

## SPECIES PROFILE

# Least Bittern

*Ixobrychus exilis*

**Federal Listing:** Not listed

**State Listing:** Species of Special Concern

**Global Rank:** G5

**State Rank:** S1

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### ELEMENT 1: DISTRIBUTION AND HABITAT

#### 1.1 Habitat Description

The least bittern is the smallest member of the heron family. Its laterally compressed body, long toes, and curved claws are well suited to sliding through and grasping the stems of the tall, emergent vegetation where it often clings in order to fish over deep, open water (Gibbs et al. 1992). Least bitterns are associated with cattail (*Typha* spp.) marshes in northern regions, including managed impoundments, lake coves with stable water regimes, and occasionally sedgy bogs (Gibbs et al. 1992). It prefers freshwater or brackish marshes with scattered woody vegetation.

Least bitterns may build small foraging platforms at the best feeding sites, enabling them to hunt over water 25-60 cm deep, as deep as is used by the largest herons (Gibbs et al. 1992). Small fish are the primary prey, though snakes, frogs, tadpoles, crayfish, insects (primarily *Odonata* and *Orthoptera*), small mammals (shrews and mice), and vegetation may be eaten (Gibbs et al. 1992). Least bitterns nest in dense stands of emergent vegetation near or over open water (DeGraaf and Yamasaki 2001).

#### 1.2 Justification

The least bittern is thought to have declined in many areas of the eastern United States and adjacent Canada (Gibbs et al. 1992). Palustrine freshwater and brackish emergent wetlands, where least bitterns make

their homes, are among the most threatened habitats in the country (Gibbs et al. 1992). The least bittern is listed as endangered in Massachusetts (Massachusetts Natural Heritage Program 2003), threatened in Connecticut (Connecticut Department of Environmental Protection 2004) and is a species of special concern in Vermont and New Hampshire. Pollution, sedimentation and invasion by purple loosestrife (*Lythrum salicaria*) and phragmites (*Phragmites australis*) degrade cattail-dominated wetlands (Gibbs et al. 1992), especially in southern New Hampshire, where development pressures are highest. Although least bitterns seem tolerant of human presence and may persist in highly urbanized areas if wetlands remain relatively undisturbed, they may be subject to increased predation by generalist predators such as snapping turtle (*Chelydra serpentina*), crow (*Corvus brachyrhynchos*), and raccoon (*Procyon lotor*) that are also tolerant of human activity (Gibbs et al. 1992).

#### 1.3 Protection and Regulatory Status

Protection under the Federal Migratory Bird Treaty Act of 1918.

#### 1.4 Population and Habitat Distribution

The least bittern is a rare and local breeder in New England. It is found primarily in eastern Massachusetts and Rhode Island, as well as Connecticut, Vermont and coastal Maine (DeGraaf and Yamasaki 2001). It has apparently always been rare in New Hampshire, where historical sightings were few and were concentrated in the southern part of the state. There are historical records from Concord, Hampton, Seabrook and the Connecticut River valley, of which some may have been migrants (Vernon 1994). There were no breeding records at the time of the compilation of the *Atlas of Breeding Birds in New Hampshire*,

although it was thought that the species had likely nested here (Vernon 1994). Multiple individuals seen during the mid to late 1980s at Eel Pond in Rye and recently at Stubbs Pond in Newington (2002), and a lone juvenile observed at the Exeter sewage lagoons in early September 1994, suggest possible breeding at these locations.

Similarly, single occurrences of least bittern over several years during the mid 1980s at Cascade Marsh in Sutton indicate potential breeding habitat for the species. Towns with single records are Durham, Derry, Candia, and Newmarket. A 1997 least bittern record in a cattail wetland at Pondicherry Wildlife Refuge in Jefferson, Coos County, is the northernmost record in New Hampshire.

