakeholders in the community—private sector and public agencies—but on terms acceptable to the landowners. Third, the landowners involved expert technical, legal, and process assistance to deal with complexity—again, on their terms. Finally, and most important, the ranchers decided to participate and agree to the final settlement; these decisions were not imposed by others.

The Upper Elk River Valley and Jerome Park are important examples of the APDA approach and illustrate its flexibility. In each project, ranchers made the key decisions while using outside assistance. Each project incorporated development as an essential component for preservation. Jerome Park is owned in common by the nine ranchers, and its agreement involved complex, formal legal agreements. The Upper Elk River Valley compact among individually owned ranches focuses on principles, but is not legally binding.

RELATED APPROACHES

Agricultural Preservation and Development Associations (APDAs) are voluntary private associations of agricultural landowners seeking to maintain a critical mass of agricultural activity in a region while balancing preservation and development. In APDAs, landowners make the key decisions regarding development and preservation, with appropriate technical and advisory assistance from environmental experts, developers, and others. Development of some land is recognized as an important, and usually necessary, means for compensating landowners fairly for preserving their most productive and environmentally sensitive lands.

This section examines three related approaches that support goals and characteristics similar to those of APDAs: landpooling, unitization agreements, and "mega-PUDs." These three approaches and APDAs each address to some degree the shortcomings of current agricultural land preservation efforts, highlighted earlier in this paper, which are piecemeal, slow, expensive, and contentious.

Landpooling. *Landpooling* is a technique in which a group of separate land parcels are considered as a single entity for unified planning for preservation, development, or both. Landpooling may be initiated by landowners, developers, or the public sector.

Landpooling and readjustment procedures were developed in Germany in the late 19th century and are commonly used today in the Far East and Britain to expedite government planning for orderly development on the urban fringe. In such cases, landpooling and readjustment procedures are not voluntary.

The meaning of the term "landpooling" is not standardized. Some authors restrict the meaning to arrangements under which land is legally consolidated ("pooled") by the transfer of ownership of separate parcels of land to an entity handling the transaction and planning; the term "land readjustment" then refers to arrangements for unified planning under which landowners retain individual ownership of parcels.

On the other hand, the Seattle-based firm, Landpool Administrators, LLC., defines "landpool" as "a business partnership formed by adjacent property owners for the unified conservation, planning and development of lands typically located on the urban fringe and in rural areas." Such partnerships are entered into voluntarily, and landowners retain ownership of their individual properties (Landpool Administrators 2003).

APDAs can be considered as a special case of voluntary landpooling by agricultural landowners. Depending on the number of landowners and acreage they control, voluntary landpooling, as indicated by Landpool Administrators, clearly honors private property rights and looks primarily to private development rather than the public sector to provide adequate compensation in order to protect important and sensitive agricultural lands. Depending upon the number of landowners and acreages involved, such landpooling arrangements may avoid piecemeal development.

Unitization agreements. For decades, the oil and gas sector has employed unitization agreements to facilitate maximum extraction of connected oil or gas resources ("pools") owned by many different interests. According to Andrew Derman, an attorney in this field,

> "*Unitization*… is a deliberate effort to consolidate all, or a sufficiently high percentage of, the royalty and participating interests in a pool as will permit reservoir engineers to plan operation of the pool as the natural energy mechanism unit which it is." (Derman 2003).

Like landpooling, unitization agreements may be voluntary or compulsory. Indeed, a body of federal and state law has developed over time that enables willing majority owners of a connected oil or gas 'pool' to establish a unitization agreement that is binding upon all parties. This feature of unitization agreements is similar to that provided under marketing orders of agricultural commodities.

The central idea behind unitization is *optimum realization of the total underlying resource*. In the oil and gas sector, "realization" means "development." These fuels are extracted optimally to avoid waste. Under a unitization agreement, all parties agree to consolidate their interests to reach this goal. Such agreements enable geologists and engineers to analyze the resource, determine the optimal number of wells needed, and develop cost-effective and timely extraction procedures without being constrained by property boundaries and ownership patterns.

Derman underscores the importance of bringing in expert technical analysis early in the process. "Voluntary poolings and unitizations derive from agreements among interested parties…Unless unitization is implemented early in the life of a field, prior development (especially when conducted on a competitive basis) often results in inefficient operations and may lead to over development, as the owners seek to establish leverage in negotiating a larger share of the field or drain the field."

The central idea behind an APDA is *optimal balance of preservation and development that sustains working farms and ranches economically and environmentally*. Like unitization agreements for oil and gas interests, APDAs seek optimum realization of their total resources.

Experience with unitization agreements in oil and gas development is relevant for farmland protection in a number of ways. First, just as geologists and engineers get in early to evaluate the petroleum resource under a unitization agreement, so APDAs and landpools could benefit greatly from objective, upfront analyses of environmental and development values on their total lands before development dominates the landscape. Second, the success of unitization agreements hinges upon the participation formula that defines each owner's share of the combined resource when developed. Agreement by several owners on a formula is a big challenge. Derman notes:

> "The participation formula is the heart of the unitization agreement…The formula determines the portion of the unitized substances each participating party is to receive, and it is usually arrived at after long and laborious negotiation. The ideal solution would allocate production so that each participating interest owner's share of production from the unit would be in exact proportion to the value of the interest that each participating interest owner contributes to the unit.…But the attainment of the ideal participation formula …is impossible…[But] with the advent of computers, participating interest owners are capable of analyzing complex formulas in a short period of time to determine the effect of the proposed formulas on their individual interests."

Participation formulas in land preservation and development will be quite different in content from those used in oil and gas development, but the experience of creating such formulas and getting them approved by many different oil and gas interests could be very relevant to landpools and APDAs.

Finally, a key idea from unitization for effective farmland preservation and growth management via landpools or APDAs is to create a landpool that is big enough to capture the increased value of developable land within the pool that is adjacent to protected land also within the pool. The landpool should be big enough to warrant the time, energy, and expense to do the complex upfront analysis of the preservation values and development potential of the combined holdings and to realize these environmental and economic benefits.

Mega-PUD approach. Shifting our perspective from farmland preservation to growth management for a moment, consider the tug of war between land developers and anti-sprawl forces. Bruce Frankel, professor of urban planning at Ball State University and chairman of the Frankel Development Group, highlights three conventional approaches to growth management and contends that none has been particularly effective: purchasing, containment, and incentives (Frankel in *Smarter Growth* 1999).

Purchasing land away from developers limits land conservation to public resources, now scarcer than ever. "Public policies aimed at countering sprawl by offering piecemeal planning incentives do little more than drain public finances." Containment policies draw lines that builders cannot cross, constraining development via urban growth boundaries. Oregon's 1973 land use law withdrew 16 million acres for the development market through its EFU [exclusive farmland use] designation. Frankel argues for integrating green belts and open space with development rather than segregating the two.

Incentives for conformance of development to state plans is a powerful tool in New Jersey and Maryland but too piecemeal for Frankel. In Colorado and other states, incentives are frequently given at local levels for cluster development. However, the proliferation of small areas of clustering can lead to increased costs of providing local government services.

