

American Bittern



ASSESSING HABITAT QUALITY FOR PRIORITY WILDLIFE SPECIES IN COLORADO WETLANDS

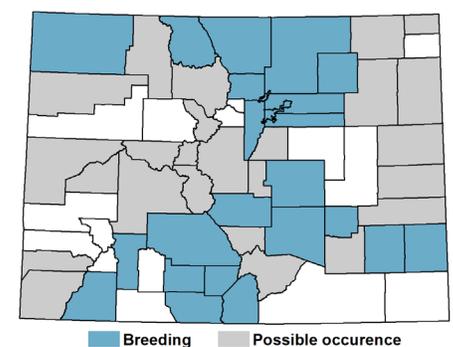
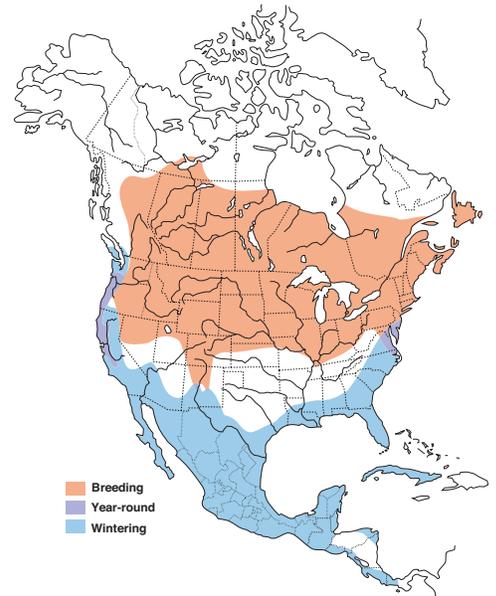


©ANDY MORFEW
andymorfev.com

Species Distribution

Range

American bitterns breed from the mid United States through northern Canada. In Colorado, American bitterns occur in non-contiguous areas throughout the state and are most common in the San Luis Valley.



North America map used by permission from Birds of the World, published by Cornell Lab of Ornithology. Colorado map based on Andrews and Righter (1992), Yaeger (1998), Kibbe (2016), and CFO (2020).

Version Date: November 2020

The American bittern (*Botaurus lentiginosus*, Family *Ardeidae*) is a secretive, marsh bird found throughout Colorado at lower elevations.

Species Description

Identification

The American bittern is a type of heron with a haunting low-frequency *dunk-a-doo* vocalization that sounds similar to a metal stake being driven into mud. Even with their large size (24–33 inches), they can be difficult to find because they are secretive, fairly solitary, and cryptic among emergent vegetation, especially dry vegetation.

Preferred Habitats

American bitterns occur primarily in emergent marshes. However, depending on size and condition of the habitat, they might be found in beaver ponds, oxbows, herbaceous riparian wetlands, warm water sloughs, wet meadows and reclaimed gravel pits.

Diet

American bitterns consume a wide variety of animal matter, such as amphibians, snakes, small mammals, fish, crayfish, crabs, insects, and spiders. They frequently feed at the interface of water and emergent vegetation.

Conservation Status

American bitterns are listed as a Non-game Species of Management Concern by the U. S. Fish and Wildlife Service. States list them as endangered, imperiled, at risk, species of special concern, or species of greatest conservation need. In Colorado, American bitterns are listed as a Tier 2 Species of Greatest Conservation Need (CPW 2015). The International Union for Conservation of Nature lists the population as decreasing, but because of its extensive range and low rate of decline, it is considered of least concern.

Preferred Habitat Conditions

Distance to disturbances	buffer >220 yards
Dominant vegetation	tall, dense and robust emergent vegetation
Height of herbaceous vegetation	3–6.5 feet
Interspersion	complex patterns that maximize interface between water and vegetation
Landscape context	proximity to other wetlands on the landscape
Percent emergent cover	60–80% with high amount of edge
Residual cover (litter)	mix of dead and live vegetation, with moderate litter depth
Size of habitat	large wetlands >25 acres
Water depth (predominant)	at least some open water 3–25 inches deep
Water quality	unpolluted water that will support preferred foods

Management Recommendations

This fact sheet contains easy-to-use guidelines for understanding habitat needs of Colorado Parks and Wildlife priority wetland-dependent wildlife. Biologists with expertise in American bitterns have suggested numerous practical steps that can be taken to improve habitat quality for this species.

Hydrology

- Preserve shallow wetlands interspersed with water.
- Avoid complete drawdowns to maintain food base.
- Throughout breeding season, maintain water levels between 3–25 inches.
- Avoid drawdowns before mid-August.

Vegetation

- Preserve wetlands with robust vegetation.
- Occasionally set back succession with disking and/or drying.
- Maintain wide and dense vegetated buffer around emergent wetlands.
- Limit mowing, burning, and deferred grazing to once every 2–5 years, and avoid immediately around wetland, especially during breeding.
- Use no-tillage or minimal tillage practices; avoid conventional tillage.

Contamination

- Reduce application of agricultural chemicals and other toxins.
- Reduce siltation and eutrophication.

Land Use

- Restrict livestock grazing within 220 yards of wetland edge.

Conservation

- Preserve wetlands greater than 25 acres, preferably larger.
- Maintain mosaic of wetlands in different successional stages.



© FYN KYND



© TOM KOERNER, USFWS



© KENNETH COLE SCHEIDER

Acknowledgements

Pete Walker (Colorado Parks and Wildlife) and Colin Lee (Rocky Mountain Bird Observatory/Colorado Parks and Wildlife/Natural Resources Conservation Service) reviewed an earlier version and provided input on preferred habitat conditions.