### 1.5 Town Distribution Map

*Not completed for this species.*

### 1.6 Habitat Map

*See Habitat Map for Marsh and Shrub Wetlands.*

### 1.7 Sources of Information

NatureServe (2005) was used for status and ranking information. New Hampshire Wildlife Sightings (2005) and NHNHB databases (2005) and Vernon (1994) were the primary sources of locality records. Habitat and life history information was taken from published literature, including the *Atlas of Breeding Birds in New Hampshire* (Foss 1994).

### 1.8 Extent and Quality of Data

In New Hampshire, the least bittern appears to be limited to a few suitable cattail marshes, mainly in the southern part of the state. Because its secretive nature makes it unlikely to be detected even in the most suitable habitat, the lack of sightings does not imply the absence of the least bittern (P. Hunt, NHA, personal communication). Among the few least bittern records, recent distribution data are largely the result of records submitted to the New Hampshire Wildlife Sightings web page from NHBR.

### 1.9 Distribution Research

Experienced birders should identify and report least bittern locations. Standardized census techniques, in-

cluding the use of tape-recorded vocalizations to elicit responses from breeding birds, are needed to provide more information regarding distribution. The least bittern, American bittern, Virginia rail, sora, and other elusive wetland birds should be incorporated into comprehensive wetland bird monitoring efforts.

## ELEMENT 3: SPECIES THREAT ASSESSMENT

The loss of wetlands likely poses the most significant threat to least bittern in the northeastern United States (Gibbs et al. 1992). See Threats in Marsh and Shrub Wetlands profile.

## ELEMENT 4: CONSERVATION ACTIONS

See Marsh and Shrub Wetlands habitat profile for relevant conservation strategies. Tall grass-like emergent vegetation, especially cattail, should be maintained at the borders of ponds and wetlands. Management of federal and state impoundments to encourage dense, emergent vegetation, especially cattails, will create potential breeding habitat (Gibbs et al. 1992).

## ELEMENT 5: REFERENCES

### 5.1 Literature

- Connecticut Department of Environmental Protection Natural Diversity Database webpage 2004. Connecticut Department of Environmental Protection. Hartford, Connecticut. Available <http://dep.state.ct.us/burnatr/wildlife/factshts/cmoorhen.htm>. Accessed 18 February 2005.
- DeGraaf, R. M., and M. Yamasaki. 2001. New England wildlife: habitat, natural history, and distribution. University Press of New England, Hanover, New Hampshire, USA.
- Gibbs, J.P., F.A. Reid and S.M. Melvin. 1992. Least Bittern. *In* The birds of North America, No. 17, A. Poole, P. Stettenheim, and F. Gill, editors. The Birds of North America, Inc., Philadelphia, Pennsylvania, USA.
- Massachusetts Natural Heritage Program webpage 2005. Massachusetts Rare and Endangered Wildlife. Division of Fisheries and Wildlife. Westborough, Massachusetts. Available <http://www.mass.gov/dfwele/dfw/nhosp/nhfacts/galchl.pdf>. Accessed 18 February 2005.

- NatureServe. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.2. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 2005 March 3.
- Vernon, R.C. 1994. Accounts of historically or potentially breeding species, least bittern. Pages 370-371 *in* Atlas of breeding birds in New Hampshire, C.S. Foss, editor. Arcadia, Dover, New Hampshire, USA.

## 5.2 Data Sources

- New Hampshire Natural Heritage Bureau. 2005. Database of Rare Species and Exemplary Natural Community Occurrences in New Hampshire. Department of Resources and Economic Development, Division of Forests and Lands. Concord, New Hampshire, USA.
- Wildlife Sightings database. Maintained by the University of New Hampshire Complex Systems, Durham, New Hampshire, USA. Accessed 15 February 2005.

## Distribution of Least Bittern in New Hampshire

Distribution  
■ Known  
■ Potential



Known = confirmed breeding observations as reported in the NH Natural Heritage Bureau's Element Occurrence Database and obtained from NH Bird Records and the NH Breeding Bird Atlas, Audubon Society of New Hampshire.  
Potential = possible breeding and other observations from the same data sources.

