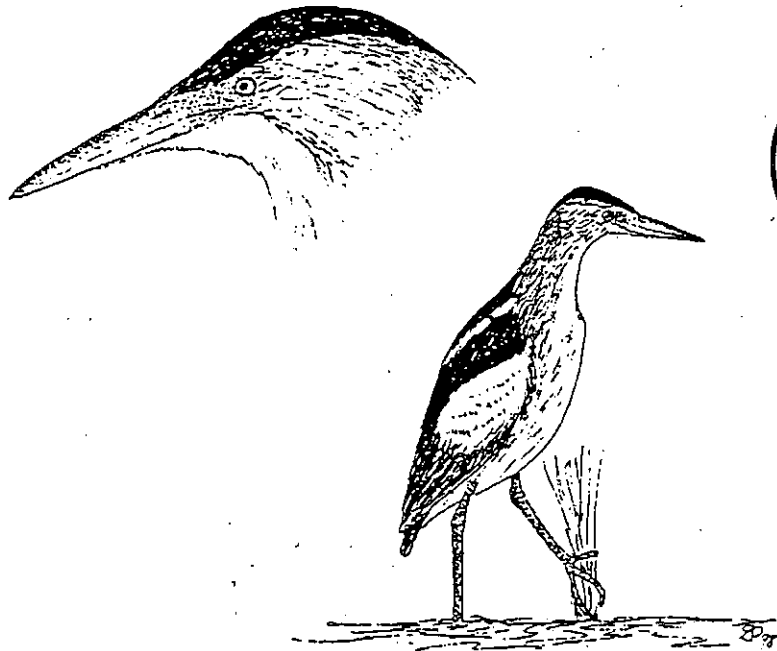


Update
COSEWIC STATUS REPORT

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ON

Least Bittern
(Ixobrychus exilis)



Ross D. James

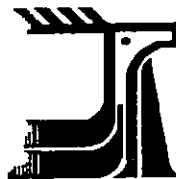
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Cover illustration: Least Bittern - Ross D. James, Gateways Centre, R.R. No. 3,
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Least Bittern

Reason for status: This species is of concern because of its rarity, breeding habitat specificity, and continued loss of suitable wetlands in its range in southern Canada. It is also of conservation concern in the adjacent U.S. States. [Designated (rare) vulnerable in 1998 and reconfirmed as vulnerable in 1999.]

Occurrence: Manitoba, New Brunswick, Ontario, and Quebec

NOTES

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COSEWIC

A committee of representatives from federal, provincial and private agencies that assigns national status to species at risk in Canada and the chairs of the scientific species specialist groups.

COSEPAC

Un comité de représentants d'organismes fédéraux, provinciaux et privés qui attribue un statut national aux espèces canadiennes en péril ainsi que des président(e)s des groupes des spécialistes scientifiques.

**Update
COSEWIC Status Report**

on

**Least Bittern
(*Ixobrychus exilis*)**

by

**Ross D. James
Gateways Centre
R.R. No. 3
Sunderland, Ontario
L0C 1H0**

**Funding provided by Canadian Wildlife Service
Environment Canada**

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Executive Summary

The Least Bittern was designated vulnerable by COSEWIC in 1988, because it is specific to marsh habitats that have experienced tremendous losses during the past century; most observers felt that the population was declining, although there were no specific surveys that clearly demonstrated a decline; and the total population was considered to be only in the order of 1000 pairs.

Since that time, there still are not any definite data that would give a clear idea of population size and trend. The Marsh Monitoring program in the Great Lakes basin, begun in 1994, may begin to provide some information on this species in future. However, it is uncertain that the survey method, intended to survey many species simultaneously, will be adequate to provide reliable estimates for this species.

Most of the Canadian population breeds in southern Ontario, with some in southern Quebec and Manitoba, and a very few in the Maratimes. There is still a perception that the population is likely in decline, as the habitats it requires are still being assulted by developmental and agricultural interests. Sustained high water levels, natural succession and siltation are impacting Great Lakes shoreline marshes driving birds from some if not all such marshes. Most adjacent U.S. states also consider that Least Bittern is in decline there.

Because the Least Bittern is a very secretive and quiet bird, it could all but disappear before we become aware of the fact. It is important to continue to review the status of this species and to review current attempts to assess its status, or to find a reliable census method for it. But, because there are no reliable data on population estimates on which to base a change in status, it is recommended that the vulnerable status be retained for the time being.

Résumé

Le Petit Blongios a été désigné vulnérable par le COSEPAC en 1988, car il s'agit d'une espèce associée aux marais, un type d'habitat ayant connu d'énormes pertes au cours du dernier siècle. De plus, la plupart des observateurs ont remarqué un déclin dans la population de cette espèce. Malgré le fait qu'aucune enquête particulière n'ait clairement prouvé ce déclin, la population totale était estimée à seulement 1 000 couples.

