

# A Payment for Ecosystem Services Pilot Project Surveying for Rare Plants on Private Lands in San Miguel County, Colorado



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## **EXECUTIVE SUMMARY**

In 2010, San Miguel County in southwestern Colorado launched a pilot Payment for Ecosystem Services (PES) project to provide money to private landowners in exchange for access for a field botanist to look for targeted rare plant species.

Inspired by a presentation by Sally Collins, the founding director of the USDA Office of Environmental Markets, San Miguel County Commissioner Art Goodtimes received a fellowship from the Center for Collaborative Conservation (CCC) at Colorado State University to initiate an on-the-ground PES project – matching CCC fellowship money and advisory support with an existing County open space mill levy fund. The project operated under the auspices of the County Open Space Commission, which is a recommending group to the San Miguel County Board of Commissioners.

A statewide Colorado Rare Plant Conservation Initiative was started in 2009 under the aegis of The Nature Conservancy and others. Most public lands in the state had been surveyed, but potential sites on private lands had not. A survey was perceived as meeting County and State goals for locating habitat on private lands, refining the extent of existing populations, and perhaps at some later date developing possible monitoring and protection measures. Since San Miguel County was interested in a proof-of-concept PES project, a rare plant program seemed to provide a quantifiable environmental target that could be monetized – fulfilling the intent of a PES pilot. Plus, it was an opportunity to build trust and relationships with private landowners in the county.

The entire two-and-a-half year process of conceptual development, project discussion and delineation, stakeholder outreach, fieldwork protocols and final survey results provides a template for getting a small-scale, local PES project underway. Seven landowners were compensated for participating in the pilot and two properties were found to contain populations of one of the four targeted rare plants species. The County is working on developing a long-term monitoring program for the surveyed property with what the Colorado Natural Heritage Program calls an “A-ranked occurrence” – based on population size, condition and landscape context (criteria is specific for each species).

Important lessons were learned in limiting the focus of a project, testing for measurable results, using sliding scale reimbursements, and securing stakeholder support and participation. The pilot process also provided lessons in the etiquette of contract writing, appropriate types of confidentiality, public outreach versus invitation, and the long-term viability of a program.

The success of the pilot has inspired San Miguel County to continue and possibly expand the Rare Plant PES Project, as well as begin work to see if a larger PES effort can be organized around complementary environmental targets. The County’s new focus is on developing a PES program centered perhaps on the pending listing of the Gunnison Sage Grouse, which has a significant flock in the County. The project would hope to pay ranchers and large landowners for doing something measurable to help protect and preserve the birds on private land. Or possibly a project involving carbon ranching, i.e. sequestering carbon on private lands through various stewardship practices to build soil and reduce greenhouse gas emissions.

Through sharing the story of the PES pilot in San Miguel County, we hope to support the building of a network of successful PES programs that advance conservation efforts in other rural communities around the country.

## **I. Healthy Human Communities Depend Upon Healthy Natural Communities**

Ecosystem services are the benefits people derive from nature that support and fulfill human life. These benefits are many and diverse – food, clean air, clean water, maintenance of biodiversity, nature-based recreational opportunities, and much more. The recognition that humans are dependent upon nature is an ancient concept, yet the importance of the dependence is becoming more salient with the escalating pressures humans are placing on the planet’s natural resources from factors like over-population, land use changes, and what the Norwegian eco-philosopher Sigmund Kvaloy Setreng calls “Industrial Growth Society” (Setreng, S.K., 1985).

Since the Enlightenment, ecosystem services have been valued as givens or “externalities” by classical economists. But they are more like essential system services, without which most human economies would collapse. By beginning to quantify resource value and instituting a program of monetary incentives for ecosystem services, this pilot helps move society a bit further along in reaching the ecological goal of true cost accounting, of factoring into price – that most crucial signal and leveraging point within our capitalist economic system – not only the cradle-to-grave cost of materials, labor, etc. to make a product, but the cost to our ecosystems in having each product made.

In recent years, leaders from across the public, private, nonprofit, and academic sectors have been working together to better understand the connections between nature and human well-being, and to create the scientific, institutional, and political capacities to sustainably manage the planet’s natural resources to support healthy human and healthy natural communities. In essence, the ecosystem services concept can be boiled down to a simple message: when we degrade nature, we place human welfare at risk; and when we restore and steward nature, we enhance nature’s benefits underpinning human welfare. Given this situation, how can communities – large to small, urban to rural – do a better job of interacting with natural systems for the benefits they provide to people alongside our ethical obligation to protect nature?

PES projects are a major new tool being deployed to address this challenge (Engel et al. 2008). PES is an incentive-based mechanism in which beneficiaries (or users) of ecosystem services contract with and compensate ecosystem-service providers (meaning landowners and natural resource managers) for management practices that ensure the supply of services. More broadly, PES seeks to establish a direct feedback loop, one that has often not existed before,

between ecosystem-service beneficiaries and providers to ensure resources and capacity to sustainably manage working agricultural lands and wildlands. Experimentation with PES is occurring globally, with activity in the U.S. being largely focused on water quality, water quantity, biodiversity, habitat protection, and carbon sequestration to mitigate climate change. Given its newness, PES is evolving rapidly with a growing list of lessons learned to inform the design of new programs and to improve the effectiveness of existing programs.

This report describes the process undertaken in San Miguel County in southwestern Colorado to design and implement a first-time PES pilot project in a rural landscape context, administered by a county-level government. Section II describes the genesis of the PES project in San Miguel County. Section III describes the project region in Colorado's San Miguel County. Sections IV and V describe, respectively, the processes of designing and implementing the project. Section VI highlights lessons learned throughout the process. Section VII concludes by describing potential next steps that San Miguel County is exploring to expand the pilot to a broader program.

