

**Payments for Ecosystem Services
In Southern Arizona and
Southwestern New Mexico**

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University of Arizona
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Authors:

Wendy Vanasco, Aaron M. Lien, and Laura Lopez-Hoffman

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Introduction

Ranching in southern Arizona is dependent on large expanses of open, healthy rangelands. These rangelands provide the forage and water that support livestock herds and enable sustainable ranching. In addition to grazing, the rangelands provide many other benefits to people and nature. These benefits include wildlife habitat for common and rare species; forage for species such as deer and pronghorn, which in turn are prey for mountain lions and the occasional jaguar; soil and nutrient cycling that supports the continued production of grasses and other plants; the ability to hold and store water; pollination of crops and other plants; and many others. These benefits are often referred to as ecosystem services: the services – or benefits – that people receive from ecosystems – the community of plants, animals, and biological processes that collectively make up what we call rangelands.

Over the past several decades, scientists have engaged in research to increase our understanding of how ecosystems work. This research includes efforts to detail the ecosystem services provided by nature to humans and even to place an economic value on these services to help policymakers understand the benefits we all receive from natural systems. More recently, land managers, policy makers, and conservationists have sought to find ways to pay landowners for the ecosystem services flowing from private lands that provide a benefit to the public or other resource users. These efforts are called payment for

ecosystem services programs. They take many forms, some familiar, some not so familiar.

Conservation programs representing an example of a payment for ecosystem services approach that may be familiar to southern Arizona and southwestern New Mexico ranchers are those sponsored by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) and funded by the Farm Bill. These programs include cost share programs like the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP). Both of these programs support rangeland conservation by paying a significant portion of the cost of management practices like erosion-control structures and wildlife-friendly fencing. While not termed payment for ecosystem services programs by NRCS, these programs have the practical effect of paying ranchers for work that improves the natural functions of rangeland ecosystems. These improvements often have positive impacts beyond the borders of a single ranch.

Payment for ecosystem services programs can be simple, as in the example of NRCS programs, or complex. The Malpai Borderlands Group grass bank program could be considered a more complex payment for ecosystem services program. Under the grass bank program, a rancher is given access to forage on a nearby ranch when forage is scarce on his or her own ranch (the “payment”) in return for a reciprocal conservation agreement (the “ecosystem service”). In both the example of NRCS

conservation programs and the Malpai Borderlands Group grass bank program, specific ecosystem services are not quantified. In other cases, ecosystem services are quantified. An example of payments for a specific, quantified ecosystem service is habitat conservation banking. In this case, a landowner voluntarily sets aside a portion of his or her land and manages it for a threatened or endangered species. When the landowner has successfully restored habitat for the species, he or she can then sell credits to developers to offset destruction of habitat elsewhere.

As is seen in these examples, ranchers can directly benefit from participating in payment for ecosystem services programs. In the examples given, a rancher could benefit from sharing the cost of implementation of management practices that will make his or her ranch more productive, from increased flexibility in times of drought by participation in a grass bank, or from direct income through the sale of habitat conservation credits. In each case, the goal of the payment for ecosystem service program is to improve the quality of rangelands or wildlife habitat while also providing a direct, material benefit to the participating rancher. Payments for ecosystem services can provide ranchers with the means to improve management and diversify sources of income within the existing ranch business model.

Information in this Report

The purpose of this report is to introduce ranchers to payment for ecosystem service programs for which they may be eligible. The report provides information on the major payment for ecosystem service programs currently available in southern Arizona and southwestern New Mexico, how each program works including the type and amount of payments offered, and eligibility requirements for each program. Whether a ranch is eligible or a good fit for a specific program is dependent on the specific location and characteristics of the ranch and the interest of the property owner in engaging in a program.

The report divides programs into two basic categories: government-sponsored and funded programs and privately funded programs.

Government-sponsored and funded PES programs

Government-supported payment for ecosystem service programs are financed by local, state, or federal government dollars. Most programs are federally funded. When considering participation in a publically funded program, it is important to understand the regulatory implications. By participating in federal payment for ecosystem service programs, for example Farm Bill programs, a “federal nexus” may be created for purposes of federal environmental regulations. A federal nexus exists when projects that take place on private land are funded with federal dollars. Examples of potential impacts of a federal nexus may include environmental project review to meet the requirements of the National Environmental Policy Act and regulations under the Endangered Species Act. When considering participation in a government-funded program, always make sure to ask questions so you have a full understanding of the implications of the funding. Usually, the staff at your local NRCS or Natural Resources Conservation District office can help you understand the implications of participating in a publically-funded program.

