



Credit Jim Williams

# American Bittern Minnesota Conservation Summary

*Audubon Minnesota  
Spring 2014*



The *Blueprint for Minnesota Bird Conservation* is a project of Audubon Minnesota written by Lee A. Pfannmuller ([leepfann@msn.com](mailto:leepfann@msn.com)) and funded by the Environment and Natural Resources Trust Fund. For further information please contact Mark Martell at [mmartell@audubon.org](mailto:mmartell@audubon.org) (651-739-9332).

# American Bittern

## Priority for Minnesota's Bird Conservation Plan:

- Prairie Parkland: Highest Level Priority
- Boreal Hardwood Transition: Highest Level Priority
- Prairie Hardwood Transition: Highest Level Priority
- Aspen Parklands: Highest Level Priority

## Other Status Classifications:

- Minnesota Species of Greatest Conservation Need
- Minnesota Audubon Action List
- National Audubon Common Bird in Decline
- USFWS Bird of Management Concern USFWS Region 3 (1995)
- USFWS Bird of Conservation Concern in BCR11, 12, 22, 23 and USFWS Region 3 (2008)
- United States Waterbird Conservation Plan: High Concern; apparent population decline (PT = 4)
- Northern Prairie and Parkland Waterbird Region: High Concern
- Upper Mississippi River and Great Lakes Waterbird Region: High Priority in BCR12, 22 and 23; Focal Species for Region-wide monitoring because it is a Conservation Priority species in the UMVGL Region

## Population Information:

- North American population estimate: 992,000 pairs (UMVGL Waterbird Conservation Plan)
- The combined Minnesota population estimate for BCR12 and 23 (i.e. the UMVGL region) is 344 individuals (UMRGL JV Waterbird Plan); no estimate available for BCR11 in Minnesota.

## Minnesota BBS Data:

- Yellow Level of Credibility
- 1966-2009: Decreasing trend (**statistically significant**) of -3.5; 1999-2009: Decreasing trend of -0.9
- Minnesota does not have one of the highest centers of the species abundance; it supports about 3.54% of the species North American breeding range

Minnesota Residency: Breeds mostly North and Central; migrant throughout

## Habitat Requirements: Marsh

Found primarily in freshwater wetlands with tall, emergent vegetation and occasionally in sparsely vegetated wetlands. Uncommonly nest in upland cover surrounding a wetland basin, provided that cover not modified by agriculture; in Iowa, found only on wetlands > 10 ha, suggesting species may be largely dependent on a wetland's area (from Birds of North America)

Occupies large wetlands and wetland complexes with tall, emergent vegetation. Size of wetland usually 100-250 ha with <10 cm of water, but may be found in wetlands up to 1000 ha. Territory size averages 127-415.3 ha. Density estimates for a large Wisconsin marsh: 40 calling males/100 ha; in Maine, 60 wetlands: 62 calling males at about 2.6/100 ha of wetland vegetation. Abundance positively correlated with wetland area. Also found on large interior marshes surrounded by grassland-upland interface during molt. Abundance positively correlated with wetland area. Prefers larger wetlands > 10 m from human activity (e.g. roads, railroads, dikes). Nests in dense, moderate height (0.5-1.5m) vegetation including reeds (*Phragmites australis*), sedges (*Carex*), cattails (*Typha*) and grasses.

Migration: Temperate

Climate Change Vulnerability: Low (1); decreases in abundance and distribution based on climate change models

Threats (from UMVGL WCP):

- Wetland loss (especially sedge meadow, including wintering ranges in the southern United States) and degradation (invasive plant species, especially Phragmites sp.); inland freshwater wetlands still among the most threatened habitats
- Ingestion of pesticides/contaminants
- Water level change (regulation, human-induced alterations, and climate change)
- Human disturbance

**OVERALL MINNESOTA GOAL: Establish an effective marsh bird monitoring program**

**BEST MANAGEMENT PRACTICES** (from Dechant et al. 2003; npwrc.usgs)

- Protect wetlands from siltation, eutrophication, chemical contamination, and other forms of pollution.
- Maintain water levels at <61 cm throughout the breeding season (April-August). Avoid complete drawdowns before mid-August. During molting, bitterns need relatively deep, stable waters to provide adequate food and protection from predators. Use slow drawdowns to mimic natural wetland succession.
- If stock ponds are a part of a management plan, manage for growth of emergent vegetation. In South Dakota, American Bitterns most often were located in semipermanent wetlands or wetlands with open water in the center, a band of emergent vegetation around the periphery, and idle grassland in the adjacent uplands.
- Maintain a wide vegetative margin around wetlands to protect breeding habitat and to deter nest predators.
- To maintain tall, dense, upland vegetation, disturbance (e.g., mowing, burning, and grazing) should not occur more often than every 2-5 yr.
- Although American Bitterns nest only in idle grasslands, the twice-over deferred rotation grazing system may be the best grazing system in terms of providing overall bird nesting cover in uplands. Encourage adoption of no-tillage or minimum-tillage practices instead of conventional-tillage (annual) practices, so that breeding habitat is undisturbed during the nesting season.

