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The Role of Farm Policy in Achieving Large-Scale Conservation: Bobwhite and Buffers

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Abstract

The Farm Bill provides a policy vehicle for implementing conservation programs with the potential to alter land use on a large spatial scale. The conservation payments under the Farm Bill dwarf the collective investment of the North American Wetlands Conservation Act, Endangered Species Act, Pittman-Robertson Act, and Conservation and Reinvestment Act. However, the ecological value of past policy has varied by program, practice, region, and wildlife species, resulting in a broad array of wildlife habitat and population effects ranging from positive to negative. We argue the conservation provisions of the Farm Bill can produce more consistent positive wildlife habitat benefits when policy (program statutes, rules, practices, and practice standards) is developed in the context of explicit goals identified as part of large-scale conservation initiatives. For example, initiatives like the North American Waterfowl Management Plan, Partners in Flight, and the Northern Bobwhite Conservation Initiative (NBCI) set science-based goals and objectives to facilitate wildlife species population recovery and sustainability at the landscape scale. We contend that the best ecological and societal cost/benefit ratio is achieved when Farm Bill conservation programs and practices are developed to address these specific habitat goals. We present a case study illustrating how a Conservation Reserve Program option (Conservation Practice 33—Habitat Buffers for Upland Birds) specifically addresses NBCI goals and objectives. We discuss the successes, failures, and lessons learned by NCBI in policy formulation, practice development, programmatic delivery, and evaluation. (WILDLIFE SOCIETY BULLETIN 34(4):986–993; 2006)

Key words

Colinus virginianus, *Conservation Reserve Program, Farm Bill, farm policy, habitat buffers for upland birds, northern bobwhite, Northern Bobwhite Conservation Initiative.*

Agricultural systems produce food and fiber to meet ever-increasing rates of per capita consumption. Concomitantly, agriculture is the world's largest industry and dominates human uses of land (Robertson and Swinton 2005). In the United States nonfederal, rural land uses comprise 71% of the contiguous 48 states' 768.9-million-ha landmass. In 2002 382.8 million ha (50%) of the contiguous 48 states were devoted to cropping or grazing land uses (U.S. Department of Agriculture [USDA] 2003*a*). Cultivated and noncultivated cropland accounted for 149 million ha of land use with an additional 12.8 million ha of retired cropland enrolled in the USDA Conservation Reserve Program (CRP). The condition of these lands directly and indirectly influences the function and integrity of natural ecosystems. Conversion of natural plant communities to agriculture uses has contributed to the degradation and loss of formerly extensive ecosystems, including the eastern tallgrass prairie (Bachand 2001), Lower Mississippi Alluvial Valley bottomland hardwoods (King et al. 2005), and longleaf pine forest (Noss et al. 1995), among others.

Agriculture and Conservation

Agricultural Effects on Wildlife Populations

Agricultural land use in these human-altered systems determines the distribution, variety, and quality of natural goods and services, including wildlife populations. Globally, conversion of natural communities to agricultural uses and intensification of extant farmlands has been identified as the single greatest threat to bird species in developed and especially developing nations (Green et al. 2005). The 1997 USDA–Economic Research Service report on Agricultural Resources and Environmental Indicators concluded that 380 of 663 plant and animal species listed as threatened or endangered in the lower 48 contiguous states in 1995 were listed, at least in part, due to activities associated with agriculture (USDA 1997).

Murphy (2003) reported that population trends of grassland and shrubland birds in the eastern and central United States were linked strongly to changes in agricultural land use. Peterjohn (2003:17) concluded that "Most factors responsible for declines in farmland bird populations likely fall under a general theme of agricultural intensification that incorporates both habitat changes and various farmland management strategies." Similarly, in England and Wales, Chamberlain et al. (2000) attributed population declines in farmland birds to agricultural intensification.

Clearly, the manner in which we use our agricultural lands has and will continue to influence the ability of landscapes to sustain viable wildlife populations. Peterjohn (2003:17) recognized that it is not realistic to expect a reversion to less-intensive agricultural practices across North America and concluded "Effective conservation of farmland birds will require innovative solutions based on current agricul-

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tural practices that benefit the greatest number of farmland birds."

