

**MANAGING FOR PRIORITY BIRDS ON THE
LOWER CHIPPEWA RIVER IMPORTANT BIRD AREA**



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WISCONSIN BIRD CONSERVATION INITIATIVE
IMPORTANT BIRD AREAS PROGRAM**

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Cover photos are all by Mike Mossman.

Clockwise from right:

Tiffany Bottoms barrens
Tiffany Bottoms flooded silver maple swamp
Tiffany Bottoms barrens
Tiffany Wildlife Area, looking south

Center:

Dead Lake marsh

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ABSTRACT

This report identifies priority bird species and major habitat opportunities for the 72,000-acre Lower Chippewa River Important Bird Area (IBA) and provides recommendations for their management on the major properties within the IBA, almost all state-owned; it complements a master plan recently developed for these properties. The process used to identify priority species strives to be strategic, placing this IBA in a broader context and emphasizing what it can best contribute to bird conservation. Extensive tracts of forest, mostly floodplain but also upland, constitute the IBA's greatest significance to priority birds; it also offers important opportunities for dry prairie and barrens habitats, floodplain and upland oak savanna, and the high-quality mosaic of lowland and upland natural communities characteristic of a large, free-flowing river floodplain. The Tiffany Wildlife Area, with its extensive forest cover, presents the best opportunity to manage populations of priority forest birds. Dunnville Wildlife Area's floodplain and terrace prairies and surrogate grasslands hold the highest opportunity for priority dry, sparse grassland birds. The large, privately owned Tyrone Property offers high potential for dry grassland and barrens species, particularly if existing habitats are expanded and connected and pine plantations and agricultural fields are restored to native habitats. Nine Mile Island hosts the largest and highest quality block of floodplain forest outside the Tiffany, with moderate opportunity for forest interior birds. The other tracts, smaller and scattered throughout the floodplain, offer less opportunity to manage for populations of priority birds, although this may change with additional restoration and acquisitions; but they help preserve a forested corridor along the river and a lowland-to-upland gradient of high-quality native communities.

INTRODUCTION

Purpose

This document provides detailed, bird-specific recommendations for land managers within the Lower Chippewa River Important Bird Area (IBA). It complements a WDNR master plan which has been completed for the Wildlife and State Natural Area properties on the Lower Chippewa River, almost all of which are included within the boundary of the IBA. A master plan "establishes the level and type of public uses permitted" on a property and "details the authorized resource management and facility development" that will take place there (WDNR 2009a). The master plan documents for the Lower Chippewa describe broad ecological opportunities and lay out a conservation vision, focused on natural communities, for these properties including management objectives and prescriptions (WDNR 2010). This report focuses on lands within the IBA boundary, including one large private tract that is not treated in the master plan. It provides

additional details and management considerations for priority bird species according to a strategic emphasis that considers the site within state and regional contexts, identifies special features and unique opportunities this site offers compared to other IBAs, and strives to determine its best contribution to bird conservation.

The Important Bird Areas Program

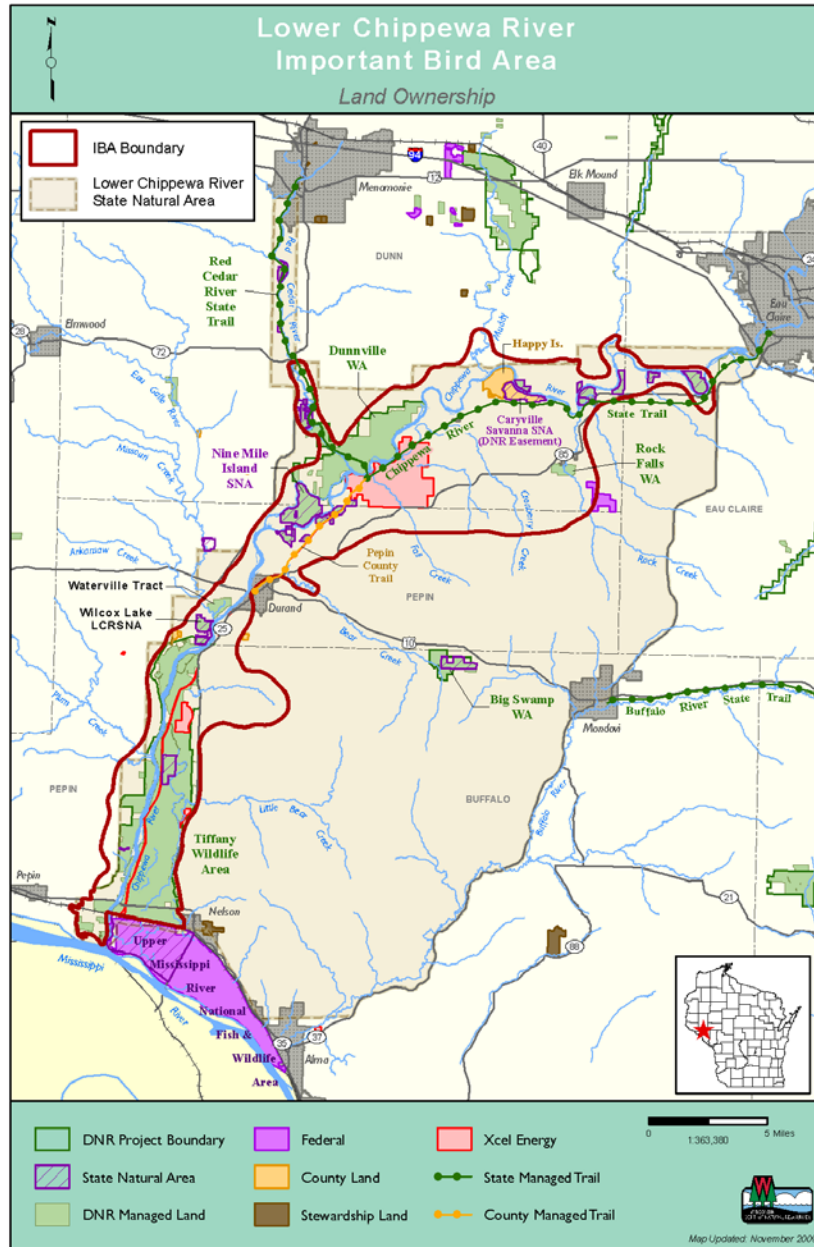
The Important Bird Areas (IBA) Program is an international effort to identify, protect, and manage sites that contain critical habitats for birds. Initiated in Europe by BirdLife International in 1981, the IBA Program now exists in over 160 countries and 48 U.S. states. IBAs are identified using straightforward, science-based criteria. Identification of a site as an IBA requires supporting documentation, particularly data on bird species diversity and abundance, and review by a Technical Committee of bird and habitat experts. Approval of a site as an IBA, therefore, underscores its high value to bird populations and its priority for conservation and management. This process provides a scientifically defensible way to prioritize conservation actions and allocate limited resources to ensure maximum benefit for birds. Once sites are identified as IBAs, collaborative conservation strategies can be developed voluntarily to maintain and manage the sites for the species they support. The IBA Program was launched in Wisconsin in 2003 as part of the Wisconsin Bird Conservation Initiative (WBCI), a statewide coalition of over 160 organizations working collaboratively to advance bird conservation. Eighty-eight sites have been approved as IBAs by the Wisconsin IBA Technical Committee, and 86 of these are described in a recent publication (Steele 2007).

SITE DESCRIPTION

The Lower Chippewa River IBA

The Lower Chippewa River IBA encompasses some 72,000 acres in Eau Claire, Dunn, Pepin, and Buffalo counties in western Wisconsin (Figure 1). It begins just downstream from Eau Claire, encompassing approximately 40 miles of the Chippewa River before it meets the Mississippi River, as well as a small portion of the Red Cedar River to its confluence with the Chippewa. The IBA contains a complex of high-quality natural communities associated with a large-river floodplain. Floodplain forest is found along the banks and islands of the river throughout the IBA and occurs in especially large tracts downstream from Durand to the Mississippi, where it is interspersed with sedge meadow, emergent marsh, shrub carr, savanna, prairie, and many sloughs and oxbow lakes. Sand and gravel terraces host savanna, barrens, and prairie, particularly upstream from Durand. Farther from the river, oak-dominated upland forests occur on the rugged hills, with dry prairie on steep, south-facing slopes. Also present are agricultural fields, non-native grasslands, and scattered conifer plantations.

Figure 1. Lower Chippewa River Important Bird Area, with major properties labeled.



Numerous public properties are found within the IBA boundary: the Lower Chippewa River, Caryville Savanna, Nine Mile Island, Five-Mile Bluff Prairie, and Tiffany Bottoms State Natural Areas (SNAs); the Dunnville and Tiffany State Wildlife Areas; the Rock Falls and Waterville Extensive Wildlife Habitat Areas; and portions of the Red Cedar and Chippewa River State Trails. It also includes a large private tract, the “Tyrone” property, owned by Xcel Energy. The IBA falls almost completely within the 312,000-acre Lower Chippewa River SNA project boundary and encompasses all the focus areas identified as priorities for land protection in the Lower Chippewa River SNA Feasibility Study (WDNR 1999).

Brief descriptions of the major tracts making up the IBA are given below. Additional details on the landscape and natural communities of the public properties can be found in The Regional and Property Analysis (WDNR 2009b) prepared for the master plan.

Caryville Savanna State Natural Area

This SNA is a low, sandy 412-acre island, known as Brush Island, in the Chippewa River. It consists of floodplain forest and a high-quality oak barrens on the western end.

Rock Falls Extensive Wildlife Habitat Area

This 268-acre property is the only public parcel within the IBA boundary that is not on either the Chippewa or Red Cedar Rivers, and so is not well connected to the other tracts. It is located south of the Chippewa in Dunn County, along Rock Creek which bisects the property. Most of the property is mixed prairie grass and wetland impoundment, with large planted white pines, hardwoods, and shrub carr adjacent to the creek.

Dunnville State Wildlife Area

This 4,366-acre wildlife area is located on the north bank of the Chippewa and extends north for a short distance along the Red Cedar, which flows into the Chippewa toward the property’s western end. Dunnville presents a diverse complex of lowland and upland habitats. The flat bottomland has open sand and gravel bars, floodplain forest interspersed with prairie, savanna, and sharecropped fields, and numerous oxbows and backwater sloughs. Farther from the river are steep slopes associated with a terrace escarpment that rises to over 80 feet in places; these contain rare terrace prairies and seepage lakes as well as oak savanna and shrub carr. Mixed hardwoods, jack pine barrens, and a conifer plantation are found on the plateau above the hills. Along the Red Cedar River are steep cliffs hosting mixed hardwood forests containing more ‘northern’ species, including red maple, white pine, white and yellow birch, and an area of black ash swamp.

Tyrone Property

This is a 4,000-acre undeveloped power plant site owned by Xcel Energy. It is located directly across the Chippewa River from the Dunnville Wildlife Area, with which it

shares many characteristics of topography and vegetation. Much of the property, especially farther from the river, consists of sharecropped fields and pine plantations, but there are small areas of jack pine barrens as well as prairie, floodplain forest, and savanna.

Nine Mile Island State Natural Area

Much of this 1,564-acre SNA is an island in the Chippewa River just downstream from the Dunnville Wildlife Area; there also are several small tracts along the south bank. Floodplain forest is the dominant community. There is an oak barrens on the island's northernmost tip with a diverse, high-quality dry prairie ground layer in places.

Waterville Extensive Wildlife Habitat Area

Located on the north bank of the Chippewa just west of Durand, this 316-acre property consists mostly of floodplain forest with many backwater sloughs; there are approximately 100 acres of former agricultural fields that are now in grass and shrubs.