## **II. Genesis of the PES project in San Miguel County, Colorado**

In September 2009, Commissioner Art Goodtimes, of San Miguel County, attended a presentation on ecosystem services by Sally Collins, the founding director of the U.S. Department of Agriculture's Office of Ecosystem Services and Markets (now named the Office of Environmental Markets). This presentation described the broad field of ecosystem services, including a focus on PES, as a new strategy to advance conservation stewardship on public and private lands. The presentation was part of a conference hosted by the Center for Collaborative Conservation<sup>1</sup> at Colorado State University titled, "Bridging the Gap: Collaborative Conservation from the Ground Up" held in Fort Collins, CO.

Inspired by the PES concept but recognizing that few actual on-the-ground projects had been developed in Colorado, Commissioner Goodtimes sought to explore with the County Open Space Commission the feasibility of launching a county-level PES pilot project. Since San Miguel County had passed a dedicated mill levy for open space and resource protection, there seemed to be a source of funding that could initiate a new conservation program of this sort. At

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<sup>1</sup> For more information on the Center for Collaborative Conservation, please visit this website: <http://www.collaborativeconservation.org>

the time, and to the best of our knowledge, no PES programs existed in the U.S. that were organized at the county level. To provide proof-of-concept for what seemed like a good idea, the San Miguel County Open Space Commission launched the San Miguel County Payment for Ecosystem Services Pilot Project in 2010 both to address a local resource issue and to develop a real-world, hands-on PES experience in the community.

### III. Project Region: San Miguel County, Colorado

San Miguel County is located in southwestern Colorado and spans a physically diverse geographic region, from the western San Juan Mountains to the arid high-desert region near the Utah border (Fig. 1). The county has a population of 7500, which includes the mountain resort towns of Telluride and Mountain Village that encompass 44% of the population, as well as Norwood and other small communities in the western end (SMC, 2006). Historically the economy has been based on ranching and mining, although more recently the economic engine has shifted toward tourism, real estate, second-home ownership and construction. The western communities in the county continue to predominately focus on ranching, farming, and energy and mineral development activities. Land ownership is approximately 66% public lands and 34% private lands (SMC, 2006).

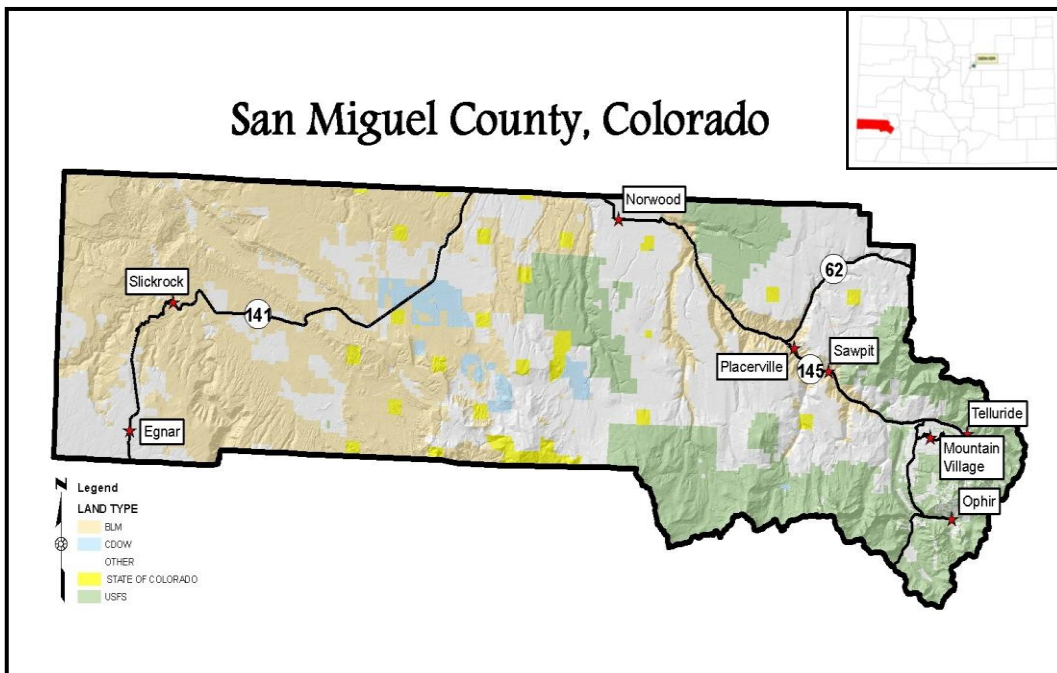


Figure 1: Map of San Miguel County, Colorado (SMC, 2012)

A key group in the county addressing local natural resource issues is the San Miguel County Open Space Commission (henceforth, “the commission”), whose mission is to protect and conserve open space for people, natural habitat for flora and fauna, and agricultural lands for the farming and ranching communities throughout the county for current and future generations. The commission works collaboratively with regional landowners on a voluntary basis, along with land trusts and local, state, and federal agencies to carry out its mission. The commission is composed of a group of volunteers from different geographical areas of the county, who meet monthly to discuss issues related to its land heritage program. Since its inception in 1999, the commission has helped to protect 11,692 acres in the county by negotiating conservation easements and through a Purchase of Development Rights Program (SMC, 2011).

San Miguel County has a range of conservation issues currently being addressed that cut across public and private lands, and across diverse stakeholder interests and communities. These issues include a proposed in-stream water right filing by the Colorado Water Conservation Board in the San Miguel River watershed, which could potentially restrict available irrigation water for some members of the agricultural community. Another issue is the restriction of development rights for parcels that contain wetlands, which presents a disincentive for private landowners to have wetlands on their property. The presence of the candidate species Gunnison Sage Grouse (*Centrocercus minimus*) and its habitat on public and private lands, which the U.S. Fish & Wildlife Service is proposing for Endangered Listing, is also a major focus of conservation efforts. For private landowners, harboring this species can limit development rights. Finally, San Miguel County contains multiple globally rare plant species as documented by public land surveys. However, full knowledge and understanding of these species is incomplete, and private lands data are needed to better characterize the status of these species.

