

# Habitat Exchange: A New Tool to Engage Landowners in Conservation

Endangered Species Act Policy Series



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# ACKNOWLEDGMENTS

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Sand County Foundation is a non-profit conservation organization dedicated to working with private landowners across North America to advance ethical and scientifically sound land management practices that benefit the environment.

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The Environmental Policy Innovation Center was established to develop innovative policies that expand environmental markets, improve water quality, speed endangered wildlife recovery, and incentivize conservation on private lands. We also provide solutions that allow water, energy and other essential infrastructure to move forward while benefiting natural resources. We believe in having an organizational culture built upon trust for a staff of creative people. Taking down non-profit cultural barriers to innovation and risk taking in the development of policy gives the Innovation Center a unique niche from which to provide valuable tools to make conservation faster, bigger and stronger.

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# Foreword: Customized Offset Tools for Wildlife

*By Timothy Male, Executive Director of the Environmental Policy Innovation Center*

When a permit or other authorization is issued under the Endangered Species Act that allows some amount of harm to befall an endangered species, there are a number of scenarios in which the party receiving the permit or authorization may want to take beneficial action to help the same species somewhere else. The term ‘offset’ is often used for such a scenario. A corporation may have operational principles or sustainability standards that require them to seek an outcome that minimizes or completely offsets the harm they caused. Some kinds of permits require such offsets when the impacts to the species would otherwise be too significant and the U.S. Fish and Wildlife Service would not otherwise be able to issue a permit.

One of the most frequently used kinds of offsets involves the permanent protection of an area of land or water, its restoration and management, often with permanent funding provided for the costs of doing so. The U.S. Fish and Wildlife Service has approved approximately 150 ‘banks’ in 14 states where private land has been permanently protected and is managed to enhance the status of endangered wildlife or plants. An even greater number and acreage of permanent habitat reserves have been created through an “incidental take permit” based upon a Habitat Conservation Plan, of which there are more than 1,000 across the country. Indeed, the existing policy of the U.S. Fish and Wildlife Service requires permanent land protection as a condition of approval of conservation banks.<sup>1</sup>

However, permanent land protection may be a difficult, cost-prohibitive or ineffective conservation tool in some situations. For example:

- Many private landowners are unwilling to put permanent restrictions on their future use of their property.
- The cost of fee title acquisition or easement acquisition on land in many parts of the country is prohibitively high.
- Human-caused climate change and natural shifts in habitat may render a currently suitable area of endangered species habitat unsuitable in the near or distant future.

In this working paper, Michael Bean, former Principal Deputy Assistant *Secretary* for *Fish and Wildlife and Parks at the Department of Interior*, describes a new approach called a Habitat Exchange that allows for both permanent and temporary protection and management of habitat to provide offsets for wildlife impacts elsewhere. The program is called an ‘exchange’ because the purchase and sale of conservation “credits” earned as result of such protection and management is coordinated similar to how stock exchanges coordinate transactions involving stocks. Temporarily putting land into an exchange program may be much less expensive than permanent protection and as habitat shifts over time, an exchange can enroll areas that are more suitable for the endangered species. In both approaches, it’s critical that liability for the future management of species is transferred from a company or permittee to the owner of the conservation bank or administrator of the habitat exchange.