## **MONITORING NEEDS**

- The American Bittern is a high priority for monitoring and a focal species (conservation priority) in the UMVGL region. It should be included in a regularly conducted monitoring effort for marsh birds with species-specific sample sizes to detect population changes effectively. (UMVGL WCP).

**Action:** Support initiation of a marsh bird monitoring program following the protocol being implemented in other Great Lakes states.

**Background:** In the UMVGL Waterbird Conservation Region the American Bittern is a high priority for monitoring. The sampling should include species-specific sample sizes to detect population changes effectively.

In the Prairie Pothole Joint Venture region, which supports more than 50% of the continental population, the species is considered a High Conservation Risk. Because BCR 11 constitutes the heart of the species range, and because it is not well monitored using BBS, monitoring populations in this region should also be a priority.

Broadcast of conspecific calls has been used to enhance detection of this secretive species; timing of playbacks is key to effective monitoring (BNA).

**CONSERVATION ACTIONS**

- Identify and target high priority landscapes and habitats for conservation action (NPP WCP).  
**Action:** Identify Important Bird Areas that are a priority for this species in southwestern Minnesota
- **Upper Mississippi Valley/Great Lakes Joint Venture Region:** Adopt habitat objectives for the Yellow Rail established by the UMGLJV Waterbird Habitat Conservation Strategy (Soulliere et al. 2007) to maintain and/or benefit this species (UMVGL WCP).

*Wet Meadow with Open Water Habitat Goals for the Yellow Rail  
(and American Bittern) in Minnesota*

BCR	Maintenance & Protection	Restoration & Enhancement
11	No goal established by PPJV (see next targeted conservation action)	No goal established by PPJV (see next targeted conservation action)
12	5,230 acres	5,320 acres
23	240 acres	240 acres

**Action:** Work with UMGVGL JV conservation partners on Minnesota IBAs that support significant populations of American Bitterns in the UMGVGL region to achieve established habitat goals.

**Action:** Ensure that some of the wetlands protected and restored meet the following criteria:

1. The wetlands are large, shallow wetlands (larger than 10 ha) with dense growths of robust emergents.
2. Individual wetlands are embedded within a larger complex of wetlands to provide habitat at various stages of succession.

- **Prairie Pothole Joint Venture Region:** Adopt the Minnesota Prairie Landscape Conservation Plan (2010) habitat and restoration goals that target wet meadow wetlands that benefit American Bitterns.

Wetland Goals for the Prairie Pothole Region of Minnesota (BCR11)

Conservation Action	Prairie Landscape Conservation Areas	Specific Conservation Action	Habitat	
			Wetlands (all types)	Wetlands & Grasslands
Protection	Core Areas	Acquisition	62,621 acres	
		Voluntary management or conservation contracts		154,277 acres
	Corridor Areas (complexes & general corridors)	Acquisition	13,295 acres	13,150 acres
		Voluntary management or conservation contracts		131,825 acres
	Matrix Landscape	Acquisition		177,074 acres
		Voluntary management or conservation contracts		1,243,927 acres
<b>Protection Total</b>			<b>75,916 acres</b>	<b>1,720,253 acres</b>
Restoration	Core Areas		82,161 acres	
	Corridor Areas (complexes & general corridors)		20,731 acres	26,428 acres
	Matrix Landscape			250,880 acres
<b>Restoration Total</b>			<b>102,892</b>	<b>277,308</b>

**Action:** Use the Minnesota Prairie Landscape Conservation Plan (2010) to guide habitat protection and restoration goals by conservation partners within Minnesota’s Prairie Pothole Landscape and by Audubon Minnesota and conservation partners within Important Bird Areas located within the Prairie Pothole Landscape.

