



**STATUS: HIGH
CONSERVATION
PRIORITY IN IOWA**

Least Bittern

Ixobrychus exilis

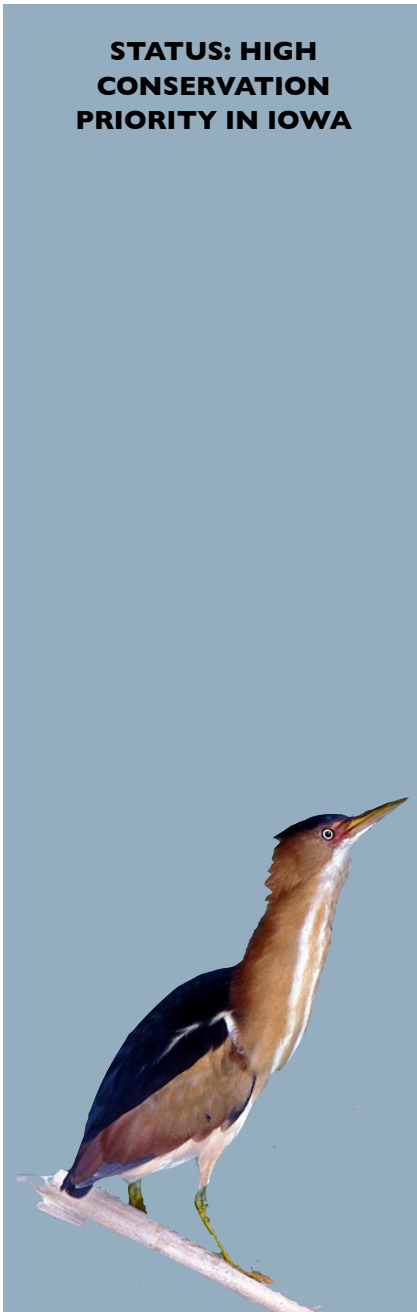
Introduction

The Least Bittern, one of the smallest herons in the world, is adapted for life in dense wetland vegetation. It is considered to be among the most inconspicuous of North American wetland birds. This colorful heron is quite vocal and can be found at surprisingly high densities—up to 15 nests in 37 acres. Suitable habitats include freshwater wetlands with tall, dense emergent vegetation and clumps of woody plants over deep water.

Least Bitterns forage by stalking along the open-water side of emergent vegetation, grasping clumps of plants with their long toes and curved claws as they move. They also build small foraging platforms at especially good feeding sites, catching fast-moving prey, mainly small fish and dragonflies, with their small, thin bills.

An extremely narrow body permits this bittern to pass easily through tangled vegetation. When encountered, Least Bitterns typically burrow like rodents through dense vegetation, fly away weakly over marsh vegetation with legs dangling, or “freeze” with their bill pointed upward, feathers compressed, and eyes directed forward.

Least Bitterns are often overlooked in surveys of bird populations because the species is so secretive. Reports from birdwatchers, however, have suggested that populations are reduced over much of the species’ range and extirpated in some areas. Basic research on the Least Bittern’s nesting biology, movements, population dynamics, and overwintering biology would help to clarify the status of the species and facilitate its conservation.



Habitat Preferences

Research done in Iowa suggests that Least Bitterns are most abundant in freshwater wetlands during years when ratios of emergent vegetative cover to open water were equal. They appear to be restricted to deep- and shallow-water cattails stands, apparently avoiding areas of dry cattails, river bulrush, and sedge. Tall stands of wetland vegetation, often associated with stable water regimes at managed impoundments and larger ponds and lakes, are apparently favored.

This species is most regularly found in Iowa on wetlands of 12 acres or more in size, suggesting that the species may be area-sensitive; but territorial individuals have been seen on wetlands as small as 2 acres.

Feeding Habits

The diet of Least Bitterns consists mostly of small fish and insects; but it also feeds on leeches, crayfish, frogs, tadpoles, small snakes, and other prey found in dense, emergent, wetland vegetation.