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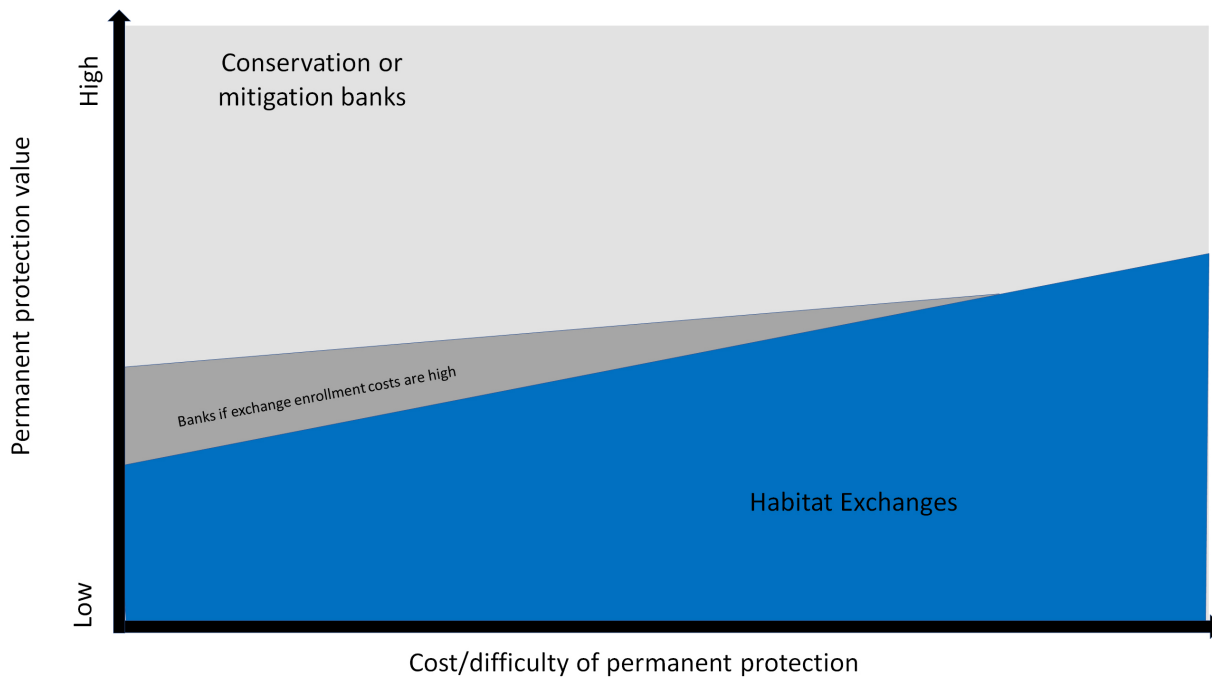
1. [Guidance for the Establishment, Use, and Operation of Conservation Banks](#) (2003) U.S. Fish and Wildlife Service

# Habitat Exchanges Versus Conservation Banks

There are a number of circumstances where Habitat Exchanges may be more practical. In particular, where the value of permanent habitat is enduring and the costs of land protection are relatively low, conservation banks make sense. In contrast where the ecological value of land will change or drop over time and where land is expensive, habitat exchanges may be a more effective tool for conservation (Figure 1).

In situations where there are relatively high risks to the future ecological value of permanently protected land, but where the cost or difficulty of permanent land protection is relatively low, different considerations may be relevant (Figure 1). Habitat exchanges are likely to have meaningful transaction costs. They will need to recruit new landowners to replace ones whose land enrollments are ending. Initial costs for restoring habitat may be higher than the long-term costs of maintaining it such that each time a property leaves the program and new lands are enrolled, the habitat restoration and management costs are high. In these cases, it will still make more sense to use conservation banks where exchange transaction costs are high, but shift to exchanges if transaction costs are lower.

**Figure 1**



## Existing Use

Habitat Exchanges are in operation in Nevada (for sage grouse) and in the Central Valley of California (covering chinook salmon, giant garter snake and a handful of birds). A type of exchange was created for the U.S. Army's Fort Hood in Texas which has the potential to make it easier for the Army to carry out training operations on the military installation that harm endangered



birds by offsetting those temporary impacts with temporary habitat management on nearby private properties.<sup>2</sup> Additional exchanges exist on paper in Colorado and Montana for sage grouse, but have not yet involved any transactions. Another Habitat Exchange was created in New Mexico and Texas to help offset impacts on the dunes sagebrush lizard, which is no longer a candidate for endangered species listing as a result. Five Midwest states also use a Habitat Exchange approach to facilitate temporary investments in habitat management for a bird called the lesser prairie chicken.

## Recommendations

Michael Bean's Working Paper, "*Habitat Exchanges: A New Tool to Engage Landowners in Conservation*," makes clear that Habitat Exchanges are still a new tool and little evidence is available on their effectiveness. In particular, more work is needed to understand how the costs of enrolling, compensating, restoring, and managing landowner relationships for different pieces of land over an extended time period compares to permanent land protection and management costs. The U.S. Fish and Wildlife Service or state agencies themselves could provide information on the volume of transactions that are occurring under available Habitat Exchanges. In addition, no state has developed policies to ensure that Habitat Exchanges and their administration will function effectively in the long-term. Given the experience of multiple states with these exchanges, they could work together to develop a common set of principles and guidelines that would help smooth the establishment of future Habitat Exchanges.

