

## IDENTIFYING SITE-BASED HABITAT AND POPULATION GOALS WITHIN IMPORTANT BIRD AREAS

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*Abstract.* In 2004, the New Jersey Audubon Society initiated the Important Bird Areas (IBA) Program to identify and protect sites essential to the long-term conservation of native bird populations. With 123 sites identified, the program has transitioned into the conservation planning phase in which we develop models for comprehensive site-based conservation based on need and land ownership patterns. Using the Mannington Meadows IBA as an example, we present a model for site-based conservation of an area in a mainly private ownership pattern. This on-the-ground model integrates land preservation, habitat restoration, and community design to protect the viability of the IBA by building partnerships with organizations that offer the particular expertise necessary to protect a site. The results of two years of outreach thus far are 142 ha of habitat restoration projects in process or planned, 1012 ha of land permanently preserved, and significant improvements in zoning and land use regulations made by the local communities. This model of site-based conservation includes specific habitat restoration goals that identify target species, population objectives and corresponding habitat objectives for target species. Using priority species identified by the State Wildlife Action Plan and population goals identified by Partners in Flight, New Jersey's IBA model is achieving the goals of regional and nation plans on the local level and within priority sites.

*Key Words:* Grassland conservation, Important Bird Areas, Partners in Flight, site-based goals, Wildlife Action Plan.

## LA IDENTIFICACIÓN DE HÁBITAT A BASE DE SITIO Y OBJETIVOS DEMOGRÁFICOS DENTRO DE ÁREAS DE AVE IMPORTANTES

*Resumen.* En 2004, la Sociedad de Nueva Jersey Audubon inició las Áreas Importantes de Pájaro Programan para identificar y proteger sitios esenciales a la conservación a largo plazo de poblaciones nativas de pájaro. Con 123 sitios identificados, el programa ha transicionado en la conservación que planea fase en la que desarrollamos modelos para la conservación sitio-basado completa se basaron en la necesidad y pautas de propiedad de tierra. Utilizando las Praderas de Mannington IBA como un ejemplo, nosotros presentaremos un modelo para la conservación de sitio-basó de un área en un principalmente pauta de propiedad privada. Esto en el modelo de suelo integra conservación de tierra, restauración de hábitat, y diseño de comunidad para proteger la viabilidad del IBA construyendo las asociaciones con organizaciones que ofrecen la pericia particular necesaria para proteger un sitio. Los resultados de dos años de alcance así son lejos 350 acres de proyectos de restauración de hábitat en el proceso o planeados, 2500 acres de tierra dirigida para la conservación, y para mejoras significativas en regulaciones de zonificación y utilización de la tierra hechas por los vecindarios. Este modelo de conservación de sitio-basó incluye objetivos específicos de restauración de hábitat que identifican la especie de objetivo, objetivos de población y correspondientes objetivos de hábitat para la especie de objetivo. Utilizando la especie de prioridad identificada por los objetivos de Plan y población de Fauna de Estado Acción identificados por Socios en el Vuelo, modelo de IBA de Nueva Jersey logra los objetivos de regional y planes de nación en el nivel local y dentro de sitios de prioridad.

### INTRODUCTION

In 2004, the New Jersey Audubon Society (NJAS) initiated the Important Bird Areas (IBA) Program to identify and protect sites essential to the long-term conservation of native bird

populations (NJAS 2008). To be recognized as an IBA, sites have to meet specific criteria set by a technical committee comprised of scientists, resource managers and ornithologists with specific knowledge of New Jersey avifauna. Currently, 123 sites have been identified as IBAs

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in NJ and the program has transitioned into the conservation planning phase in which we develop models for comprehensive site-based conservation based on land ownership patterns and local conservation needs.

The IBA Program provides a scientifically based strategy for identifying and protecting sites of high conservation concern. Our vision is that IBAs are the sites in which the NJ Wildlife Action Plan (WAP) and Partners in Flight (PIF) goals will be implemented on-the-ground (Martell et al 2004, NJDEP a) NJAS's application of the IBA strategy for site conservation identifies avian management targets and specific habitat restoration goals by stepping down state and regional bird plan objectives to the IBA level and developing broad partnerships to achieve these goals.

The first model we developed is for conservation of an IBA that is mainly in private land ownership and its land use is primarily agricultural in character. Conservation needs for this model include restoration of riparian, wetland, and grassland habitats and protection from habitat fragmentation. To identify grassland habitat goals, we developed a grassland restoration plan by stepping down WAP and PIF goals and by building partnerships with organizations that offer the particular expertise necessary to protect a site.