Tiffany State Wildlife Area

Straddling the Chippewa for approximately 13 miles to just above its confluence with the Mississippi, the Tiffany Wildlife Area is the largest tract on the IBA at 13,118 acres. It contains two SNAs: Tiffany Bottoms (402 acres) and Five-Mile Bluff Prairie (10 acres). Tiffany is the premier forested property on the IBA, with significant tracts of both upland and lowland types. Floodplain forest predominates east of the river, with a canopy dominated by swamp white oak in the sandier northern third and a silver maple-dominated canopy in the finer alluvial sediments of the southern two-thirds. Other habitats are interspersed throughout, including floodplain savanna and prairie, shrub carr, sedge meadow, emergent marsh, oxbow lakes, and backwater sloughs. West of the river, the topography is much more rugged, rising steeply from the river. Upland oak-dominated forests occur here, along with scattered small, dry prairies. A 340-acre inholding owned by Xcel Energy is located in the northern third of the property, east of the river and west of Highway 25. This parcel is similar in vegetation and topography to that of the northern third of the Tiffany; it contains some floodplain forest, a small backwater lake, pine plantation, and dry prairie. WDNR manages this inholding through an agreement with Xcel.

Lower Chippewa River State Natural Area

Separate from the discrete sites described above is the Lower Chippewa River SNA, a project that encompasses 312,000 acres within the watersheds of the Chippewa, Buffalo, and Red Cedar Rivers and includes the entire floodplain of the Lower Chippewa. Within this project boundary, the State has authority to purchase 15,000 acres, especially targeting the many remnant prairies and savannas found within the boundary, which represent 25% of Wisconsin's remaining native grasslands. To date, 1,852 acres consisting of floodplain forest, current and former agricultural fields, and small amounts

of upland forest and wetlands have been acquired in scattered tracts along the Chippewa and Red Cedar Rivers.

Significance to Bird Conservation

The Wisconsin IBA Program uses several criteria categories to define critical bird habitat (Steele 2007): importance to state-listed species; importance to high conservation priority species; providing for assemblages of species associated with rare or representative habitats in the state; and hosting significant concentrations of breeding, migrating, or wintering birds. The Lower Chippewa River IBA meets criteria in each one of these categories. It hosts populations of 9 state endangered or threatened species, notably birds requiring extensive tracts of forest; 26 high conservation priority species; 5 breeding assemblages associated with rare or representative habitats (Floodplain Forest; Upland Hardwood Forest; Grasslands; Oak Savanna; and Sedge Meadow); and concentrations of waterbirds in late summer, waterfowl in the fall, and landbirds in fall and especially spring. The landbird numbers are considered exceptional (Steele 2007).

The extent and quality of the natural communities on the Lower Chippewa, and the bird habitats they provide, make this site stand out even among other IBAs. Of greatest significance to priority birds (see next section) are the extensive tracts of floodplain forest and upland forest; terrace prairies, particularly those that are drier and characterized by short, sparse vegetation, and floodplain and upland oak savannas; and the landscape-scale mosaic of large-river communities with its natural ecotones and lowland-to-upland gradient.

The floodplain forests of the Tiffany Wildlife Area make up the largest intact block remaining in the upper Midwest. Their connectivity with the Nelson-Trevino Bottoms (part of the Upper Mississippi Refuge) at the confluence of the Chippewa with the Mississippi increases their value. These forests are more diverse in structure and species composition than those found along much of the Upper Mississippi Refuge IBA; they exist in larger and more intact blocks than those on the Lower Wisconsin, St. Croix River, Van Loon Bottoms, and Avon Bottoms IBAs; and they have much greater public ownership than those on the Lower Wolf IBA. These characteristics greatly increase the forests' value and potential to provide for source populations of floodplain obligates like Prothonotary Warbler and species requiring extensive tracts of forest, such as Red-shouldered Hawk, Cerulean Warbler, and especially Kentucky Warbler, for which this IBA may represent the best opportunity in Wisconsin.

Dry riverine terrace prairies and more open barrens are important for grassland birds like Vesper Sparrow, Lark Sparrow, and Grasshopper Sparrow that favor sparse vegetation, exposed soil, and few, scattered trees or woody cover, particularly where they exist in larger blocks. The Lower Chippewa River IBA is especially important for Lark Sparrow, which is more restricted to sandy soils than other dry-grass-loving species; only the Lower Wisconsin River and Fort McCoy-Robinson Creek Barrens IBAs offer equal or higher opportunity for this species.

Depending on their structure, savannas on the Lower Chippewa IBA provide for birds that prefer more forested as well as more open habitats, and are most valuable to priority species when they are in larger blocks, well connected to surrounding communities, and serving as transitional habitats on the continuum between closed and open types. Whip-poor-wills may benefit from savanna restoration and management in more forested contexts (dry sites with open understory, such as more closed oak barrens, adjacent to grassy openings), while work in more open situations with scattered trees or woody cover can create or maintain habitat for Red-headed Woodpecker and Field Sparrow.

The ecotonal nature of habitats on the Lower Chippewa River IBA, where variations in soils, slope, exposure, hydrology, previous management, and natural and anthropogenic disturbance cause communities to intergrade and mix, is a significant and characteristic feature and one that is important to priority birds. Kentucky Warbler (floodplain-upland forest ecotone) and Blue-winged Warbler (forest-shrub ecotone) are examples of priority species for which this grading or juxtaposition of communities is a critical habitat feature. Finally, the vast mosaic of lowland and upland habitats on the Lower Chippewa is important to a host of common breeding bird species. Appendix 1 contains a list of breeding birds for the IBA.

IDENTIFYING PRIORITY SPECIES

Compiling a Priority Species List

In keeping with a strategic focus on identifying this site's most valuable contribution to larger-scale bird conservation objectives, the following state and regional bird conservation plans were used to compile a candidate priority species list for the Lower Chippewa River:

- Priority species in the Partners in Flight bird conservation plan for the Upper Great Lakes Plain (Knutson et al. 2001), also known as Bird Conservation Region (BCR) 23, the Prairie-Forest Transition, a region that encompasses roughly the southern two-thirds of Wisconsin.
- Priority species in the Upper Mississippi River and Great Lakes Joint Venture landbird, waterbird, and waterfowl habitat conservation strategies (Potter et al. 2007; Soulliere et al. 2007 a, b).
- Bird Species of Greatest Conservation Need (SGCN) in the Wisconsin Wildlife Action Plan (WDNR 2005).
- Grassland bird species of management concern in the Southwestern Uplands Natural Division, an area of the state that includes the Lower Chippewa River (Sample and Mossman 1997).

Breeding populations were emphasized in priority setting. The initial candidate list numbered 42 birds. Local, state, and regional population estimates (Steele 2007; RMBO 2007; Soulliere et al. 2007 a, b) were then used to examine the relative opportunity for

these species on the Lower Chippewa compared to other important sites around the state for which population estimates were available. Each species was assigned on this basis to one of three opportunity categories: Low, Moderate, or High (Table 1).

Table 1. Candidate Priority Species and their opportunities for the Lower Chippewa River.

Species	Lower Chippewa River Opportunity ¹	Population Estimate (breeding pairs) ²
Blue-winged Teal	Low	20-25
Hooded Merganser	High	40-80
Northern Bobwhite	Low	10-20
American Bittern	Low	~20
Least Bittern	Low	1-10
Yellow-crowned Night-Heron	Low	1-2
Bald Eagle	Moderate	30
Northern Harrier	Low	~5
Red-shouldered Hawk	High	40-50
Black Tern	Low	5-30
Black-billed Cuckoo	Low	100-300
Yellow-billed Cuckoo	Moderate	100-300
Whip-poor-will	Moderate?	>20
Red-headed Woodpecker	Moderate	~60
Acadian Flycatcher	Low	~10
Willow Flycatcher	Low	30-60
Least Flycatcher	Low	100-150
Bell's Vireo	Low	2-4
Yellow-throated Vireo	Low	100-200
Northern Rough-winged Swallow	Low	50-100
Sedge Wren	Low	30-60
Marsh Wren	Low	2-10
Veery	Low	40-80
Wood Thrush	Low	40-80
Brown Thrasher	Moderate	50-150
Blue-winged Warbler	Moderate	100-200
Cerulean Warbler	High	30-50
Prothonotary Warbler	Moderate	30-50
Worm-eating Warbler	Moderate	2-4
Louisiana Waterthrush	Low	2-4
Kentucky Warbler	High	30-40
Hooded Warbler	Low	~10
Field Sparrow	Moderate	200-400
Vesper Sparrow	Moderate	150-300
Lark Sparrow	High	40-80
Grasshopper Sparrow	Moderate	150-300
Henslow's Sparrow	Moderate	30-50
Swamp Sparrow	Low	50-100
Dickcissel	Low	30-50
Bobolink	Low	30-50
Eastern Meadowlark	Low	30-50
Western Meadowlark	Low	10-20

¹ Relative opportunity on Lower Chippewa River compared to other sites in Wisconsin for which estimates are available.

² From R. Hoffman pers. comm. 2008; K. Johansen pers. comm. 2009; Krause 2008; M.J. Mossman pers. comm. 2009; Mossman and Hartman 1991; Steele 2007; WBBA data 1995-1999; WDNR 2008; and WDNR 2010.

Selecting a final set of priority species from the candidate list was a challenge due to the lack of bird survey coverage across the entire IBA. It is a vast site with many areas that are remote and difficult to access, particularly on the Tiffany. Large portions have never been adequately surveyed or lack recent data, complicating the process of estimating populations and gauging relative opportunity. The assessments in Table 1 generally are conservative; they are the best that available data, supplemented by expert opinion, could produce and may underestimate populations and opportunity for some species. The priority species list below, therefore, is presented with the understanding that it is dynamic and subject to change as additional information becomes available.

All the species in the High and Moderate Opportunity categories were placed on the final priority list. The majority of species in the Low Opportunity category were not included on the final list. Many of these species clearly have much higher populations and management opportunity elsewhere. Examples include Northern Harrier (large open landscapes dominated by idle grassland, sedge meadow, etc.); Least Flycatcher (extensive hardwood and mixed forests in northern Wisconsin); Marsh Wren (dense emergent marshes, particularly those with cattail or river bulrush, in central and eastern Wisconsin); and Louisiana Waterthrush (springs or clean, flowing streams, especially in steep, rocky gorges or ravines, in large tracts of upland forest, particularly in the Baraboo Hills). In most cases, they occupy habitats that are represented by higher opportunity species. Several Low Opportunity species were included on the final list, however: Blue-winged Teal; Least Bittern; Yellow-throated Vireo; Wood Thrush; Bobolink; and Eastern Meadowlark. All of these species may be underestimated and their habitat requirements are captured only partially or not at all by those of the higher opportunity species.

Opportunity to Inform Management

The 22 Priority Species for the Lower Chippewa River IBA are shown in Table 2, grouped by broad habitat type and also placed into one of two categories, High or Moderate, according to their opportunity to inform management.

High Opportunity species are those whose habitat requirements are considered most useful for planning and guiding management activities on the Lower Chippewa. In general, these species share the following characteristics: relatively large populations on the Lower Chippewa; identifiable habitat features that can be influenced by management actions; some degree of predictable response to management; and habitat needs that provide for those of other species.

Cerulean Warbler is one example of a High Opportunity species. This area-sensitive forest-interior species' habitat requirements—large forest tracts, mature stands, many

large trees and complex canopy structure—must and can be planned for at multiple spatial scales, which probably also will provide habitat for many other forest species. In contrast, the equally important Kentucky Warbler is placed in the Moderate Opportunity category because its habitat is harder to characterize and its presence in a particular management stand can be difficult to predict based upon specific management options (e.g., it often occurs at stand boundaries or where diffuse forest openings are created by disease or windthrow). Kentucky Warbler may be more predictable on the Lower Chippewa than at other sites; with better monitoring and habitat characterization this species may become a candidate for the High Opportunity category.

Table 2. Lower Chippewa River Priority Species by broad habitat category and opportunity to inform management.

	Forest	Savanna/Shrub	Grassland	Marsh
High Opportunity	Bald Eagle Red-shouldered Hawk Cerulean Warbler Prothonotary Warbler	Whip-poor-will Red-headed Woodpecker Blue-winged Warbler	Field Sparrow Vesper Sparrow Lark Sparrow Grasshopper Sparrow Henslow's Sparrow	
Moderate Opportunity	Hooded Merganser Yellow-billed Cuckoo Yellow-throated Vireo Wood Thrush Kentucky Warbler	Brown Thrasher	Bobolink Eastern Meadowlark	Blue-winged Teal Least Bittern

Similarly in the Savanna/Shrub category, Brown Thrasher has Moderate Opportunity to inform management because its numbers are relatively low, it can occur in a wide variety of open habitats with scattered woody vegetation (although somewhat more predictably where soils are sandy), and because its requirements are provided for by a combination of the habitats of the High Opportunity Savanna/Shrub birds and several of the Grassland species.

