



North American Section of the Society for Conservation Biology Recommendations for the 2007 Farm Bill

The Society for Conservation Biology: The Society for Conservation Biology (SCB) is an international professional organization dedicated to advancing the science and practice of conserving the Earth's biological diversity (the variety of life on Earth). Conservation biology integrates natural sciences such as biology and ecology with social sciences such as economics and sociology to meet the pressing challenges of biodiversity conservation. Membership comprises over 13,000 professionals including resource managers, researchers and educators, government and private conservation scientists, and students.

The Farm Bill and Conservation Biology: The Farm Bill Conservation Title and the scientific evidence for a biodiversity crisis developed simultaneously yet largely independently. In 1985, the Farm Bill formally recognized the major impact that farm policy has for conservation of soil, water, and wildlife by creating the Conservation Title. A year later, the National Academy of Sciences and Smithsonian Institution organized the National Forum on BioDiversity. This forum convened leading biologists, economists, agricultural experts, agency representatives, and other professionals to discuss mounting evidence on the acceleration of habitat loss and species extinction rates (Wilson 1988). In the same year, the Society for Conservation Biology was founded to further the scientific study of the phenomena affecting the maintenance, loss, and restoration of biodiversity. Since then conservation biologists have assessed the major causes of species endangerment, and developed methods of evaluating the viability of rare species. They have assessed the effectiveness of protected areas and repeatedly shown that these areas are insufficient for protecting biodiversity. Although conservation policy in the Farm Bill and conservation biology arose simultaneously, they have had little interaction with each other.

Most Threatened and Endangered species exist on private lands and many of these lands are agricultural (Groves et al. 2000). It is now clear that success or failure for many species will be determined by practices outside protected areas, especially on agricultural lands. Federally funded State Wildlife Action Plans have identified thousands of species that are imperiled, but not federally listed as Threatened or Endangered. A Farm Bill with strong conservation provisions will help ensure that these species do not become Threatened or Endangered.

Conservation biologists have unique expertise for informing and evaluating agricultural systems and policies that maintain and enhance biodiversity (Murphy & Noon 2007). They also are a largely untapped resource for providing technical assistance on the biodiversity values present on a farm and in a region and how a landowner can best utilize Farm Bill conservation programs to maintain and enhance these values.

The North American Section of SCB's Recommendations for the 2007 Farm Bill: We offer recommendations that further the protection of native habitats and wildlife, advance sustainable agricultural practices, and increase the effectiveness of conservation programs.

Many of our recommendations are drawn from the Farm Bill recommendations of other organizations such as The Nature Conservancy, The Teddy Roosevelt Conservation Partnership, and the Land Stewardship Project. We have focused our recommendations on priority issues supported by scientific research in SCB's peer-reviewed journal, *Conservation Biology*, and other peer-reviewed sources.

Protect Native Prairie Habitat with Sodsaver and Appropriate Incentives

Conversion of native habitats is a major threat to biodiversity (Noss et al. 1995; Wilcove et al. 1998). Well-known examples are draining of wetlands and plowing of prairies for agriculture, and clearing of forest lands for agriculture and real estate development (Dahl 1990; Samson & Knopf 1994; Dale et al. 2000). Protecting remnant native habitats is critical for the maintenance of biodiversity in agricultural landscapes (Bowers 1999; Cully et al. 2003; Daily et al. 2003; Ricketts 2004; Van Buskirk & Willi 2004; Wilsey et al. 2005; Öckinger & Smith 2007). Past Farm Bills have included programs designed to discourage some forms of conversion (notably wetland drainage) and to encourage practices that restore some habitats (Conservation Reserve Program (CRP) for example). Unfortunately, incentives for conservation of native prairie have not been supported. Without such incentives (Wilcove & Lee 2004), price support programs for commodity crops encourage farmers to plow and convert native prairie. While existing Sodbuster provisions discourage the plowing of prairie, landowners still do not get monetary support for keeping their prairie intact. Furthermore, they can get monetary support for planting trees and exotic grasses in native prairie, which reduces habitat quality for many prairie species (Samson & Knopf 1994; O'Leary & Nyberg 2000).