Societal Benefits and Producer Costs of Wildlife Conservation

Wildlife resources are important to the American people and the national economy because of the ecological, economic, recreational, and aesthetic values associated with natural habitats and wildlife populations (U.S. Fish and Wildlife Service [USFWS] 2002). The United States agricultural sector is well-positioned to play a significant role in protecting and enhancing the nation's wildlife resources because of the extensive quantity of land and water resources controlled by agriculture (USDA 2003*b*). However, for agricultural producers, allocation of land to uses that protect or enhance wildlife resources involves economic tradeoffs. Shifting land from agronomic production to wildlife habitat results in direct costs and lost opportunity costs from commodities the land would have produced (USDA 2003*b*). Although producers may enjoy the benefits of wildlife through enhanced hunting, fishing, or wildlife viewing, the economic value of wildlife production may be difficult to capture. An asymmetry in the distribution of costs and benefits of wildlife conservation may account for producer decisions regarding land use. Producers incur the costs of wildlife production but may find it difficult to garner profits from these actions that benefit the larger society (USDA 2003*b*). To secure the participation of the farm sector, conservation programs must address central economic issues inherent in this cost/benefit asymmetry (USDA 2003*b*).

Agricultural Policy and Conservation

Conservation Objectives of Agricultural Policy

Agricultural policy affects producer decisions and, hence, environmental impact of agriculture. Agricultural subsidies that favor excess production tend to decouple agriculture from ecological support systems (Robertson and Swinton 2005). Alternatively, policy incentives that reward producers for environmental stewardship tend to re-couple agriculture and the environment (Robertson and Swinton 2005). Evolution in United States farm policy since 1985 has served to better link commodity programs with conservation programs through joint use of regulation and incentives. Prior to 1985 USDA conservation programs operated independently of commodity programs designed to control market supplies, stabilize commodity prices, and maintain farm incomes (USDA 2003*b*). Reducing environmental damage associated with soil erosion became an explicit USDA policy objective beginning with the Food Security Act of 1985.

The Highly Erodible Land (Conservation Compliance and "Sodbuster") and Wetlands Conservation ("Swampbuster") provisions of the 1985 (and subsequent) farm acts authorized the Secretary of Agriculture to restrict commodity program benefits for producers who farmed highly erodible lands or destroyed wetlands (USDA 2003*b*). These regulatory mechanisms, in combination with the CRP (Food Security Act of 1985) and the Wetlands Reserve Program (WRP; 1990 Farm Act), served to increasingly link USDA conservation objectives with commodity programs (USDA 2003*b*). Swampbuster and WRP provisions of the 1990 Farm Act made wetland conservation and water quality an explicit USDA objective. Under the 1996 and 2002 Farm Acts, creation of new programs, the Wildlife Habitat Incentive Program (WHIP), Environmental Quality Incentive Program (EQIP) and expansion of existing programs (e.g., CRP), made wildlife habitat protection an explicit conservation goal of U.S. agricultural policy (USDA 2003*b*). The combination of private lands, public wildlife resources and public funds provides a fertile arena for conservation policy that benefits all.

Regulation and Incentive

Both regulation and incentive can be effective in influencing producer decisions and may work in tandem to achieve conservation objectives. For example, from 1982–2001 soil erosion on all cropland declined from 3.1-billion tons/year to 1.8-billion tons/year, a net reduction of about 42%. These reductions have been attributed to the combined effects of increased awareness on the part of producers, delivery of technical assistance, and conservation provisions of recent farm acts (Brady 2005). Similarly, the combined effects of Swampbuster, greater public awareness of wetland values, and various state and federal laws have contributed to a 44% reduction in gross wetland losses from 204,775 ha during 1992–1997 to 113,961 ha during 1997–2002 (Brady 2005). These reductions in wetland losses, in combination with gains through wetland conservation programs like WRP, have resulted in an average net wetland gain of 17,807 ha/year (Brady 2005, Natural Resources Conservation Service [NRCS] 2005*a*). These wetland gains are in stark contrast to patterns observed prior to the 1985 Farm Act (Brady 2005) and are the product of clear policy objectives of "no net loss" of wetlands (White House Office on Environmental Policy 1993) supported by carefully crafted regulations and incentives.