In several cases, High Opportunity species represent specific habitats and features for which the Lower Chippewa holds a significant opportunity but which are not captured by the habitat requirements of other Priority species. Examples include Prothonotary Warbler, a floodplain forest obligate which needs still or slow-moving water and snags with cavities suitable for nesting, and Bald Eagle, which depends on large nesting trees and a healthy aquatic ecosystem that provides diverse fish populations.

The two Marsh species, Blue-winged Teal and Least Bittern, represent a special case. Both species have very low estimated populations on the Lower Chippewa, which is far from their centers of breeding activity in the state (Cutright et al. 2006). While this IBA lacks the more extensive emergent marshes (with adjacent upland grassland for the teal) that would provide greater opportunity for both species, it does contain smaller moderate-to-high quality marshes and sedge meadows (e.g., at Dead Lake Slough) mostly interspersed within the floodplain forests of the Tiffany Wildlife Area, which provide valuable habitat. Blue-winged Teal and Least Bittern represent these habitats.

MANAGING FOR PRIORITY SPECIES

Species-specific Recommendations

The following section provides more detailed information for Priority Species, emphasizing those identified in Table 2 as having High Opportunity to inform management. The species are presented grouped by habitat, with habitats listed in order of overall conservation significance within the IBA. The information for each species includes a population estimate (from Table 1), habitats used, Lower Chippewa properties with management opportunity, key habitat features, and management recommendations. Where several habitats are listed for a species, an attempt was made to list more preferred habitats first. Properties with management opportunity are listed in order of greatest to least.

Forest Species (see individual species maps in Appendix 2)

- **Bald Eagle**; estimated population: 30 pr
 - Habitats: floodplain forest; upland forest.
 - Properties with management opportunities: Tiffany; Nine Mile Island; Dunnville; Tyrone; Waterville; Lower Chippewa River SNA; Caryville.
 - Key habitat features: mature forest stands near water; nest in large, supercanopy trees; diverse forage fish populations; open areas (beaches; sand or gravel bars) for killing and eating prey.
 - Recommendations:
 - Consider maintaining a 330-foot no-management buffer around nests at all times.
 - Management activities (forestry practices, prescribed burning) from 330 feet to ~1/4 mile of the nest should occur outside the breeding season (April 1 to July 15).
 - If timber cutting occurs in an eagle territory, retain supercanopy trees.
 - Refer to National Bald Eagle Management Guidelines (USFWS 2007) for additional recommendations.
 - Maintaining water quality and a healthy aquatic ecosystem is important to this species.

- **Red-shouldered Hawk**; estimated population: 40-50 pr
 - Habitats: floodplain forest; upland forest.
 - Properties with management opportunities: Tiffany; Nine Mile Island; Waterville; Lower Chippewa River SNA; Caryville.

- Key habitat features: large tracts of mature, closed-canopy forest associated with water; prefers stands with some large trees; area-sensitive.
- Recommendations:
 - Avoid fragmenting large tracts into smaller blocks.
 - Use uneven-aged management that does not reduce the canopy cover below 70% in areas of known occupancy; consider longer rotations.
 - Maintain a buffer of ~20 acres around known nest sites.
 - Avoid disturbance in areas of known occupancy between April 1 and May 15.

- **Cerulean Warbler**; estimated population: 30-50 pr
 - Habitats: floodplain forest; upland forest.
 - Properties with management opportunities: Tiffany; Nine Mile Island.
 - Key habitat features: extensive forested matrix; mature stands with many large trees; complex canopy structure; prefers diversity of tree species (e.g., less abundant in stands of pure silver maple); area-sensitive.
 - Recommendations:
 - Maintain large tracts of mature, structurally diverse (high snag density; complex canopy) forest.
 - Use forest management techniques that result in 2 or more age classes.
 - Encourage large trees.
 - Maintain or encourage a diversity of tree species; since elms are gone and ashes are in danger, species like swamp white oak, hackberry, basswood, and yellowbud hickory are acceptable in addition to silver maple.
 - Within an extensive forested matrix, small canopy openings (i.e., from small group selection or single-tree harvests) are acceptable.

- **Prothonotary Warbler**; estimated population: 30-50 pr
 - Habitats: floodplain forest.
 - Properties with management opportunities: Tiffany.
 - Key habitat features: floodplain forest obligate; often found at edges but most abundant in large tracts; cavity nester; requires slow-moving or pooled water and trees or snags (0-6 feet from water) with cavities suitable for nesting 2-12 feet above the water or ground, occasionally higher.
 - Recommendations:
 - Retain snags and cavity trees.

- This population seems to be restricted to the far southern portion of the Tiffany (where Highway 35 crosses the property, and adjacent to Nelson-Trevino Bottoms); apparently absent from suitable habitat farther north in the Tiffany, although this species is poorly monitored and recent data are lacking; consider keeping most of this area (particularly south of Hwy 35) in closed-canopy ($\geq 75\%$) forest; avoid creating large, shrubby openings, especially those that may become invaded by exotics.
- **Kentucky Warbler**; estimated population: 30-40 pr
 - Habitats: floodplain forest; upland forest; prefers wet-mesic conditions; often occurs at the ecotone between floodplain and upland forest.
 - Properties with management opportunities: Tiffany; Nine Mile Island.
 - Key habitat features: large forest tracts with big trees; within a large forested matrix, attracted to small openings, such as those caused by natural windthrow or disease, that have partial canopy cover and semi-dense shrubs, saplings, or herbaceous vegetation (see habitat description and photo from Nine Mile Island in Appendix 3); nests on or very close to the ground; area-sensitive.
 - Recommendations:
 - In general, management that provides suitable habitat for Cerulean Warbler will also provide for this species, although understory structure rather than canopy structure is more important for Kentucky Warbler.
 - Preserve the natural ecotone between lowland and upland forest, as that is where this species tends to occur.
 - Habitat can be difficult to characterize in terms of stand-level prescriptions; the key features are small (~5 trees), canopied openings having a patchy distribution of dense saplings, shrubs, and/or herbaceous vegetation (forbs, not grasses); tend not to occur in extensive shrubby openings, especially if open-canopied.

Grassland Species (see individual species maps in Appendix 2)

- **Field Sparrow**; estimated population: 200-400 pr
 - Habitats: dry prairie; dry-mesic prairie; semi-open to open barrens; floodplain, terrace, and upland oldfields with at least a little woody cover; young conifer plantations.
 - Properties with management opportunities: Dunnville; Tyrone; Tiffany; Nine Mile Island; Rock Falls; Lower Chippewa River SNA.
 - Key habitat features: idle grassland with 5-25% cover of scattered shrubs or saplings; prefer dry, upland sites (although tend not to occur on steep, bluffside prairies) but occur in the floodplain where soils are sandy; will use small (15-25 acres) sites.
 - Recommendations:

- Infrequent (4-6 yr) burning or mowing will keep grassland open while maintaining a shrub component.
 - Managing for an ephemeral component of scattered shrubs can provide suitable habitat for Field Sparrows on larger sites; conversely, a more permanent shrub presence can be maintained on smaller sites that are less suitable for grassland species having larger area requirements and lower tolerance for woody cover.
- **Vesper Sparrow**; estimated population: 150-300 pr
 - Habitats: open oak or pine barrens; dry prairie; sand prairie; young prairie restoration; weedy rowcrops; recently abandoned fields.
 - Properties with management opportunities: Dunnville; Tyrone; Lower Chippewa River SNA; Rock Falls; Caryville.
 - Key habitat features: prefers dry, sandy habitats with short, sparse vegetation, exposed soil, and some scattered shrubs, saplings, or tall forbs; nests on the ground.
 - Recommendations:
 - Maintain short (<6 inches), sparse herbaceous vegetation with medium (1:1 to 2.5:1) grass to forb ratio, <5% woody cover, and some exposed soil.
 - Vesper Sparrows tolerate short (1-2 yr) burn rotations and readily colonize recently burned sites if some scattered woody cover remains; they also respond to continuous light grazing.
- **Lark Sparrow**; estimated population: 40-80 pr
 - Habitats: sand prairie; open oak or pine barrens; dry prairie; dry oldfields or fallow fields.
 - Properties with management opportunities: Dunnville; Tyrone; Lower Chippewa River SNA.
 - Key habitat features: restricted to dry, sandy habitats with short, sparse herbaceous vegetation and exposed soil or sand blows; prefers sites with some scattered shrubs and trees for song perches; nests on the ground.
 - Recommendations:
 - Maintain short (<6 inches), sparse herbaceous vegetation with high (>2.5:1) grass to forb ratio, no more than 10% woody cover, and bare ground.
 - Lark Sparrows tolerate short (1-2 yr) burn rotations and readily colonize recently burned sites if some scattered woody cover remains; they also respond well to moderate-to-heavy grazing.

- **Grasshopper Sparrow**; estimated population: 150-300 pr
 - Habitats: dry prairie; dry-mesic prairie; open barrens; dry oldfields or fallow fields, pasture; sand prairie.
 - Properties with management opportunities: Dunnville; Tyrone; Nine Mile Island; Rock Falls.
 - Key habitat features: relatively short, sparse vegetation with some bare soil and little to no woody cover; prefers some stiff-stemmed forbs for perching; moderately area-sensitive.
 - Recommendations:
 - This species is best managed for in grassland sites >25 acres.
 - Burning or mowing can be used to maintain the preferred structure: 2-8 inch vegetation height, medium grass to forb ratio (1:1 to 2.5:1), and some bare ground.
 - Use burn intervals of 2-4 yr; for smaller sites, treat no more than 50-60% in a given year.
 - Grasshopper Sparrows will use taller grass habitats if vegetation is patchy and not too dense.

- **Henslow's Sparrow**; estimated population: 30-50 pr
 - Habitats: dry-mesic to wet prairie; idle warm or cool season grass.
 - Properties with management opportunities: Dunnville; Rock Falls.
 - Key habitat features: tall (>12 inches), dense, grass-dominated vegetation in uplands or lowlands having abundant litter and standing dead vegetation (residual) and little (<5%) or no woody cover; at least moderately area-sensitive.
 - Recommendations:
 - Management for Henslow's Sparrow ideally should occur in tracts >120 acres in size.
 - Use long management rotations (4-6 yr) to maintain the preferred structure; only 20-30% of a site should be managed in a given year.

Savanna/Shrub Species

- **Whip-poor-will**; estimated population: >20 pr
 - Habitats: oak barrens; pine barrens; oak woodland.
 - Properties with management opportunities: Tiffany; Dunnville; Nine Mile Island; Tyrone.
 - Key habitat features: open forest (especially oak) with little or no underbrush and sparse ground layer, adjacent to grassy clearings or other open habitats for

foraging; seems to prefer drier sites; nests on the ground, sometimes under a shrub or sapling; area-sensitive.

- Recommendations:
 - This species may require a fine-scale mosaic of wooded stands and openings within a forested matrix; species is poorly monitored and little is known about its habitat requirements.
 - Management of oak barrens with fire and cutting to create a variety of structures may provide the best opportunity for this species, especially where the surrounding landscape is mostly forested.

- **Red-headed Woodpecker**; estimated population: ~60 pr

- Habitats: open savanna-like habitats with scattered trees in uplands or lowlands—oak woodland, savanna, barrens, pockets of diseased or flooded trees in floodplain forest; less common than formerly in forest openings.
- Properties with management opportunities: Dunnville; Tiffany; Nine Mile Island; Tyrone; Lower Chippewa River SNA; Caryville.
- Key habitat features: open understory with scattered trees having cavities suitable for nesting; will use dead limbs in live trees, but prefer dead trees/snags with no bark; prefer areas with small clusters of dead or dying trees containing suitable nest sites; open understory is important for facilitating common foraging techniques (flycatching; swooping; ground foraging).
- Recommendations:
 - Maintaining and restoring savanna may create suitable habitat for this species, particularly if fire is used as it can create the preferred barkless snags and clusters of dead trees; this also can be accomplished by girdling.
 - Retain snags and dying trees in suitable habitat; avoid pruning dead limbs from live trees.
 - Controlling invasive shrubs is important to this species.