Frankel's alternative to these piecemeal and publicly expensive approaches to managing growth is the *mega-planned unit development* (*mega-PUD)* or a series of smaller, connected PUDs. The mega-PUD approach seeks to do large-scale land use planning at the community level to balance growth and development with agricultural land and public open space. Planning is driven by municipal officials, but landowners and developers have the opportunity to assemble the land within the mega-PUD for economic gain. Conventional zoning is replaced by the mega-PUD, which is a permitted use rather than a conditional use. This change safeguards lands within the mega-PUD slated for protection. The key steps are:

(a) formulate an integrated land conservation and development plan for the community or region

(b) discard conventional zoning and determine with precision where development should—and should not—occur

(c) change the comprehensive master plan and enact a zoning ordinance in accordance with the plan; accomplish this through a mega-PUD as a permitted use, not a conditional use.

(d) a "consortium" assembles the land—could be done by landowners, by a developer, or the municipality

(e) vested rights secure land conservation; the consortium has legal standing before the planning board, and applies for and receives land development approvals.

Frankel's focus is primarily on preserving the semblance of a farming past and breaking up the monotony of sprawl within highly urbanized corridors of growth. In contrast, APDAs seek to preserve a critical mass of working ranches and farms within regions experiencing suburban sprawl or low-density rural, nonagricultural development, such as 35-acre ranchettes.

The APDA approach puts landowners rather than the municipality or county in the driver's seat at each step, not only the fourth step. But both approaches underscore the effectiveness of doing large-scale land use planning to address both development and conservation.

The mega-PUD approach incorporates a site and subdivision plan for each undeveloped parcel. Agricultural landowners receive compensation for preserving most of their lands by applying for and receiving development approvals on some of their lands, plus conservation easement payments on those lands not developed. Funding for conservation easements would come from a portion of the sale of developable land within the mega-PUD. This approach "…accords land preservationist 'vested rights' and legal protection from zoning challenges by sprawl-happy developers."

Mr. Frankel observes, "It may just be true, after all, that the best way to conserve land is to develop it." (Frankel in *Viewpoint* 1999).

CONCLUSION

The APDA approach and its relatives—landpooling, unitization agreements, and mega-PUDs—provide important alternatives to the current set of tools and methods for preserving agricultural land and managing growth. These approaches seek to address squarely the slow, piecemeal, expensive, and contentious nature of so many farmland preservation efforts.

Indeed, these mega-approaches are more than tools and methods; they are based upon a clear set of principles in tune with private property rights, limited public funding, and growing public commitment to environmental preservation. Each approach envisions cooperative agreements among landowners for consensus vision and comprehensive planning over large acreages to balance preservation and development. Each approach incorporates information and input from non-landowners to articulate important environmental and noncommercial values. Each approach also seeks core funding from future development rather than public sources to provide fair compensation to landowners for protecting their most productive and environmentally sensitive lands.

The two Colorado examples described in this paper feature small numbers of ranchers who control large landscapes in areas with important scenic and environmental values. Additional study is needed to determine the extent of the applicability of the APDA approach under other, very different, conditions such as cropland areas comprised of many parcels on the fringes of major urban concentrations.

In a subsequent paper, the author intends to examine some key steps that could accelerate the use of these "mega-approaches" and other tools to protect agricultural lands. These include: (a) increased awareness, understanding, and appreciation among agricultural producers and the general public of the environmental amenities and other non-commodity products and services provided by working farms and ranches; (b) objective documentation of these amenities, products, and services through ecological economics and related disciplines; and (c) easier access to technical, legal, financial, and legal assistance to groups of agricultural producers interested in land stewardship without jeopardizing their own financial security.

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THE POTENTIAL OF LANDPOOLING FOR CONSERVATION AND AGRICULTURE AT THE URBAN FRINGE AND BEYOND

David B. Renkert

This paper is an overview of the notion that privately-initiated, market-based landpooling may be a practical way to meet the financial needs of individual landowners while preventing natural resource fragmentation that is the result of sprawling real estate development. Despite the best efforts of planners and conservationists, leapfrogging real estate developments continue to fragment watersheds, forests, wildlife habitats, and agricultural areas across the U.S. This fragmentation continues due to individuals inevitably placing a higher value on their personal space and financial well-being than that of society's to the detriment of regional planning and conservation efforts. Landpooling, by delineating parcels by ecological and economic linkages, allows ecosystems to remain intact. Landowners are able to maintain their agricultural livelihood while simultaneously becoming shareholders in their region's development. Initial analysis shows that landpooling may:

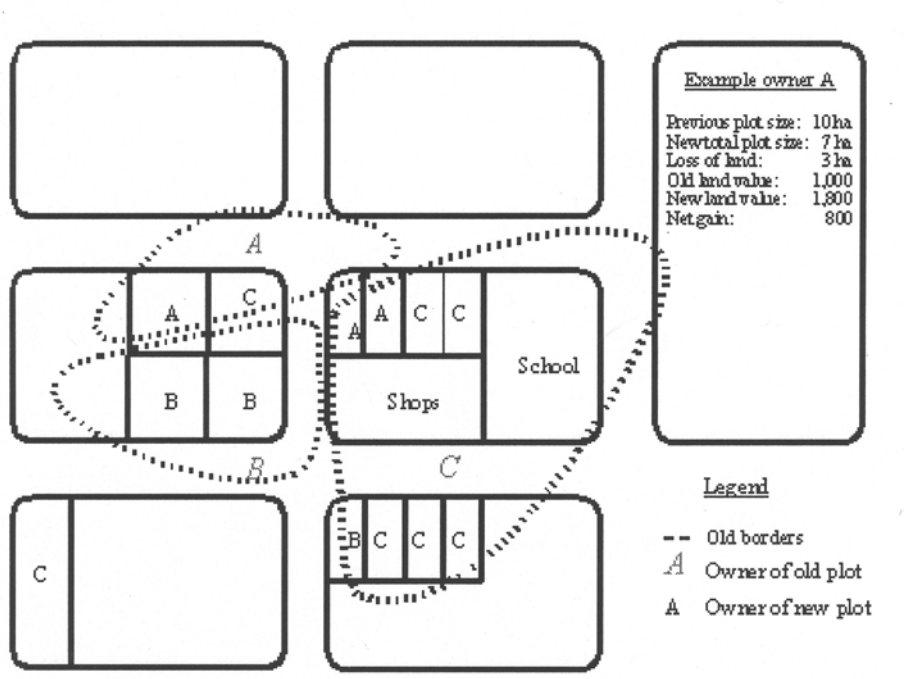
- *Reduce development uncertainty,*
- *Protect natural resources and habitats,*
- *Increase property values and land investment liquidity, and*
- *Eliminate leapfrogging sprawl.*

INTRODUCTION

Landpooling/readjustment (LP/R) is a technique used to provide for the unified planning, servicing and development of urban fringe lands. In countries outside the United States, LP/R is typically performed by a government appointed agency. The agency assembles fringe properties through voluntary participation and/or eminent domain; then plans, re-plots, and services the properties as a single development. The agency finances the project through short-term debt, eventually selling a percentage of improved plots to recoup its costs. The balance of improved plots is returned to the previous landowners (see Figure 1). The objectives of most LP/R projects are agrarian reform, maintenance of adequate land supplies for housing, and installation of infrastructure. Despite its clear benefits, LP/R, in its current form, has found little success in the U.S. land markets.

Even where successfully applied abroad, LP/R has some known shortcomings. One common deficiency is the lack of orderly development once these regions have been improved. Owners will simply withhold their newly improved plots from development, speculating on further increases in value. Some agencies have been forced to include provisions to entice private sector development and reduce holdout speculation.