This species forages by clambering about, sometimes clumsily, on stalks of vegetation over water, and jabs downward with its long, slender bill to capture prey at the water's surface. In daytime, it often frequents tall, dense stands of emergent plants along deep, open waters. Least Bitterns also build foraging platforms of bent reeds at productive feeding sites, and uses these platforms during periods of late-incubation and brood-rearing.

Among 28 recognized behaviors used by herons, Least Bitterns employ only 4: "standing in place," "walking slowly," "neck swaying" (to overcome glare, to increase camouflage, or to have muscles in movement when strike begins), and "wing-flicking," which involves quick, repeated extension and retraction of wings that may startle prey from hiding. By clinging to emergent vegetation and constructing

platforms, this tiny heron is able to forage over water as deep as that used by the largest North American herons, although most foraging occurs at the water's surface. Incubating adults forage passively by reaching out from nest after passing prey.

Breeding Biology

Least Bittern nests are built of emergent aquatic vegetation and sticks, on elevated platforms. Nests are well concealed beneath an overhead canopy, and, built mostly by the male, are usually widely scattered across wetlands. Least Bittern may produce two broods in one year and at times will nest in loose colonies.

Usually 4-5 eggs are laid, but the number may vary from 2 to 7. Incubation is by both parents, and lasts from 17 to 20 days. Both parents feed the young by regurgitating partly digested prey items. When predators approach the nest, the adult bird may make itself look larger by fluffing its feathers out and partially spreading its wings.

Legs and feet of young develop quickly, and young may leave the nest as soon as 6 days after hatching if disturbed; however, they normally will remain in the nest for about 2 weeks. The young will generally stay near the nest for another week or more while being fed by the parents and learning to fend for themselves.

Concerns and Limiting Factors

Destruction of wetland habitat is likely the greatest threat to the existence of Least Bitterns with wetland loss during past decades contributing largely to the current declining status of this species across much of North America. If wetlands remain undisturbed and unpolluted, however, Least Bitterns seem tolerant of human presence, and may sometimes persist in highly urbanized areas. Water impoundments can create important nesting habitats for Least Bitterns in some regions but do not offset losses of natural wetlands.

Since there are no effective ways to monitor populations of this secretive species, highly accurate population levels are essentially unavailable in Iowa. But several recent state surveys give strong evidence, that, populations have declined, apparently since mid-century. Consequently, Least Bitterns are a species of high conservation priority in Iowa.

Siltation resulting from erosion of farmlands and run-off containing insecticides may degrade nesting habitats and reduce food supplies in agricultural areas. High concentrations of dieldrin were detected in Least Bittern in some parts of the nation.

Invasion by purple loosestrife and phragmites may alter and degrade wetland habitats, and, are threats in many areas. Because Least Bitterns fly low to the ground, collisions with motor vehicles, barbed-wire fences, and transmission lines can be a significant mortality factor.

Conservation of this species would be facilitated by: 1) standardized, regional monitoring programs to determine abundance and distribution and to evaluate trends in populations; 2) studies of habitat associations during nesting, migration, and overwintering periods; 3) studies of breeding biology that examine movements, causes, and rates of juvenile and adult mortality, causes of nest failure, renesting, juvenile dispersal patterns, mating systems, and diet; 4) identification of major stopover sites for overwintering and migrant Least Bitterns; 5) investigation of factors that regulate populations; 6) monitoring of contaminant levels in adult birds (or their eggs) in agricultural, industrialized, and undisturbed regions; and 7) identification of management techniques that enhance manipulated wetlands or restore degraded habitats.

Habitat Management Recommendations

Preservation, protection, and improvement of wetland habitats for Least Bitterns, particularly large (12 acre or larger), shallow wetlands with dense growth of robust, emergent vegetation, are the most urgent conservation needs for this species.

Wetlands also need to be protected from chemical contamination, siltation, eutrophication, and other forms of pollution. Because the birds occur in many wetlands managed by state and federal agencies for waterfowl, there is ample opportunity for making minor alterations to existing management practices to improve nesting habitat for Least Bitterns.

As with its close relative American Bittern, the wetland management discussion in Part 3 of this project should provide a variety of ideas for protecting and improving the factors that will sustain populations of this species.