FARM BILL PROGRAMS

The primary source of public funding for ecosystem services and other conservation activities is the Farm Bill. The Farm Bill includes a section, the Conservation Title, which creates several different programs to encourage conservation activities by agricultural producers, including farmers and ranchers. Before the enactment of the 2014 Farm Bill, there were at least 20 agricultural conservation programs. The new Conservation Title reduces and consolidates the number of conservation programs in an effort to streamline programs for producers.

Many of the larger conservation programs, such as the Conservation Reserve Program (CRP), the Environmental Quality Incentives Program (EQIP), and the Conservation Stewardship Program (CSP) are still included. Other smaller and overlapping conservation programs are now rolled into these larger programs.

The largest conservation program, CRP, is reauthorized with a reduced acreage enrollment cap and amended to include the enrollment of grassland acres similar to the Grasslands Reserve Program (GRP). EQIP, a program that assists producers by sharing the cost of adoption of new management practices, is reauthorized with a new 5% funding carve-out for wildlife habitat practices. This funding carve-out for wildlife is similar to the Wildlife Habitat Incentives Program (WHIP), which has been folded into EQIP.

The 2014 Farm Bill also creates two new conservation programs – the Agricultural Conservation Easement Program (ACEP) and the Regional Conservation Partnership Program (RCPP) – out of several of the existing programs, including the Wetlands Reserve Program (WRP), Farm and Ranchland Protection Program (FRPP), and GRP. ACEP retains most of the provisions from the individual programs that it consolidates by establishing two types of easements: wetland reserve easements (similar to WRP) that protect and restore wetlands, and agricultural land easements (similar to FPP and GRP) that prevent non-agricultural uses on productive farms or grasslands.

Congress reauthorizes the Farm Bill every five years. During the reauthorization process, the programs included in the Farm Bill often undergo changes that may affect producers' eligibility to participate, the types of practices or incentives available, or even the existence of programs. For example, in the 2014 Farm Bill the Wildlife Habitat Incentives Program was eliminated, but wildlife funding was added to the Environmental Quality Incentives Program. The information in this report applies only to the 2014 Farm Bill.

Financial Assistance Programs

The 2014 Farm Bill provides three financial assistance programs to help agricultural producers implement and maintain conservation improvements on their land. The NRCS administers The Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP). The Conservation Reserve Program (CRP) is a land conservation program administered by the Farm Service Agency (FSA).

Environmental Quality Incentives Program

The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides financial and technical assistance to agricultural producers through contracts up to a maximum term of ten years in length. These contracts provide financial assistance to help plan and implement conservation practices that address natural resource concerns on agricultural lands. Examples include improvements to soil, water, plant, animal, air and related resources. EQIP is also designed to help producers meet Federal, State, tribal and local environmental regulations.

The 2014 Farm Bill now folds the Wildlife Habitat Incentive Program (WHIP) into EQIP. WHIP is a voluntary program that pays up to 75 percent of the cost for private landowners to implement management practices that enhance wildlife habitat on their land. The program is not limited to agricultural lands, but participants must be agricultural producers. Examples of eligible conservation practices include restoring native prairie grasses,

performing forest management practices, and improving riparian and wetland areas. A minimum of 5% of EQIP funding will go to wildlife practices.

Application Requirements:

Owners of land in agricultural or forest production or persons who are engaged in livestock, agricultural, or forest production on eligible land and who have a natural resource concern on the land may participate in EQIP. Eligible land includes:

- cropland
- rangeland
- pastureland
- non-industrial private forestland
- other farm or ranch lands

Applicants must also control or own eligible land, comply with adjusted gross income limitation (AGI) provisions, be in compliance with the highly erodible land and wetland conservation requirements, and develop an NRCS EQIP conservation plan of operations. Additional restrictions and program requirements may apply.