San Miguel County has a history of collaborative approaches to natural resource and conservation stewardship issues. The county has participated in long-term monitoring projects for unique fens in the Prospect Basin via the San Juan Fens Partnership, and for salvage logging regeneration in the Burn Canyon area. The Burn Canyon project was named one of the Ford Foundation’s fifteen model forest health collaborations in the U.S. in 2006, and it also won several federal agency national partnership awards in 2007. San Miguel County also participates in the Uncompahgre Partnership (UP), a collaboration among five counties in Colorado, including governmental agency and community members, to address collaborative forest

management issues at a landscape scale. San Miguel County was awarded the Forest Service's Chief's Award in 2013 for its work on a Forest Service-led UP project.

In addition to its track record of experience with collaborative conservation partnerships, San Miguel County has a conservation funding mechanism in place, called the Purchase of Development Rights Program. Funded in part by a voter approved mill levy that is leveraged with funds from the Great Outdoors Colorado program, this mechanism provides funding to pay landowners for a portion of the value of future development rights tied to their property. The program helps maintain open space and keep lands in agricultural use. Since 2000, the Open Space Commission has been using these funds to acquire and maintain conservation easements, with a particular focus on parcels with Gunnison Sage Grouse habitat.

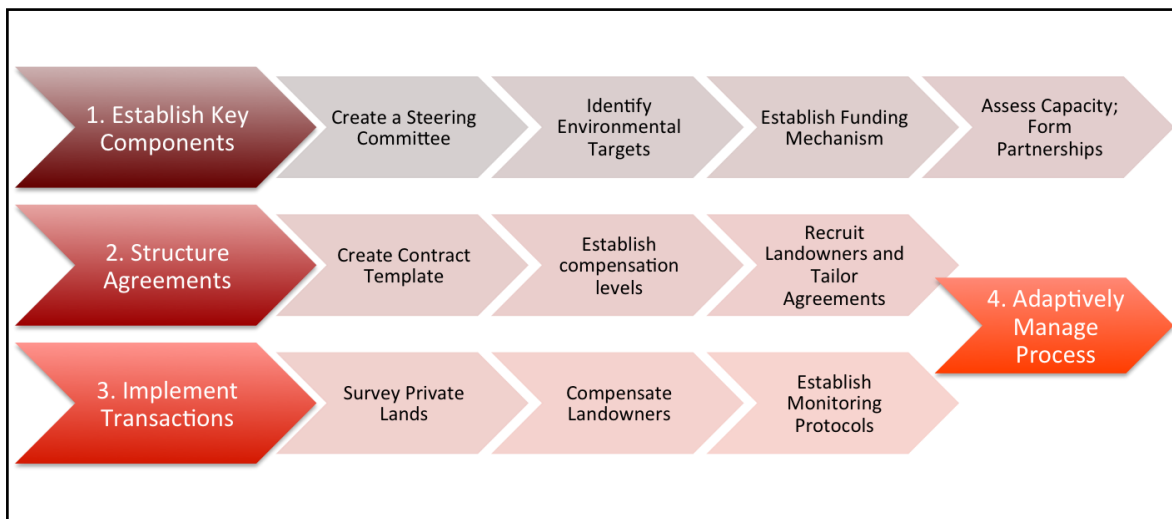
Given its dedicated funding mechanism and combined with an internal goal of diversifying and expanding activities, the Commission served as a natural partner to design and implement a new PES program. Furthermore, with prior experience in collaborative and innovative natural resource initiatives, Commissioner Goodtimes and the Commission felt that San Miguel County had the capacity to advance a PES pilot project.

#### **IV. Program Design Process**

In 2010, Commissioner Goodtimes received a fellowship from the Center for Collaborative Conservation at Colorado State University to initiate the PES project, and the Commission agreed to commit a portion of funds from the mill levy to this pilot project. Commissioner Goodtimes worked with the Director of the Commission to create a PES Steering Committee (henceforth, "the committee"), comprised of himself; the Staff Director of the Commission (Linda Luther-Broderick); a member of the Commission, Jim Boyd, who also serves as a local specialist for the USDA Natural Resources Conservation Service (NRCS); and Peggy Lyon, a botanist with the Colorado Natural Heritage Project, who has expertise in surveying for rare plant species on public and private lands. Collectively, the committee members organized and facilitated the process of designing and implementing the PES pilot. Professor Josh Goldstein from Colorado State University provided valuable PES expertise to the committee.

The major steps in the PES pilot project design, which occurred over an 18-month period included the following: 1) establishing the key components of the pilot, which in addition to

forming the committee also included identifying environmental targets, establishing the funding mechanism, assessing technical and institutional capacity, and forming partnerships; 2) structuring agreements, which included creating contract templates, establishing compensation levels, recruiting landowners and tailoring agreements accordingly; 3) implementing transactions, which included surveying private lands, compensating landowners, and establishing monitoring protocols; and finally 4) adaptively managing the process for future iterations (Fig. 2).



**Figure 2: Overall Process for the San Miguel County PES Pilot Project**

During the first six months, the committee discussed alternative proposals for the environmental target of the PES pilot, considering which goal or set of goals would balance three objectives: address and provide measurable benefit to an environmental issue in the county, engage and build trust across key stakeholders, and demonstrate proof-of-concept that could be scaled up in future years. The committee considered county payments to private landowners for various kinds of ecosystem services that met county environmental goals, including in-stream flow leases for the San Miguel River, preservation of irrigated and natural wetlands, and Endangered Species Act protection for the Gunnison Sage Grouse and its habitat. While these kinds of issues or a combination of them were attractive big picture scans, the committee felt they would be too complex and potentially contentious to meet all its objectives, as stated above.

Amidst the deliberations, the committee developed a simpler idea for a pilot project. As one of the members suggested “What about extending our public land rare plant survey that we



did a couple years back onto private land, and paying the ranchers for access?” As it happened, a statewide rare plant effort had been initiated the year before in 2009. The Colorado Rare Plant Conservation Initiative has the goal of conserving “Colorado’s most imperiled native plants and their habitats through collaborative partnerships for the preservation of our natural heritage and the benefit of future generations”<sup>2</sup>. As noted above, most public lands in the state had been surveyed, but potential sites on private lands had not, leading to notable spatial gaps in plant records affecting the Initiative’s ability to evaluate the conservation status of rare plants. A rare plant survey was perceived as meeting County and State goals for locating habitat on private lands, refining the distribution of extant rare plant populations, and possibly co-developing monitoring and protection measures with the landowners themselves.