Agricultural policy clearly can affect the manner in which individuals and societies use agricultural lands and the attendant ecological services produced by agricultural landscapes. However, creating agricultural landscapes that produce multiple ecosystem services requires valuing these services and linking their production to policy and market mechanisms (Robertson and Swinton 2005). Policy tools range from voluntary to mandatory and include education, technical assistance, economic incentives, compliance mechanisms, and regulatory requirements (Claassen et al. 2001). Most USDA conservation programs rely on a combination of education, technical assistance, and economic incentives to encourage agricultural producers to manage land and water resources to benefit wildlife species and their habitats. Economic incentives vary by program but include cost-sharing of practice implementation costs, incentive payments, and easement payments. Although education and technical assistance are essential conservation tools, eco-

nomic assistance that rewards environmental stewardship is key to securing the participation of the farming and ranching sectors. Agricultural producers will alter land-management practices and shift land from commodity production into wildlife habitat, provided economic costs are addressed with just compensation (USDA 2003*b*). Voluntary enrollment of more than 647,511 ha in the WRP (Rewa 2005) and 14.5-million ha in the CRP (USDA 2005*a*) illustrates producer willingness to modify production practices and land use given sufficient economic incentive.

Effective Policy

The environmental benefits of agri-environmental policy are higher if policies are targeted, flexible, and coordinated (Claassen et al. 2001, USDA 2003*b*). Environmental targeting prioritizes conservation investments to those lands with the most potential for producing desired wildlife benefits and those areas where the benefits are greatest relative to the costs. Effective targeting can significantly increase environmental benefits and reduce costs of conservation on agricultural lands (USDA 2003*b*). Environmental targeting has been effectively used to competitively rank CRP bid submissions based on the Environmental Benefits Index (EBI). The EBI-based competitive enrollment in the CRP, beginning in March 1997, reduced per acre program costs by 22% (USDA 1997) and increased the economic benefits for water-based recreation and wildlife viewing relative to previous enrollments based primarily on erodibility. Feather et al. (1999:*iv*) concluded that "valuation-based targeting of the CRP is feasible and might improve its performance if public preferences are known and explicit."

Producer flexibility allows farmers to determine an optimal approach to accomplishing environmental improvements compatible with their production system. Agri-environmental policy that accommodates producer flexibility is more cost-effective for and palatable to producers than rigid solutions developed at county, state, or federal levels (Claassen et al. 2001). Producer flexibility was illustrated in implementation of conservation compliance provisions (Claassen et al. 2001).

Program coordination ensures that the wide range of extant farm programs do not duplicate or ameliorate each other. Implementation of conservation compliance provisions (i.e. Sodbuster, Swampbuster) along with conservation programs (i.e., CRP, WRP) in the 1985 and subsequent farm acts illustrates coordination among commodity and conservation programs (Claassen et al. 2001) and has produced measurable benefits in soil and wetland conservation (Brady 2005). However, heretofore, program coordination has been limited to internal coordination among USDA programs and agencies. Although USDA conservation programs have been designed to achieve broad conservation objectives of enhancing soil, water, and wildlife habitat resources, available policy options and practices often have not been designed to address specific wildlife habitat goals identified in comprehensive, multi-agency, regional and national conservation initiatives.

Wildlife Benefits of Farm Bill Conservation Programs

The Conservation Reserve Program

There is abundant evidence of multiple wildlife benefits of conservation programs implemented under Farm Bill legislation since 1985 (Heard et al. 2001, Haufler 2005). The CRP has received the most research attention. Consequently, the wildlife benefits of the CRP have been better quantified than for other Farm Bill conservation programs (i.e., WRP, WHIP, EQIP; Farrand and Ryan 2005, Johnson 2005, Reynolds 2005).

Although the CRP has provided habitat for a wide variety of wildlife species and likely has altered population trajectories for some species, the benefits of the CRP have varied regionally and temporally in relation to stand age, established cover type, management regimes, and landscape context (Burger 2000, 2005, Johnson 2005). The wildlife benefits of the CRP, although anticipated, were more ancillary to programmatic goals than intentional. Creating wildlife habitat did not become a statutory objective of the program until the 1996 Farm Act, which incorporated wildlife benefits into the EBI. Over much of the life of the program, intentional wildlife benefits were accrued only insofar as state wildlife resource agencies and conservation groups were able to effectively influence local deployment of the program, often with considerable resistance from county, state, and national USDA offices.