How EQIP Works:

Local NRCS conservationists will help applicants develop a conservation plan, identify conservation measures, and pursue funding through one of the EQIP signup options available. Many specific features of EQIP are determined by NRCS State Conservationists with advice from local working groups and State Technical Committees. Those who are interested in EQIP should work with the local NRCS office to identify and plan the conservation measures wanted on their land. Those who

have previously developed a conservation plan with NRCS will already have the conservation planning step completed. Those who consider applying for EQIP for the first time should schedule a meeting with NRCS to discuss their options and develop a conservation plan before moving forward. The program is competitive, with farmers and ranchers submitting applications for EQIP contracts that are ranked based on criteria developed by both the NRCS National Headquarters and NRCS State Conservationists. The ranking criteria vary from state to state.

A farmer or rancher enters into a contract with USDA that requires the farmer or rancher to carry out an EQIP program plan in return for EQIP payments and technical assistance. An EQIP plan of operations covers the specific conservation practices that will be implemented and any terms or conditions that USDA considers necessary to carry out EQIP, including the purposes to be met by implementing the plan.

Payments:

Farm Bill legislation provides NRCS with authority to provide financial assistance payments through EQIP to eligible producers to help implement approved conservation practices. Additional financial assistance may be available to help producers develop conservation plans required to support EQIP projects. Limited resource farmers, beginning farmers and ranchers, and socially disadvantaged farmers are eligible for higher payment rates and may receive advance payment of up to 50 percent (newly raised from 30 percent in the former 2008 Farm Bill).

An applicant can receive more cash up front when starting a project instead of being reimbursed afterward. This may make the program more accessible to beginning farmers and ranchers with limited savings to purchase materials and services needed to implement conservation practices included in their EQIP contract.

Payment and Benefit Limitations:

According to NRCS, program participants may not receive, directly or indirectly, payments that, in the aggregate, exceed \$300,000 for all EQIP contracts entered into during any six-year period. Participants whose projects NRCS determines to have special environmental significance may petition the NRCS Chief for the payment limitation to be waived to a maximum of \$450,000. Additional payment limitations apply to producers enrolled in the EQIP Organic Initiative.

Conservation program benefits are also limited to individuals or entities with an Adjusted Gross Income (AGI) of \$1 million per year or less, unless two-thirds of that money is derived from agriculture, ranching, or forestry operations. The limit is based on the 3 tax years immediately preceding the year of the original contract obligation.

Additional information about this environmental improvement program can be found on the NRCS National Website:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>

Contact your local NRCS office for application assistance and sign up deadlines.

Conservation Stewardship Program

The Conservation Stewardship Program (CSP) is a comprehensive working lands conservation program designed to protect and improve natural resources and the environment. CSP provides technical and financial assistance to farmers and ranchers to actively manage and maintain existing conservation systems and to implement additional conservation activities on land in agricultural production. CSP payments compensate the producer for improving, maintaining, and actively managing conservation activities in place at the time of the application, and for adopting new conservation activities during the term of the contract. Through CSP, participants implement additional management practices steps to improve resource conditions, including soil quality, water quality, water quantity, air quality, habitat quality, and energy efficiency.

CSP gives conservation-minded farmers, ranchers and landowners additional opportunities to do even more with conserving natural resources. For example, the CSP program can provide additional financial resources to improve and maintain livestock watering systems and ensure that those conservation investments will last many years into the future.

According to NRCS, CSP provides two types of payments through five-year contracts: annual payments for installing new conservation activities and maintaining existing practices; and supplemental payments for adopting a resource-conserving crop rotation. Producers who successfully fulfill their initial contract may be eligible

to renew their contract if they agree to additional conservation objectives. Payments are made after October 1 of each fiscal year for contract activities installed and maintained in the previous year.

Eligibility:

Eligible lands include private and tribal agricultural lands, cropland, grassland, pastureland, rangeland and nonindustrial private forestland. CSP is available to all producers, regardless of operation size or type of crops produced. Land being used for livestock production and other private lands on which resource concerns can be addressed are also eligible. Applicants must demonstrate they have control over these lands.

CSP applicant eligibility, as well as ranking and payment levels, are tied to how well a farmer or rancher is addressing priority natural resource concerns on their land. Priority resource concerns are determined at the state level and can include, for example, soil quality, water quality, wildlife habitat, plant diversity, energy conservation, and soil erosion.