Figure 1. Basic Principles of Land Readjustment, UNESCAP. 1995. *Municipal Land Management in Asia: A Comparative Study*. CityNet. pg. 93. United Nations, New York.



Arguments surrounding use of compulsory purchase, eminent domain, private property rights, and market economics seem to be the predominant stumbling blocks of LP/R's use in the U.S. Some practitioners have, however, documented the effectiveness of LP/R in areas needing re-assembly and development, particularly in areas developed for recreational home sites where there was little or no market demand, such as in Florida and Hawaii.

International experiences demonstrate the benefits of regional planning and development. However, LP/R is not likely to gain popularity in the U.S. in its current form. The remainder of this paper provides a brief review of the LP/R experiences abroad, presents suggested modifications and guidelines, and offers examples of future urban fringe developments using privately-initiated landpools.

Landpooling/Readjustment Experience[1] LP/R has been used abroad for more than a century in a variety of uses and outcomes. A handful of cities have cost-effectively rebuilt their metropolitan cores after man-made and natural disasters. Other areas have used LP/R to promote agricultural mechanization and efficiencies. General experience shows LP/R projects need between two and eight years to complete. This includes time for initiation, assembly, implementation and redistribution, but not complete buildout. Improved plot value increases of 250% and more have been documented, offsetting required size reductions.

Necessary Modifications. A fundamental use of LP/R is to align parcel ownership patterns with desired land uses. In cases where rapid urbanization of urban fringe lands is apparent, landpooling can be utilized to plan and service areas in a unified manner. In the U.S., where rapid suburbanization and leapfrog development are fragmenting resources and inhibiting agricultural efficiency, landpools provide the ability to plan regionally. More importantly, landpools provide the necessary legal and financial

mechanisms to support regional plans over the long-term; something lacking in today's regional planning policies, incentives, and regulations. Privately-initiated landpools can capitalize on economies of scale, reduce uncertainties, and increase development efficiencies. Adequate supplies of housing land can be ensured and the quality of urban fringe communities improved. In addition, rural areas can benefit significantly from increased habitat resource and farmland protection options.

Initiation. To be successful, landpooling projects in the U.S. must be privately-initiated. This is mostly due to the individualistic nature of real estate development, and the general acceptance that federal, state, and local governments provide market frameworks and guidelines, rather than force the participation of lands or landowners. Government agencies can, however, play an important role by providing necessary tools, education and infrastructure.

State planning agencies can facilitate landpooling by educating planning departments and other involved agencies about the landpooling process. Additionally, landpools are businesses that require start-up and ongoing funding. State and local planning, agricultural, and conservation departments could make funds available through grant or loan programs. State participation would benefit communities and landscapes, as well as improve regional economies and the state tax base.

Ownership, Equity, and Redistribution. The existing LP/R model requires the realignment of private property lines. This is not the case with privately-initiated landpools. Landpools are delineated according to a combination of ecological, existing land use, and "unique market" opportunities. Landpools only affect major land use actions, such as development, the placement of conservation easements, and new venture development. Because landpools, as defined herein, generally encompass rural areas not subject to rapid urbanization, property lines generally do not need adjustment.

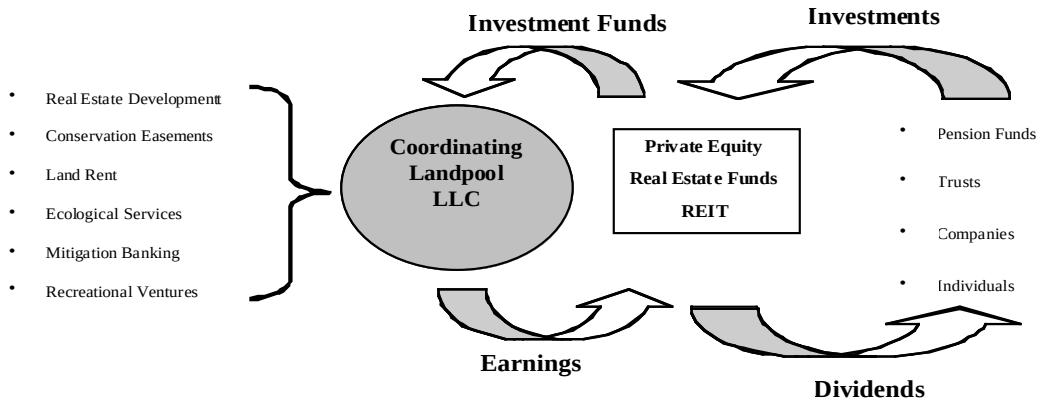
Landpool equity is determined according to the percentage of market value controlled per individual landowner or the amount of invested capital contributed toward the total value of the project.

LP/R projects abroad require the contribution or sale of improved plots to recoup the managing agency's costs and redistribute the remaining lots to the previous landowners. Landpool businesses can meet similar financial obligations with investors and do not need command of individuals' properties. Because the landpool is a business owned by the landowners and its investors, planned development is phased in according to market demands, thus reducing holdout speculation and the need for additional regulation.

Financing and Liquidity. Land areas and major land use actions are the basis of a new real estate asset class.

No longer perceived as simply raw land parcels waiting for development, landpools control markets to reduce uncertainties, increase land values, and create opportunities. Landpools combine cash flows from various actions to provide balanced, long-term returns. These businesses access the real estate and financial markets as shown in Figure 2.

Figure 2. The Financing of Land Pooling.



Management. Landpools are businesses that require ongoing representation to government, non-government organizations (NGO), investors, and the markets. Landowners and investors act as members of a corporate board of directors with their associated committees and advisors.

Guidelines. It will be important to follow simple initiation and implementation guidelines when forming landpools.

Delineation. Because landpooling allows a region to be planned as if it were a single property, interior property lines are "erased" for major land use activities. Preliminary research for landpools includes studies of geology and soils, vegetation and land cover, hydrology, existing infrastructure, parcel data and various market investigations. Value capture depends greatly on the percentage of control that can be exerted on recognizable markets.

Efforts should be made to eliminate "holes." One of the greatest deficiencies of parcel level development and conservation are "externalities''– the positive or negative consequences of a land-use decision on one property that affects another. Landpooling coordinates land uses to reduce possible negative effects and emphasizes positives ones to maximize potential value. Positive externalities increase landpool value when, for example, a conservation easement is placed which results in an subsequent increase in value of the surrounding properties due to their proximity to protected open space. Similarly, incompatible or undesirable land uses can cause negative externalities which reduce property values.

Formation. Legal formation and equity basis determination are two early and important steps. Limited Liability Company (LLC) formation is easiest to file and provides the most flexible format with tax benefit pass through and corporate liability protection. Equity participation is negotiable; however, utilizing a points-based appraisal or simple market appraisal to determine the initial landpool value will be necessary to formulate initial stakeholder value. Generally, the percentage of total landpool value owned, at initiation, determines one's equity share.

Not all landowners within the delineated landpool have to participate fully for a regional plan to be designed and implemented. The landpool members or investors can obtain right-of-first-refusals or purchase options from those property owners not inclined to join.