Using the Mannington Meadows Important Bird Area (MMIBA) as an example, we offer our model for site-based conservation of an area in a private ownership pattern of agricultural use. This on-the-ground model integrates land preservation, habitat restoration, and community design (i.e., land use and zoning regulations) to protect the viability of the IBA.

## METHODS AND RESULTS

We selected our focal area by prioritizing IBAs by threats, needs and opportunities, biological significance and availability of funding. Focal areas are those that are under an immediate threat of habitat degradation, offer opportunities for conservation, and for which funding to implement habitat restoration plans was available. We identified the Mannington Meadows Important Bird Area as the highest priority because of the intense development pressure, need for habitat restoration and availability of state and federal incentive programs to fund planned restoration projects.

Once identified as a focal area, we developed a conservation plan for the MMIBA. Information to include in the plan was collected by interviewing landowners and community leaders about the history and culture of the community.

Biological priorities were determined by reviewing all repositories for data and conservation actions that apply to the MMIBA (WAP and PIF plans, NJAS IBA database, Delaware Estuary Comprehensive Management Plan, etc.). Once the plan was complete and published on our web site, we recruited partners to implement specific needs identified by the plan. We identified habitat fragmentation as a significant threat and recruited a land trust partner to engage landowners within the IBA boundary in land protection activities. To address the residential development threat, we worked with partner conservation organizations to provide guidance to the community in growth planning. Finally, the IBA was identified by the WAP as a priority area for grassland conservation and management. Therefore, we developed a grassland bird conservation plan that identifies target species and numeric habitat goals for grassland breeding birds.

### GRASSLAND BIRD MODEL

To develop the grassland bird conservation plan for the MMIBA, we identified target avian species, conducted a GIS analysis to model potential grassland habitat, and stepped down statewide population goals to the IBA level based on potential habitat.

#### *Target Species*

Seven species of grassland breeding birds were identified as management targets for restoration activities (Table 1). Target species were identified as priority within the WAP, which provides a comprehensive list of all federal and state-endangered and -threatened species as well as other species of State and Regional Conservation Concern that occur in each conservation zone within the state. The WAP incorporates the priorities of all the national bird conservation plans and is the most comprehensive source for clearly defining species priorities for any part of New Jersey (Martell et al 2004, Rosenberg 2004). The MMIBA is located in the Southern Piedmont Plains conservation zone (NJDEP b). To develop our grassland bird targets, we identified the species that utilize grassland habitats and for which records showed the species to currently or historically breed in the County in which the IBA is located (Niles et al 2008, Walsh et al 1999).

#### *Stepping-down Goals*

Population goals and the corresponding habitat goals to support grassland breeding bird

TABLE 1. MANAGEMENT TARGETS, POPULATION GOALS AND HABITAT GOALS FOR THE MANNINGTON MEADOWS IMPORTANT BIRD AREA (MMIBA) IN NEW JERSEY.

Grassland Breeding Birds of Conservation Concern	NJ Pop. estimate (present number of pairs)	Statewide goal (target number of pairs)	MMIBA <sup>1</sup> population goal (pairs)	Mean territory size (ha)	MMIBA habitat goal (ha)
American kestrel ( <i>Falco sparverius</i> )	963	1445	29	NA	NA
Bobolink ( <i>Dolichonyx oryzivorus</i> )	1227	1840	37	1.5	56
Eastern Meadowlark ( <i>Sturnella magna</i> )	767	1535	31	2.3	71
Grasshopper sparrow ( <i>Ammodramus savannarum</i> )	1441	2882	58	2	116
Savannah sparrow ( <i>Passerculus sandwichensis</i> )	71	143	10	0.5	5
Upland sandpiper ( <i>Bartramia longicauda</i> )	NA	NA	3	10	30
Vesper sparrow ( <i>Pooecetes gramineus</i> )	58	117	10	1.65	17
Total <sup>2</sup>					295 ha

<sup>1</sup>Mannington Meadows IBA = 2.4% of available grassland patch in NJ.

<sup>2</sup>Habitat goal is approximately 4% of the IBA.

populations were developed for each of the target species. To develop population goals, we started with population estimates stepped-down for NJ from national estimates (Rosenberg 2004). Next, we determined the population goals for each species based on PIF goals (increase population, maintain populations, etc) (Martell 2004). Because our management targets are species of conservation concern, population goals were an increase over current estimates.