Each state's NRCS website outlines a list of their priority resource concerns. CSP applicants must address at least one priority resource concern to the "stewardship threshold" level or above at the time of application to be eligible. Applicants must also agree to adopt or install additional conservation activities during the contract period, and address at least one more priority resource concern to the stewardship threshold level during the first 5-year contract period. The term "stewardship threshold" refers to the level of natural

resource conservation and environmental management required, as determined by NRCS using the Conservation Measurement Tools, to conserve and improve the quality and condition of a natural resource. Producers who do not meet the eligibility threshold can seek assistance to make improvements through the Environmental Quality Incentives Program and apply for CSP once they can qualify.

The Conservation Measurement Tool (CMT):

The CMT is a set of questions used to evaluate CSP applications using a point-based system for environmental benefits. It will evaluate both the producer's baseline level of conservation on these lands and the additional activities the farmer or rancher intends to undertake over the five year contract. Points are assigned to score current and planned conservation performance and are used for ranking and payment purposes.

Additional information about the Conservation Stewardship Program can be also be found on the NRCS National Website:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/csp/>

Conservation Planning and Technical Assistance

Conservation Technical Assistance (CTA) is the service NRCS and its partners provide to landowners and managers to identify opportunities and address concerns and problems related to the use of natural resources. Technical assistance helps producers make effective natural resource management decisions on private, tribal, and other non-federal lands. CTA is available to any group or individual interested in conserving natural resources and sustaining agricultural production.

CTA can help landowners plan and implement conservation systems that:

- reduce erosion
- improve soil and water quality
- improve and conserve wetlands
- enhance fish and wildlife habitat
- improve air quality
- improve pasture and range condition
- reduce upstream flooding
- improve woodlands

Although the CTA program does not include financial or cost-share assistance, it helps producers develop conservation plans. These conservation plans may serve as a starting point for participation in USDA financial assistance programs. An NRCS-approved conservation plan must accompany all financial assistance program applications.

All owners, managers, and others who have a stake and interest in natural resource management are eligible to receive technical assistance from NRCS.

To receive technical assistance, producers should contact their local NRCS office or the local conservation district.

Additional information about Conservation and Technical Assistance Programs can be found on the NRCS National Website through the following link:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/cp/>

Easement Programs

NRCS offers easement programs to eligible landowners to conserve working agricultural lands, wetlands, grasslands and forestlands. The most important program for ranchers is the Agricultural Conservation Easement Program (ACEP). ACEP combines several of the land conservation and easement programs that were included in previous Farm Bills.

Agricultural Conservation Easement Program

The Agricultural Conservation Easement Program (ACEP) provides financial and technical assistance to help conserve agricultural lands, wetlands, and their related benefits. Under the Agricultural land easements component, NRCS helps Indian tribes, state and local governments, and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect and enhance enrolled wetlands. ACEP is a new program that consolidates three former programs – the Wetlands Reserve Program, Grassland Reserve Program, and Farm and Ranchland Protection Program.

Agricultural land easements protect the long-term viability of the nation's food supply by preventing conversion of productive working lands to non-agricultural uses. Land protected by agricultural land easements provides additional public benefits, including environmental quality, historic preservation, wildlife habitat, and protection of open space.

Wetland Reserve Easements provide habitat for fish and wildlife, including threatened and endangered species, improve water quality by filtering sediments and chemicals, reduce flooding, recharge groundwater, protect biological diversity, and provide opportunities for educational, scientific, and limited recreational activities.

Agricultural Land Easements:

NRCS provides financial assistance to eligible partners for purchasing Agricultural land easements that protect the agricultural use and conservation values of eligible land. In the case of working farms, the program helps farmers and ranchers keep their land in agriculture. The program also protects grazing uses and related conservation values by conserving grasslands, including rangelands, pasturelands, and shrublands. Eligible partners include Indian tribes, state and local governments, and non-governmental organizations that have farmland or grassland protection programs.

Under the Agricultural land component, NRCS may contribute up to 50 percent of the fair market value of the agricultural land easement. Where NRCS determines that grasslands of special environmental significance will be protected, NRCS may contribute up to 75 percent of the fair market value of the agricultural land easement. The limitations identified in a conservation easement are tailored to suit the unique characteristics of individual properties as well as the different activities and interests of the landowner. In general, conservation easements limit subdivision, commercial activities, industrial activities,

and other uses inconsistent with the goal of the conservation easement. Some easements allow lots to be reserved for family members. Granting an easement to a conservation organization that qualifies under the Internal Revenue Code as a “public charity” can also yield income and estate tax savings.