Recommendations:

- 1) Include Sodsaver: strengthen and expand provisions in the conservation title of the new Farm Bill that discourage conversion of native habitats: no land that was non-cropland, as determined by the Farm Services Agency, but is converted to cropland should be eligible for any federal benefits, including but not limited to income or price support payments, crop insurance, disaster payments, conservation program enrollment, and Farm Service Agency farm loan benefits. Provide monetary incentives for landowners to maintain existing native prairie.
- 2) Compliance with Swampbuster/Sodbuster should be linked to all federal farm program benefits, including disaster payments and crop insurance.
- 3) Terminate incentives for tree planting in land that was historically prairie.

Reauthorize & Expand Biodiversity Benefits of Land Retirement Programs

Past Farm Bills created several land retirement programs that are responsible for substantial conservation benefits and have the potential to deliver even greater benefits for biodiversity (Van Buskirk & Willi 2004). These programs include the Conservation Reserve Program (CRP), Grasslands Reserve Program (GRP), and the Wetlands Reserve Program (WRP). A growing body of research documents multiple benefits of CRP, including reversing landscape fragmentation, maintaining regional biodiversity, increasing the populations of

game and other valuable species, and lowering the risk of endangerment for several rare grassland bird species (Dunn et al. 1993; Johnson & Schwartz 1993; Johnson & Igl 1995; Cunningham 2005; Veech 2006). CRP's significant land coverage of over 36 million acres substantially adds to its landscape-scale conservation value. Temperate grasslands are one of the most altered and least protected ecosystems in the world (Hoekstra et al. 2005). Between 1984 and 1997, over 8.4 million acres of grasslands were converted to cropland in nine states of the Great Plains region (USDA). An expanded Grasslands Reserve Program would protect and restore grasslands and maintain them as grazing lands. The Wetlands Reserve Program is a key program for protecting and restoring functioning wetlands and the migratory ducks and other birds, Threatened and Endangered species, and other wildlife dependent on wetlands (e.g., see Jenkins et al. 2003).

Recommendations:

Conservation Reserve Program:

- 1) Reauthorize CRP at its original acreage cap of 45 million acres.
- 2) Target enrollment of CRP acres that buffer priority areas identified in regional biodiversity assessments or State Wildlife Action Plans (see Targeting below).
- 3) Only cropland that was planted or considered planted with an agricultural commodity in 4 of the 6 years between 1996 and 2001 should be eligible for enrollment in CRP and CREP.
- 4) Permit only haying and grazing regimes that protect soil, water, and wildlife habitat values of land.
- 5) CRP's protection of soil, water, and wildlife habitat resources should not be compromised by biofuels production under the Farm Bill.

Grasslands Reserve Program:

- 1) Reauthorize GRP at 2 million acres per year and devote an increased acreage to grassland restoration.
- 2) Target resources on long-term and permanent easements, native plant communities, and grasslands that support at-risk species identified in State Wildlife Action Plans.

Wetlands Reserve Program:

- 1) Reauthorize the WRP and increase its funding level from 250,000 to 300,000 acres per year.
- 2) Revise the WRP appraisal to permit consideration of full economic value of the wetlands as part of a land's highest and best use evaluation.

Reduce the Impacts of Invasive Species To Biodiversity and Agricultural Production

Invasive species can significantly reduce crop production, forest productivity, grazing productivity, as well as significantly impact our remaining natural communities (Mack et al. 2000; Cully et al. 2003). Invasive pest and pathogen control costs the US economy \$138 billion a year (Pimentel et al. 2000). Invasive species are also recognized as one of the greatest threats to biological diversity, second only to habitat loss (Wilcove et al. 1998).

New provisions in the 2007 Farm Bill should strive to reduce the impacts of invasive species.

Recommendations:

- 1) Prohibit planting of invasive plant species within Farm Bill conservation programs. Currently CRP and WRP program guidelines allow planting some invasive species.
- 2) Increase funding and incentives to prevent the introduction of invasive species, to plant appropriate native plant species, and for the removal of invasive species.
- 3) Amend the Plant Protection Act to clarify that preventing the introduction of invasive plants and pests is a federal responsibility.
- 4) Realign the operational focus of the Animal and Plant Health Inspection Service (APHIS) from control to prevention. Incorporate early detection, rapid response, and data management into policies to prevent the introduction of invasive species. Refine the mission of APHIS so that threats to natural areas are given equal priority to threats to agricultural production.
- 5) Increase agricultural research funding to combat invasive species.