Suggested Reading and Citations

Andrews, R., and R. Righter. 1992. *Colorado Birds*. Denver Museum of Natural History, Denver, Colorado.

Brown, M., and J. J. Dinsmore. 1986. Marsh size and isolation for marsh bird management. *Journal of Wildlife Management* 50: 392-397.

CFO (Colorado Field Ornithologists). 2020. Colorado county birding. <https://cobirds.org/CountyBirding/Specialties/>

CPW (Colorado Parks and Wildlife). 2015. State Wildlife Action Plan: A Strategy for Conserving Wildlife in Colorado. Denver, Colorado.

Dechant, J. A., M. L. Sondreal, D. H. Johnson, L. D. Igl, C. M. Goldade, A. L. Zimmerman, and B. R. Euliss. 2003. Effects of management practices on grassland birds: American Bittern. Northern Prairie Wildlife Research Center, Jamestown, North Dakota.

Gibbs, J. P., and S. M. Melvin. 1992. American Bittern. In *Migratory nongame birds of management concern in the northeastern United States*. K. Schneider and D. Pence, Eds. U.S. Fish and Wildlife Service, Newton Corner, Massachusetts.

Kibbe, D. P. 2016. American bittern. *Colorado Breeding Bird Atlas* (L. E. Wickersham, Ed.). pp. 148-149. Colorado Bird Partnership and Colorado Parks and Wildlife.

Lowther, P. E., A. F. Poole, J. P. Gibbs, S. M. Melvin, and F. A. Reid. 2020. American Bittern (*Botaurus lentiginosus*), version 1.0. In *Birds of the World* (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.

Rehm, E. M., and G. A. Baldassarre. 2007. The influence of interspersion on marsh bird abundance in New York. *Wilson Journal of Ornithology* 119: 648-654.

Wiggins, D.A. 2006. American Bittern (*Botaurus lentiginosus*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region.

Yaeger, M. 1998. American bittern. *Colorado Breeding Bird Atlas* (H. E. Kingery, Ed.). pp. 52-53. Colorado Bird Atlas Partnership and Colorado Division of Wildlife, Denver, Colorado.

Habitat Scorecard for American Bitterns (v. Nov 2020)

Assessment of habitat before and after restoration or management actions

Project Name: _____ Project Area (acres): _____ Habitat Area (acres): _____

Size of Contiguous Habitat outside Project Area (acres): _____ Ownership (circle): Same / Different / Conservation Easement

Scorecard Instructions: Enter one value that best describes early to mid-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. **If condition is outside range or is not described, enter a zero.**

Project Area and Habitat Area: The project area includes the entire area affected by the project. The habitat is the area that will provide (in case of pre-project) or does provide (post-project) habitat for each potential target species within the project area. The habitat area may be the same size as the project area or it might be smaller and it may be defined differently for different target species. If there is contiguous habitat area outside the project area, note the size and whether the ownership of the contiguous areas is the same or different and whether it is under conservation easement or other habitat protection. If the habitat area within your project area is noncontiguous and/or if sections are in very different conditions, consider using multiple scorecards so that each scorecard represents the general conditions. If you use multiple scorecards, identify each habitat area on a map.

Key habitat variable and conditions	Value	Pre-Project	Expected Post-Project	Actual Post-Project
Date of assessment				
Size of habitat				
>25 acres	10.8			
>12 – 25 acres	7.2			
2.5 – 12 acres	3.6			
Residual cover (litter) depth				
>15 – 25 inches	10.3			
>8 – 15 inches OR >25 – 40 inches	6.8			
4 – 8 inches	3.4			
Percent of water with emergent vegetation				
>60 – 80%	10.3			
>30 – 60% OR >80 – 100%	6.8			
15 – 30%	3.4			
Water quality				
No visual evidence of turbidity or other pollutants	10.3			
Some turbidity or presence of other pollutants, but limited to small and localized areas within the wetland. Water may be slightly cloudy.	6.8			
Water is cloudy or has unnatural oil sheen, but the bottom is still visible. Note: If the sheen breaks apart when you run your finger through it, it is a natural bacterial process and not water pollution.	3.4			
Dominant vegetation				
Robust wetland herbaceous plants (e.g., cattail, bulrush, reedgrass) OR tall sedges >8 inches	10.3			
Low sedges, rushes, or grasses <8 inches	6.8			
Annual and perennial forbs OR open willows and shrubs	3.4			
Height of herbaceous vegetation				
>3 – 6.5 feet	9.7			
>1.5 – 3 feet	6.5			
1 – 1.5 feet OR >6.5 feet	3.2			
Distance to developed areas (urban or industrial land uses)				
>250 yards	9.7			
>100 – 250 yards	6.5			
50 – 100 yards	3.2			

Continued on next page.

Habitat Scorecard for American Bitterns (v. Nov 2020)

Assessment of habitat before and after restoration or management actions

American Bittern Scorecard *continued.*

Key habitat variable and conditions	Value	Pre-Project	Expected Post-Project	Actual Post-Project
Interspersion				
C	9.7			
A or B	6.5			
D	3.2			
Interspersion patterns refer to the diagram (stippled = water, solid = vegetation)		<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">A </div> <div style="text-align: center;">B </div> <div style="text-align: center;">C </div> <div style="text-align: center;">D </div> </div>		
Percent of wetland with some water				
>70 – 100%	9.7			
>50 – 70%	6.5			
10 – 50%	3.2			
Predominant depth of water				
2 – 8 inches	9.2			
>8 – 40 inches	6.1			
<2 inches or >40 – 50 inches	3.1			
Total (of 100 possible): add all numbers in before or after columns				