With the assistance of our regional botanist from the CNHP, the committee selected as the environmental target four rare plant species that are found in San Miguel County: Gypsum Valley Cat’s Eye (*Cryptantha gypsophila*), Cushion Bladderpod (*Physaria pulvinata*), Lone Mesa Snakeweed (*Gutierrezia elegans*), and Parish’s alkali-grass (*Puccinellia parishii*). None of the plants are listed under the Endangered Species Act. In fact, there is no federal or state protection for these endemics. However, they are classified by CNHP as imperiled (See Appendix 1 for more information on the species and their status).

With the environmental target selected, in 2011 the committee continued to develop additional components and lay the groundwork for the pilot. The committee adapted a PES project primer from the Katoomba Group (2008) to assist in the PES development process. In assessing institutional and technical capacity, the committee attempted to partner with a regional ranching advocacy group who had expressed initial interest in the PES concept and this project. However, due to the timing of project implementation and other constraints, the committee was unable to form a partnership with the group and utilize their input to help shape landowner contract and payment details.

Assisted by Jim Boyd of the NRCS, the committee internally created a draft contract template for landowners, which included payment levels of \$5 per acre, and up to \$1000 total, in exchange for initial access to the land in order for a trained botanist to conduct a rare plant survey for the four species targeted (Table 1). The contract also specified payment levels for bonus amounts, ranging from \$100-400, based on a discovered plant population’s size and

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<sup>2</sup> <http://conserveonline.org/workspaces/corareplantinitiative>

condition, as determined by the botanist conducting the survey and in accordance with CNHP protocols for Element Occurrence Ranking. Payment levels, such as the \$5 per acre parameter established for access, were based upon the types of compensation programs available through NRCS landowner assistance programs in this region for implementation of best grazing management practices. The contract specified an additional bonus of \$200 for landowners who agreed to have rare plant populations found on their property listed in the CNHP database, which is only available to scientific researchers. Privacy concerns are of paramount importance to private landowners in the county; the committee recognized that and has done everything it could to keep all the data, names and private landholdings out of this report and away from all public availability.

The committee included a provision in the draft contract to allow for the development of a monitoring agreement, if rare plant populations were found and if the landowner was willing; however, details of this component were not specified at the time contracts were signed. Members of the committee reported that developing the draft contract and its transaction details was a challenging step of the process, as there were few models upon which to base their work.

**Table 1:** General structure of the landowner contract and compensation amounts.

Contract Components	Compensation Amount
Access to land for survey	\$5/acre; maximum of \$1000
A-ranked rare plant population	\$400
B-ranked rare plant population	\$300
C-ranked rare plant population	\$200
D-ranked rare plant population	\$100
CNHP database listing of populations	\$200

## V. Program Implementation

In 2012, simultaneous with working to develop the contract template, the committee began the process of targeting appropriate landowners to participate in the pilot. Using the expertise of the CNHP botanist, the committee identified several major areas of potential habitat for the four rare plant species. They refined the areas, selecting 22 properties based on proximity

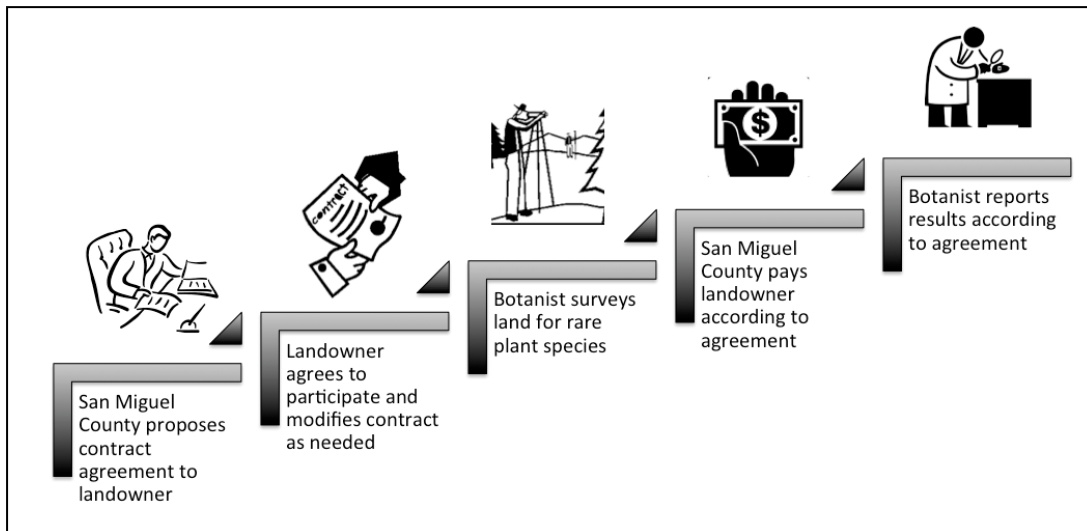
to known populations of the targeted species on adjacent public lands as well as an examination of geological maps and aerial photos that indicated likely potential habitat for the species. The committee next determined ownership of the selected properties, utilizing county tax records. Members of the committee then began outreach to those targeted landowners to solicit their participation in the pilot. Initially, they conducted outreach on a one-on-one basis. While this method was effective in some cases, the committee found that many landowners preferred to have written details of the pilot to review prior to discussing potential participation in the PES pilot.