- **Blue-winged Warbler**; estimated population: 100-200 pr

- Habitats: shrubby or early-successional habitats in forested landscapes, e.g., floodplain and upland forest openings (large or small); shrubby oldfields; barrens; “soft” edges; tend not to be in very dry barrens sites nor in shrub swamps.
- Properties with management opportunities: Tiffany; Dunnville; Nine Mile Island; Tyrone; Lower Chippewa River SNA; Caryville.
- Key habitat features: semi-dense to dense shrubs or seedlings with scattered trees in mesic to wet-mesic sites.
- Recommendations:

- Naturally a bird of shifting mosaic habitat dynamic; current management, floodplain disturbance and natural habitat diversity on the IBA provide the habitat features this species needs.
- Not necessary to target specific management at this species (selective cutting would be a way to provide habitat for them).

Marsh Species

- **Blue-winged Teal**; estimated population: 20-25 pr
 - Habitats: emergent marsh; sedge meadow.
 - Properties with management opportunities: Tiffany; Dunnville; Rock Falls.
 - Key habitat features: open water (permanent or semi-permanent for brood rearing); adjacent idle grassland or sedge meadow for nesting.
 - Recommendations:
 - Maintain or restore idle grasslands adjacent to wetlands; Blue-winged Teal prefer medium height (6-14 inches), dense vegetation with a moderate litter layer and little or no woody cover.
 - Maintaining water quality (i.e., avoiding siltation) and preventing reed canary grass invasion are important to maintaining wetland habitats.

- **Least Bittern**; estimated population: 1-10 pr
 - Habitats: emergent marsh.
 - Properties with management opportunities: Tiffany; Dunnville; Rock Falls.
 - Key habitat features: tall, dense stands of emergent vegetation (cattail, bulrush) interspersed with open water; prefer hemi-marsh conditions (having ~1:1 ratio of emergent vegetation to open water); tend to occur in larger marshes.
 - Recommendations:
 - Keep shrubs and trees from encroaching around wetlands.
 - Maintaining water quality (i.e., avoiding siltation) and preventing reed canary grass and narrow-leaved cattail invasion are important to maintaining wetland habitats.

Property-specific Recommendations

This section provides general bird habitat management recommendations that are applicable across the Lower Chippewa River IBA, followed by more detailed treatments of each individual property. The individual property treatments include a summary of relevant information from the Master Plan (for the state-owned properties), list of major bird-related habitat opportunities, description of Priority species opportunities, and property-specific management and monitoring recommendations.

For the state-owned properties, the Master Plan summaries refer to Native Community Management Areas (NCMAs) and Habitat Management Areas (HMAs), which are classifications in the land management classification scheme described in Wisconsin Administrative Code NR 44, used for all WDNR property master plans. All the lands in the Lower Chippewa properties fall into one of these two classifications, which the Master Plan describes as follows:

“Native Community Management Areas are managed to represent, restore and perpetuate native plant and animal communities, whether upland, wetland or aquatic, and other aspects of native biological diversity.

Habitat Management Areas are managed to provide or enhance habitat, whether upland, wetland or aquatic, to support specific species of plants and animals.”
(WDNR 2010, p. 4-5)

General Management Recommendations

- Larger blocks of habitat generally are more valuable for birds than smaller ones because they provide better for area/edge sensitive species and capture more natural variability (e.g., topography, different habitat structures, etc.).
- Gradual ecotones between habitat types are better than sharp edges because they allow plant communities to shift in response to natural variations in topography, substrate, etc., and provide for birds that key in on transitional habitats; examples are Blue-winged Warbler (shrub-forest transition) and Kentucky Warbler (lowland-upland forest transition). Similarly, it is better to have a habitat surrounded by a physically more similar habitat than a physically less similar one: the same 20-acre tract of dry prairie will be much better for Grasshopper Sparrows if surrounded by taller, thicker grassland (even though this structure is unsuitable for them) than if surrounded by shrubs or forest. Similar habitats should be connected wherever possible to create larger blocks.
- Open habitats (e.g., prairies, sedge meadows) should never be fragmented by linear woody features. Woody cover in open grasslands should be scattered and generally kept below 15%, and will often be ephemeral or shifting spatially.
- Currently cropped or newly acquired agricultural land should be left in production until it can be managed or restored to a native community type.
- Controlling exotic and overabundant species is an overarching and ongoing need across the whole IBA. This may be the most important management need to attend to given that the effects of these species can limit future management options, sometimes severely, stymie the most well-executed of restorations, and impact bird habitat in profound and long lasting ways. Exotics should be aggressively controlled to keep them in check and prevent their spread into new areas; when kept at low levels, their effects on breeding birds generally are minimal. The problem of overabundant deer is a more complicated one to tackle but should nevertheless be addressed sooner rather than later. If excessive deer browse is indeed preventing

regeneration in floodplain forests, the implications for long-term forest health and bird habitat could be serious.

- Regular monitoring of breeding birds is another overarching need, one that is essential if management is to be truly “adaptive”. Birds are relatively easy to monitor and, more than any other taxon, provide a useful measure of the overall health of natural communities. The monitoring recommendations in the individual property treatments below highlight inventory gaps needed to better refine estimates for Priority species and establish a baseline against which future monitoring data can be evaluated; however, a long-term monitoring scheme is needed for surveying habitats across the IBA at suitable intervals in order to determine whether management is maintaining populations of Priority species. Ideally this monitoring scheme would be: repeatable; designed to assess the status of species of interest across the whole IBA as well as answer questions that individual managers may have about how management is affecting birds on their property; integrated into larger state and regional coordinated bird monitoring efforts.

Tiffany State Wildlife Area

- **Master Plan summary (see WDNR 2010, Map G-1):**
 - A 759-acre HMA focused on early-successional upland (oak-aspen) forest management is located in the northern portion of the Pepin County side.
 - South of this is the 826-acre Five Mile Bluff Prairie/Woods NCMA.
 - The entire Buffalo County portion and floodplain forest portion of Pepin County is NCMA: the Floodplain Prairie & Savanna NCMA encompasses 3,844 acres in the northern third of the Buffalo County portion; the southern two-thirds of the Buffalo County portion and the Pepin County floodplain forest comprise the 7,718-acre Floodplain Forest & Wetlands NCMA, which is further subdivided into a 4,328-acre Active Management area and a 3,390-acre Passive Management area.
- **Major habitat opportunities:**
 - Best forest opportunity on the whole IBA for both floodplain and upland forest.
 - Best connection between floodplain and upland forest.
 - Floodplain forest presents a special opportunity as it is the largest block in the state and upper Midwest, is high-quality (relatively undisturbed and diverse in structure and species composition), and is interspersed with a mosaic of related habitats (shrub carr, marsh and sedge meadow, oxbow lakes, etc.) that add diversity.
 - Significant savanna opportunity (particularly with additional restoration), especially as a transition from more closed-canopy structure in southern two-thirds of property to more open in northern third; this could maintain habitat for some forest birds while providing for savanna birds.

- Open wetland opportunity is low on this IBA, but Tiffany has the best.

- **Priority species opportunities:**

- Best opportunity for Priority forest birds on the entire IBA: Bald Eagle; Red-shouldered Hawk; Cerulean Warbler; Prothonotary Warbler—only population on the IBA; Kentucky Warbler—may be the best opportunity in the state.
- Blue-winged Warbler: likely a high proportion of the IBA population occurs on the Tiffany.
- Whip-poor-will: this species is very poorly monitored; however, savanna restoration in the Floodplain Prairie & Savanna NCMA may provide habitat for this species. The drier and more open oak woodlands in the Five Mile Bluff Prairie/Woods NCMA also may provide suitable habitat, especially where stands are adjacent to prairie openings.
- Red-headed Woodpecker: savanna restoration in the Floodplain Prairie & Savanna NCMA may provide habitat for this species. Although no longer as common in forest openings as in the past, may use trees killed by flooding and disease; such openings may increase in the Tiffany in the future due to the effects of emerald ash-borer.
- Best opportunity on the IBA for marsh birds: Blue-winged Teal; Least Bittern.
- Some opportunity for Field Sparrow in the Floodplain Prairie & Savanna NCMA.

- **Management Considerations:**

- Tiffany presents the best opportunity on the IBA to sustain source populations of Priority forest birds.
- Bald Eagle and Red-shouldered Hawk have been recorded throughout the Tiffany; Prothonotary Warbler is restricted to floodplain forest and available data suggest that Cerulean Warbler and possibly also Kentucky Warbler are more abundant in the floodplain forest than in the upland (see individual species maps in Appendix 2).
- According to available data, the Prothonotary population is concentrated in the Active Management portion of the Floodplain Forest & Wetlands NCMA (below Hwy 35), while Ceruleans have been recorded more often in the Passive Management portion; Kentuckies have been recorded in both the Active and Passive Management portions. *However*, this needs to be confirmed by monitoring; most of the data for these species is >10 yrs. old; this entire NCMA is a high priority for surveys, especially targeting these three species.
- Management aimed at Cerulean Warbler should provide for the habitat needs of the other Priority forest birds (although note species-specific habitat features above). Modeling in the Driftless Area suggests that Tiffany is within a landscape having high potential for forest-interior bird habitat (Wilson 2008). Tiffany's extensive forests, especially the Floodplain Forest & Wetlands

NCMA, have many of the attributes listed in the best available description of Cerulean Warbler habitat for the upper Midwest, the Cerulean Warbler Conservation Area Model (Knutson et al. 2001; see excerpt in Appendix 4).

- Many stands throughout Tiffany’s floodplain forests may already have many suitable characteristics, with maturing conditions, natural disturbances (especially windthrow), and interspersed other native habitats and features (e.g., open sloughs, sedge meadows, beaver ponds, etc.) providing the necessary structural diversity and canopy gaps. Management to “create” this habitat probably is not necessary. Where lack of natural regeneration is a concern, some management may be appropriate; however, if excessive deer browse is the problem, silviculture still may not produce regeneration. Controlling deer densities and preventing the spread of reed canary grass and invasive shrubs (see Krause’s introductory habitat description paragraph in Appendix 5) may be the most critical management activities in these forests.
- Plan forest management at multiple scales—landscape (i.e., entire property), site (management area), and compartment/stand. Regeneration objectives can be met while maintaining Priority forest bird habitat by using a variable retention silvicultural system, which maintains structural complexity and mimics natural disturbance while still allowing for regeneration (Mitchell and Beese 2002). Maintaining some canopy cover in managed stands has the added advantage of discouraging invasion by reed canary grass.
- Much of the research on managing floodplain forests for birds comes from the southern and southeastern states, where Priority species such as Prothonotary and Kentucky Warblers are more abundant and widespread and where forest conditions may not be comparable to our floodplain forests in the Upper Midwest, and particularly to unmanaged forests in the Tiffany. With these caveats firmly in mind, the following research from the Mississippi Alluvial Valley may provide some useful management guidance. Twedt and Somershoe (2009) found that variable retention, or “wildlife forestry”, treatments (clustered thinning with and without embedded patch cuts) generally were not detrimental to priority forest birds; Prothonotary Warbler densities were not significantly different between treatment and control stands, and Kentucky Warbler densities were higher in treated stands. However, Norris et al. (2009) found that less intensive “wildlife forestry” harvest regimes (individual selection and small group selection) were most beneficial (similar or increased densities compared to unharvested stands) to priority forest birds, while more intensive regimes (species selection and shelterwood) benefitted common shrub/edge birds to the detriment of priority forest species.
- Retention of large, live trees, snags, and coarse woody debris should be emphasized. The following guidelines for bottomland hardwoods from the Lower Mississippi Valley Joint Venture may be worth considering as target stand conditions for regenerating stands in Active Management areas (again, keep in mind that these are untested in the Upper Midwest): average overstory canopy cover of 60-70%, midstory cover of 25-40%, and 14-16 m²/ha basal area

(60-70 ft²/acre) with $\geq 25\%$ in older age classes (Twedt and Wilson 2007, Wilson et al. 2007).