Wetland Reserve Easements:

NRCS also provides technical and financial assistance directly to private landowners and Indian tribes to restore, protect, and enhance wetlands through the purchase of wetland reserve easements. For acreage owned by an Indian tribe, there is an additional enrollment option of a 30-year contract.

Through the wetland reserve enrollment options, NRCS may enroll eligible land through:

- Permanent Easements – Permanent Easements are conservation easements in perpetuity. NRCS pays 100 percent of the easement value for the purchase of the easement. Additionally, NRCS pays between 75 to 100 percent of the restoration costs.
- 30-year Easements – 30-year easements expire after 30 years. Under 30-year easements, NRCS pays 50 to 75 percent of the easement value for the purchase of the easement. Additionally, NRCS pays between 50 to 75 percent of the restoration costs.
- Term Easements – Term easements are easements that are for the maximum duration allowed under applicable State laws. NRCS pays 50 to 75 percent of the easement value

for the purchase of the term easement. Additionally, NRCS pays between 50 to 75 percent of the restoration costs.

- 30-year Contracts – 30-year contracts are only available to enroll acreage owned by Indian tribes, and program payment rates are commensurate with 30-year easements.

For wetland reserve easements, NRCS pays all costs associated with recording the easement in the local land records office, including recording fees, charges for abstracts, survey and appraisal fees, and title insurance.

Eligibility:

Land eligible for agricultural easements includes cropland, rangeland, grassland, and pastureland. NRCS will prioritize applications that protect agricultural uses and related conservation values of the land and those that maximize the protection of contiguous acres devoted to agricultural use.

Land eligible for wetland reserve easements includes farmed or converted wetlands that can be successfully and cost-effectively restored. NRCS will prioritize applications based the easement’s potential for protecting and enhancing habitat for migratory birds and other wildlife.

To enroll land through agricultural land easements, NRCS enters into cooperative agreements with eligible partners. Each easement is required to have an agricultural land easement plan that promotes the long-term viability of the land.

To enroll land through wetland reserve easements, NRCS enters into purchase agreements with eligible private landowners or Indian tribes that include the right for NRCS to develop and implement a wetland reserve restoration easement plan. This plan restores, protects, and enhances the wetland's functions and values.

How to Apply:

To enroll land through agricultural land easements, eligible partners may submit proposals to NRCS to acquire conservation easements on eligible land.

To enroll land through wetland reserve easements, landowners may apply at any time at the local USDA Service Center.

Additional details about easement programs and contact information can be found on the NRCS National Website through the following link:

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/acep/>

Privately Funded Payment for Ecosystem Services Programs

Privately funded payment for ecosystem services (PES) program opportunities are limited in southern Arizona and southwestern New Mexico. There are only a few formally established PES programs. These programs are all the result of federal laws that require mitigation by developers for certain activities. While the result of federal laws, in most cases private individuals or corporations make payments. There are also other potential opportunities for ranchers to diversify their income by capitalizing on the benefits of ecosystem services outside of a formal PES program. However, due to the lack of a formal program structure, these opportunities are more risky. The return on investment is uncertain and case dependent.

CONSERVATION BANKING

Conservation banking, also known as habitat mitigation banking or habitat banking, is a PES program created by the Endangered Species Act (ESA). One of the goals of the ESA is to prevent harm to threatened and endangered species. However, sometimes harming an endangered species is unavoidable. When this is the case, one approach to mitigating, or offsetting, the impact on the species is the purchase of credits from a conservation bank approved by the United States Fish and Wildlife Service (FWS). Typically, buyers of habitat mitigation credits are private developers or state and local

governments. If a ranch contains habitat appropriate for an endangered species, the ranch owner may be able to establish a conservation bank in order to sell credits.

Conservation banks require significant upfront investment, while returns are uncertain. Therefore, they can be risky. Conservation banks require permanent restrictions on land use; once established, they are difficult to remove. Before beginning a conservation banking project, careful consideration should be given to market conditions for the species the bank is intended to protect. Is there demand for credits? Is there any information available on the sale price of credits? How would a conservation bank impact other activities on my ranch? Conservation banking is relatively rare in Arizona and New Mexico. While ranchers may be technically eligible to establish conservation banks, actual opportunities are likely limited.