Plans. Once a landpool is formulated, pre-development plans should delineate three major categories: areas that will, will not, or may be developed. Ecological studies can determine what areas absolutely

should not be developed and those areas that are better left undeveloped for the valuable contributions they provide such as viewsheds and amenities. Areas for development are readily identifiable as well; brownfield and infill opportunities are the easiest to recognize. Because planners generally recognize the difficulty of predicting development options beyond 20 years, some areas within the landpool are left uncommitted one way or the other.

Options. Prospective landpools should explore multiple land use options, not simply agriculture and/or housing. In many cases, multiple ventures utilizing the same area can generate proceeds similar to those from housing or other types of real estate development. Combining markets in water and air pollution credits, watershed services, recreation, or mitigation banking may be financially comparable alternatives to rural housing development.

In cases where development is appropriate, landpool founders should seek alternative start-up funding measures such as the early partnership with a regional developer. Landpools should also look to capitalize on state and local programs, and promote landpool efficiency and effectiveness to return greater benefits to the public.

LANDPOOLING BENEFITS

Conservation. Much like current regional planning efforts, landpools can conserve and protect natural resources. Well designed landpools will promote the protection of natural resources and habitats in their entirety with a long-term view to capitalizing financially on their protection. Natural resources provide the foundation for what are described as "nature's services" (Daily 1997). These services, the filtration of air and water, flood mitigation, biodiversity, etc, are estimated in the hundreds of billions of dollars in value currently outside the marketplace (Costanza et al. 1997) and may eventually be the greatest source of landpool income.

Financial Options. Landpools manage diversified income streams and exert greater market control with binding regional plans. Landpools as businesses may have access to the financial markets unlike raw land parcels, thereby reducing the dependency upon political funding for resource conservation and development planning. Financial market access increases landowner and investor liquidity options, diversifies risk, and increases funding resources. From a reverse viewpoint, the public gains opportunities to "invest" in resource and habitat conservation, while reaping dividend income and the capital gains potential of tangible real estate investments. Additionally, landpool businesses can strengthen regional economies by expanding employment opportunities and enhancing regional quality of life.

Implementation. As long as government regulations, policies, and incentives surrounding land use are implemented at the parcel level, sprawl and its resultant fragmentation, litigation, and value depletion will prevail in the U.S. land markets. Landpools can effectively and equitably control markets, eliminating unplanned developments that destroy conservation possibilities and reduce ecosystem values and other economic potential. State and local planning agencies can work with landpool founders to create "real" regional plans versus juggling multiple, individual plans forced to fit development regulations.

Landpool businesses, much like corporations, can exist beyond the lives of their founders, providing the framework to grow and achieve over generations, not simply during a political term or single lifespan.

EXAMPLES

Rural Speculation. The interstate highway system has created an enormous amount of competing, speculative developments. At many interchanges, landowners have hurriedly proposed development schemes to capture perceived opportunities. The reality is that the market for gas stations, strip malls, and the like, in remote locations between destinations, is limited.

Three projects are proposed on adjacent properties at an interchange in the state of Washington. A fourth property is offered up for sale at, what the landowner perceives to be "development" value. Each project has completed market analysis, feasibility studies, and determined viability without consideration of the impacts generated by the other three projects. Each has assumed complete control of what little market is available.

If this scenario is allowed to continue, one project, if properly executed, may succeed, while two others remain un- or half-completed. The landowner will most likely not be able to sell his lands at the desired price. Were these properties, with the possible addition of others, to be pooled, each would benefit to a greater extent than they would individually. The development market could be controlled, half-built projects that eliminate further land use are avoided, and income streams are generated.

Integrated Rural /Urban Fringe. A land area of 50,000 acres is situated between a major city and two quickly developing towns. The majority of land is controlled by multiple landowners, however, there are a handful of homeowners on 10 and 20 acre plots. After a preliminary study, a combination of agricultural and conservation interests form a landpool in order to slow the fragmentation of their landscape, protect their interests, and maintain agricultural feasibility within the region.

Their plan is to enhance water resources and viewsheds, capitalize on development opportunities, and protect large contiguous blocks of agricultural land in order to meet their objectives, state and local planning requirements, and attract investment capital.

Agricultural and conservation interests each benefit from large areas of protected green infrastructure, individual homeowners property values increase, and government planners' development and social infrastructure goals are met. Institutional investors, whose goal it is to reduce downside potential, fund necessary infrastructure development and finance purchase options and right-of-refusals as necessary, maintaining the integrity of the landpool and capturing significant long-term upside potential.

Rural Conservation. In a high desert location where there is little development pressure, a group of ranchers seek to augment their income. Currently, each manages a recreation opportunity similar to the others. Each spends money advertising and operating their recreation component; some simply lease the component to another. The area encompassed by these ranchers totals roughly 750,000 acres.

Utilizing the idea of "controlling unique markets," these ranchers decide to pool their recreation operations and funds and create a unified habitat enhancement program for the region. The goal of this landpool is to utilize the scale and uniqueness that this opportunity presents to attract a larger potential customer base, a hotel/resort operator, and greater access to state and federal habitat enhancement programs.

A VIEW TO THE FUTURE

Landpooling will significantly improve the timing and development of urban fringe areas, the quality of communities, and the protection of natural resources. Landpools that are properly designed and managed will be a source of great wealth to landowners and investors.

The public will share in this wealth by investing in a new real estate asset class - landpools - which are areas that were once perceived as raw land, but that are, in fact, the basis for nearly all kinds of economic development. Landpool equity funds will invest in various opportunities around the country and be traded in the public financial markets. Investors will realize the benefits of landpool investments and allocate a portion of their funds to them, knowing that a landpool equity fund's diversified income will generate stable, long-term dividends.

FOOTNOTES

[1] For a detailed review of LP/R, see Doebele, William, 1982. *Land Readjustment, A Different Approach to Financing Urbanization.* D.C Heath & Co. Lexington, Massachusetts; Archer, R. W., 1985. *A Bibliography on Land Pooling - Readjustment - Redistribution for Planned Urban Development in Asia.* Vance Bibliographies; 2nd edition; and Larsson, Gerhard, 1993. *Land Readjustment – A Modern Approach to Urbanization.* Avebury.

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CREATING MARKET-BASED INCENTIVES FOR CONSERVATION

Craig Evans

This paper explores why it is almost predetermined that the last crop will be asphalt, as a direct result of the way in which land is appraised and valued in most fast-growth states. It will also discuss ways in which this trend can be combatted. Among the conservation tools highlighted are those that create vibrant rural areas by addressing the problem of growth, not just the symptoms. Also, this paper addresses rural land protection tools which work, yet need improvement. Finally, this paper will discuss new rural planning tools with an emphasis on Florida's Rural Lands Stewardship Program which utilizes market-based incentives to preserve large areas of land at a fraction of the prior estimated preservation costs.

THE MANY VALUES OF AGRICULTURE

When considering the many values of agriculture, there are four points to keep in mind. First, without profit agriculture cannot exist. Second, without profit there is no room for rural enterprise. Third, land use tends to follow economics. Finally, changes in land use result primarily from economic decisions.

Economics, open space, and the environment are all attributes of agriculture. Agriculture has a significant impact on our national, state, and local economies. A significant amount of the landscape that we consider open space is devoted to agricultural uses. Additionally, agricultural land is a repository for many ecological values and provides habitat for a significant number of endangered species.

These attributes should be enough to convince others to preserve agriculture. However, policy makers, the public, and developers often perceive the situation differently. Why is their picture so disparate?