- For Tiffany forests:
 - **Floodplain Forest & Wetlands NCMA, Passive:** if any forest management occurs here, it should be single-tree selection.
 - **Floodplain Forest & Wetlands NCMA, Active:** consider mostly single-tree selection or small group selection (30-40% canopy removal) with extended rotations in areas directly adjacent to Passive portion. If areas of more intensive canopy removal are necessary, they should be <2 acres or <20% of stand area. Always retain snags and cavity trees, especially in core Prothonotary Warbler area south of Hwy 35.
 - **Five Mile Bluff NCMA:** maintain integrity of ecotones between different forest types, particularly between lowland and upland. As in the floodplain, maintain stand conditions suitable for Cerulean Warbler; emphasize variable retention where forestry practices are used. Consider experimenting with fire to regenerate oaks. Manage for open oak woodland where it can serve as a transition between interior forest and prairie openings—areas of semi-open canopy can still be used by several Priority upland forest birds (Cerulean Warbler, Yellow-billed Cuckoo, Yellow-throated Vireo), while attracting savanna species, particularly if the understory is also open. Again, controlling invasive shrubs and excessive deer browse may prove the most important management activities for perpetuating Priority bird habitat.
- As with Five Mile Bluff, savannas in the **Floodplain Prairie & Savanna NCMA** should be restored and managed to be transitional from closed-canopy forest to oak woodland to oak opening to prairie. Because of Tiffany's extensive forested context, this should not be a detriment to Priority forest-interior birds like Cerulean Warbler and Kentucky Warbler, whose core populations are likely farther south in the Tiffany anyway, especially if appropriate structural features are retained along the more closed-canopy part of the savanna continuum. Natural ecotones should be preserved or mimicked and hard edges avoided. In general, consider promoting a more closed-canopy savanna structure in the southern portion of this NCMA (in and around Tiffany Bottoms SNA), with more open-canopied savanna structure and prairie openings increasing toward the north. Favor an open understory as much as is practical in these areas with more open-canopied savanna structure, as this will be more attractive to Red-headed Woodpecker and Whip-poor-will. Shrub patches are naturally present and will shift around with management, disturbance, and succession; these are the habitats that will support Blue-winged Warblers. Management should encourage this shifting mosaic. Shrub cover should not be allowed to dominate savanna understories as this will render them less attractive to Priority savanna species and will impede oak regeneration. Invasive shrubs should be aggressively controlled; manage the Xcel inholding to complement management on adjacent state-owned lands; restore native

habitat types as feasible and promote a lowland-to-upland gradient. Tiffany's grassland bird opportunity is limited, but this NCMA offers the best of it, with prairie openings providing some habitat for Field Sparrow; expect these birds to move around somewhat as woody cover comes and goes on the prairies.

- Management around marshes should focus on maintaining their openness and maintaining or creating gradual ecotones between these open wetlands and surrounding communities. Excessive tree or shrub encroachment directly adjacent to marshes should be discouraged. Where possible, maintain or restore grassland adjacent to wetlands, as this will benefit Priority marsh birds.

- **Monitoring Recommendations:**

- The entire Buffalo County portion of Tiffany needs to be inventoried for Priority species, especially Cerulean Warbler, Kentucky Warbler, and Prothonotary Warbler in the central and southern portions; this will require surveys both on foot and by canoe.
- Consider a nocturnal survey for Whip-poor-will, especially in the northern third of the Buffalo County portion, and at Five Mile Bluff.

Dunnville State Wildlife Area

- **Master Plan summary (see WDNR 2010, Map G-2):**

- The majority of the property, 2,757 acres, is classed as a HMA focused on grassland, grass-shrub, and early-successional habitats.
- The Floodplain Terrace Prairies & Wetlands NCMA, 1,139 acres in size, is located along the Chippewa River and the terrace escarpment.
- The Red Cedar Cliffs and Forest NCMA encompasses 587 acres along both sides of the Red Cedar River.

- **Major habitat opportunities:**

- Best opportunity on the whole IBA for large blocks of grassland, especially dry, short-grass habitat but including a variety of structures and moist and dry types.
- Moderate to good opportunity for savanna, restored barrens, and transitional shrub habitats.
- Moderate upland forest opportunity (northern dry-mesic type—red oak, red maple, white pine).
- Low floodplain forest opportunity, intermixed with other community types.

- **Priority species opportunities:**

- Best opportunity for grassland birds favoring shorter, sparser structure and dry conditions—Lark Sparrow, Grasshopper Sparrow, Vesper Sparrow.
- Good opportunity for Field Sparrow where scattered woody cover is present.

- Varying topography and moisture levels (e.g., wet swales) may provide for moderate numbers of tall/thick grass species like Henslow's Sparrow and generalists like Eastern Meadowlark and Bobolink.
- Red-headed Woodpecker may benefit from increasing size, connectivity, and openness of grassland, savanna, and barrens habitats, especially where fire is used and snags and cavity trees retained.
- Blue-winged Warbler: moderate to good opportunity in shrubby forest openings, edges, shrubby oldfields, etc.
- Whip-poor-will: savanna/barrens restoration and management may improve habitat for this poorly monitored species.
- Opportunity for Priority forest birds is low on this property and mostly limited to the Red Cedar Cliffs and Forest NCMA. This area has mostly common forest birds (e.g., Ovenbird, Eastern Wood-Pewee, Red-eyed Vireo), but does support low numbers of Red-shouldered Hawk, Yellow-billed Cuckoo, Acadian Flycatcher, and Hooded Warbler.

- **Management Considerations:**

- Dunnville presents the best opportunity on the IBA to manage large blocks of habitat for Priority grassland birds, in the HMA and Floodplain Terrace Prairies and Wetlands NCMA.
- Dry, short-grass species—Lark Sparrow, Grasshopper Sparrow, and Vesper Sparrow—should receive primary management focus, as these are the species Dunnville offers the best opportunity for. Dry, sandy sites should be managed for short, sparse vegetation with some exposed soil and little, scattered woody cover (see species-specific guidelines above); the restored barrens should include some areas with this open structure.
- The topographic variation and dynamic nature of this river-influenced system, as well as the lack of survey data for the majority of the property, make it difficult to delineate long-term management areas or units dedicated to particular species. Natural variation, disturbance (especially flooding), and succession may influence the mosaic of habitats and structures as much as, or more than, management on large portions of the property; management should focus less on trying to maintain particular habitats in fixed locations, except in more stable, less flood-prone areas (e.g., higher terraces, escarpment), and more on generally increasing the open aspect across the property and maintaining or creating gradual ecotones between communities.
- Many blocks of open habitats throughout the HMA and Floodplain Terrace Prairies and Wetlands NCMA are isolated by linear woody features or surrounded by forest. Connecting these blocks by removing tree rows and hedgerows and eliminating woods or thinning to produce a more savanna-like structure will improve the context for grassland birds and encourage savanna species.

- The floodplain forests throughout this area are in tracts too small and fragmented, and perhaps lacking suitable structure, to provide appropriate habitat for Priority forest birds; this is illustrated by the absence of Red-shouldered Hawk records from this entire portion of Dunnville (see individual species map in Appendix 2), although this should be confirmed by monitoring. These blocks should be thinned, especially where they dissect or enclose open areas. All ‘hard’ edges should be softened or ‘feathered’ as much as possible. This would be the place to try any experimental prescriptions for regenerating floodplain species, especially those that involve more intensive harvest regimes, although care must be taken in places with potential for reed canary grass invasion.
- Where reforestation to bottomland hardwood is planned (e.g., currently sharecropped tracts on the western end of the property), consider a more open, savanna structure, particularly adjacent to existing grassland openings.
- Shrubby or early-successional habitats (e.g., regenerating oak or aspen) should be largely ephemeral, coming and going both temporally and spatially with disturbance and succession (areas of shrub carr may be more permanent). These are the habitats used by shrub-loving birds such as Blue-winged Warbler (shrubby forest openings) and Willow Flycatcher (scattered shrubs or shrub patches in grasslands). Shrubby habitats can serve as transitional areas between grasslands and forest tracts, but should not be linear in configuration or fragment open habitats. Woody cover in open grasslands generally should be kept below 15% in ephemeral, scattered individual plants or clumps.
- The Red Cedar Cliffs and Forest NCMA provides the best interior forest habitat on Dunnville; old-growth management should improve this habitat and may attract additional species that are higher priority for the Lower Chippewa (e.g., Cerulean Warbler).

- **Monitoring Recommendations:**

- The bulk of this property, encompassing the HMA and Floodplain Terrace Prairies and Wetlands NCMA, needs to be surveyed for birds, especially Priority grassland birds. This is critical for better estimating populations and for establishing a baseline against which to gauge the effects of management.

Tyrone Property

- **Master Plan summary: Not applicable**
- **Major habitat opportunities:**
 - Dry grassland, barrens, and savanna.
- **Priority species opportunities:**

- Moderate to excellent opportunity for dry, short-grass species such as Lark Sparrow, Grasshopper Sparrow, and Vesper Sparrow, depending on management and extent of restoration.
- Low to moderate opportunity for grass-shrub and savanna-barrens species (Field Sparrow, Red-headed Woodpecker), depending on management and extent of restoration.

- **Management Considerations:**

- This large property's potential value to Priority birds, especially dry grassland and savanna species, is high. Its actual value will depend on the extent to which habitats are managed or restored with bird habitat considerations in mind.
- Agricultural land generally has decreasing value for birds the more intensively it is used. Rowcrops offer no nesting habitat and provide foraging habitat only for species like cranes, blackbirds, and turkeys, etc. Small grains are marginal for both foraging and nesting (only if harvested after July 15). Alfalfa and grass or grass-legume hay can provide moderate to excellent breeding habitat for grassland birds, but only if cut after July 15; if cut more frequently, as often happens, they become breeding bird sinks, causing birds to expend energy on nesting attempts that are doomed to fail. Light-to-moderately grazed pastures can provide good habitat for grassland birds, including several Priority species for this IBA. As with other open habitats, these are most valuable when unfragmented by tree rows or other linear features and where woody cover is scattered and ephemeral.
- Conifer plantations provide some value to Priority birds only when young (trees less than 10 ft tall). Field Sparrow and Vesper Sparrow commonly breed in young conifer plantations, Lark Sparrow and Grasshopper Sparrow less commonly.
- Favor structures and disturbance intervals conducive to Priority dry short-grass species (see species-specific guidelines above) in prairie restorations. Connect prairie blocks by thinning or removing intervening wooded areas. Create 'feathered' transitions to surrounding habitats. Consider expanding areas targeted for prairie restoration.
- Retain snags and cavity trees in areas identified for floodplain savanna restoration. Consider using fire as a restoration and management tool. Favor large trees and an open understory, as this will benefit Priority savanna birds. Maintain or create gradual ecotones between savannas and adjacent habitats. Consider expanding areas targeted for savanna restoration.
- Consider connecting tracts of restored prairie and savanna to create larger blocks of native habitat.
- As pine plantations mature and are harvested, consider managing these areas as barrens, particularly where they are adjacent to existing or planned prairie, barrens, or savanna habitats. A continuum of structures and successional stages ranging from more closed (resembling woodland) to open with few scattered

trees (resembling dry prairie) can be used to transition from unharvested plantations or existing pine forest or barrens to open agricultural land. Consider additional prairie restoration in fields particularly in the southern part of the property as leases expire. Dry prairie is well adapted to these poor, agriculturally unproductive soils, and will contribute far greater value to the IBA.

- **Monitoring Recommendations:**

- This site would benefit from a property-wide survey to better document the bird community, particularly numbers and locations of Priority species.

Nine Mile Island

- **Master Plan summary (see WDNR 2010, Map G-2):**

- The entire island is classified as NCMA; several of the small mainland tracts are classified as HMA.

- **Major habitat opportunities:**

- Good floodplain forest opportunity in a large (>1,000 acres), contiguous, high-quality block; this may be the best single floodplain forest opportunity outside Tiffany.
- The oak barrens and prairie openings on the northernmost tip of the island and along the southern edge are high-quality but small in extent.