The committee modified its outreach approach by sending a letter to targeted landowners, explaining the central concept of PES and outlining the pilot in San Miguel County. The letter emphasized that contracts for access to survey portions of their land would be jointly negotiated, tied to financial compensation, modified according to their specific needs for confidentiality of the data collected, and entirely voluntary in nature. The letter also clarified that none of the plant species in the pilot were listed as threatened or endangered by the U.S. Fish and Wildlife Service, and that no change in management actions would be requested or required by entering into an access agreement for the pilot plant survey. The committee included this emphasis to help allay fears that private landowners often have when dealing with federally listed species and potential Endangered Species Act ramifications to their land management.

As a result of the landowner outreach, San Miguel County signed seven contracts with landowners for access to conduct rare plant surveys. Individual committee members or teams of two met with prospective landowner participants, discussed program details, left papers, and followed up with email communications, negotiating the terms of individual contracts based on individual circumstances. In some cases, a second meeting was necessary to seal the deal. As part of the contracts by way of benefits, in addition to financial compensation, the landowners had the option to accompany the botanist during the survey and also to receive a list of all species observed on the property.

In the summer of 2012, the botanist Lyon surveyed the seven properties and documented the rare plant occurrences for the four species, recording habitat information and location of populations with GPS, and counting or estimating the number of individuals found. Across the seven properties, Lyon found one A-ranked (or “excellent”) population of Gypsum Valley Cat’s Eye on one property, which was entered into the CNHP database and marked as confidential

with the landowner’s permission. Lyon also found one D-ranked (or “poor”) population of Gypsum Valley Cat’s Eye on a second property. In addition to locating these two populations, Lyon created a species list for landowners from six of the seven properties. San Miguel County completed the transactions with each landowner for access to their lands following the plant survey, with payments ranging from \$50 to \$800 for access per landowner. In addition to this payment, the county paid bonuses to the two properties with identified rare plant populations, including \$400 for the A-ranked population and \$100 for the D-ranked population. The landowner who consented to disclose the data in the CNHP database also received the corresponding \$200 bonus. In total, San Miguel County spent approximately \$9,750 from the Open Space mill levy fund on the pilot, with approximately \$3,350 in payments to landowners and approximately \$6,400 for the all costs associated with the fieldwork and reporting.



**Figure 3: Transaction Steps in the San Miguel County PES Pilot**

At this time, a monitoring agreement has not yet been formalized with the two landowners who have the extant populations of Gypsum Valley Cat’s Eye. However, from the outset, the committee considered it a priority to develop a monitoring agreement that would ensure continued health of the rare plant population, particularly for A-ranked populations. Advancing this component of the PES project will be included in the next phase of program development and the committee has included this item in its 2013 budget. The committee is

currently examining how to adapt and grow the pilot, with the expectation that an expanded PES program will develop at a larger scale for San Miguel County in 2013.

## **VI. Pilot Program Evaluation and Lessons Learned**

The San Miguel County pilot provides a successful application of the PES concept at a county level in a rural western Colorado community. The structure of the pilot meets the five overarching criteria for PES defined by Engel et al. (2008) in being (1) a voluntary transaction around (2) a well-defined environmental target of rare plants with (3) a defined buyer in San Miguel County and (4) a defined provider group in private landowners, and (5) payment being conditional upon successful completion of the rare plant survey. Policy makers and other stakeholders can use this example as a model for similar efforts moving forward, taking into account the many lessons learned in San Miguel County, as described below.

### ***Building Institutional and Financial Capacity***

To advance a PES project, it is beneficial to have a champion driving the process. However, particularly when that champion is a politician, it is also essential to build capacity within other local groups and stakeholders to ensure longevity of the program that is independent of political cycles. Commissioner Goodtimes worked closely with the Open Space Commission and the committee to ensure local stakeholders could also champion the program development process moving forward. Although the PES concept was novel to San Miguel County participants, the county had a prior track record of successful collaborative efforts related to natural resource management. This created an environment conducive to implementing an innovative, collaborative, and successful PES pilot project. Additionally, the existing mill levy funding source that county stakeholders leveraged was a significant advantage to effectively move forward with pilot development. This is not to say that counties and other groups without this type of funding source already established could not apply the PES model to their communities. The growing trend of PES programs that involve funding streams from private companies and other sources demonstrate that the concept can successfully be established in the absence of dedicated governmental funding (Goldman et al., 2012). However, in this case, the ability to leverage a portion of an existing county conservation funding mechanism helped to substantially reduce one of the key recognized barriers to PES development.

### ***Selecting an Environmental Goal and Measurable Targets***

The selection of an environmental target for a pilot is a pivotal, and often difficult, step in the process. Because PES was a new and complex concept for the committee, it was critical that committee members kept the pilot aligned with their initial, overarching goals. These goals included proving the PES concept could be applied to their community, while building trust and relationships with private landowners. In order to effectively meet these goals, it was necessary in this pilot stage for the project to make tangible progress. This meant that the pilot needed to involve the private landowners in a relevant natural resource issue. However, it also meant that the committee needed to select an environmental target that could easily be quantified, and allow a clear compensation value to be linked to the target. While access to private lands for rare plant surveys was clearly not the single most significant natural resource issue in the county, using its success as a stepping stone to future expanded projects, has helped the program designers to meet not only their pilot goals but future open space and conservation goals as well. Selecting a more manageable target in the pilot, which has proved a success, will allow San Miguel County the opportunity to tackle more complex environmental issues in the next phases of program development, while also continuing and perhaps expanding the rare plant PES program.

### ***Structuring Agreements***

The committee found developing the contract template and compensation levels to be one of the most challenging steps in the design process. While PES programs are becoming more prevalent in the U.S. and globally, the committee found few specific models upon which to base their contract. The committee hopes that their experiences and the relatively straightforward contract template that they developed can serve as a springboard for future projects in other locations (see Appendix II for the template agreement). Determining appropriate compensation levels was also a challenge, as there were diverse perspectives among committee members. Because the pilot involved rare plant species, which can invoke concerns of management intervention and impacts to property values for private landowners, some committee members felt that compensation needed to be significant to entice landowner participation. Others worried that establishing relatively high payment levels would overpay for the amount of environmental

benefit, and also set a payment precedent that would be unsustainable over the long-term. The challenge of determining relevant compensation levels for stakeholders is not uncommon in PES program development (Ferraro, 2008). The PES committee in San Miguel County can use its experience from the pilot to further refine its approach to establishing appropriate payment levels in future iterations of this program for rare plants and potentially new environmental targets.

