



Maryland Wildlife Habitat Incentives Program (WHIP) Plan

Purpose

State WHIP plans are developed at least every five years to ensure that resources are targeted to the needs of the highest priority wildlife habitats. The plan is a dynamic document.

I. Objective

National WHIP Emphasis

As well as addressing state, regional, and local wildlife needs, the state WHIP plan addresses the following national emphasis areas:

- Promote the restoration of declining or important *native* wildlife habitats.
- Protect, restore, develop or enhance wildlife habitat of *at-risk* species (federal and state T&E listed and candidate species).
- Reduce the impacts of *invasive species* on wildlife habitats.
- Protect, restore, develop or enhance declining or important *aquatic* wildlife species habitats.

State Objective

The plan objective is to target the resources of WHIP to the wildlife species and habitats in greatest need of conservation, with the following considerations:

- Utilization of existing program and technical assistance capabilities
- Leveraging of partner resources
- Potential overlapping of existing federal, state, and local programs
- Likelihood of successful and efficient implementation
- Funding limitations with respect to practice implementation (both funding and technical assistance)
- Focus on private lands

II. Wildlife Priority Identification

Method of Priority Identification

Wildlife priority identification for the Maryland WHIP utilized the key wildlife habitats for species of greatest conservation need (GCN) identified in the *Maryland Wildlife Diversity Conservation Plan (MWDCP)*^A. Key wildlife habitats were linked to NRCS land uses, practices

^A See Part II, subtitle *MWDCP Background*.

and habitat improvement components (HICs) in the current Maryland WHIP. Additional practices and HICs with the potential to address MWDCP priority actions were identified. Both current and potential components of the Maryland WHIP were evaluated by the State Technical Committee for feasibility and state and national priorities. WHIP priorities, as shown in table 1, represent a combination of national program emphases, state-identified conservation needs, and considerations listed under the heading *State Objective*.

Priorities identified by local work groups have been incorporated into the program through informal feedback and formally through representation at State Technical Committee meetings. Local work group priorities will continue to be considered and incorporated when feasible and applicable to program objectives.

MWDCP Background

In response to requests by state wildlife agencies and their partners, Congress enacted the Wildlife Conservation and Restoration Program (WCRP) and the State Wildlife Grant program (SWG) to provide federal funding for state wildlife conservation needs. The WCRP and SWG required that each state develop a comprehensive Wildlife Diversity Conservation Plan (WDCP) by October 1, 2005. The Maryland WDCP (MWDCP) identified species of greatest conservation need (GCN) and their key wildlife habitats. Threats to GCN species and their key habitats were identified and conservation actions to mitigate the threats were developed, highlighting the most important actions. The final draft version of the MWDCP was submitted to the U.S. Fish and Wildlife Service in 2005, and can be found at http://dnr.maryland.gov/wildlife/divplan_wdcp.asp.

Habitat Descriptions

Early Successional Forests and Shrubland

Early successional forests are upland areas dominated by forbs, shrubs and small trees. This habitat supports a variety of GCN species, including species showing significant declines, such as Northern Bobwhite, Field Sparrow, and Prairie Warbler¹. Land use conversion and lack of disturbance are major reasons for loss of this habitat. Low density plantings of a mixture of shrubs and trees, and management that mimics natural disturbance will mitigate losses of this habitat.

Oak-Pine Forests and Mesic Deciduous Forests

These forested habitats support a wide range of GCN species throughout the state, including the state and federally endangered Delmarva Fox Squirrel, the state endangered Barking Treefrog, and species showing a significant decline, such as the Black-and-white Warbler, Red-eyed Vireo, Scarlet Tanager, Whip-poor-will, and Wood Thrush¹. Land use conversion and habitat fragmentation are major threats to these habitats. Development of forested corridors will provide connectivity between existing habitats to support populations and enhance genetic diversity.