- **Priority species opportunities:**

- Moderate opportunity for Priority forest birds, including Bald Eagle, Red-shouldered Hawk, and Kentucky Warbler.
- Moderate to good opportunity for Blue-winged Warbler in floodplain forest openings.
- Oak barrens and prairie host small numbers of Priority grassland birds (primarily Field Sparrow); increasing the extent of dry prairie and open barrens-savanna will provide additional habitat, particularly for species less tolerant of woody cover (e.g., Lark Sparrow).
- Red-headed Woodpecker may benefit from increasing extent and openness of savanna-barrens habitats, especially where fire is used and snags and cavity trees are retained.

- **Management Considerations:**

- Increase openness of savanna-barrens areas. Maintain or create gradual transitions between closed-canopy forest, savanna, and prairie. The value of these open habitats on the eastern part of the island to birds will be enhanced if the adjacent private lands on the easternmost tip receive similar management.

- Old-growth management of the floodplain forest should maintain or increase its value to Priority forest birds.

- **Monitoring Recommendations:**

- Additional surveys, particularly in the open habitats but also in the floodplain forest, would be beneficial to better document Priority species; Mossman and Hartman (1991) noted actual (Kentucky Warbler, Red-shouldered Hawk) and potential (Prothonotary Warbler, Cerulean Warbler) habitat, although these observations were from the westernmost portion of the island, which is privately owned.

Rock Falls Extensive Wildlife Habitat Area

- **Master Plan summary (see WDNR 2010, Map G-3):**

- This entire property is classified as HMA focused largely on open grassland and impoundment management.

- **Major habitat opportunities:**

- Moderate opportunity for open grassland with a diversity of structures, and some grass-shrub.

- **Priority species opportunities:**

- Moderate opportunity for grassland and grass-shrub birds, including several Priority species—Field Sparrow; Vesper Sparrow; Grasshopper Sparrow; Henslow’s Sparrow; Bobolink; Eastern Meadowlark; Blue-winged Warbler; and Blue-winged Teal (see WDNR 2010, Table 2-1).
- This property currently is too small to provide for significant populations of any of these species; its highest value may be in the variety of grassland structures it provides, which allow it to host a diverse grassland bird community.

- **Management Considerations:**

- This property, which is outside the floodplain and has more permanent grass cover, offers greater potential for long-term management units aimed at specific structures. Manage grasslands to maintain and enhance a variety of structures by varying disturbance intervals and intensities; these structures should range from short and sparse to tall and dense with a thick litter layer. Encourage forbs in some areas. Favor dense mid-height grass with no woody cover adjacent to impoundments for nesting waterfowl. Woody cover elsewhere in open grasslands should be no more than 15%, scattered, and ephemeral.

- Consider thinning along Rock Creek to create more of a savanna structure, which is more compatible with surrounding grasslands. This should also help to favor mature trees.

- **Monitoring Recommendations:**

- A property-wide survey would be useful to better gauge opportunity for Priority species.

Lower Chippewa River State Natural Area

- **Master Plan summary (see WDNR 2010, Maps G1, G-2, and G3):**

- All the tracts within this SNA are classified as NCMA except for the ones upstream of Caryville Savanna SNA, which are classified as HMA. The focus for all of these parcels is to maintain a floodplain forest corridor along the Chippewa and Red Cedar rivers, and to restore forest, savanna, and prairie as appropriate, maintaining a lowland-to-upland gradient wherever possible.

- **Major habitat opportunities:**

- These parcels are too small and isolated to represent any major habitat opportunity for birds (although this may change with additional acquisitions); mostly they consist of floodplain forest, with smaller amounts of grassland/prairie, wetlands around a shallow, backwater lake (Wilcox Lake), savanna, and upland forest.

- **Priority species opportunities:**

- Bird data are available for only three of these parcels. The Wilcox Lake Tract, has mostly common species, but does support small numbers of Priority grass and shrub birds—Blue-winged Warbler; Field Sparrow; Vesper Sparrow; and Lark Sparrow. The Red Cedar River Tract (just north of Dunnville) and the Knutson Tract, on the north bank of the Chippewa across from Caryville Savanna SNA, both have common forest birds and perhaps a pair or two of Red-shouldered Hawk.

- **Management Considerations:**

- Restore and maintain appropriate natural communities and ecotones. Connect habitats to create larger blocks whenever possible.

Waterville Extensive Wildlife Habitat Area

- **Master Plan summary (see WDNR 2010, Map G1):**

- This entire property is classified as HMA.

- **Major habitat opportunities:**

- Floodplain forest, particularly as an expanding corridor west of the Chippewa River, and along Thompson Slough and the Eau Galle River.
- **Priority species opportunities:**
 - Red-shouldered Hawk; 3 individuals were detected recently (WDNR 2008).
- **Management Considerations:**
 - Maintain the forested corridor along the sloughs and rivers, and consider expanding it. “Feather” edges between forest and openings. The grass-shrub openings are not critical to Priority species; they were not sampled in recent surveys (WDNR 2008)—although surrounding points that were sampled had just common shrub-edge birds (Gray Catbird, Common Yellowthroat, Indigo Bunting, etc.)—but likely support only a handful of species such as Willow Flycatcher, Blue-winged Warbler, and Field Sparrow. These openings should be maintained only to the extent that they do not compromise the surrounding forest by providing a foothold for exotics.

Caryville Savanna State Natural Area

- **Master Plan summary (see WDNR 2010, Map G3):**
 - This entire property is classified as NCMA.
- **Major habitat opportunities:**
 - Oak barrens and dry, short- to mid-height prairie on the island’s western end.
 - Floodplain forest on the eastern half.
- **Priority species opportunities:**
 - Moderate for dry grassland and grass-shrub species—Field Sparrow; Vesper Sparrow, Grasshopper Sparrow, etc.
 - Low for Red-shouldered Hawk and Blue-winged Warbler.
- **Management Considerations:**
 - Retain snags and cavity trees. Thin or remove linear woody features in prairie openings and keep shrub cover scattered and ephemeral.
- **Monitoring Recommendations:**
 - A property-wide survey would be useful to better gauge opportunity for Priority species. At the very least, an inventory of the actively managed areas would provide a baseline, help inform ongoing management, and gauge its effects.

RESOURCES FOR MORE INFORMATION

Forest Birds

- WBCI All-Bird Conservation Plan, Priority Species Site Accounts: <http://www.wisconsinbirds.org/plan/species/priority.htm>
- Lower Mississippi Valley Joint Venture (especially the Bookshelf and Research pages): <http://lmvjv.org>
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Grassland Birds

- WBCI All-Bird Conservation Plan, Priority Species Site Accounts: <http://www.wisconsinbirds.org/plan/species/priority.htm>
- WBCI All-bird Conservation Plan, Grassland Habitat Pages: <http://www.wisconsinbirds.org/plan/habitats/list.htm>
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<http://www.lmvjv.org/bookshelf.htm>

APPENDIX 1: List of Breeding Birds for the Lower Chippewa River

Species	Status¹
Canada Goose	B
Wood Duck	B
American Black Duck	N
Mallard	B
Blue-winged Teal	B
Green-winged Teal	N
Hooded Merganser	B
Ring-necked Pheasant	B
Ruffed Grouse	B
Wild Turkey	B
Northern Bobwhite	B
Pied-billed Grebe	N
Double-crested Cormorant	N?
American Bittern	Po
Least Bittern	Pr
Great Blue Heron	B
Great Egret	N
Green Heron	Pr
Yellow-crowned Night-Heron	Po
Turkey Vulture	Po
Osprey	Po
Bald Eagle	B
Northern Harrier	B
Cooper's Hawk	B
Red-shouldered Hawk	B
Red-tailed Hawk	B
American Kestrel	B
Peregrine Falcon	N
Virginia Rail	B
Sora	B
Sandhill Crane	B
Killdeer	B
Spotted Sandpiper	B
Wilson's Snipe	Po
American Woodcock	Pr
Black Tern	B
Rock Dove	B
Mourning Dove	B
Black-billed Cuckoo	B
Yellow-billed Cuckoo	B
Great Horned Owl	B
Barred Owl	B
Common Nighthawk	N
Whip-poor-will	Pr
Chimney Swift	B
Ruby-throated Hummingbird	B
Belted Kingfisher	B
Red-headed Woodpecker	B
Red-bellied Woodpecker	B
Yellow-bellied Sapsucker	B

Species	Status ¹
Downy Woodpecker	B
Hairy Woodpecker	B
Northern Flicker	B
Pileated Woodpecker	B
Eastern Wood-Pewee	B
Acadian Flycatcher	Pr
Alder Flycatcher	B
Willow Flycatcher	B
Least Flycatcher	B
Eastern Phoebe	B
Great Crested Flycatcher	B
Eastern Kingbird	B
Bell's Vireo	B
Yellow-throated Vireo	B
Warbling Vireo	B
Red-eyed Vireo	B
Blue Jay	B
American Crow	B
Common Raven	Po
Horned Lark	B
Tree Swallow	B
Northern Rough-winged Swallow	B
Bank Swallow	B
Cliff Swallow	B
Barn Swallow	B
Black-capped Chickadee	B
Tufted Titmouse	Po
Red-breasted Nuthatch	Po
White-breasted Nuthatch	B
Brown Creeper	B
House Wren	B
Sedge Wren	B
Marsh Wren	Pr?
Blue-gray Gnatcatcher	B
Eastern Bluebird	B
Veery	B
Swainson's Thrush	N
Wood Thrush	B
American Robin	B
Gray Catbird	B
Brown Thrasher	B
European Starling	B
Cedar Waxwing	B
Blue-winged Warbler	B
Golden-winged Warbler	B
Nashville Warbler	N
Yellow Warbler	B
Pine Warbler	B
Blackpoll Warbler	N
Cerulean Warbler	B
Black-and-white Warbler	B
American Redstart	B

Species	Status ¹
Prothonotary Warbler	B
Worm-eating Warbler	Pr
Ovenbird	B
Louisiana Waterthrush	Pr
Kentucky Warbler	B
Mourning Warbler	B
Common Yellowthroat	B
Hooded Warbler	Pr
Scarlet Tanager	B
Eastern Towhee	B
Chipping Sparrow	B
Clay-colored Sparrow	B
Field Sparrow	B
Vesper Sparrow	B
Lark Sparrow	B
Savannah Sparrow	B
Grasshopper Sparrow	B
Henslow's Sparrow	B
Song Sparrow	B
Swamp Sparrow	B
Northern Cardinal	B
Rose-breasted Grosbeak	B
Indigo Bunting	B
Dickcissel	B
Bobolink	B
Red-winged Blackbird	B
Eastern Meadowlark	B
Western Meadowlark	B
Yellow-headed Blackbird	B
Brewer's Blackbird	B
Common Grackle	B
Brown-headed Cowbird	B
Orchard Oriole	B
Baltimore Oriole	B
House Finch	B
American Goldfinch	B
House Sparrow	B
Total Species	139