### ***Engaging Partners and Key Stakeholders***

An essential component of a successful PES program is to engage local partners to support project development and build strong relationships with the participating land managers (Wunder, 2007). One salient lesson from the San Miguel County pilot is to consider the timing of engaging these key stakeholders. The PES committee wanted to develop a tangible outline of the project before reaching out to local ranching and landowner groups, in order to provide more concrete details and foster robust discussion. While challenging to involve stakeholders in the initial, and at times, nebulous stages of project development, it may be advantageous to conduct strategic outreach to these groups earlier in the process. In the case of San Miguel County, engaging a statewide ranching group earlier in the process could have helped secure their commitment to the project, and potentially resulted in broader local landowner participation.

Building relationships and trust between public institutions and private landowners takes time, particularly in communities with populations that are wary of government involvement on private lands, as is a common issue across the western U.S. (and other locations). A pervasive concern in these communities is related to the Endangered Species Act and how the presence of federally listed species on private lands can limit owners' land management actions and ultimately impact their livelihoods. While there is no silver bullet to allay these concerns, leveraging existing relationships with private landowners and utilizing local stakeholder advocates for outreach, such as the local NRCS branch or other trusted local, regional and statewide landowner groups, could help build trust for new programs involving endangered species and private lands. The targeted approach that San Miguel County used for outreach and engagement of landowners, as opposed to a broader invitation to a more general pool of private landowners, also aligned with trust building objectives. The approach also helped focus project efforts to those parcels that would likely contain the environmental targets and keep the scope manageable for a pilot context.

### ***Ensuring Confidentiality for Private Landowners***

Program designers should take issues related to confidentiality into account, and balance landowner needs with other goals in defining program rules and contract terms. In the case of San Miguel County, contracts with landowners specified that findings from the surveys could not be shared with anyone, including the federal government, without explicit landowner consent. Furthermore, the contracts provided a bonus for landowner consent to list identified populations in the CNHP database, which is only available to scientific researchers and not the general public for privacy reasons. Despite these considerations, the committee found that landowner apprehension, combined with a lack of information regarding the Endangered Species Act, did present a significant barrier for landowner participation in the pilot. Due to these concerns, as well as the incipient relationship with participants, the committee decided to alter the program design and keep the monitoring agreement separate from the access agreement. They planned to establish the details of this subsequent agreement once a greater level of trust had been built, and currently are in the process of doing so. While inclusion of monitoring is important to establish measurable environmental gains from a PES program (Engel et al., 2008), the committee found a phased approach to be an effective and practical strategy to meet this goal in San Miguel County.

### ***Application of PES at a County Scale***

The San Miguel County pilot has the potential to provide valuable insight for the next generation of PES projects being developed, particularly those applied in a western U.S. setting where communities face conservation challenges related to rural working lands. Additionally, application for a county government and/or a local open space program provides a promising opportunity for replication. Over the last decade, there has been a notable trend of increased funding and programs to protect open space across the U.S. Currently, there are open space programs housed in the majority of Colorado's 64 county governments, as well as within numerous municipal governments<sup>3</sup> who may find the experience of the San Miguel County PES pilot valuable (TPL, 2012). These programs may face similar needs, in terms of diversifying

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<sup>3</sup> More information on Colorado Open Space programs can be found at the Colorado Open Space Alliance website: <http://www.coloradoopenspace.org/>



program activities to include stewardship of ecosystem services and methods to incentivize these practices, in addition to acquiring and managing lands of conservation interest.

Based upon the experience of San Miguel County in designing and implementing this PES pilot, we provide the following summary guidance to county governments, open space programs, and other relevant stakeholders at the initial stages of PES exploration:

1. When possible, build capacity within existing county organizations and leverage existing funding sources to facilitate pilot development.
2. Select an initial environmental goal that resonates with key stakeholders in order to foster relationship building, but that is also relatively easy to quantify, keeping the pilot scope manageable.
3. Modify existing models for contract templates if available. If none are available, collaboratively develop initial agreements and adapt components and compensation levels over time, and with stakeholder input as appropriate.
4. Conduct strategic outreach to key partners early in the design process to promote deeper engagement within the overall project development process.
5. Leverage existing relationships with landowners and utilize local advocates for targeted landowner outreach in order to solicit pilot participation.
6. Determine landowner needs for confidentiality when structuring agreements and consider providing additional incentives for information sharing and monitoring components.

## **VII. Next Steps**

With a successful pilot completed, the committee is currently exploring how to proceed with additional phases of PES development. The Commission is planning to continue the rare plant surveys and monitoring efforts, and has allocated funds in the 2013 county budget to be used for this purpose. The commission will need to adaptively manage the program based on the pilot and finalize additional details for the program moving forward. They are currently considering including additional plant species at the CNHP G3 (“vulnerable”) Ranking Level, refining the process of targeting landowners based on these species, and enhancing the engagement process with additional landowners.

The Commission is also actively exploring ways to expand the pilot into a broader PES program, including defining new environmental targets. One potential program design would focus targets on the Gunnison Sage Grouse, which is currently in the process of being named an Endangered Species. Having been an advocate for listing, the county is very interested in a project that might provide compensation to landowners for expanded suitable habitat beyond areas currently occupied by the bird.

Other ideas for expansion include a possible carbon ranching project, a concept that San Miguel County has started to explore with the Quivira Coalition<sup>4</sup>. Carbon ranching involves applying strategies that use food and stewardship to build soil, sequester carbon dioxide, reduce greenhouse gas emissions, and build resilience in local landscapes. The central premise of a potential PES program for carbon ranching in San Miguel County would be to reward ranchers and landowners for effective carbon ranching practices. By entering into a contract with ranchers and landowners to measure the amount of baseline carbon in their soil and then paying them for increasing that metric by one percent or more, using whatever management means landowners choose, a substantial amount of carbon sequestration could be accomplished. The Quivira Coalition and San Miguel County could provide workshops on how that might best be done. Carbon ranching and carbon sequestration would also meet the county's goal of reducing San Miguel County's carbon footprint.