Selection of cover crops and wildlife-friendly disturbance regimes are 2 issues that have been points of contention between conservation interests and USDA over the 20-year life of the CRP. Failure to base cover-crop selection on wildlife habitat value has left a legacy of poor cover conditions on millions of acres of CRP that persist today (Burger 2005). Past policy and policy interpretation have limited the wildlife benefits accrued by the CRP throughout much of the country (Burger 2005). In the 1996 Farm Bill, wildlife habitat was elevated to co-equal status with soil erosion and water quality, yet even today wildlife habitat does not carry the weight of the other objectives when it comes to compliance. For example management practices that might enhance wildlife habitat quality (i.e., disking, prescribed fire) but might compromise soil erosion objectives could result in noncompliance, whereas, soil-conserving practices that compromise wildlife habitat quality (i.e. fescue [*Festuca* sp.] establishment) are not considered noncompliant.

Conservation Programs and Conservation Initiatives

Farm Bill conservation programs clearly have made tremendous contributions to achieving some habitat goals of regional and national conservation initiatives such as the North American Waterfowl Management Plan (NAWMP, USFWS 1986). Reynolds (2005) estimated that from 1992–2003, 25.7-million additional ducks were produced in the Prairie Pothole Region of the Dakotas as a result of habitat created through the CRP. Similarly, in the Lower

Mississippi Alluvial Valley, the WRP program has been strategically deployed to help achieve bottomland hardwood restoration goals of the NAWMP and forest-bird habitat goals of the North American Bird Conservation Initiative (NABCI) and Partners in Flight. However, these habitat gains were largely accomplished because conservation partnerships were able to effectively exploit existing programmatic options of Farm Bill conservation programs, not because the policy defining the program was explicitly designed to achieve these objectives.

We believe that conservation provisions of the Farm Bill can produce more consistent positive wildlife habitat benefits when policy (statutory language, rules, practices, and practice standards) is developed in the context of explicit goals identified in large-scale conservation initiatives. This philosophical approach is not unprecedented. The WRP was explicitly created as a programmatic vehicle to help accomplish the administration goal of "no-net loss" of wetlands (White House Office on Environmental Policy 1993). The Continuous CRP program, Conservation Reserve Enhancement Program (CREP), and elements of EQIP were designed to achieve the conservation goals of USDA's National Buffer Initiative (NRCS 2005*b*).

Language in the Conference Report of the 2002 Farm Bill established precedent for proactively developing policy and deploying USDA conservation programs to meet the objectives of large-scale conservation initiatives. Specifically, the Conference Report stated: "The managers find that bobwhite quail are a valued traditional symbol of farmed landscapes, but their populations have declined by two-thirds since 1980. The Managers further find that the success of the Southeast Quail Study Group's new 'Northern Bobwhite (*Colinus virginianus*) Conservation Initiative' is largely dependent upon land management actions by agricultural producers and nonindustrial private forestland owners. The managers further find that many conservation programs of this farm bill have large potential to contribute to bobwhite quail habitat objectives and encourage the Secretary to support the goal of restoring habitat for this species" (Farm Security and Rural Investment Act of 2002, Title II, Subtitle A, Paragraph 7).

The United States Congress, recognizing the many values of northern bobwhite and its precipitous decline, took the unique action of singling out this species and specifically directing federal agencies responsible for delivering federal farm programs to capitalize on opportunities within the 2002 Farm Bill to accomplish the goals and objectives of the Northern Bobwhite Conservation Initiative (NBCI). This action laid the foundation for creation of a new CRP practice (Conservation Practice [CP]33—Habitat Buffers for Upland Birds) specifically designed to help meet habitat and population goals of the Northern Bobwhite Conservation Initiative.

In August 2004, President George W. Bush unveiled the Presidential Bobwhite Initiative in the CRP. In this initiative the President directed USDA-FSA to create a new continuous CRP practice intended to create 101,214 ha of early successional grass buffers along agricultural field edges (USDA 2005*b*). We use this practice as a case study to illustrate proactive policy development designed to achieve habitat objectives of large-scale conservation initiatives.