¹B = Breeder

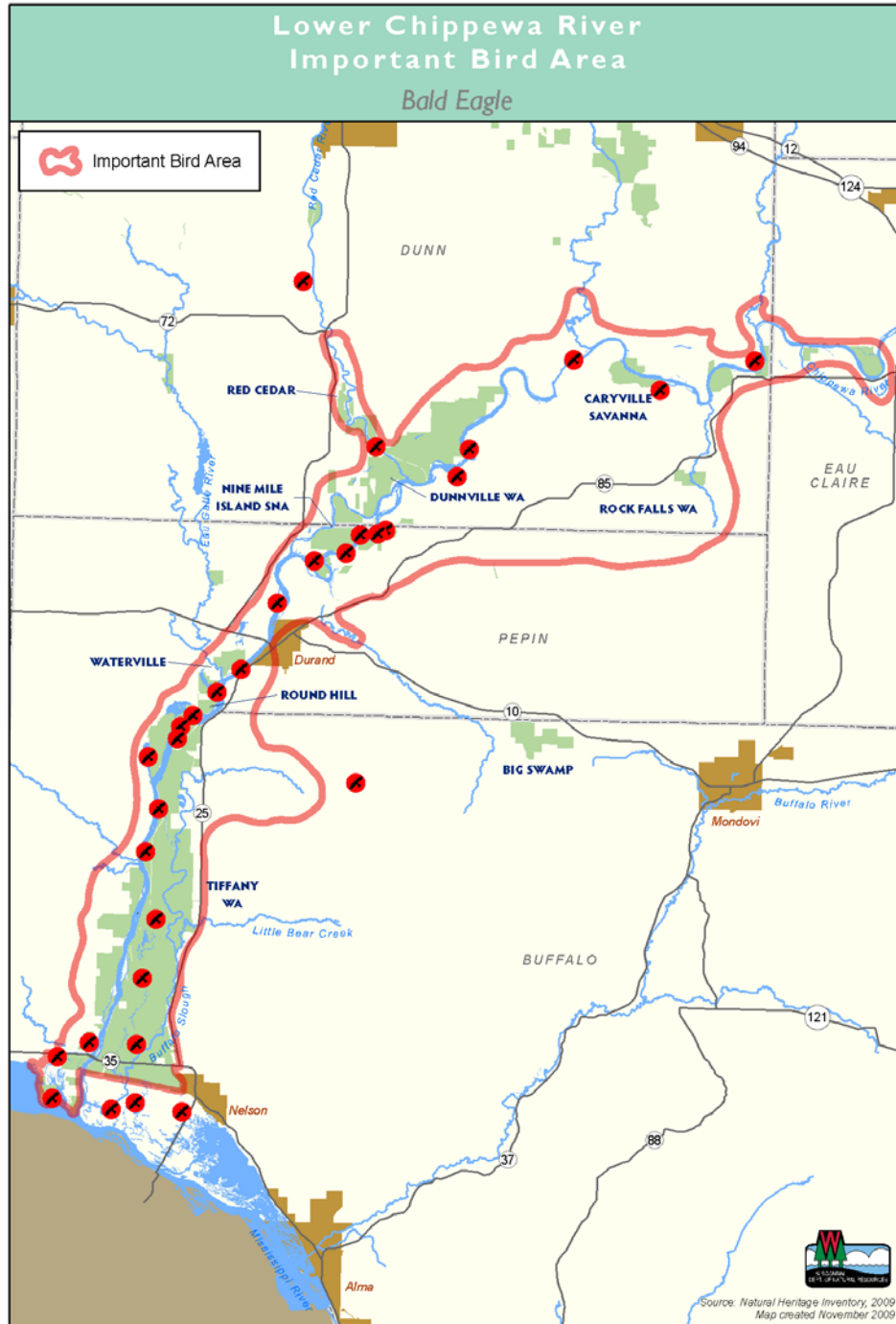
N = Non-breeder or no evidence of breeding