Wetland Habitats

Wetland habitats in Maryland include floodplain forests, upland depressional swamps, Delmarva Bays, bogs, shrub wetlands, and emergent wetlands. Wetlands support a large array of GCN species, including the state and federally threatened Bog Turtle, the state endangered Eastern Tiger Salamander and Eastern Narrow-Mouthed Toad, and many rare and declining species, including the Carpenter Frog, Blue-winged Teal, Gadwall, Pied-billed Grebe, and Yellow-crowned Night Heron. Extensive wetland loss has occurred in Maryland since European settlement due to land clearing and drainage for agriculture and development. Although the Wetland Reserve Program and Conservation Reserve Program provide opportunities for wetland restoration, funding limitations and program restrictions sometimes preclude their use for restoring aquatic habitats. WHIP provides another option for restoring and managing wetland habitats for a wide range of species. Aquatic habitats developed with WHIP funds will support Bog Turtle conservation efforts, and provide important stopover sites for migrating shorebirds and waterfowl. WHIP will also provide opportunities to connect existing wetland habitats with forested corridors.

Grasslands

Grasslands are upland treeless areas dominated by herbaceous vegetation. Habitat suitability for grassland specialist species increases with increasing size and area to edge ratio². Grasslands support GCN species displaying some of the most significant declines in Maryland and throughout the eastern portions of their range. Species include the state endangered Sedge Wren and Upland Sandpiper, state threatened Henslow's Sparrow, and species showing significant declines, including the Eastern Meadowlark, Field Sparrow, Grasshopper Sparrow, and Northern Bobwhite. Land use conversion is a major threat to Maryland grasslands. The majority of grasslands in Maryland are in pasture and hayland, which tend not to support viable populations of grassland species because of incompatible management practices. Establishment of grasslands sized and managed specifically for native wildlife is critical to the maintenance of Maryland's wildlife diversity.

Stream and River Habitats

Maryland's diverse landscape includes the highland streams and rivers of the Appalachian Plateau and Valley and Ridge physiographic regions, the highly variable and biologically productive streams and rivers of the Piedmont physiographic region, and the low-gradient streams and rivers of the Coastal Plain. Among the extensive benefits provided by streams and rivers are spawning habitats for endemic and migratory fish species, export of food to estuaries, and wintering habitats for migratory water fowl. GCN species that are at home in streams and rivers include the state and federally endangered Dwarf Wedge Mussel, and the state endangered Sable Clubtail (dragonfly), Maryland Darter (fish), Ironcolor Shiner (fish), and Hellbender (salamander).

A full description of these key habitats and GCN species they support can be found in the MWDCP.

Table 1. WHIP priority habitats are key wildlife habitats that support threatened and endangered species, and species of concern in Maryland. The resource concerns represent the major threats to the species and habitats. The highlighted practices and habitat improvement components are the primary mechanisms for addressing the resource concerns. The other practices and components can address the resource concerns in specific circumstances or as secondary functions.

| Habitat Type | Resource Concern ^B | Practices | Habitat Improvement Components |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Terrestrial Forested Habitats - Early Successional Forests - Shrubland | Loss of habitat | Conservation Cover (327) Field Border (386) Riparian Forest Buffer (391) Upland Wildlife Habitat Management (645) | Invasive Species Control Shrubland Establishment Woodland Establishment |
| Terrestrial Forested Habitats - Oak-Pine Forests - Deciduous Forests | Habitat fragmentation | Conservation Cover (327) Riparian Forest Buffer (391) Upland Wildlife Habitat Management (645) | Forested Corridor |
| Wetland Habitats - Floodplain Forests - Upland Depressional Swamps - Carolina/Delmarva Bays - Bog and Fen Wetlands - Nontidal Shrub Wetlands - Nontidal Emergent Wetlands | Loss/degradation of habitat Habitat fragmentation | Filter Strip (393) Riparian Forest Buffer (391) Shallow Water Area for Wildlife (646) Streambank and Shoreline Protection (580) Upland Wildlife Habitat Management (645) Wetland Creation (658) Wetland Restoration (657) Wetland Wildlife Habitat Management (644) | Forested Corridor Herbaceous Buffer Invasive Species Control Riparian Forest Buffer Streambank Stabilization Wetland – Annual Emergent Wetland – Emergent Freshwater Wetland – Forested Wetland – Shrub |
| Terrestrial Non-Forested Habitats - Grasslands | Loss of habitat | Conservation Cover (327) Field Border (386) Filter Strip (393) Riparian Forest Buffer (391) Upland Wildlife Habitat Management (645) | Field Border Grassland Establishment Herbaceous Buffer Invasive Species Control |
| Stream and River Habitats | Habitat degradation Habitat fragmentation | Conservation Cover (327) Filter Strip (393) Riparian Forest Buffer (391) Streambank and Shoreline Protection (580) Wetland Restoration (657) Upland Wildlife Habitat Management (645) Wetland Wildlife Habitat Management (644) | Forested Corridor Invasive Species Control Riparian Buffer Shoreline Stabilization Streambank Stabilization Wetland - Forested |

^B The primary resource concerns for all habitat types are *threatened and endangered species* and/or *declining species and species of concern*.