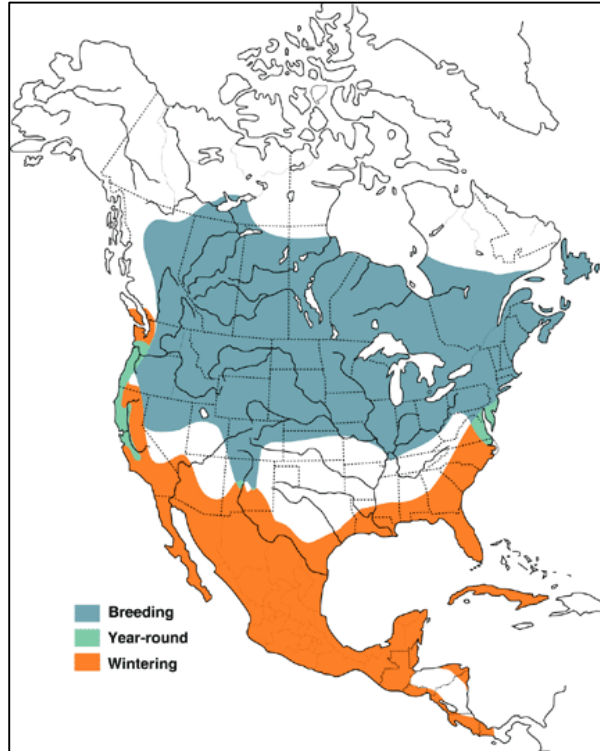
**Action:** Ensure that some of the wetlands protected and restored meet the following criteria:

1. The wetlands are large, shallow wetlands (larger than 10 ha) with dense growths of robust emergents.
2. Individual wetlands are embedded within a larger complex of wetlands to provide habitat at various stages of succession.

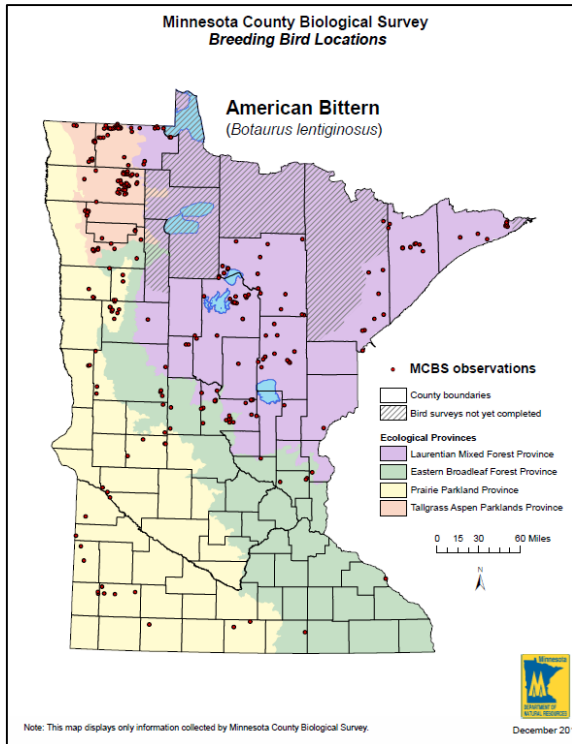
**RESEARCH NEEDS**

- Detailed study of the species breeding biology

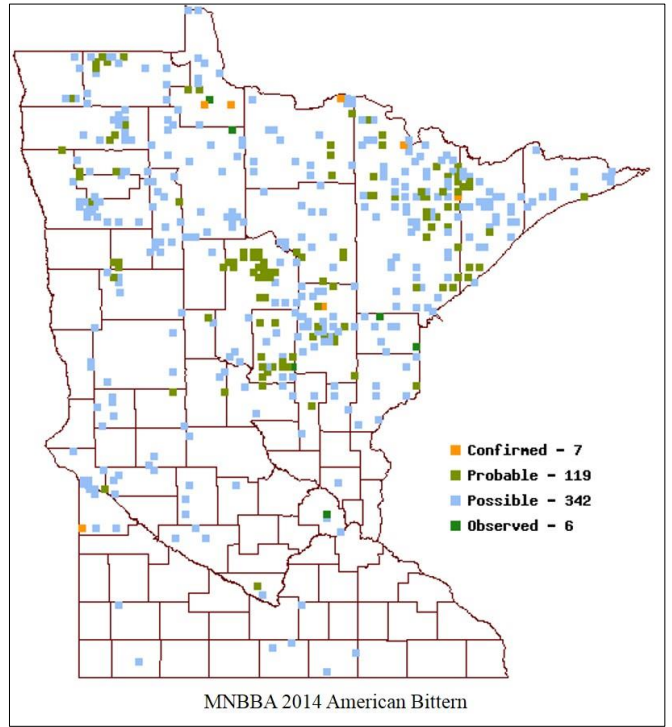
## American Bittern Distribution Maps



Birds of North America <http://bna.birds.cornell.edu/bna/>



MN DNR [http://www.dnr.state.mn.us/eco/mcbs/bird\\_map\\_list.html](http://www.dnr.state.mn.us/eco/mcbs/bird_map_list.html)



MN Breeding Bird Atlas <http://www.mnbba.org/>