Economics. Agriculture is one of California's most important industries, producing $29 billion in direct farm gate value each year. The economic impact of the state's agricultural industry is even greater. Each one of the $29 billion dollars has a multiplier effect, as each dollar is spent and re-spent in local communities. This multiplier effect generates almost $100 billion per year in economic value as agricultural producers purchase seed, feed, equipment, and business services. The people who work for these companies spend their paychecks for homes, cars, movie tickets, and college educations all of which extend the economic impact.

Value-added processing also adds significantly to the economic value of a crop to the state. For example, the California grape industry (raisins, table grapes, wine) produces $2.6 billion in direct farm gate value on an annual basis. A portion of this crop goes into the production of wine. The resulting retail value of the California wine industry is $14 billion.

Additionally, farmers generate about $59 billion in personal income for Californians, or 6.6% of the state's total annual personal income. California agriculture supports 1.1 million jobs which is about 7.4% of all employment.

Open space. About 45 million acres of California's total land area of 100 million acres, are federally owned. Of the remaining land, 78% is devoted to agriculture and forestry. Of this land, ranchers control 19 million acres, farmers control 10 million acres, and 14 million acres are under the control of

timber concerns and private woodland owners. Altogether, these three groups of private landowners control 43 million acres—almost half of California's total land area including:

<u>every</u> acre to be used for future development,
<u>every</u> acre to be protected, and
<u>every</u> acre to remain in agriculture and forestry.

These are the lands that will be needed to sustain California's water resources, wildlife, open space and environment. These lands will affect future food and fiber production and will help support California's built environment.

Environment. Nationally, 75% of threatened and endangered plant and animal species are found on private agricultural and forest lands. Some endangered plant species are found exclusively on private agricultural lands. Furthermore, agriculture offers buffers between natural and developed areas, positive cash flow from property taxes (due to low demand for services), and a land use compatible with conservation as an alternative to public land purchases.

When carried out with environmental compatibility in mind, agriculture and forestry can provide:

- Preservation of wetlands,
- Water storage,
- Ground water recharge,
- Water filtration,
- Flood control,
- Purification of air,
- Carbon sequestering,
- Generation of oxygen,
- Forests and woodlands, and
- Ambient healthful living conditions.

Hence, agriculture and forestry produce not only our food, fiber, and horticultural products, but can accommodate many important resource values as well.

While natural habitats that are rare and fragile are considered priceless by society, our market economy gives them a low value. For example, if you have a wetland on your property, you might be lucky to have it appraise at $250 per acre. However, should you start to fill it in, you are likely to find yourself paying a $10,000 per day fine to the Environmental Protection Agency.

Unfortunately, almost NONE of the resources cited above will increase your property value. Neither will:

- Wildlife habitats,
- Presence of Threatened and Endangered Species,
- High food production capability,
- Clean drinking water
- Productive fisheries
- Biological, botanical, and scientific opportunity, and
- Biological diversity.

In fact, most of these resources may actually DECREASE your property value.

The fault for this lies with our land appraisal process. Land is valued on the basis of how many housing units or condos it will accommodate if it lies close to an urbanizing area. The appraisal may also be based on the agricultural production value of the land if it lies in a significantly rural area. Appraisals are not based on the value of land for aquifer recharge or wildlife habitat.

The appraisal process greatly affects the decision a landowner makes regarding the use of land. The result is a tendency to eliminate the features from the land for which the lowest value is assigned—wetlands and wildlife habitat—and convert land to the economic activities for which the highest value is assigned. This often translates into shopping centers, commercial centers, and housing units in growth areas of the state.

HOW TO KEEP RURAL AREAS RURAL

Too often, the first response by concerned policy makers, planners, environmentalists, and members of the public is to blanket rural areas under a cover of "no development" or very low density development in a misdirected effort to protect these areas. Without viable economic activities in rural areas, it is going to be almost impossible to maintain the amenities that go along with these working landscapes which we tend to lump together and call "rural character."

Effective Incentives. Incentives are needed to improve profitability, promote landowner equity and land use patterns appropriate to rural areas, improve compatibility with the environment, and encourage innovative planning and development. In June 2001, several new programs were successfully legislated in Oregon and Florida. These programs provide several new incentives for private landowners to participate in conservation activities on their properties. The 2002 Farm Bill also includes an innovative new program for maintaining rural values and promoting rural economic growth.

In order to better understand this trend, let us explore Florida's Rural Lands Stewardship Program (RLSP). This program is designed to carry out three strategies: (1) the creation of market forces that preserve open space and encourage clustered patterns of development, (2) the valuation of property based on natural resource attributes, and (3) the creation of economic incentives for the implementation of best management practices and other voluntary conservation practices in order to maintain and enhance regional environmental value.

Strategy 1. The first stratagem of the RLSP is to create market forces that reserve open space and encourage clustered patterns of development. Rural development policies that are appropriate to rural areas, in their reflection of the characteristics of rural communities, are needed. The goal of this strategy is to develop land use policies that:

- Promote rural economic development,
- Maintain the viability of agriculture,
- Enhance regional environmental protection,
- Incorporate agriculture into the landscape,
- Control sprawl, and
- Protect the character of rural areas while promoting reasonable and sustainable growth.

Included in this goal is a vision for rural communities that produces a thriving rural and agricultural economy, a healthy natural environment, and well planned, clustered developments surrounded by extensive areas of open space.

Strategy 2. The second stratagem of the RLSP is the valuation of property based on natural resource attributes. This valuation is intended to enhance landowner equity by emphasizing that land has more than a one-dimensional value based on the units per acre that can be built upon the landscape. There is a need to develop incentive programs that reward landowners to retain, protect, and manage natural resources. If landowner equity were provided, landowners could realize the full value of their land without converting it out of natural uses, agriculture, or forestry. Options for the provision of equity include:

- Maintenance of landowner equity through assignment, transfer and consolidation of density allocation credits in areas where population growth threatens to crowd our farms;
- Provide incentives for environmental and resource values; and
- Provide incentives to encourage and reward conservation practices.

If natural amenities are to be protected, a landowner is entitled to fair compensation for these amenities.

Strategy 3. The final stratagem of the RLSP is the creation of economic incentives for the implementation of best management practices and other voluntary conservation practice in order to maintain and enhance regional environmental value. Landowners and operators need to be rewarded and acknowledged for their private stewardship efforts. Additionally, programs need to be adjusted to improve the ability of these landowners and operators to nurture the ecological values associated with the lands under their care.

For example, the improvement of conservation easement programs is needed to make easements more attractive to private landowners. Some steps toward this goal are:

- Addressing the inherent conflict of having permanent agreements conserving lands where current economic activities have uncertain futures;
- Ensure easements encourage and promote agriculture;
- Easements should allow for all normal operations while promoting environmental compatibility; and
- Easements should also allow for and promote economic flexibility so agriculture and rural enterprises can remain competitive in the global economy.

Furthermore, conservation tools are needed to fill the gap between short-term restoration programs and permanent protection, particularly for private landowners who are not in the market for public purchases or permanent easements.

The Rural Lands Stewardship Act (F.S.), which created this program, is multi-dimensional. It establishes five pilot projects to test the concept of rural land stewardship areas, ranging in size from 50,000 to 250,000 acres. It creates a system for Transferable Land Use Credits that provide equity for private landowners with environmentally sensitive resources on their properties. The Act allows private owners to convey development rights and receive compensation for environmental values in return for Transferable Land Use Credits which may be used only within designated receiving areas. The number of credits is also tied to mitigation values of environmental resources with higher credits for more valuable resources.