Although San Miguel County still has much to finalize for their next steps, the time and resources that they invested in a successful pilot project leaves them well positioned to expand to a larger program in order to protect the biodiversity and ecosystem services vital to their community.

## **Acknowledgments**

The authors would like to thank the San Miguel County Board of Commissioners, including Elaine Fischer of Telluride and Joan May of the Mountain Village, and the members of the Open Space Commission including Jim Boyd, Ben Williams, Erlund Greulich, Peter Mueller, Herb McHarg, Susie St. Onge, Barbara Brattin, and Laura Kudo. Also many thanks to the San Miguel County staff, including Lynn Black, Ramona Rummel, Steve Zwick, Becky King, Dave

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<sup>4</sup> See the Quivira Carbon Ranching website for more information on the concepts: <http://www.carbonranching.org/>

Schneck, Heather Widlund, Mike Rozycki, Sheila Grother, John Huebner, Nina Kothe, Yvette Henson, Kari Distefano, Mike Horner and Chris Smith. Thanks to Robin Reid, Patrick Flynn, Ch'aska Huayhuaca, Jill Lockett, Kim Skyelander, and the Center for Collaborative Conservation at CSU.

Commissioner Goodtimes also wishes to especially thank the invaluable assistance of Stacy Lynn, formerly of the Center for Collaborative Conservation at CSU, as well as the following individuals and organizations: Leigh Robertson of the San Miguel Basin Gunnison Sage Grouse Working Group; April Montgomery of the Southwest Water Conservation District; Betsy Neely and Susan Punjabi of the Colorado Rare Plants Conservation Initiative; Bill Romme, Maria Fernandez-Gimenez, Heather and Rick Knight, Dan Binkley, Tony Cheng, David J. Cooper, George Beck, Ed Warner and the Warner College of Natural Resources at CSU; John Calderazzo and Sue Ellen Campbell of CSU's English Dept.; R. Patrick Bixler, doctoral student with CSU's Sociology Dept.; Faith Sternlieb of CSU's Colorado Water Institute; C.J. Mucklow of CSU's Cooperative Extension; Allison Level of the CSU Library; David Anderson and Renée Rondeau of the Colorado Natural Heritage Project at CSU; Kathay Rennels, Director of Economic Development at CSU; Andrew Seidl of the International Union for the Conservation of Nature and CSU; Ellen Mayo of the U.S. Fish & Wildlife Service; Steve Schrock and Mary Chapman of Delta; the Public Land Partnership; Courtney White of the Quivira Coalition; Hilary Cooper of the Sheep Mountain Alliance; Scotty Johnson of the Defenders of Wildlife; the Colorado Green Party and the San Miguel Greens; George Sibley, John Hausdoerffer and the Headwaters Conference at Western State University of Colorado; Jeff Jones of the Conservation Cooperative; Johnny Sundstrom of the Rural Voices for Conservation Coalition; Jayla Poppleton and Josh Zaffos of Headwaters magazine and the Colorado Foundation for Water Education; Terry R. Fankhauser and Ted Toombs of Partners for Western Conservation; Rick and Marty Hollinbeck of Norwood; Skyler Hollinbeck, student at Ft. Lewis College; and Patricia Limerick of the Center of the American West at CU Boulder.

This report and the pilot project were funded in part through the practitioner fellowship Commissioner Art Goodtimes received from the Center for Collaborative Conservation at Colorado State University in 2010.

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## Appendix I

### Rare Plants of Focus for the SMC PES

Four species were selected as targets for this project: *Cryptantha gypsophila*, *Physaria pulvinata*, *Gutierrezia elegans*, and *Puccinellia parishii*. Photos of the species are included below.

- The Gypsum Valley cat's-eye (*Cryptantha gypsophila*. Figure 1) is known from outcrops of gypsum soils in the western part of the county. It is also known from similar sites in Dolores and Mesa counties. It is ranked G2 S2, or imperiled globally and in Colorado, by the Colorado Natural Heritage Program.
- Cushion bladderpod (*Physaria pulvinata*. Figure 2) is found in the area of Miramonte Reservoir on Mancos shale, and in Lone Mesa State Park in Dolores County. Both occur in areas with little other vegetation. It is ranked G1 S1, or critically imperiled.
- Lone Mesa snakeweed (*Gutierrezia elegans*. Figure 3) was recently found at Lone Mesa State Park, where it grows in association with cushion bladderpod, so it is expected that it may occur in San Miguel County. It is ranked G1 S1, or critically imperiled.
- Parish's alkali grass (*Puccinellia parishii*. Figure 4) has been found in alkaline swales east of Miramonte Reservoir, and at Lone Mesa State Park around stockponds. Until recently it was known only from Arizona. It is ranked G2G3 S1, or imperiled to vulnerable globally and imperiled in Colorado.



Figure 4: Gypsum Valley cat's eye (*Cryptantha gypsophila*)



**Figure 5: Cushion bladderpod (*Physaria pulvinata*).**



**Figure 6: Lone Mesa snakeweed (*Gutierrezia elegans*)**



**Figure 7: Parish's alkali grass (*Puccinella parishii*)**

**Appendix II**  
**Landowner Contract Template**

**San Miguel County**  
**Payment for Ecosystem Services (PES) Project's**  
**Land Access License Agreement**

This Land Access License Agreement ("Agreement") is entered into this \_\_\_\_ day of \_\_\_\_\_, 2012, between San Miguel County, Colorado, acting by and through the County's Open Space and Recreation Program, ("SMC"), as the Licensee, and \_\_\_\_\_ ("Landowner"), as the Licensor. Both state and agree as follows:

**I. Grant of Land Access License:**

**A. Grant of Land Access**

1. Landowner grants to SMC a revocable and nonexclusive license giving botanist Peggy Lyon (PL), acting for the PES Project, permission to enter ("Access") upon the Landowner's property ("Property") located within San Miguel County boundaries, as described in Exhibit "A", for the sole purpose of conducting a one-time botanical field survey ("Survey") of the Property.