Northern Bobwhite Conservation Initiative

Northern bobwhite are an ecologically, socially, recreationally, and economically important game bird distributed throughout the midwestern, southern, and southeastern United States. However, throughout the range, this ubiquitously distributed and formerly abundant species has experienced an average rate of decline of 3.0% per year over the past 4 decades (Sauer et al. 2005). The NBCI (Dimmick et al. 2002) is a national bobwhite recovery plan, prepared by the Southeast Quail Study Group (SEQSG) Technical Committee at the request of the directors of the Southeastern Association of Fish and Wildlife Agencies (SEAFWA). The NBCI identifies national, regional, and state-level population and habitat goals. The NBCI is organized to delineate population and habitat objectives for 15 bird conservation regions that comprise the majority of the bobwhite's range. This approach was selected in recognition of regionally varying limiting factors and to facilitate coordination and cooperation with other bird management plans (e.g., NABCI, Partners in Flight).

The goal of the NBCI plan is to restore range-wide northern bobwhite populations to an average density equivalent to that which existed on improvable acres (lands potentially amenable to management) in the baseline year of 1980. The NBCI predicted that restoring northern bobwhites to 1980 density on remaining land base will require the addition of 2,770,922 coveys to the current population. Achieving this population will necessitate impacting habitat on 32.8-million hectares of farm, forest, and range land. However, the recommended land-management practices would change the primary land use on only 6–7% of this land.

The NBCI is predicated on the assumption that insufficient availability of native herbaceous grasses and forbs, primarily for nesting and brood-rearing habitat, limits bobwhite populations throughout the range. The plan presumes bobwhite populations could be restored by targeting specific habitat management practices in agricultural, southern pine, and rangeland systems. In agricultural landscapes the plan promotes increasing and enhancing nesting, brood-rearing, and roosting habitat by adding (or improving) native warm-season grasses, legumes, forbs, and shrubs.

Agricultural lands are particularly important in achieving NBCI habitat goals. The plan estimated that 78% of the habitat and population objectives could be produced on 7.6-million hectares of cropland, hayland, pasture, and CRP (Dimmick et al. 2002). Insofar as the great majority of improvable rural lands within the bobwhite range are owned and managed by private, nonindustrial farm and forest landowners, Farm Bill conservation programs are seen as a primary vehicle for accomplishing these land-use changes. The NBCI estimated that fully 21% of the population goals

could be achieved simply by converting existing CRP exotic grasses to diverse, managed stands of native, warm-season grasses and forbs.

Conservation buffers and field borders were identified as primary practices that are easily integrated within crop-production systems and, if broadly applied, could achieve habitat goals in agricultural systems. The Conservation Buffer Initiative provided a policy framework under which to promote native grass buffers. This NRCS initiative encourages establishment of conservation buffers to achieve soil, water-quality, and wildlife-habitat objectives. The Buffer Initiative relies on producer participation in a suite of USDA Farm Bill conservation programs (CRP, Continuous CRP, CREP, EQIP, WHIP) to meet national buffer goals. However, many of the available practices do not provide long-term bobwhite habitat because they require tree planting or establishment of exotic forage grasses and prohibit periodic disturbance. Additionally, eligibility for many of these practices is restricted to lands adjacent to riparian areas or water bodies. To achieve the habitat goals of the NBCI, a new upland habitat buffer or conservation field-border practice was needed that could be used to create native early successional, herbaceous and shrub cover around the entire perimeter of cropland fields. To be broadly adopted, the practice had to be free of highly erodible land (HEL) eligibility criteria and include both establishment cost-share and incentive payments to offset opportunity costs. The Continuous CRP was the perfect programmatic vehicle, but no such practice currently was available.

Bobwhite Buffers

Early efforts.—As early as 1931, bobwhite researchers understood the value of herbaceous field borders around agricultural fields (Stoddard 1931). Recent studies have confirmed the benefits of native field borders in agricultural landscapes for bobwhite (Puckett et al. 1995, Smith 2004) as well as grassland songbirds (Marcus et al. 2000, Smith et al. 2005*a*,*b*). In 1996 the Southeast Quail Study Group, joined by 10 conservation partners, proposed to USDA-FSA a field border practice in the Continuous CRP program. At that time FSA elected not to implement the proposal. Reasons cited included potential costs, unspecified enrollment limits, and inclusion of dry pivot corners as part of the proposal.