A TEST CASE: THE IMMOKALEE STUDY AREA OF COLLIER COUNTY, FLORIDA

The issues addressed in this study are continued agricultural viability, environmental resource protection, and the long-term economic prosperity and diversification of Collier County.

Collier County Study Area Profile.

Land use data:

Total Acreage	195,080
Agriculture	112,996 ac.
Grazing Leases	63,616 ac.
Conservation Lands	12,933 ac.
Other	3,582 ac.
Water	1,953 ac.

The city of Naples, on the Gulf Coast of Florida, is 20 miles due west of this area. This 300 square mile area is the home of Collier County's Agricultural industry. One third of the Area is within the Big Cypress Area of Critical State Concern. Includes two privately owned wetland flow ways, the Camp Keais Strand and Okaloacoochee Slough.

Before Implementation of the RLSP. Agricultural zoning limited future development potential on all lands to 1 unit per 5 acres. Development under the Collier County Growth Management Plan was limited to construction of residential units, no clustering was allowed, no transfers of development rights were allowed, no commercial construction was allowed and no retail construction was allowed. Significant areas were designated as "environmentally sensitive," but the identification of these areas was not scientifically based (much of the work had been done by infrared aerial survey and had not been verified on the ground by field surveys) and many of these areas were not clearly delineated.

The initial proposal for these rural lands included downzoning to 1 unit per 20 acres on all agricultural lands and 1 unit to 40 acres on land with wildlife habitats, wetlands, and flow ways. Such downzoning would reduce the value of land without giving the landowner any value in return. It would also destroy the collateral value of the land, interfering with those agricultural operations that rely on annual production loans.

After Implementation of the RLSP. The resulting proposal offered something different. If a landowner opted in, they became eligible for:

- Basic density credit on all lands of 1:4,
- Transfer of density credits to other lands,
- Clustered development,
- Commercial development, and
- Retail development.

The additional credit bonuses offered included:

- Early-entry bonus (an additional 3700 development units created – these units went to landowners who where the first to opt in);

- Additional density credit for affordable housing; and
- Additional bonus of credits per acre for restoring or initiating protection of environmentally sensitive lands.

The RLSP implementation meant that natural resource areas are clearly defined. Extensive, ground-verified GIS map overlays were created and show all natural resources along with densities of such resources. Development is allowed with minimum impact on agriculture. The development footprint is reduced by 90% and Collier County aims to reduce the number of agricultural lands lost to development to 8,500 acres from and estimated 85,000 in 2025.

Included in the RLSP is the creation of an economic development program. Guidelines are provided to direct development into compact towns, villages, and crossroads. Town centers, public places, libraries, commercial, retail, and professional services are allowed and encouraged.

By opting into the RLSP, landowners sacrificed development in flow ways, vegetative, and wildlife habitats (including the development of golf courses with exceptions made in some vegetative habitats). However, landowners who did not opt in limited their development potential significantly. Their residential development zoning remained at a density of 1:5. They are unable to obtain public funding for infrastructure and must make significant outlays to widen and extend roads, build schools, and meet stormwater requirements. With these outlays, it is impossible to make housing prices competitive.

Under the RLSP, Collier County's environment fares extremely well. The limited development footprint accommodates the projected population in compact form and protects 5 to 10 acres of stewardship area for each acre developed. The plan places 100,000 acres of flow ways and habitats into environmental protection designations. It protects 90% of native upland and wetland vegetation in a 300 square mile area and incorporates 91% of telemetry points for the endangered Florida panther into habitats. The RLSP successfully protects 75,000 acres of agricultural land and 18,000 acres of water retention areas.[1]

Benefits of the RLSP. The Rural Lands Stewardship Plan for Collier County provides these benefits:

- Incentive based,
- Controls urban and rural sprawl,
- Separates urban and rural land uses,
- Maintains asset value of rural lands,
- Preserves open space for agriculture and natural environment,
- Accommodates future development in well planned clustered patterns,
- Allows for flexibility in location of future development,
- Allows ALL landowners to economically benefit from development, and
- Allows landowners to choose options that offer future appreciation … *even when protecting natural resources.*

The RLSP is extremely cost-effective. The investment for its creation was $1 million. With this investment, development is limited to just 10% of the land area. The rural character is maintained with the creation of "villages" and "towns." The RLSP permanently protects 90,000 acres of environmentally sensitive lands with conservation easements and removes development rights from another 85,000 acres of land that will remain in agriculture and open space.

All of this will be accomplished without the expenditure of a single public dollar to buy easements or development rights. In comparison, the same amount of protection, using traditional land protection tools, would cost $280 million (at today's land prices). Hence, for every $1 spent, the public is receiving $280 of value, a ratio of 1:280. Moreover, this means that $279 million in public revenues has been saved, and can now be directed to other public needs.

CONSERVATION ON THE NATIONAL LEVEL

The 2002 Farm Bill provides for $2.5 billion per year in conservation funding. Included in the 2002 Farm Bill are 12 programs that will provide landowners with incentives to protect, maintain, and even improve the natural resources that exist on their lands. There also is a program (Section 2003 of the Farm Bill) that uses "stewardship agreements" to tie together all conservation tools and incentives into one agreement with one application, and allows national programs to be adjusted to address unique local conditions.

The stewardship agreements are significant because they can be used to:

- Implement conservation practices on private agricultural lands anywhere in the U.S.,
- Fill in gaps between existing conservation programs,
- Combine different regulatory obligations into a single operating plan, and,
- Buy any service from a private owner/operator in which there is a public benefit.

Conservation incentive programs that have been passed into law in two states (Oregon and Florida) have taken the federal concept of stewardship agreements and expanded their benefits even further.

CONCLUSION

The results of the development of Florida's Rural Lands Stewardship Program, the federal funding for conservation programs in the 2002 Farm Bill programs and the federal initiative to provide increased flexibility for the delivery of conservation programs to rural landowners everywhere through stewardship agreements is an increase in the number of tools in the "conservation toolbox". These tools now include:

- Public land acquisition,
- Permanent conservation easements,
- Conservation Incentives Programs (Oregon & Florida),
- Locally-oriented "service contracts" to purchase conservation and environmental services from producers (building blocks for the stewardship agreements),
- Rural lands stewardship program (no public funding required),
- Expanded farm bill programs (up to $2.5 billion per year available), and
- Stewardship agreements (that allow for the "assembly" of up to 600 different federal programs … plus state, local & private programs … all in ONE contract!).

Used together, these programs and conservation tools harness market-based incentives. As a result, they can help producers maintain landowner equity and improve profitability by generating new, ongoing sources of additional revenue. They can also improve compatibility with the environment. By installing practices that will reduce operating expenses and help agricultural operations become more efficient, these programs are moving conservation in the right direction. Using them in the most effective combination will be our next challenge.

FOOTNOTES

[1] Additional information regarding the design and functioning of the RLSP, including valuation criteria and credit calculations, can be obtained by contacting Craig Evans, chair, Rural Lands Stewardship Council, 621 NW 53rd Street, Suite 240, Boca Raton, Florida 33487, e-mail craig@privatelands.org.