Establishing a habitat mitigation bank is a complex process. The first step is to contact the FWS to determine if there are any opportunities for conservation banking. The FWS will consider the location of the ranch, the conservation goals for any threatened or endangered species in the region of the ranch, and if conservation banking fits with these conservation goals. If the FWS determines that the proposed location is appropriate for a conservation bank, the ranch owner can then begin work on developing a conservation bank plan. Coordination with the FWS throughout the conservation bank planning and implementation process is recommended to ensure the bank plan

meets FWS requirements. At minimum, all conservation banks must be consistent with the larger conservation strategy for the species the bank is intended to protect and must be protected by a permanent conservation easement. The number of credits – the commodity that can be sold to buyers in need of mitigation – contained in a bank and what those credits are based on is determined by the FWS. The value of the credits is determined through private negotiations between the bank owner and the buyer of credits.

WETLAND AND STREAM MITIGATION BANKING

Similar to conservation banking, there are also opportunities for private landowners to create wetland and stream mitigation banks. Wetland and stream mitigation banking are programs created by the Clean Water Act (CWA). One of the goals of the CWA is to prevent pollution, destruction, and other impacts on wetlands, rivers, and streams in the course of construction of highways, housing developments, etc. However, sometimes harm or destruction of a wetland or stream is unavoidable. When this is the case, one approach to mitigating, or offsetting, the impact on a wetland or stream is the purchase of credits from a wetland or stream mitigation bank approved by the US Army Corps of Engineers (ACE) and the Environmental Protection Agency (EPA). Typically, buyers of wetland or stream mitigation credits are private developers or state and local governments. If a ranch contains a wetland or stream appropriate for restoration, the ranch owner may be

able to establish a mitigation bank in order to sell credits.

Also similar to conservation banking, wetland and stream banking require significant upfront investment with uncertain returns. Wetland and stream banks require permanent land use restrictions; once established, they are difficult to remove. Before beginning a wetland or stream mitigation project, careful consideration should be given to market conditions for wetland and stream mitigation credits. Is there demand for credits? Is there any information on the sale price of credits? How would a wetland or stream bank impact other activities on my ranch? Because wetlands and streams with year-round surface water flows are uncommon in southern Arizona and southwestern New Mexico, opportunities for wetland and stream banking may be limited.

Establishing a wetland or stream mitigation bank is a complex process. The first step is to contact the ACE and EPA to inquire about the bank establishment process and determine if a site on your ranch would meet the requirements of mitigation banking rules. Wetland mitigation banks may be established either by restoring, creating, or preserving a wetland. Stream mitigation banks generally involve stream restoration projects that improve the environmental benefits provided by a degraded stream. Coordination with ACE and EPA throughout the mitigation bank planning and implementation process is recommended to ensure the bank plan meets ACE and EPA requirements. At minimum, all wetland and stream

mitigation banks must be protected by a permanent conservation easement and meet a range of environmental objectives. The number of credits – the commodity that can be sold to buyers in need of mitigation – contained in a bank and what those credits are based on is determined by ACE and EPA in agreement with the mitigation bank owner. The value of credits is determined through private negotiations between the bank owner and the buyer of credits.

OTHER SOURCES OF ECOSYSTEM SERVICE INCOME

While conservation, wetland, and stream banking provide a formal means to develop a specific commodity value from rangeland ecosystem services, there are also other potential income sources that are less formal. Examples include payments from hunters to access private lands, “ecotourism,” partnerships with non-profit organizations with grants to support rangeland management and restoration, and grass banking programs. These approaches may require management changes, new marketing efforts, and other changes. As with conservation, wetland, and stream banking, return on investment is highly uncertain. On the other hand, marketing ecosystem services provided by rangelands provides an opportunity to diversify ranch income streams.

Ranchers who own private land may be able to market hunting opportunities on their ranch. Sustainable grazing practices such as rotational grazing and water developments can increase wildlife

populations as well as provide benefits for ranching operations. In addition, ranchers can implement specific management activities to create or maintain specific types of habitat and increase species diversity and abundance. Because private lands do not have open access, hunters may be willing to pay to access private lands with high-quality habitat where they have less competition with other hunters and increased odds of success.