Po = Possible breeder

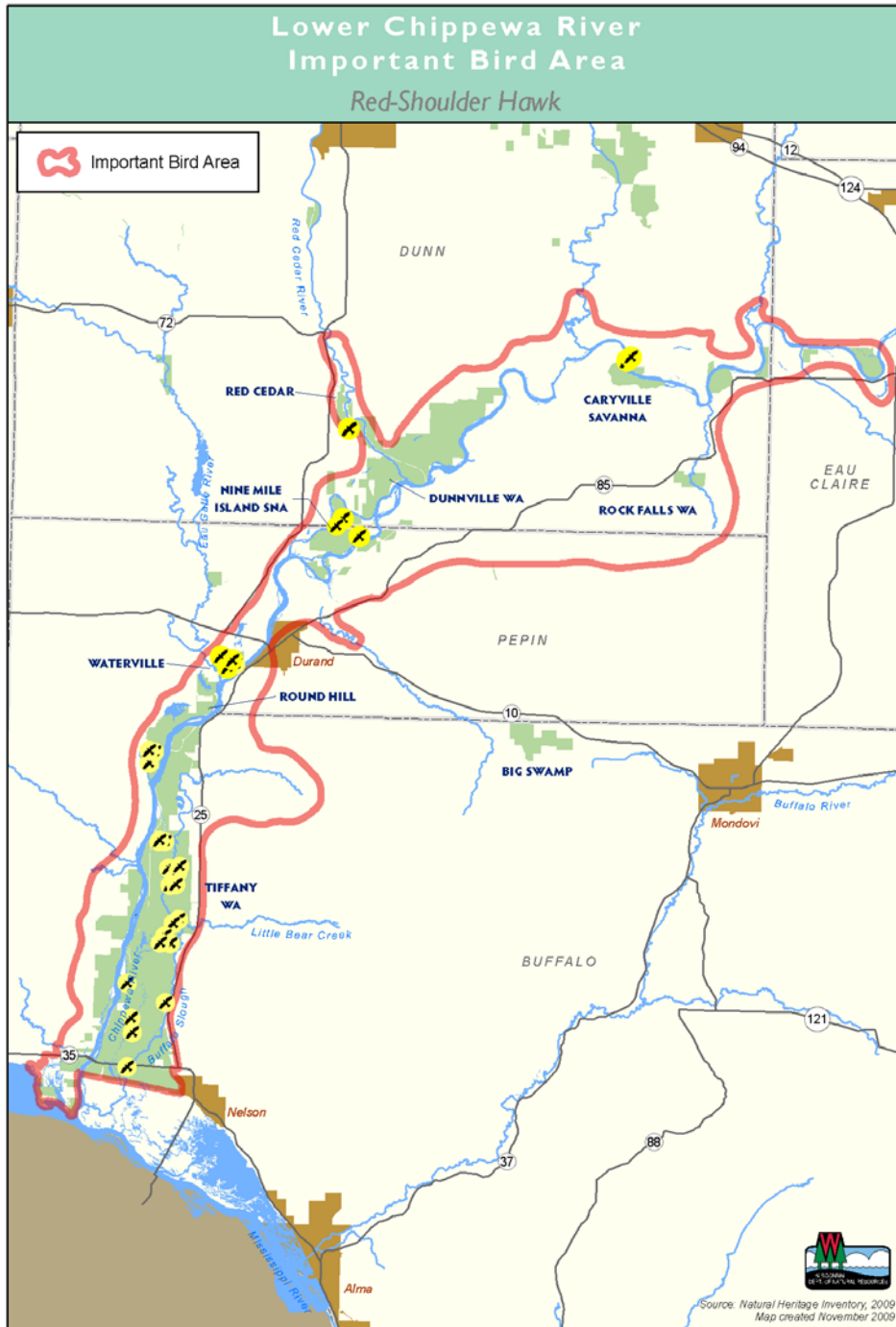
Pr = Probable breeder

APPENDIX 2: Individual Priority Species Maps

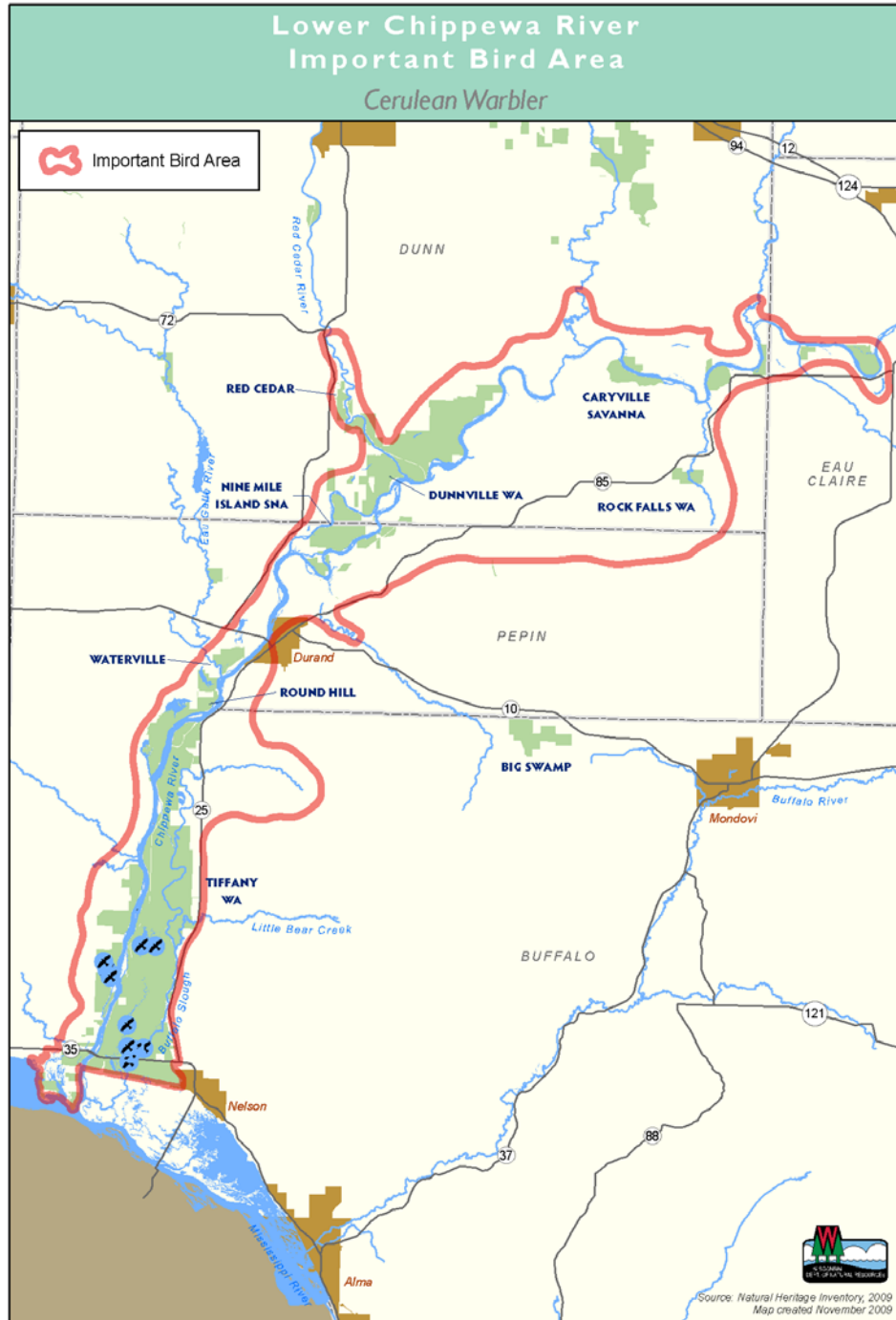
Bald Eagle



Red-shouldered Hawk



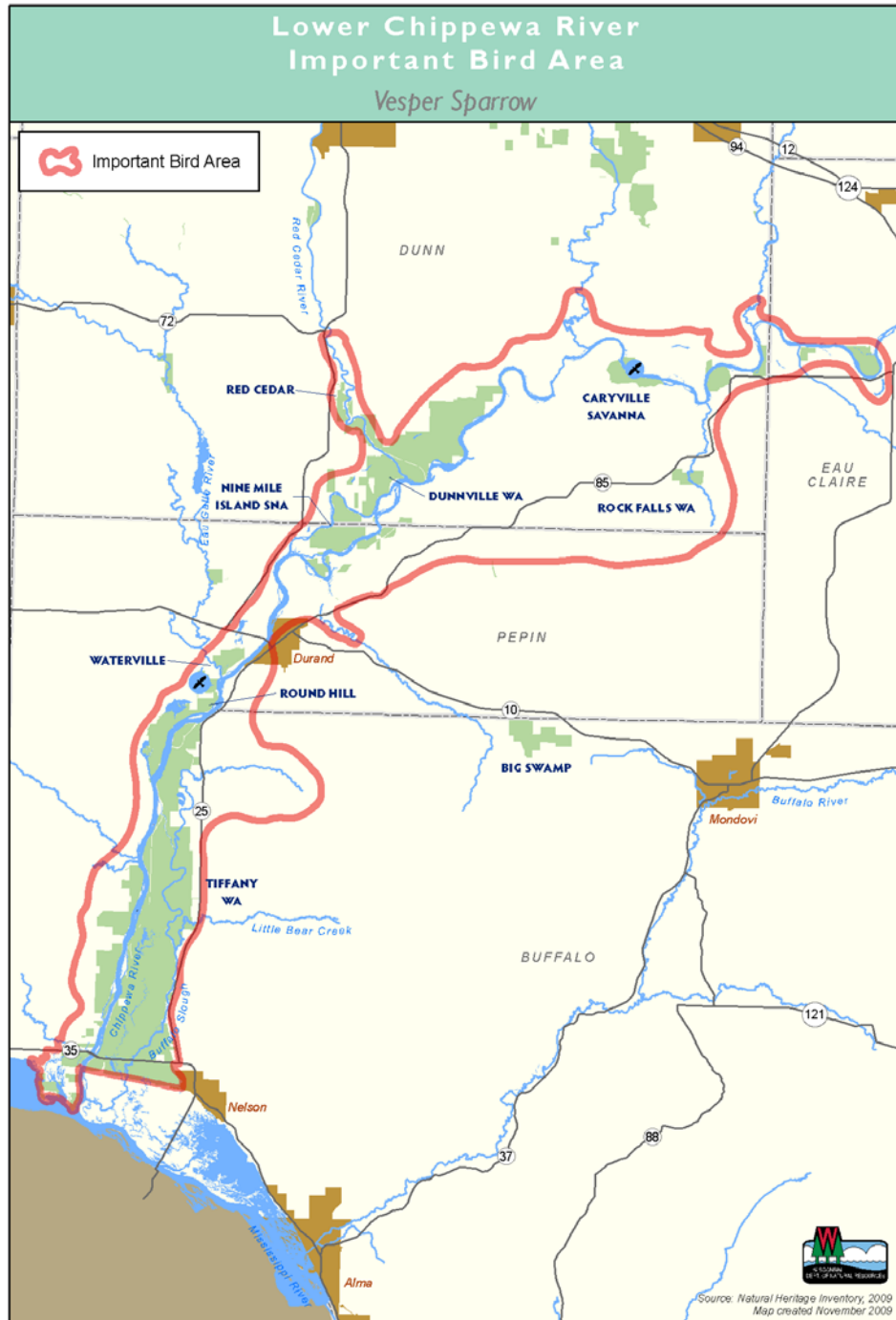
Cerulean Warbler



Kentucky Warbler



Vesper Sparrow



Lark Sparrow



Blue-winged Warbler



APPENDIX 3: Kentucky Warbler Habitat Description and Photo

An excerpt from bird survey field notes for Nine Mile Island, 4 June, 1991 (from Mossman and Hartman 1991).

“Kentucky Warbler: We paddle up backwater slough at lower end of island (Section 3 sw; see map), and find a male Kentucky Warbler singing in area of wet-mesic forest where canopy has been opened (but not completely) by death of several trees within a ca 1-acre area. There is 1 cut stump (2-ft dbh), which appears to have been cut after it died; also 2 dead, truncated silver maples, apparently broken by wind; a dying Am. elm with almost no leaves, apparently succumbing to Dutch elm disease; and 2 butternuts apparently dying from the butternut disease. Apparently opening resulted from death of elms and butternuts by disease, followed by windthrow of silver maples, which had become susceptible due to loss of the other canopy trees. The understory is partly flooded, with thick saplings released by canopy opening, consisting mostly of 1.5-4m tall saplings of black walnut, prickly ash, and green ash. Ground layer is lush with wood nettle and ostrich fern. Diverse tree species here: mostly Celtis and silver maple, with Am elm, butternut, swamp white oak and river birch. The Kentucky sings repeatedly, not only from this opening but actually more from adjacent woods, which have less dense understory and more canopy. This site differs from other similar sites on island and elsewhere along river between here and Eau Claire, by being more mesic, deeper interior, more surrounded by extensive, more-or-less unbroken canopy. We hear Red-shouldered Hawk from here, toward east. Other birds within 50m are cowbird, blue-winged warbler, catbird, y-b sapsucker, crested flycatcher, ovenbird, bunting, northern oriole, peewee, towhee.”



Photo by M.J. Mossman

APPENDIX 4: Cerulean Warbler Conservation Area Model

Knutson et al. 2001, p. 34-35:

“Cerulean Warbler Conservation Area (CWCA) Model

We estimate that sustainable breeding populations of Cerulean Warblers in PIF16 require >700 ha (1730 acres) core blocks of mature, mesic hardwood forest, with low edge-to-area ratio (Robbins et al. 1989, Hamel 2000b) within an approximately 4,000 ha (10,000 acre) matrix. The surrounding matrix should be >50% forested, with >25% mature forests and <15% hostile habitat (cowbird feeding sites such as short-grass, intensive animal grazing or feed lots) (Thompson 1994). Within the core block, at least 25% of the canopy trees should be mature trees >20 m in height and 25-55 cm diameter at breast height (dbh) with canopy cover from 65-85% (Hamel 1992, Robbins et al. 1992, Oliarnyk and Robertson 1996, Robbins et al. 1998). Management should emphasize long rotations, and strategies that produce a varied 3-dimensional stand with extensive development of vertical diversity and canopy gaps (Hamel 2000b). In addition, observers note that Cerulean Warblers have better nesting success with an open forest understory (Oliarnyk and Robertson 1996). Unevenaged management and old-growth or wilderness management are most likely to achieve these goals. An alternative, higher quality prescription, from the perspective of the Cerulean Warbler, may be achievable in some heavily forested subsections of PIF16. This alternative model calls for a landscape matrix of 8,000 ha (20,000 acres) where >70% of the land is forested and managed according the principles outlined above (Hamel 2000b). Woodlots within CWCAs should not be grazed by domestic livestock, and deer populations should be kept at a minimum.

Restoration of CWCAs will also benefit a number of other area-sensitive forest and riparian associated bird species. Therefore, additional considerations for these species are appropriate. For example, sufficient numbers of large canopy trees should remain to create large snags for woodpecker populations. Maintain >20 cavity trees X rotation age per 40 ha (100 acres) within stands, with a mean minimum size of 30 cm dbh to provide adequate habitat for cavity-nesters (Green 1995). The rotation age factor is necessary because woodpeckers excavate new sites each year. Disturbance to forests should focus on units in the 10-15 ha (25-40 acre) range, to accommodate the spatial preference of the Golden-winged Warbler (Confer 1992).

Restored streams and rivers should retain a high quality vegetated riparian zone five times the width of the normal stream channel to restore meanders, oxbows, and the full range of native riparian vegetation, including tree species richness (Large and Petts 1994, Knutson et al. 1996). This width would also meet the habitat needs of a diverse suite of riparian forest nesting birds.”

APPENDIX 5: Tiffany Red-shouldered Hawk Survey Notes

An excerpt from the WDNR 2008 Forest Raptor Survey Report (Krause 2008)

May 4, 2008

60 degrees, sunny, wind 8 -15 mph

Pepin County and Tiffany Bottoms WA

Marginal to Fair to Good to Excellent quality bottomland hardwood/floodplain forest habitat. Upper portion of the Chippewa River Delta has a diverse canopy of 11-15"/15"+ silver maple, green ash, cottonwood, elm, river birch, swamp white oak, bur oak, hackberry, butternut, yellowbud hickory, and basswood. Many stands have a rich spring flora w/ diverse herb layers. The invasive exotic Dames Rocket is well established in places and a large population of Garlic Mustard was found within the floodplain at one location. Prickly ash is the dominant understory shrub throughout the delta with nannyberry, red osier dogwood, gray dogwood, wild plum, and thornapples also present. Exotic honeysuckles and buckthorns have become firmly established along edge habitats, such as the river corridor and running sloughs, and continue to spread into interior forest habitats. Reed canary grass is ubiquitous throughout the floodplain, and dominates the understory in the more frequently flooded silver maple bottoms in the lower portion of the delta. Small, remnant "floodplain wet prairies" and savannas are managed with prescribed fire and help to maintain a remnant Massasauga Rattlesnake population. Unmanaged openings and old fields are rapidly filling in with native and exotic shrub species. Sloughs, backwaters, and shallow ponds are abundant throughout the river delta. Many are associated with large open marsh/wet meadow habitats. Most of the lower portion of the site was flooded during the survey period. An old railroad grade and a small canoe were utilized to access these portions of the delta.

Survey Results: **approximately 32 RSHA responses**, 6 BAEA, 2 RTHA, 3 BAOW, 2 RTHA

WP 215

RSHA call (very distant)

240 degrees

Heard hawk calling from parking lot before beginning transect

WP 216

No Response

WP217

RSHA call

236 degrees

en route to next waypoint

less than ¼ mile

WP 218
Small stick nest in dead topped 5-11" birch
Pair of unidentified raptors flew from the area

WP 219
2 BAEA's flyby

WP 220
Small stick nest in 11-15" multiple trunk, river birch

WP 221
RSHA call
220 degrees (from parking area)
greater than 1/2 mile

WP 222
Beaver dam crossing

WP 223
Rich bottomland hardwood forest with open grown 15"+ swamp white oaks
No Response

WP 224
RSHA call
8 degrees (bird flew in from the north)
3rd bout
less than 1/4 mile
BH 11-15"/5-11", open understory, next to old field, vernal ponds present
Good quality habitat
Old, large stick nest in 11-15" butternut
1st crotch, 32' up

WP 225
Old heron rookery, at least 6 old nests

WP 226
BAEA flyby

WP 227
Medium sized stick nest in 5-11" ash in side fork near the top of the tree. Old heron nest?
Large block of good quality bottomland hardwood habitat near the confluence of the Eau Galle and Chippewa Rivers.

WP 228
Crow/raven nest in 11-15" ash

WP 229
Medium large stick nest in 2cond crotch of 15"+ ash
Not active

WP 230
BH 5-11"/11-15"
No active nest located during nest search.

WP 231
Medium-large stick nest in side fork of 5-11" elm

WP 232
BH 5-11"/15"+ next to old field
No active nest located during nest search

May 5, 2008
Sunny, calm, 45 degrees

Dead Lake Bottoms – Tiffany WA

WP 233 – 234
No Response

WP 235
RSHA call
160 degrees (south)
1st bout
Less than ¼ mile
BH 11-15"+
Good quality habitat

WP 236
End of transect. No nest located.

WP 237
RSHA call
254 degrees
less than ¼ mile
En route to canoe

WP 238
Medium sized stick nest in side crotch of 11-15" ash.
Not active

WP 239

No response

WP 240

Medium sized stick nest in side fork of 11-15" ash

WP241

Medium large stick nest in 11-15" swamp white oak

WP 242

Flushed BAOW

BAEA Flyby

BH 11-15"/15"+ next to old field and main river corridor

WP 243

BAOW pair calling

WP 244-245

No Response

WP 246

Medium-large stick nest in side fork of 15"+ silver maple

Not active

No Response

Turkey Vultures soaring along bluff face

WP 247

No Response

Good sized stick nest just NE of WP. Not active.

WP 248

RSHA call, soaring overhead

110 degrees

3rd bout

¼ mile

Flooded BH 11-15"

Good quality habitat

WP 249

No Response

Buffalo Island – Tiffany WA

Inaccessible due to high water. Surveys conducted along running slough on the east side of the island.

WP 250 – 254

Disturbed BH with dense exotic shrub layer, old fields, managed floodplain savanna.

Marginal to poor quality habitat

May 6, 2008

Warm, sunny, calm

Old RR grade – Tiffany WA (south end)

Silver maple bottoms, mixed BH's, reed canary meadow, shrub swamp, open marsh.
Flooded conditions. Fair to good quality habitat.

WP 255 – 259

No Response

WP 260

Garlic Mustard Infestation

N44.46692

W092.05630

WP 261

RSHA call

3rd bout

18 degrees

Bird flew in from the north, perched. Calling repeatedly.

**Inaccessible further to the north due to high water. Old RR grade being
“reclaimed” by the river due to repeated flooding.**

Old RR Grade – Tiffany WA (north end)

WP 263 – 265

No Response

WP 266

RTHA soaring over managed floodplain savanna/prairie

WP 267

BH 11-15” bisected by powerline ROW

No Response

WP 268

RSHA call

310 degrees

greater than ½ mile (very distant)

WP 269 – 272

No Response

WP 273

BH 11-15"/15"+

RSHA Response

230 degrees (SW)

¼ mile

Bird flew in and perched briefly, calling repeatedly.

2cond bird calling from 130 degrees

¼ - ½ mile

Nest searching is impossible due to flooded conditions

WP 274

RR grade collapses into the swamp further to the south