III. Partnership Involvement

Maryland NRCS has longstanding partnerships with the Maryland Department of Agriculture (MDA), the Soil Conservation Districts (SCDs), the Maryland Department of Natural Resources (DNR), and the U.S. Fish and Wildlife Service (FWS) Chesapeake Bay Field Office. These partnerships are expected to continue for the foreseeable future.

NRCS, MDA and SCD staff generally operate as a single unit in field offices, where they plan and implement resource management plans, and leverage federal, state, and private funding sources to meet resource conservation objectives on private lands.

DNR and FWS provide assistance to field offices including, but not limited to, developing and implementing species- and habitat-specific management plans, providing guidance on the location and needs of threatened and endangered (T&E) species and species of concern, developing and implementing forest establishment and management plans, and providing outreach to potential customers.

NRCS has formal agreements with FWS to provide technical assistance for WHIP wetland restoration projects being implemented specifically for the state- and federally-listed Bog Turtle. DNR provides regular monitoring on Bog Turtle restoration sites.

Table 2. Estimated Annual Partner Contributions

| Partner | WHIP Priorities | Technical Assistance Contribution (TA) | Financial Assistance Contribution (FA) | Total Contribution (TA+FA) |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|----------------------------|
| MD Department of Agriculture/Soil Conservation Districts | All | \$47,000 | – | \$47,000 |
| MD Department of Natural Resources | Terrestrial Forests – Habitat Fragmentation Wetland Habitats – Loss/Degradation of Habitat Stream and River Habitats – Habitat Degradation and Fragmentation | \$20,000 | \$20,000 ^c | \$40,000 |
| U.S. Fish and Wildlife Service | Wetland Habitats – Loss/Degradation of Habitat Grasslands – Loss of Habitat | \$81,000 | \$5,000 | \$86,000 |
| TOTALS | | \$148,000 | \$25,000 | \$173,000 |

^c Invasive species control in aquatic habitats.

IV. Application Ranking Criteria

- **National Program Issues (35%)** – Based on the national program emphases listed in Section I of this document, the four national issues are equally weighted. Priority is given to projects that address multiple national issues.
- **Cost Efficiency (10%)** – Cost efficiency is an estimate of the amount of benefit received for the cost of practice implementation over the lifespan of the practice.

State program issues comprise the remaining 55 percent of the ranking criteria, and include both environmental and cost factors as follows:

- **Habitats Improved (20%)** – Points are given for all priority habitats improved, which include early successional habitats, forest corridors, wetland (aquatic) habitats, and riparian habitats. Projects addressing multiple priority habitats will receive more points.
- **Vegetation (5%)** – Priority is given for a relatively high level of planned species richness. Projects with planned vegetation consisting of five species or more are given priority for addressing species richness.
- **Wildlife Access (5%)** – Priority is given to projects in which the proposed project is connected to existing wildlife habitat. Permanently protected existing habitat and existing habitat currently under a long-term agreement are given priority over existing habitat without such protections.
- **Project Size (10%)** – Larger projects are given priority because of the generally recognized relationship between habitat size and wildlife use. Planned practices based on acres are given priority over practices based on length because they typically provide more wildlife habitat. Projects of 20 acres or more are given the highest priority. Additional priority is given to projects that have small length to width ratios, which addresses habitat requirements of many bird species in need of conservation.
- **Degree of Habitat Improvement (15%)** – Priority is given to projects that provide a greater degree of habitat improvement based on benchmark and planned habitat suitability index (HSI) evaluations.

Ranking criteria and weights are subject to change.

V. Performance Measurement Criteria

The Maryland WHIP is designed to address the needs of at-risk wildlife species and habitats, with consideration of available technical expertise, likelihood of success, and field office workload. Ranking criteria are designed to ensure that the projects with the highest benefits are selected for funding, and practice requirements for WHIP have been developed to ensure that wildlife criteria are being met and/or exceeded. It is expected that the program design will result in a high level of program performance.