Fully Support the Conservation Security Program

In addition to maintaining and restoring habitats through reserve programs such as CRP, GRP, and WRP, agricultural practices should enhance the ecological function (e.g., dispersal, pollination, soil and water quality) of the agricultural matrix surrounding “natural” habitat fragments (Warner 1994; Shutler et al. 2000; Fauth 2001; McKone et al. 2001). The Conservation Security Program (CSP) is potentially one of the most powerful tools for reshaping the conventional agricultural landscape to be a sustainable working landscape that provides healthy food, a good livelihood for farmers, and improved ecosystem services (Russelle et al. 2007). CSP provides annual compensation to farmers whose sustainable practices (e.g., no till, best management practices, organic, etc.) support ecosystem services and biodiversity on working lands (Boody et al. 2005).

Recommendations:

- 1) The CSP should be fully funded with enrollment opportunities provided in all watersheds annually, preferably on a continuous sign-up basis or a rotating continuous sign-up basis. If sign-ups are not continuous, the sign-up period should be predictable and farmers and ranchers should be provided with reasonable advance notice.
- 2) Streamline and simplify the application process and payment structure for CSP. In addition to dedicated funding, programmatic changes should be made such as folding the maintenance payment and stewardship payments into a flat sum conservation planning payment that farmers receive each year of their contract. The other existing payment structure, new cost-share payments and enhancement payments, can be refined but should remain in place.
- 3) Better integrate CSP and the Environmental Quality Incentives Program (EQIP). As the two major working lands programs available through the Farm Bill, steps should

- be taken to help coordinate the programs. EQIP can help get producers ready for the higher level of conservation demanded by CSP. EQIP should provide in its ranking system support for proposals aimed at making the farm eligible for CSP.
- 4) Broaden the list of participants involved in establishing “resources of concern” or conservation standards for CSP beyond USDA Natural Resources Conservation Service (NRCS) to include state, federal, and non-governmental organization (NGO) conservation professionals. A broader perspective beyond NRCS’s traditional focus on soil and water issues is needed to establish well-designed standards that address the conservation of habitat of native plants and animals on working farms.

Improve Technical Assistance for Wildlife Habitat Enhancement Practices

The conservation programs of past U.S. Farm Bills have enhanced numerous wildlife populations nationwide (Dunn et al. 1993; Johnson & Schwartz 1993; Johnson & Igl 1995; Veech 2006). These programs could produce more benefits for wildlife by increasing the focus and flexibility of practices and providing broadened technical assistance with more cooperation between agronomic and wildlife professionals. The choice of practices should be broadly stated and flexible enough to be tailored to the farm operation and species in greatest conservation need, as identified in a state's Wildlife Action Plan. The outcomes of these changes will include more objective-driven (versus the current program-driven) planning and implementation of practices (Burger 2007), increased accountability for wildlife benefits, and increased knowledge-sharing between state natural resource professionals, farmers, and NRCS staff.

Recommendations:

- 1) Direct state wildlife management agencies and NRCS staff to jointly develop species- and habitat-specific practices to be used for the CRP, CSP, and other programs at relevant scales within states, regions, or watersheds. These practices should be informed by a state’s Wildlife Action Plan.
- 2) Provide a minimum of one farm visit by a wildlife professional and an NRCS technician to each farm as they consider seeking CRP, GRP, WRP, CSP, and EQIP to help the farmer determine how and whether to apply for the program.
- 3) Provide adequate funding to monitor the results of the practices that are put in place to determine their effectiveness and to set the stage for adaptive management of habitats on farms.