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2. Robertson Consulting Group. [rcs.tamu.edu/media/277203/final\\_rcs\\_eval\\_report\\_march\\_2010.pdf](http://rcs.tamu.edu/media/277203/final_rcs_eval_report_march_2010.pdf)

# Habitat Exchanges: A New Tool to Engage Landowners in Conservation

A Paper for the Sand County Foundation  
By Michael J. Bean

Aldo Leopold's old observation that successful conservation will require "rewarding the private landowner who conserves the public interest" is the guiding principle behind a new conservation tool called "habitat exchanges." Through these exchanges, working landscape landowners can generate revenue in return for stewardship activities that benefit rare species, rare habitats, or other environmental resources. The opportunity to do so can change how a landowner perceives such resources -- from a liability, or at best a mere amenity, to a potentially significant economic asset. While that is clearly a good thing for conservation, habitat exchanges have not yet been enthusiastically embraced by all conservation interests, some of whom worry that their potential benefits have been oversold and that their consequence may be to undermine other, more effective conservation tools. This paper takes a close look at habitat exchanges and their salient characteristics. It seeks to provide greater clarity about the role that such exchanges could play in future conservation efforts.

## Introduction: A Primer Regarding Mitigation

An understanding of habitat exchanges necessarily begins with a discussion of mitigation. Although a variety of state and federal laws protect environmental resources such as endangered species, wetlands, and other important habitat types, such protection is rarely absolute. Rather, these laws typically allow activities that adversely affect protected resources, provided that such adverse effects are mitigated. "Mitigation" is a concept that encompasses a broad range of measures that are often expressed in terms of three sequential steps. The first of these is avoidance. In designing or reviewing a proposed project, a threshold question is whether it can reasonably be accomplished in a manner that avoids altogether any adverse impact on protected resources. If so, there is no need for further steps in the mitigation sequence.

Assuming that adverse impacts cannot reasonably be avoided altogether, the next step in the mitigation analysis requires an assessment of whether there are reasonable measures to minimize those impacts. For example, could the project footprint be reduced or altered to lessen its adverse effects? Could seasonal or time-of-day restrictions on disturbing activities be imposed to reduce their effects? Could post-project reclamation efforts reduce the duration of those effects? These and other similar questions aim to identify ways to reduce the scope or intensity of adverse impacts to the lowest practicable level.

The final step in the mitigation analysis addresses those impacts that remain after reasonable minimization measures have been identified. Its purpose is to identify measures that will offset or compensate for the remaining impacts. For example, the unavoidable loss of an acre of wetland in a particular watershed might be offset by the creation or restoration of an acre of wetland elsewhere in that watershed. Similarly, the unavoidable degradation of an acre of habitat for an endangered species might be offset by enhancing an acre of habitat for that species somewhere else.

While "mitigation" encompasses the measures required as a result of all three steps in the above

process – avoidance, minimization, and compensation – it is not uncommon to see the term used to refer solely to the compensatory measures identified in the final step. To avoid confusion, however, this paper uses the term “compensatory mitigation” to refer to the product of this final step in the process and the more general term “mitigation” to refer to all three steps.

Compensatory mitigation can be the most conceptually challenging of the three steps, because it requires the quantification and comparison of impacts from both development and conservation measures using a consistent methodology. It is also often the most controversial and contentious aspect of mitigation. Habitat exchanges are a means of ensuring the availability of compensatory mitigation measures in advance of development impacts, a concept that grew out of, and has many similarities to, a practice known as “mitigation banking” (in the case of wetlands under the Clean Water Act) or “conservation banking” (in the case of the Endangered Species Act).

## **Compensating in Advance of Impacts: The Idea of Banking**

In the early evolution of mitigation practice, there was a distinct preference for siting compensatory mitigation measures as close to the site of the development impacts as reasonably possible. This preference for “on-site” mitigation apparently reflected a belief that all the lost functions and values of the affected resources, including those that were location-specific, could be most effectively offset by siting compensatory measures as nearby as possible. Over time, however, the recognition grew that the best place to site compensatory mitigation measures was not necessarily immediately proximate to the impact site. By stepping back and taking a broader look at the conservation needs and opportunities within an ecologically defined area – a watershed, for example – one could identify sites where restoration, enhancement, or other conservation actions might produce a “bigger bang for the buck” than would an automatic preference for on-site compensatory mitigation.