8. WRAP-UP

Programs and Experiences

Contributors

List of Conference Participants

PROGRAMS AND EXPERIENCES

Larry Libby
Ohio State University

Four themes surfaced in different contexts throughout the conference. These themes were: 1) The public-private paradox; 2) Reliance on the idea that compensation is the best way to achieve conservation outcomes; 3) The effort to improve the quality of information for policy-making; and 4) The need for innovative approaches

The public-private paradox encompasses the broad question of the appropriate role of government compared to the private sector. It is a subject that comes and goes with the political winds. In our conference, it surfaced in a number of places – first in Helen Flach's presentation on the unknown effects of the farm bill provision for supplying farmers with technical assistance through private providers. It also shows up in the idea of selling easements to land trusts, rather than to the government. The implication from reports that land owners have more trust for selling to land trusts than to the governments has unsettling implications.

At the base of the entire conference, the idea has stood that compensation is the best way to reach conservation goals. However, this idea shouldn't be taken as a single article of faith. Doing so suggests that only social bribery can get things done, and surely this is not the only way to go. In fact, researchers have concluded that regulatory approaches are acceptable and permissible. Also, a large portion of the public feels that compensation must occur within a structure of regulation that confers the rights for which compensation is made. Furthermore, the public endorses the idea that rights of landowners are limited by the effect that exercising them has on other people. Within this regulatory framework, compensation to achieve desired ends becomes attractive.

Many speakers at the conference stressed the need to articulate the benefits of farmland preservation, but they went beyond this necessity for carefully identifying all stakeholders in farmland preservation and quantifying what benefits and how much of them accrues to whom. They described a need-to-know: what people want, how much they value what they want, and whether the policies governing our programs actually deliver these preferences. The conference also highlighted the need to know something about the supply curve for farmland easements. This includes understanding the motivations for farmowners to sell easements and how much their "attachment value" affects the supply of easements. We also need to know how much the "hassle-factor" affects farmowners' willingness to sell easements and how much the hassles add on to transaction costs.

Finally, many presentations testified to the search for innovative new approaches, particularly in the funding arena. The landpooling idea suggested new ways to bring funding into the farmland conservation area, but it also created investment as a motivating force for conservation. Again, it echoed the public-private paradox. The need for innovative approaches also spoke forcefully to the demand for more short-term easements. We already have lots of less-than-perpetuity programs; we need to look at how to use this tool more widely.

Eric Vink
California Department of Conservation

California is very fortunate to have a big toolbox of regulatory tools and a wide variety of compensation programs. Together, these two mechanisms have kept the California countryside more intact than it would otherwise be, since just driving around shows our great capacity to spread out. The conference presentations stayed very applied which will really help those working in conservation "on the ground."

The conference underscored the importance of the debate/discussion on providing a bigger suite of tools. Landowners, especially, brought out the need – in the face of an uncertain farming future – for options for less-than-perpetuity.

The conference also profiled a host of tensions inherent in programs to compensate private owners for conservation. One tension comes from protecting agricultural land for its auxiliary values while recognizing that it still provides a high-production "food factory." While the term might seem pejorative, it recognizes the true scale" (and the reality of farmers' experience) of California agriculture.

The conference also highlighted the tension between *where* to preserve farmland and *when* to preserve it. Do we work right at the urban fringe, providing it improves the prospects for the land on the other side, or do we work further out, possibly focusing on land not possibly not yet threatened, but therefore buying more land with our scarce dollars?

We also have the tension within our Farmland Conservancy Program of wanting to keep the process simple for landowners, but also taking seriously government's responsibility for accountability to the public. We appreciate that most farm owners are very conscientious stewards of the land and understand their frustration when it seems we are not trusting them to do a great job for us. We also are very concerned that citizens see us as minding the public till for their ultimate value. We know that one bad deal could give the whole program a black-eye.

CONTRIBUTORS

Chuck Bacchi is a cattle rancher in El Dorado County. He and his family have about 13,000 acres of winter pasture in El Dorado and Sacramento Counties. In the summer, they move their cattle to a Forest Service allotment in Placer County and to 2,100 acres of irrigated pasture in Klamath County, Oregon. Bacchi can be reached at info@bacchiranch.com.

Deborah Bowers has chronicled farmland preservation activities and issues since 1990 in *Farmland Preservation Report*, a monthly publication. She is co-author, with Tom Daniels, of *Holding Our Ground: Protecting America's Farms and Farmland*, published by Island Press. A former newspaper journalist in Baltimore, she is also a consultant and grants writer for land trusts in Maryland and currently a research associate for the University of California Agricultural Issues Center study of local farmland preservation programs nationwide. Bowers can be reached at bowerspub@hotmail.com.

David Carlson is the Executive Director of the Colorado Agricultural Outlook Forum. He has also been a policy analyst for the Colorado Department of Agriculture and served as chief of the Resource Analysis Section since 1976. During his 26 years with the Department, Carlson has directed major studies on agricultural land conversion and groundwater depletion of the Ogallala Aquifer in eastern Colorado, and has analyzed the impacts of several proposed energy and water projects upon agriculture. He also works with agricultural and wildlife organizations and agencies to develop voluntary, incentive-based programs to protect threatened and endangered species such as the black-tailed prairie dog. Currently, he is analyzing relationships between net irrigation requirements and consumptive use estimates in Colorado agriculture for the Colorado Water Conservation Board. Carlson received a Ph.D. in mathematics from the University of Colorado, Boulder. He can be reached at david.carlson@coloradoagforum.com.

Tom Daniels is a professor in the Department of Geography and Planning at SUNY-Albany. Previously, he was Director of the Agricultural Preserve Board of Lancaster County, Pennsylvania where he managed the county's nationally-recognized purchase of development rights program. Daniels is the author of *When City and Country Collide* and co-author of *Holding Our Ground: Protecting America's Farms and Farmland*. He serves as a consultant to state and local governments and land trusts. Daniels can be reached at tdaniels@albany.edu.

Jeffrey Dorfman is a professor of applied economics at The University of Georgia. He earned a Ph.D. in agricultural economics from the University of California, Davis in 1989 and has been at UGA ever since. He was the founding director of the Center for Agribusiness and Economic Development. He has written one book, several book chapters, and about 50 journal articles and reports on a wide variety of economic and statistical topics. His current research program focuses on the economics of smart growth and economic development in Georgia, measuring productivity and efficiency in the presence of undesirable outputs, numerical Bayesian econometrics in general and health economics. He has worked as a consultant for private firms, government agencies, and non-profit organizations. Dorfman can be reached at jdorfman@agecon.uga.edu.

Dick Esseks is an emeritus professor of public administration at Northern Illinois University. He continues as a research scholar for the Center for Agriculture in the Environment of the American Farmland Trust. His work on farmland protection issues has included contributions to the 1979-81

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Russell Lester and his wife Kathleen own Dixon Ridge Farms in the Winters area of western Yolo County. They manage a vertically integrated, organic walnut operation on 240 orchard acres and 811 acres of bare ground. Both Lesters are graduates of UC Davis. Starting with a 68-acre old almond orchard purchased from Russ' parents and converted to walnuts, they gradually shifted from conventional to organic farming. In this process they developed a cover crop mixture of seeds, "Bios Rich Mix", that is marketed to other farmers. Dixon Ridge Farms has a web site, http://www.dixonridgefarms.com, that describes the history and operations of the farm, describes products, and lists several goals including growing premium organic walnuts, farming in an environmentally sustainable manner, educating others on farming practices, employing a whole systems approach, and making a profit. Lester can be reached at russ@dixonridgefarms.com.