Targeting

Targeting conservation programs to high priority areas of a landscape or region will result in the most ecological benefit for dollars expended (Szentandras et al. 1995; Groves et al. 2002). The United States now has regional assessments of biodiversity for much of its area, including federally-funded Wildlife Action Plans for all 50 states. These assessments provide an excellent foundation for targeting conservation programs to the most critical areas for protecting native species and habitats and for providing connectivity for the movement of sensitive wildlife among habitats (Bowne et al. 2006). In combination with

assessments of key areas for soil and water quality protection, they can ensure that conservation programs effectively benefit a wide range of conservation concerns.

Recommendations:

- 1) Provide the means for the NRCS to identify landscape and regional ecological priorities and target funds towards landowners in high priority areas. This will help generate the greatest landscape scale ecological benefit per dollar spent. Programs should:
 - a. Focus on keeping the most important ecological areas intact and provide connectivity between farmed and natural areas that can help sustain populations across the “working landscape.”
 - b. Direct states to use regional biodiversity assessments (government or NGO) or State Wildlife Action Plans to target Farm Bill dollars to priority areas.
 - c. Focus on critical sites or on areas with concentrations of federal or state listed species of concern, as identified in regional biodiversity assessments.
- 2) Increase conservation program points for projects that include funding, conservation priorities, or other coordination with conservation NGO’s.

Provide Incentives for Ecologically Appropriate Biofuel Production

U.S. energy policy should first and foremost expand its emphasis on energy conservation and energy efficiency. The primary objective for agriculture needs to be focused on cutting energy consumption through changes in farming systems towards sustainable food systems. In terms of energy production, our nation needs a diverse portfolio of energy sources and should prioritize sustainable and renewable energy production methods (Pacala & Socolow 2004). Development of biofuels as a renewable energy source poses significant opportunities for restoration and conservation of native grasslands, biodiversity, and ecological communities (Tilman et al. 2006a). It also poses significant potential risks. Risks include increases in production acreage that may drive additional loss and conversion of valuable natural lands, and threats to biodiversity from introduction of non-native genetic material and invasive species. Cellulosic biofuels derived from biodiverse native perennial cropping systems have the potential to generate win-win outcomes for the environment and economy (Tilman et al. 2006a; Tilman et al. 2006b). The 2007 Farm Bill should provide measures that maximize the conservation benefits of biofuels and minimize the risks. Such measures should maintain the diversity of native habitats, plants, and animals, develop and refine best practices, and ensure that biofuel production methods are sustainable and adaptively managed to ensure net benefits to society.

Recommendations:

- 1) Provide incentives for producing biofuels from restored native plant communities on previously cultivated land.
- 2) Balance the needs of wildlife and ecosystem services with biofuels production goals.
- 3) Provide incentives for utilizing native species of local origin, recognizing that these plants are the best adapted to local conditions.

- 4) Provide adequate funding for monitoring, research, technical assistance, and adaptive management.

Provide Funding for Research and Performance Measures

Performance measures and research are essential for evaluating the effectiveness of conservation practices for rare species and habitats, as well as other conservation values (Kleiman et al. 2000; Byers et al. 2002; Hughey et al. 2003; Brudvig et al. 2007). After over twenty years of Farm Bill conservation programs, increasing interest in a greater variety of conservation benefits, and increasing demands on agricultural lands, we need to assess the effectiveness of Farm Bill conservation programs for protecting native habitats, rare species, and the ecological processes that support them. Such larger scale assessments as well as farm-level performance measures provide the basis for refining practices, improving allocation of resources, and more accurately describing the benefits of Farm Bill conservation programs.

Recommendations:

- 1) Fund rigorous, science-based assessments of the effectiveness of the United States' agricultural conservation programs for protecting native habitats, rare species, and the ecological processes that support them.
- 2) Require all Farm Bill conservation programs to identify performance measures that gauge effects on ecological and conservation objectives tied to the program's purpose. Increase funding to support performance measures.

Conclusion

The 2007 Farm Bill provides a critical opportunity to build on the conservation successes of past farm bills. This can be done by expanding the protection and restoration of native habitats and the species that depend on them, reducing the impacts of invasive species, improving the ecological function of agricultural landscapes, improving technical assistance for wildlife enhancement practices, targeting programs using State Wildlife Action Plans, providing incentives for ecologically appropriate biofuel production, and supporting research and performance measures to improve success.

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