Taking into consideration the conservation needs and opportunities at that larger scale had one other important consequence. It made it possible to carry out compensatory conservation measures in anticipation of future development projects within the same watershed or similar area even before the precise nature and location of those future projects was known. For example, a state highway department might reasonably foresee that it will need to compensate for the loss of wetlands caused by future roadbuilding in a particular watershed. Rather than wait until the precise alignment and wetland impacts of each future project are known, and then compensating for those impacts with on-site mitigation measures, the highway department could – with the approval of appropriate regulatory authorities – carry out compensatory mitigation measures now and generate credit for those measures that it could “bank” for its own future use as specific highway projects move forward.

Importantly, freeing compensatory mitigation decisions from the restraint of an on-site requirement and allowing the crediting of measures undertaken in anticipation of future projects made possible the aggregation at a single large site of compensatory mitigation for multiple future small development projects. Thus, one of the potential benefits of mitigation banking is that it facilitates conservation action at a larger scale than project-by-project, on-site mitigation decisions are likely to accomplish.

One final point deserves emphasis. In the state highway department example referenced above, the highway department banks credit for its own future use in offsetting the impacts of its own future projects. However, through the mechanism of mitigation banking, investments in conservation

by private parties can earn credit that can be used to offset the impacts either of their own future development projects or those of third parties to whom they transfer their credit. Thus, mitigation banking can be – and often is – undertaken as an entrepreneurial, for-profit effort. As Leopold urged, it is one way to reward a private landowner for conserving the public interest.

## **Mitigation / Conservation Banks and Habitat Exchanges: Similarities and Differences**

In comparing mitigation and conservation banks with habitat exchanges, a word of caution is in order. Banks have a several decade long history and are the subject of rather detailed regulations, policies, and guidance documents. Thus, one can rather safely generalize about banks. Habitat exchanges, on the other hand, are a much newer idea, one that has had relatively little on-the-ground experience thus far, and one that has gotten scant attention in regulations, policies, or guidance documents. They exhibit greater variety and are still evolving in many of their details.

That said, like mitigation banks and conservation banks, habitat exchanges are a mechanism for providing compensatory mitigation for the adverse environmental impacts of future projects. Each provides for the generation of “credits” for conservation actions taken at a mitigation site and for the use of such credits to offset future impacts of projects undertaken either by the credit generator or by a third party. Thus they have the same basic purpose and the same general approach.

Despite these basic similarities, however, there are some important differences. One of these concerns the duration of the conservation actions that generate mitigation credits. The banking guidance issued by the Fish and Wildlife Service in 2003 was absolutely clear that permanent protection of a bank site is always required. Indeed, it defined a conservation bank as “a parcel of land containing natural resource values that are conserved and managed in perpetuity, through a conservation easement.” The Service’s formal 2016 policy on compensatory mitigation under the Endangered Species Act (a policy that is currently undergoing reconsideration at the direction of Interior Secretary Zinke) reaffirmed the requirement that bank sites be permanently protected. The requirements for banks under the Clean Water Act are only slightly less demanding. Specifically, the Army Corps of Engineers and the Environmental Protection Agency issued regulations in 2008 governing all forms of compensatory mitigation under the Clean Water Act (i.e., whether through mitigation banks or by other means). They require that “the aquatic habitats, riparian areas, buffers, and uplands that comprise the overall compensatory mitigation project must be provided long-term protection through real estate instruments or other available mechanisms.”

In contrast, habitat exchanges allow for the generation of mitigation credit from conservation actions of varying duration, ranging from permanent to a relatively few years (typically five or ten). Among other things, this greater flexibility of exchanges offers a means of hedging conservation investments against the risk of climate change. As evidence mounts that species are shifting their ranges in response to a changing climate, the concern has grown that permanently preserved sites may cease to support the very species they were intended to conserve. A strategy to guard against that risk, proponents of habitat exchanges argue, is to secure a mix of permanent and less-than-permanent conservation sites. As the conservation commitments at the less-than-permanent sites are about to expire, those commitments can either be renewed where they currently are or shifted to new sites that offer better conservation potential in light of a changed climate. In that fashion, development actions that cause the permanent loss of protected resources can be offset over the



long term, although the sites where those offsetting measures take place may shift over time (proponents of habitat exchanges refer to this as “dynamic permanent conservation”). That strategy may have particular appeal where landowners are reluctant to encumber their land in perpetuity with permanent conservation easements. That reluctance is real in many parts of the country for, as both Stephen Hawking and Woody Allen have reportedly said, “eternity is a long time, especially towards the end.”

The potential to earn credit for short-term activities also has the effect of enlarging the universe of possible credit-generating activities. In particular, whereas the primary purpose of permanent conservation easements is to protect a site against incompatible uses by restricting most forms of development, the focus of short-term conservation measures is typically on stewardship activities such as invasive species removal, erosion control measures, planting of desired vegetation, and similar active management measures.