Conservation context.—In 1998 the Directors of the SEAFWA charged the SEQSG with developing a range-wide bobwhite recovery plan. The NBCI was completed in March 2002 (Dimmick et al. 2002) and immediately endorsed by SEAFWA and the International Association of Fish and Wildlife Agencies (IAFWA). The NBCI elevated bobwhite conservation to a national issue. Language in the Conference Report of the 2002 Farm Bill explicitly linked Farm Bill conservation programs and NBCI habitat goals. Moreover, it directed the Department of Agriculture to intentionally utilize USDA conservation programs to accomplish these habitat goals. Congressional earmarks in the Agricultural Appropriations Bill for fiscal years 2003–2005 funded the NRCS Bobwhite Restoration Project. This project, through a grants-in-aid program, was designed to document bobwhite benefits of Farm Bill practices and refine practice standards. In 2003 a full-time NBCI coordinator was hired. The NBCI had provided the vision and momentum to propel bobwhite conservation to national attention and priority.

Conservation Practice 33 Habitat Buffers for Upland Birds

Policy development.—In 2003 the SEQSG refined, narrowed the scope of, and, in partnership with nearly 30 conservation organizations, again proposed a habitat-buffer practice in Continuous CRP to FSA. In 2004 the SEQSG worked closely with FSA to develop a win–win habitat-buffer proposal. In August 2004, President George W. Bush announced the availability of a new continuous CRP practice, CP33—Habitat Buffers for Upland Birds, as part of his Presidential Bobwhite Habitat Initiative. CP33 was unique in that it was the first continuous CRP practice specifically designed to meet habitat and population goals of a national species recovery plan. It was also the first CRP practice to require integrated state, regional, and national monitoring of wildlife response (FSA 2004).

In development of this practice, FSA worked with the SEQSG to define practice sideboards. Under CP33, 101,174 ha were allocated to 35 states within the bobwhite range in proportion to cropland acreage and rate of bobwhite decline. Habitat buffers would be 30–120 feet wide and planted to native warm-season grasses, legumes, and shrubs or re-vegetated through natural succession. Economic incentives would include a $10/acre/year sign up incentive, a per-acre annual rental payment based on the county soil-rental rate, 50% cost-share for cover establishment, and a practice incentive payment equal to 40% of approved establishment costs. Contracts would be 10 years in length and maintenance of desirable habitat would require periodic planned disturbance (i.e., disking, prescribed fire, selective herbicide) over the life of the contract. Required mid-contract management would be incorporated into the conservation plan of operation and cost-shared up to 50%.

Program delivery.—Once national guidelines were established and released to state FSA offices, state executive directors assembled wildlife teams to develop practice standards and monitoring protocols. Landowner signup began in October 2005 and the availability of this practice was publicized through joint efforts of FSA, NRCS, state natural resource agencies, universities, Quail Unlimited, Pheasants Forever, Quail Forever, and other conservation organizations. It was quickly recognized that a coordinated effort among all cooperating agencies within states was necessary to promote the program effectively. This was especially true for those states lacking private-lands biologists charged with delivering conservation programs.

Producer acceptance.—In a 1999 national survey of producer attitudes toward conservation buffers, producers reported they would like to have access to a continuous sign-up field-border practice (Applied Research Systems, Inc. 1999). Thus, upland habitat buffers are popular with

producers and CP33 provides them with a practice they have requested. In the first year of availability, agricultural producers in 35 states have enrolled 29,588 of the available 101,174 ha of CP33 habitat buffers. The attractive economic incentives, continuous signup, flexible width, lack of HEL requirements, and ability to implement buffers on some or all field boundaries make CP33 appealing to producers. Conservation Practice 33 buffers are easy to establish and the availability of native warm-season grass or natural-succession establishment options increases the palatability of the program to a broader range of producers. Producers have reported that a requirement to plant native warm-season grasses can be a disincentive to buffer adoption (Applied Research Systems, Inc. 1999). The availability of the natural-succession establishment option alleviates the requirements for specialized planting equipment (e.g., native warm-season grass drills) and may result in broader adoption. Management options are clearly defined and utilize tools (i.e., disking, prescribed fire, and selective herbicide) to which producers have access and experience. Buffers easily fit into production systems, require no engineering to establish, and can replace low or negative profit regions with a conservation practice supported by incentives (Barbour 2006).

In a Mississippi study, infield weed density was unaffected by herbaceous field borders, but field borders increased whole field profitability (Barbour 2006). In this study economically optimal buffer width varied in relation to adjacent plant community (wooded vs. herbaceous or crop), crop type (corn vs. soybeans), soil-rental rates, production costs, and expected commodity price. However, CP33 buffers of 7–30 m generally were more profitable than row-crop production (Barbour 2006).