Lawrence W. Libby is a professor and C. William Swank Endowed Chair in the Rural-Urban Policy Department of Agricultural, Environmental and Development Economics at The Ohio State University. His continuing research interests focus on the structure and performance of alternative public rules guiding use of land and water. In particular, he has emphasized the economic implications of alternative institutional means for protecting agricultural land in an urbanizing society, altering land use patterns in the interest of protecting groundwater quality, and altering farm production practices to reduce non-point pollution and soil erosion. He can be reached at libby.7@osu.edu.

Andrea Mackenzie was appointed by the Sonoma County Board of Supervisors as the General Manager of the Sonoma County Agricultural Preservation and Open Space District in September 2000. The District preserves agricultural, greenbelt, natural resource and recreation lands for future generations and has permanently protected over 55,000 acres since its creation in 1990. Mackenzie has worked for the district since 1996 and was the Senior Planner/Project Manager for the district's *Acquisition Plan 2000*. Before joining the district, Mackenzie worked as a planner for the East Bay Regional Parks District, which operates the nation's largest regional park and open space system. She has a B.A. in Environmental Studies from UC Santa Barbara and a M.A. in Urban Planning and Natural Resources from UC Los Angeles. Mackenzie can be reached at amackenz@sonoma-county.org.

Albert G. Medvitz and **Jeanne McCormack** have farmed dryland grains and alfalfa and produced lamb wool on 3700 acres in the Montezuma Hills outside Rio Vista, California for the past 15 years. Before turning to farming, Al was an assistant professor and director of a physical sciences teaching laboratory at Boston University and Jeanne was a program officer at World Education, an international NGO devoted to adult education and the alleviation of poverty worldwide. Both Jeanne and Al have advanced degrees from Harvard University. Both are former Peace Corps volunteers with extensive international work experience n Africa and elsewhere. Both are active in farming and farm preservation organizations. They have been board members of the California Woolgrowers Association and Jeanne was a board member of the Solano Land Trust. Al has recently joined the board. Al has been a past member of the Board of Directors of the California Farm Bureau Federation. He is co-editor and contributor with Alvin D. Sokolow of *California Farmland Under Urban Pressure*, published by the Agricultural Issues Center at UIC Davis. Al also lectures at UC Davis in the departments of Animal Science, Human and Community Development, and the International Agricultural Development program. Medvitz can be reached at amedvitz@rickadee.net.

Mary Nichols was named California's eighth Secretary for Resources on December 16, 1998 by Governor Gray Davis. As head of the Resources Agency, Secretary Nichols sets policy for 27 departments, commissions, boards and conservancies. including the departments of Conservation, Fish and Game, Forestry and Fire Protection, Parks and Recreation, Water Resources, and the California Coastal Commission. The Agency is also responsible for interpreting the California Environmental Quality Act. Secretary Nichols brings to state government a 30-year legacy of public service that has been instrumental in helping forge the nation's approach to environmental issues. Secretary Nichols represented the state in developing CALFED, the joint federal-state program that charts a new course for California's water resources and the Bay-Delta ecosystem. She now oversees CALFED's implementation phase, setting in motion the world's largest environmental restoration project. Prior to her present state appointment, Nichols served as the Executive Director of Environment Now, a private foundation dedicated to the protection of the California environment. She served in the Clinton administration as the U.S. Environmental Protection Agency's Assistant Administrator for Air and Radiation, and was a senior staff attorney and director of the Los Angeles office of the Natural Resources Defense Council from 1989 to 1993. Nichols was born in Minneapolis, Minnesota and attended school in Ithaca, New York. She received her BA from Cornell University and JD from Yale Law School.

Patricia Norris is an associate professor and extension natural resource economist in the departments of Agricultural Economics and Resource Development at Michigan State University. Her research and outreach interests include land resource economics, land use policy, and environmental policy, with particular emphasis on the incentives for and impacts of land use change. She co-chairs the MSU Extension Land Use Area of Expertise Team, which conducts educational and training programs in land use policy and resource management. She is the project manager of the MSUE Citizen Planner Program, a training and certificate program for local land use planning and zoning officials. She received a B.S. in Agricultural Economics from the University of Georgia, and M.S. and Ph.D. degrees in Agricultural Economics from Virginia Tech. Norris can be reached at norrisp@msue.msu.edu.

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Alvin D. Sokolow is public policy specialist for the University of California Cooperative Extension, housed on the Davis campus. His research and outreach activities are focused on farmland and land use policy in California, state-local government relations, local government finance and organization, and politics and policy in small communities. In cooperation with the American Farmland Trust, he currently is directing the *National Assessment of Agricultural Easement Programs,* a study of 46 leading local and state programs that concentrates on their community impacts and effectiveness. Sokolow is associate director for rural-urban issues of the UC Agricultural Issues Center. Prior to joining Cooperative Extension in 1992, he was a Professor of Political Science at UC Davis for 27 years. He can be reached at ajsokolow@ucdavis.edu.

Deniz Tuncer is a project manager with the Department of Conservation's California Farmland Conservancy Program. Before joining the department two years ago, she spent five years working for a non-profit association in Washington, D.C. Her work included managing a national AmeriCorps VISTA program and serving as a director of publications. Prior to that, she spent a year in Indonesia with a U.S.-based non-profit organization that provided technical assistance to farmers through the expertise of U.S. volunteers. She has served as president of two different non-profit boards and is a graduate of U.C. Berkeley. She can be reached at cfcp@consrv.ca.gov.

Nicole Van Vleck is a partner in A.& G. Montna Properties, L.P., and operations manager of this large rice and walnut operation in southern Sutter County. Covering 20,000 acres, the farm also operaters a rice dryer and a duck club. In 2002 Montna Farms sold a conservation easement on 1,235 acres of rice land to Ducks Unlimited, with funding provided by California Farmland Conservancy Program, the Packard Foundation, and a partial landowner donation. She has a B.A. in Political Science from UCLA and is a graduate of the California Agriculture Leadership Program. Van Vleck can be reached at nicolevanvleck@montnafarms.com.

Erik Vink was appointed Assistant director of the California Department of Conservation in June 2000. He heads up the Division of Land Resource Protection which administers the state's farmland protection programs: the Williamson Act and farmland Security Zone programs, Farmland Mapping and Monitoring Program, California Farmland Conservancy Program, and Resource Conservation District assistance. Vink previously worked for the American Farmland Trust in a variety of capacities, including California Field Director.

Anita Zurbrugg is Assistant Director of the American Farmland Trust Center for Agriculture in the Environment. An Illinois licensed attorney, Zurbrugg provides legal research support for AFT's Farmland Information Center and directs land use related research projects. Prior to joining AFT in 2001, Zurbrugg practiced law in Illinois. Her agricultural background includes high school vocational agriculture teacher, county advisor with the University of Illinois Cooperative Extension Service, and owner/operator of a landscape consulting business. Zurbrugg's J.D., M.A. in public policy and B.S. in biological sciences are from Northern Illinois University and her B.S. in agricultural education and landscape horticulture is from The Ohio State University. She can be reached at azurbrugg@niu.edu.

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