While the risk that climate change or other factors may render permanently preserved sites no longer capable of accomplishing their intended purpose is real, the assumption that there will be an opportunity to string together a series of non-permanent agreements so as to achieve continuous conservation over the long term is only that: an assumption. Whether that assumption will prove well founded will depend both upon the availability of suitable sites for conservation at all times in the future and upon the willingness of the owners of those sites to enter into agreements to implement conservation measures on them. A hard look at those matters is essential, although the farther into the future that one tries to look, the less clear is the picture that emerges.

At the same time, however, there may be reason to question whether permanent conservation easements will prove to be as “permanent” as they are intended to be. After all, the experience thus far with conservation easements has been relatively brief, no more than a few decades for most easements. Although easement restrictions “run with the land” and are thus binding on successive owners, each successive owner is one step further removed from the original agreement and perhaps more inclined to interpret any ambiguous provisions narrowly. Thus, while the language of the agreement binds successive owners, the spirit of the agreement may be harder to preserve each time ownership changes hands.

There is also the matter of costs to consider. Are the costs of a series of short-term agreements over the indefinite future likely to be greater than, less than, or the same as the cost of securing a permanent conservation easement at the outset? Agreements that include easements are generally complex documents, requiring careful review by a qualified lawyer. Thus, the transaction costs associated with an easement can be high, much higher than those associated with the sort of short-term contractual agreements that can generate conservation credits recognized by habitat exchanges. However, a permanent conservation easement only has to be done once. If long-term conservation commitments are to be secured by a succession of short-term agreements, then the transaction costs of each of those agreements have to be added together for a meaningful comparison of the costs of the two approaches.

Both banks and habitat exchanges are mechanisms to recognize and track both the earning of credits from conservation actions and the transfer and use of those credits to offset the impacts of development activities. To carry out those functions in a credible way, some common means of quantifying impacts – both beneficial and detrimental – must be used. In short, the credits earned for conservation actions, and the debits generated by development activities have to be measured using

the same conceptual yardstick. Absent a common conceptual yardstick – a common “currency” if you will – the result will be a meaningless comparison of apples and oranges.

Ideally, not only must there be a common conceptual yardstick, but the units of measure must be as biologically meaningful as possible. The measure of impact always begins with an assessment of the aerial extent of the impact: how many acres of a particular wetland type will be lost, for example, and how many acres of that type of wetland will be created or restored? What else is taken into account in measuring impact varies considerably, however, and defies easy generalization. Nevertheless, it seems fair to conclude that habitat exchanges aspire to utilize a more rigorous measure of impact than has often been used for banks. They seek to do so by using a formal “habitat quantification tool” that takes into account not only the number of acres affected, but the quality of those acres for the resource of concern. The quality of the acres in a given site can vary depending on the site’s configuration; the uses of the lands that adjoin it; its context in the larger landscape, including its proximity to protected lands; its slope and aspect; and other factors.

The output from a habitat quantification tool is typically expressed as some number of “functional acres” rather than simply as some number of acres, in recognition that not all acres of a given habitat type are of equal importance. Whether these formal tools will produce more accurate and useful measures of impact than have been attained for many banks remains to be seen. The challenge for both banks and habitat exchanges is the same. They must balance the desire for scientific rigor in measuring impact with the practical need for a yardstick that can be easily and efficiently deployed. The process has to be rigorous enough to produce defensible results, yet not so demanding as to prohibitively costly.

Another difference between mitigation or conservation banks and habitat exchanges concerns the manner in which transactions transferring credits are overseen. Once a bank has been formally approved by the relevant regulatory agency (e.g., the Army Corps of Engineers or the U.S. Fish and Wildlife Service) would-be credit purchasers negotiate directly with the bank for the purchase of credits at whatever price the parties agree upon. In habitat exchanges, a centralized, independent administrator, acting similarly to a stock exchange, monitors and verifies credit transactions and may itself function as a buyer and seller of credits. For example, an exchange administrator may purchase credits through a “reverse auction” technique in which landowners are invited to submit proposals for conservation projects, and to specify the amount they wish to be paid for undertaking those projects. The exchange administrator then accepts those proposals that generate credits at the lowest cost per credit. The exchange administrator then sells the credits to developers who need credits to offset the adverse impacts of their development projects. Alternatively, the role of the exchange administrator may be more limited, essentially reviewing and approving the generation and disposition of credits, with the credit generator and the credit purchaser negotiating a purchase price in much the same manner as is done under banks.