Social benefits.—Upland habitat buffers produce multiple environmental benefits, including soil-erosion control, sediment retention, water-quality enhancement, and wildlife habitat. Songbirds, as well as bobwhites, will benefit from addition of native herbaceous cover to agricultural landscapes (Puckett et al. 1995, Marcus et al. 2000, Smith 2004, Smith et al. 2005*a*,*b*). Enhanced local wildlife populations may produce economic impacts for producers and local rural communities through lease-hunting or wildlife viewing.

Challenges.—Despite all the potential benefits and apparent initial success, challenges remain. For CP33 to succeed and receive broad adoption, county and state FSA and NRCS offices must "buy-in" to and actively promote the practice. State FSA offices must adopt fair and flexible practice standards and inform county offices of program benefits and options. County FSA offices must be willing and able to address producer questions and concerns. County NRCS offices must be able to allocate time and resources to development of conservation plans of operation and buffer delineation. In some states wildlife agency personnel and technical service providers may be needed to alleviate some of the work load associated with contract development. Although the CP33 incentive package is attractive, county soil-rental rates must be competitive with cash rent values for the practice to be economically feasible. Thus, soil-rental rates may need to be adjusted in some counties. Periodic disturbance will be essential to control invasion of exotics and woody vegetation and maintain early successional habitat over the life of the contract. To achieve the intended early successional benefits, national CRP policy must allow mid-contract management over the entire life of the contract. Sound technical assistance in prescribing and implementing appropriate habitat management regimes will be needed.

The state-level monitoring requirements dictated by FSA Notice CRP-479 will impose a financial and personnel burden on state wildlife agencies. Monitoring will be implemented by state wildlife agencies under a coordinated monitoring protocol developed by the Research Committee of the SEQSG. Some, but not all, of these costs will be deferred by an IAFWA Multi-State Conservation Grant. This coordinated monitoring program will provide an unprecedented opportunity to document some of the wildlife benefits of a USDA conservation program from its inception. Such monitoring is consistent with the mission of the USDA Conservation Effects Assessment Program (CEAP) and will provide essential information for validation of this practice and development of future conservation practices. If successfully deployed, this monitoring program could provide a model for assessment of conservation effects related to large-scale conservation programs. Yet, implementation of such a large-scale monitoring program entails challenges of its own.

Summary

The unprecedented collaboration that went into development of the CP33 initiative provides a number of lessons for wildlife conservationists and natural resource policy makers. First, it demonstrates the "power of a plan." Although the initial buffer proposal failed, when it was again proposed within the context of specific habitat goals of a national conservation initiative it succeeded. The explicit habitat goals within the NBCI and the NBCI's relationship to the NABCI provided strong justification for the practice. Secondly, the CP33 initiative succeeded because of broad support and collaboration among many federal and state agricultural and natural resource agencies, joint ventures, nongovernmental conservation organizations, and producer constituencies. This collaboration was featured as a model case study in the recent White House Conference on Cooperative Conservation (http://conservation.ceq.gov/agenda.html). Thirdly, CP33 has gained acceptance by USDA and producers because it exhibits all the attributes of effective conservation policy: targeted, flexible, and coordinated. Conservation Practice 33 was environmentally targeted to those lands with the greatest potential for producing the desired goods and services. It allows for producer flexibility in location, width, cover establishment, and maintenance. From the outset, CP33 was complimentary to and internally coordinated with other USDA programs (Continuous CRP, CEAP, Conservation Buffer

Initiative, NRCS Bobwhite Restoration Project). Moreover, CP33 was externally coordinated with the conservation objectives of the NBCI, and other bird-conservation initiatives, SEAFWA, IAFWA, and multiple state wildlife agencies. Finally, CP33 will succeed with agricultural producers because it simultaneously addresses their economic needs and desire to be good environmental stewards. For the producer, CP33 effectively overcomes the asymmetry in societal benefits and personal costs. It demonstrates how conservation provisions of the Farm Bill can produce consistent, positive wildlife habitat benefits when effective policy is developed in the context of science-based goals identified in large-scale conservation initiatives. In sum, CP33 demonstrates how public funds can be effectively targeted to address problems with public resources that depend on private lands.

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