2. Landowner further agrees to allow PL to make the Survey by targeting areas of suitable habitat on the Property -- the extent of which will be mutually agreed upon by the Landowner and PL before the Survey is conducted.

3 PL will be looking for four rare species, as identified on nearby public property by the Colorado Natural Heritage Program (CNHP) – a department of Colorado State University in Fort Collins: *Cryptantha gypsophila* (Gypsum Valley cat-eye), *Puccinellia parishii* (Parish's alkali grass), *Physaria pulvinata* (Cushion bladderpod), and *Gutierrezia elegans* (Lone Mesa snakeweed.)

**B. Compensation**

1. As consideration for the Landowner entering into this Agreement SMC will pay the Landowner five dollars per acre (\$5.00), up to a maximum of one thousand dollars (\$1,000.00) for Access and Survey of the mutually agreed upon potential habitat, as described above. SMC shall pay the Landowner within 45 days of the Survey being conducted.

2. In addition to an Access payment, PL will share a summary list of all plants identified on the surveyed Property with the Landowner, if requested.



C. Time Period for Conducting Survey:

The Survey will take place on a date to be mutually agreed upon between April 20, 2012 and June 1, 2012. The Survey will be completed on foot, or by auto on existing roads, through areas that appear to be suitable habitat for the targeted species, i.e., sparsely vegetated Mancos shale or gypsum soils. Landowner can accompany PL on the survey or invite others to observe, at the Landowner's discretion.

**II. Finding Rare Plants:**

.A. Should PL discover a population of any of these four rare plants during the Survey of the Property:

1. The Landowner will receive a \$100-\$400 bonus payment ("Bonus"), in addition to the Access payment, based primarily on the population's size and condition. The Bonus will be awarded in accordance with the CNHP protocol for Element Occurrence Ranking, on a scale of A – D, which PL will assign to the Property at her discretion. Ranks are determined by size of population, condition and landscape context. Parameters for population size are specific to each species. Should PL determine that the Property qualifies for an A ranking, a \$400.00 Bonus shall be awarded. Should PL determine that the Property qualifies for a B ranking, a \$300.00 Bonus shall be awarded. Should PL determine that the Property qualifies for a C ranking, a \$200.00 bonus shall be awarded. And should PL determine that the Property qualifies for a D ranking, a \$100.00 Bonus shall be awarded. Such Element Occurrence Rankings shall be determined in accordance with the guidance set forth in the March 2000 "Natural Heritage Assessment – San Miguel and Western Montrose Counties, Colorado," prepared by Peggy Lyon and John Sovell, working for CNHP (available at: <http://www.cnhp.colostate.edu/download/reports.aspx>.) SMC shall issue any such Bonus to the Landowner within 45 days of PL determining that the Property qualifies for a Bonus.

2. SMC's Open Space Commission may consider negotiating a second mutually acceptable PES access contract with the Landowner for a 10-12 year monitoring program for the rare plant site.

3. The plant population's location will be recorded with a Global Positioning System device and individuals will be counted or estimated. Habitat information will be recorded, including slope, aspect, soil characteristics, and associated species. Photographs will be taken.

4. Information on the rare plants located on the Property, photos, GPS coordinates and data collected by PL will not be publicly available.

5. SMC's Open Space Commission will keep the data secure in the County offices – available to scientific researchers only on request and with the mutual agreement of the Landowner and SMC – and the exact location of the population will not be shared with anyone without the Landowner's consent.

6. Neither the public nor the federal government will have access to data collected by PL and stored with SMC without the mutual consent of both parties.

7. An additional Bonus of \$200 will be awarded to the Landowner if the data collected by PL can be added to the CNHP database and shared with scientific researchers (not the public).

8. The data collected by PL will be shared with the Landowner who will be free to keep the data private or share this data with anyone of their choosing.

### **III. Final Provisions:**

A. This Agreement contains the entire understanding of SMC and the Landowner with regard to the subject matter above.

1. No prior or contemporaneous term, condition, promise, representation, or understanding regarding the subject matter of this Agreement shall be of any legal force or effect unless embodied in this Agreement or in a written amendment to this agreement, mutually agreed to by both parties.

2. Any changes to this Agreement must be mutually agreed to by both parties in writing..

B. SMC and the Landowner each reserve the right to unilaterally and immediately cancel this Agreement without cause, which cancellation shall become effective immediately upon a party providing written notification of such cancellation to the other party at the party's address set forth below. SMC shall make any payments due the Landowner pursuant to this Agreement for field survey actions completed within 45 days of the cancellation of this Agreement.

C. SMC's privileges under this License are personal to PL and shall not be assignable to other persons for other uses or purposes and may only be used by SMC and PL, as its designee, for the specific purposes authorized in this Agreement and then only in the manner specified in this Agreement. Each signatory to this Agreement hereby warrants and represents that it is duly authorized and empowered to execute this Agreement on behalf of the Party it represents.

D. SMC and the Landowner do hereby mutually release and hold harmless each other, including PL, when acting in her capacity as SMC's designee under this Agreement, from any and all claims, liabilities, injuries, damages, complaints and

causes of action at law or in equity, that arise from the negligent and/or reckless acts or omissions of the parties to this Agreement and/or their designees,

This Agreement is effective as of the date set forth above.

**San Miguel County  
Open Space and Recreation Program**

By: \_\_\_\_\_

Linda Luther - Broderick

Date: \_\_\_\_\_

Address: P.O. Box 1170  
333 West Colorado Avenue, 3<sup>rd</sup> Flr.  
Telluride, CO 81435

**Landowner**

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Attachment: Exhibit "A" Description of Property Subject to Land Access License Agreement