The following criteria will be used, to the extent possible, to ensure that performance expectations are being met:

- **Addressing wildlife needs in application selection** – Applications will be reviewed by the State Biologist prior to funding approval to ensure that program funding is addressing state and national priorities. Feedback from field staff and partners will be collected and evaluated after program enrollment and implementation to refine program design for future enrollments.
- **Implementation efficiency** – Management tools, including *ProTracts* and *Performance Results System* (PRS) will be used to evaluate program implementation, including timely installation of practices and use of contracted funds.
- **Implementation success/habitat quality** – Status reviews, quality reviews, and feedback from field staff and partners will be used to determine if practice implementation was successful. When feasible, DNR and FWS staff will perform site visits at representative projects to determine if wildlife habitat is being restored and managed at the required level for targeted wildlife species. Vegetation monitoring will be conducted at Bog Turtle sites to evaluate performance of restoration methods.
- **Long-term response of wildlife to program implementation** – Long-term response of wildlife is not typically conducted directly by NRCS staff. However, data collected by the *North American Breeding Bird Survey*, the *Maryland Breeding Bird Atlas*, DNR, FWS, and other organizations will be evaluated at state, regional, and habitat levels to determine if program components are having the desired effect on targeted species. The University of Maryland is currently conducting studies on the effects of early successional habitat restoration on bird and insect populations. DNR provides regular monitoring on many Bog Turtle wetland restoration sites. University researchers and other organizations will be encouraged to apply for NRCS Fish and Wildlife Conservation Grants and other opportunities to conduct research on the success and benefits of the program.
- **Partner contributions** – Feedback from District Conservationists, PRS tracking, and direct communication and site visits with partners will be used to monitor partner contributions to the program.

VI. Budget

Interest in WHIP has been increasing in recent years, and is expected to continue to increase. Estimates for fiscal year (FY) 2007 funding needs are based on prior year requests, funding, and unit costs, as shown in table 3. The estimated financial assistance (FA) funding need for FY2007 is \$506,200.

Table 3. Prior Year and Estimated Practice Amounts and Funding

| Federal Fiscal Year (FY) | 2004 Amt. | 2005 Amt. | 2006 Amt. | 2007 | |
|------------------------------------------|--------------|----------------|------------------------|--------------------|----------------------|
| | | | | Est. Amt. | Est. FA ^D |
| Conservation Cover (ac) | 93 | 163 | 439 | 400 | \$152,000 |
| Fence (ft) | 700 | 4,085 | 12,860 | 10,000 | \$20,000 |
| Field Border (ft) | 5,400 | 5,808 | 11,738 | 10,000 | \$3,000 |
| Riparian Forest Buffer (ac) | 10 | 11 | 5 | 10 | \$8,700 |
| Shallow Water Area (ac) | 141 | 116 | 93 | 110 | \$247,500 |
| Streambank and Shoreline Protection (ft) | 195 | ? ^E | 2,319 | 2,500 | \$5,000 |
| Wetland Creation/Restoration (ac) | 280 | 856 | 953 | 1,000 ^F | \$70,000 |
| Application Funding Requests (FA) | \$350,718 | \$451,572 | \$446,766 ^G | | \$506,200 |
| Number of Contracts | 82 | 98 | 106 | | |
| Funding Received (FA) | \$351,333 | \$415,133 | \$439,798 | | |

¹ Sauer, J. R., J. E. Hines, and J. Fallon. 2005. *The North American Breeding Bird Survey, Results and Analysis 1966 - 2004. Version 2005.2.* [USGS Patuxent Wildlife Research Center](http://www.usgs.gov/patuxent/wildlife/research_center/), Laurel, MD.

² Maryland Department of Natural Resources, Wildlife and Heritage Service. 2005. *Maryland Wildlife Diversity Conservation Plan – Final Draft*. Annapolis, MD. Available at http://dnr.maryland.gov/wildlife/divplan_wdcp.asp.

^D Represents NRCS portion of financial assistance.

^E Amount for streambank and shoreline protection in 2005 is not clear in prior year report.

^F Includes invasive species control.

^G Total application funding requested was \$502,103, but \$55,337 in applications were either canceled or funded through other sources.