In a similar vein is ecotourism, which seeks to provide people with access to ecosystems and natural amenities in a way that does not harm the environment. Good examples of ecotourism include bird watching and dude ranch experiences. Southern Arizona is considered a prime bird watching region because of the diversity of habitats provided by its mountain ranges and deserts and its location along migratory pathways of many species. Every year, bird watchers spend significant amounts of money to come to southern Arizona and see rare bird species. In cases where ranchers own unique habitats, such as riparian areas, they can market these amenities to bird watchers. In other cases where ranchers know the locations of prime bird watching areas on public grazing allotments, they may be able to offer private guiding services to people hoping to catch a glimpse of a rare bird species.

Both hunting and ecotourism opportunities require implementation of management practices that will maintain, restore, or improve the quality of natural resources. There are at present limited funding sources available for this sort of

management (see part one of this report about Farm Bill programs). Therefore, ranchers may need to invest their own money in management and marketing in order to capitalize on ecosystem services-based income. The amount of investment required depends on management goals, selected practices, and if funds are available from cost share programs or other sources. Ecosystem services are one way ranchers may be able to diversify income sources while maintaining traditional grazing practices. Any efforts to improve the ecosystem service values on a ranch should be accompanied by a business planning process that evaluates the potential costs and benefits of management changes.

OTHER OPPORTUNITIES

Because of widespread interest in the concept of payment for ecosystem services by government agencies, non-profit conservation organizations, and foundations that provide grants for conservation activities, new opportunities to earn income from ecosystem services may emerge in the future. Examples include grass banks, carbon sequestration markets or incentives, and privately funded incentives for biodiversity or habitat management.

The grass bank concept was pioneered in southern Arizona by the Malpai Borderlands Group. A grass bank is an area that is set aside to provide forage for ranchers when forage on their home ranch is unavailable or limited. Grass banks typically have three components: a formal or informal association of ranchers that come together to form the grass bank,

an area of forage that serves as the grass bank, and rules among the members of the association that determine who gets access to the grass bank and when. The concept was developed to provide a way to help ranchers in a drought year or other circumstance that limits the availability of forage on their own ranch. When there is not enough forage available on the home ranch of a member of the grass bank association, they are able to utilize forage from the grass bank according to the rules of the association. Typically, members of the grass bank association are required to implement certain management practices on their home ranch or agree to a conservation easement in order to gain access to the grass bank's forage. Grass banks are used as a buffer against drought and can help sustain ranches or prevent overgrazing in dry years. They are well suited to southern Arizona and New Mexico because of the sporadic nature of the monsoon – one ranch may get enough rain to produce summer forage, while the neighboring ranch is experiencing localized drought conditions.

There is currently growing interest in southern Arizona in habitat management and restoration. The University of Arizona, with support from FWS, is currently investigating the feasibility of providing ranchers with incentives to implement management practices that will benefit jaguars and other wildlife. A new organization, the Borderlands Habitat Restoration Initiative, is developing pilot projects to reduce erosion and improve wildlife habitat, with the goal of creating a viable business model for rangeland management

and restoration projects. Some organizations in southern Arizona have also been successful in winning grant support to implement range improvement practices to reduce erosion and reintroduce fire to the landscape to improve range habitat for cattle and wildlife. All of these efforts may lead to new opportunities for ranchers.

Markets for carbon sequestration – land management practices that result in removal of carbon from the atmosphere and storage in plants and soils – have been discussed for years, but have not yet become a reality. It is unknown if carbon markets will ever emerge or, if they do, if there will be opportunities for ranchers to participate. If a market for carbon does develop, it is very likely that only the private land portion of ranches would be eligible and that potentially significant management changes would be required to produce sequestration credits eligible for sale.

Some researchers have looked at the range of potential opportunities that could become available to ranchers and proposed the “ranch of the future” model of ranch management and conservation. The ranch of the future draws income from a range of sources to diversify the ranch business model, make ranching more resilient to drought and other natural disasters, and increasing the likelihood that ranching is able to provide a comfortable income for families. A ranch of the future may have income from traditional grazing activities, ecotourism, hunting, carbon sequestration credits, habitat management incentives, and tax credits from a conservation

easement or any combination of these or other income streams based on the ecosystem services provided by the ranch. While at this point the ranch of the future is just a concept, as new conservation incentive programs are developed, the ability of ranchers to diversify their business model will increase.