## **Habitat Exchanges: The Road Ahead**

To date, there has been quite limited experience with habitat exchanges. The concept derives from a “recovery credit system” developed in the early 2000s to offset the impacts of training activities at Fort Hood Army Base in Texas on the endangered golden-cheeked warbler. Credits could be earned by nearby landowners for a variety of short-term management actions. In that example, Fort Hood was the sole purchaser of credits. Based on the Fort Hood example, in 2008 the Fish and Wildlife Service issued “Guidance on Recovery Crediting for the Conservation of

Threatened and Endangered Species.” That guidance applied only to situations in which federal agencies proposed to use credits for non-permanent conservation actions to meet their obligations under the Endangered Species Act. The use of credits to offset impacts by parties other than federal agencies was not addressed.

More recent examples having commonalities with habitat exchanges went beyond the Service guidance by allowing the use of such credits by non-federal interests. For both the dunes sagebrush lizard and the lesser prairie-chicken, variations on habitat exchanges were embodied in programmatic Candidate Conservation Agreements with Assurances approved by the Service. In the case of the lizard, the commitments embodied in that agreement were sufficient to persuade the Service that it was not necessary to list the species as endangered or threatened. In the case of the prairie-chicken, the commitments embodied in the agreement for that species were sufficient to persuade the Service to list it as “threatened” rather than the more imperiled category of “endangered.” That listing was later vacated by a court decision premised on the failure of the Service to give adequate consideration to the effects of the agreement to list the species at all.

The prospect that the Service might list the greater sage-grouse as an endangered or threatened species prompted several states to begin to develop habitat exchanges, one of which (in Nevada) only became operational in July 2017 with the announcement that the first credits approved by the exchange were available for purchase. For all three of these species – the lizard, prairie-chicken, and sage-grouse – there are now operational habitat exchanges, but no applicable requirements under the Endangered Species Act to drive demand for credits. Whether the potential for a future listing of any of these species will long serve as a driver for credit purchases remains to be seen.

Though experience to date is limited, habitat exchanges appear to have the potential to serve as an effective alternative for compensatory mitigation alongside more traditional banking and other means of mitigation, particularly where there is need for active management measures by many individual landowners. However, initial signals from the new political leadership in Washington have called into question its support of – and even its understanding of – compensatory mitigation.

On March 29, 2017, Interior Secretary Zinke issued Secretarial Order 3349. That order directed a review of recent mitigation policies including the Fish and Wildlife Service’s general mitigation policy and its policy regarding compensatory mitigation under the Endangered Species Act. Although the Order only directed a review and did not specify a required outcome of that review, the Secretary’s public comments indicated that the review would largely be a formality, the outcome of which was preordained. In June 2017, addressing a meeting of the Western Governors Association – many of whose Governors had recently spent significant resources developing habitat exchanges to compensate for development impacts on the greater sage-grouse – the Secretary said that “one of the first secretarial orders I signed was to end the practice of compensatory mitigation.” He went on to offer an example of a \$109 million project for which the required compensatory mitigation tab was \$90 million and said “Some people would call that extortion. I call it un-American.”

The principle that development projects should compensate for their negative impacts on publicly valued resources is not a recent invention. It has been embedded in federal law as far back as the Fish and Wildlife Coordination Act, enacted during the first term of office of President Franklin D. Roosevelt. It is statutorily mandated by the Endangered Species Act; it is embedded in the regulations of both the Army Corps of Engineers and the Environmental Protection Agency under the Clean Water Act; and it is a decades-old cornerstone of implementation of the National

Environmental Policy Act. Ending the practice of compensatory mitigation – even assuming that were in the Secretary of Interior’s authority – would have at least three deleterious consequences. First, it would make it much more difficult to approve development projects with significant uncompensated environmental impacts. Second, to the extent that such projects were approved, the public would suffer the loss of publicly owned or publicly valued resources for private economic gain. Third, and most important for purposes of this paper, farmers , ranchers, and forest land owners would lose the opportunity – through habitat exchanges, conservation banks, and similar mechanisms – to generate income from undertaking voluntary stewardship activities that offset the impacts of development projects undertaken by others. Thus, the progress that has been made in the last few decades to reward the private landowner who conserves the public interest would be reversed and private landowners would lose an opportunity to generate revenue by investing in conservation.