To determine the MMIBA's contribution to achieving the statewide population goal for each species, we determined the percentage of grassland habitat available within the IBA using the NJ Department of Environmental Protection's Landscape Project, a critical areas map of habitat for state and federal threatened, endangered and conservation priority species (Niles et al 2008). Of the patches modeled as potential grassland habitat statewide in the Landscape Project, approximately 2.4% occur within the MMIBA. If we assume that distribution of target birds is similar across patches throughout the state, we conclude that 2.4% of statewide population goals for each species can be attributed to the MMIBA. This is true for all target species except for the upland sandpiper and vesper sparrow (Table 1). Because 2.4% of the statewide goal for these species is assumed to be less than a minimum viable population size, we increased MMIBA population goal for these species above 2.4% to an arbitrary number assumed to support a minimum viable population.

To calculate our grassland acreage goal for the MMIBA, we multiplied the number of breeding pairs desired for the IBA by an average territory size for each species (Northern

Prairie Wildlife Research Center 2003). The resulting number is the amount of acres needed to support the desired number of breeding pairs for each of our seven target species in the MMIBA. We assumed extensive overlap of the American Kestrel with the six other targets; therefore we did not assign a habitat goal for this species. To calculate our grassland habitat goal for the entire IBA, we summed the habitat goals for the six non-raptor species. Therefore, in the MMIBA our habitat goal is to manage or restore 295 ha of agricultural lands for grassland breeding bird habitat.

Our model indicates that to implement the goals of NJ's WAP (to restore or manage grasslands for declining species) and PIF (increase grassland bird populations to a desired level), we should strive to restore to native grassland habitat or manage for breeding bird productivity 295 ha in the MMIBA.

#### IMPLEMENTING THE PLAN

To implement all parts of the MMIBA conservation plan, including the grassland conservation component, we recruited partners and conducted targeted outreach to the local communities that are within the MMIBA. We recruited and encouraged partner conservation organizations that specialize in land preservation and community planning to focus on the MMIBA. We assisted our partners in applying for financial support to foundations and other grant making organizations, provided them with assistance in reaching out to the community, and identified important actions and parcels for preservation, and supported our

partners by attending meetings or by developing written correspondence to achieve a desired outcome to a situation. Thus far, these cooperative activities have led to 1012 ha of private land targeted for long-term protection from residential development and several local ordinances have been passed to help the community better plan future growth.

To reach our habitat restoration goals, we worked with the local community, community leaders, public land managers and private landowners to identify areas for restoration. We recruited farmers to re-vegetate riparian zones and engage in grassland restoration through a series of workshops that offered information about the various incentive programs available to fund riparian and grassland restoration. Over the course of two years, we offered four workshops and presented our grassland plan to elected community officials. We also recruited one corporation to engage in 130 acres of habitat restoration activities on its corporate campus. Thus far, 142 ha of agricultural land has been restored, or set aside for restoration, to grassland, riparian, and wetland habitat, of which 61 ha have been committed toward the grassland restoration goal of 295 ha managed for breeding bird productivity.

## DISCUSSION

Important Bird Areas Programs can be an effective vehicle for delivering PIF and state WAP goals at the local level. By working within IBAs, we ensure that we are focusing our limited conservation resources in areas of high biological value and where efforts will have the greatest impact. IBAs not only provide a guide to essential bird habitat for each state, they also allow for the integration of grassroots efforts into the conservation activities. All data supporting IBA identification were submitted by university professionals, state resource managers and reputable bird watchers. By design, the IBA Program integrates conservation of essential habitat with action by citizen scientists and volunteers.

Once Important Bird Areas have moved through the identification and recognition process, the real work of IBA conservation has just begun. Prioritizing areas for action, based on biological significance, threats and opportunity, is essential. In NJ, we understood that we cannot be an effective entity by trying to work in 123 IBAs around the state with three staff members dedicated to the program. Therefore, promoting the IBA network to conservation organizations throughout the state and further prioritizing the sites for action was essential.

Likewise, we understood that conservation issues would arise for which we would not have the expertise to address within our organization. This requires another key to successful on the ground implementation of PIF and WAP goals, partnership building.

Finally, establishing scientifically driven habitat goals is crucial. At some point, the community will ask when we have reached our goals. One must be ready with a defensible answer. Because we were able to provide a goal to the local community, we were able to build a bond with local leaders and begin working toward those restoration goals.

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