Grant Programs

Ranchers may be eligible for grants from philanthropic foundations or government. In most cases, to qualify for a grant, an interested rancher will need to partner with a non-profit organization eligible to receive grant funding. Eligible partner organizations are typically 501(c)3 not-for-profit organizations under Internal Revenue Service regulations.

Examples of grant programs include the National Fish and Wildlife Foundation, a foundation that provides funding for conservation and management of fish and wildlife habitat, and Partners for Fish and Wildlife, a federal program that provides funding for conservation and management of rare, threatened, and endangered species habitat.

PARTNERS FOR FISH AND WILDLIFE

Partners for Fish and Wildlife is the primary mechanism for delivering voluntary, on-the-ground habitat improvement projects that support the FWS's mission of conserving, protecting, and enhancing fish, wildlife, and plants and their habitats for the continuing benefit of the American people. It delivers habitat conservation by providing financial and/or technical assistance through cooperative partnerships that support habitat improvement activities on private lands.

The Partners for Fish and Wildlife Program is a direct federal assistance program. It does not solicit requests for proposals, but rather, strategically determines project

sites and eligibility through established project selection criteria. There are three focus areas in southeastern Arizona: Altar Valley, Santa Cruz/San Pedro, and Chiricahua. Partners for Fish and Wildlife works in collaboration with private landowners and other conservation partners, primarily using cooperative agreements as the funding instrument.

The Partners for Fish and Wildlife Program field staff are responsible for identifying and selecting habitat conservation projects. Field staff will also use the following criteria to select projects that maximize benefits to federal trust species and use program resources in the most effective and efficient manner. Conservation activities and projects do not have to meet all of the selection criteria; however, proposed projects that meet more of the following criteria will be given the highest priority:

- Species at risk. Conservation activities and projects that improve habitat for listed species, species proposed for listing, candidate species, imperiled species, birds of management concern, species of conservation concern, or other declining species.
- Expand priority habitats, reduce habitat fragmentation, establish conservation buffers, and provide wildlife movement corridors. Habitat improvement projects near protected land, including land managed by the National Wildlife Refuge System, National Park Service, U.S. Forest Service, Bureau of Land Management, other federal agencies,

tribal, state agencies, or conservation organizations.

- National Wildlife Refuge System. Activities or projects that are on private lands near National Wildlife Refuges and complement conservation practices or resolve problems on Refuges that are caused by off-refuge land use practices.
- Regional strategic plans and priorities. Areas delineated and developed with conservation partners as geographic focus areas in the Partners for Fish and Wildlife regional strategic plans that represent an integration of shared habitat conservation priorities among the Service, conservation partners, and stakeholders. However, field staff are not prohibited from implementing high-value habitat improvement projects outside of these geographic focus areas.

Private landowners that are interested in doing a wildlife habitat improvement project should contact the Partners for Fish and Wildlife State Coordinator. The National Partners for Fish Wildlife web site is <http://www.fws.gov/partners/contactUs.html>.

Glossary of Terms and Programs

ACE – Army Corps of Engineers

ACEP – Agricultural Conservation Easement Program

AGI – Adjusted Gross Income

CMT – Conservation Measurement Tool

CRP – Conservation Reserve Program

CSP – Conservation Stewardship Program

CTA – Conservation Planning and Technical Assistance

CWA – Clean Water Act

EPA – Environmental Protection Agency

EQIP – Environmental Quality Incentives Program

ESA – Endangered Species Act

Farm Bill – the Federal law that authorizes funding for most Federally funded agricultural conservation programs

Federal Nexus – when a producer participates in a Federally funded conservation program, such as EQIP, to implement management practices on private land. The use of Federal funds may result in the application of Federal laws that would otherwise not apply on private land, such as the National Environmental Policy Act.

FRPP – Farm and Ranchland Protection Program

FSA – Farm Service Agency

FWS – Fish and Wildlife Service

GRP – Grasslands Reserve Program

NRCDD – Natural Resources Conservation District

NRCS – Natural Resources Conservation Service

PES – Payment for Ecosystem Services

RCPP – Regional Conservation Partnership Program

USDA – United States Department of Agriculture

WHIP – Wildlife Habitat Incentives Program

WRP – Wetlands Reserve Program