Depuis ce temps, il n'existe toujours pas de données définitives qui pourraient démontrer clairement la taille et les tendances de la population. Dans le bassin des Grands Lacs, le Programme de surveillance des marais, lancé en 1994, pourrait commencer à fournir quelques renseignements sur cette espèce à l'avenir. Cependant, on ne sait pas si la méthode d'enquête utilisée pour recenser un grand nombre d'espèces de façon simultanée, pourra adéquatement fournir des estimations fiables pour cette espèce.

La majorité de la population canadienne de Petits Blongios se reproduit dans le Sud de l'Ontario, à l'exception de certains individus se trouvant dans le Sud du Québec et du Manitoba et de quelques individus se reproduisant dans les Maritimes. On estime encore que la population est probablement en déclin, car le développement et l'agriculture continuent d'assaillir les habitats de cette espèce. Le maintien de niveaux élevés d'eau, la succession naturelle et l'envasement ont des répercussions sur les marais qui longent les Grands Lacs, situation qui incite les Petits Blongios à quitter la plupart sinon la totalité de ces marais. La plupart des États américains adjacents aux Grands Lacs considèrent également que la population des Petits Blongios est en déclin là-bas.

Étant donné le caractère discret et silencieux du Petit Blongios, il pourrait très bien disparaître avant même qu'on ne s'en rende compte. Il est donc important de continuer d'évaluer le statut de cette espèce, de réviser la manière dont les enquêtes en cours sont menées ou encore de tenter de trouver une méthode de recensement donnant des résultats fiables. Cependant, puisqu'aucune donnée fiable ne peut servir de base pour déterminer si l'espèce doit changer de statut, on recommande que le Petit Blongios conserve le statut d'espèce vulnérable pour le moment.

Introduction

The Least Bittern was first considered by COSEWIC in 1988 (Sandilands and Campbell 1987). It is the smallest member of the heron family nesting in Canada. It will be absent from large portions of its overall range as it breeds only locally in scattered patches of suitable habitat in North, Central and South America, as well as larger islands in the West Indies. In Canada, it breeds in extreme southern Manitoba, in southern Ontario, extreme southern Quebec and New Brunswick, possibly occasionally in Nova Scotia.

It is a very quiet, retiring, and cryptic species, difficult to gather accurate population figures for. However, because it is confined to large patches of wetland habitat that had experienced tremendous losses in the past century, because most field observers felt it had continued to decline in numbers, and because the Canadian population was estimated to be in the order of only 1000 pairs, it was designated Rare, now Vulnerable by COSEWIC in 1988.

Population Size and Trend

The Least Bittern is such a secretive and quiet bird that data on population trends and sizes is still contradictory and unclear (Gibbs *et al.* 1992). Between 1969 and 1993, breeding bird surveys from across the continent suggested an increase of 16.4%, but, from 1984 to 1993 a significant decrease of 42.6% (Price *et al.* 1995). An overall nonsignificant decline was given as the continental trend by Dunn (1996), also from BBS data. In fact, none of these trends can be taken as reliable since they are based on small sample sizes, for a species that is poorly suited to census by roadside counts.

In the maritime provinces, only 5 records were obtained during the breeding bird atlas surveys (1986 to 1990), and none were confirmed breeding. This indicates that breeding occurs sporadically at least, if not every year, and that total populations are probably in the low 10's at best (Erskine 1992).

In Quebec, during breeding bird atlas surveys (1984 to 1989) it was recorded in only 40 (1.6% of 2464) atlas squares and confirmed breeding in only 10 of those. The paucity of data meant no accurate estimates were available from Quebec (Fragner 1996). The bird has always been considered rare there and is classified as Vulnerable in the province. The overall impression is that the bird is in decline with the continued loss of habitat there. Its breeding range is confined to the southernmost and most heavily settled parts of the province. It is designated S2 by the Nature Conservancy, indicating it is considered imperiled.

In Ontario, breeding bird atlas records from 1981 to 1985 came from 223 squares (12% of 1824), but breeding was confirmed in only 46 of those squares. These records come mainly from south of the Canadian Shield or on the

southern fringes of the Shield, parts of the province with the greatest population and most heavily impacted by agricultural and developmental interests. The feeling of most contributors was that the species had certainly decreased in abundance in recent years in Ontario (Woodliffe 1978).

From abundance estimates provided to the atlas, Sandilands and Campbell (1978) suggested the Ontario population was unlikely to exceed 1000 pairs. The Ontario Rare Breeding Bird Program, for three years 1989-1991, did not offer any alternative estimates, as coverage was not extensive enough on this species (Austen *et al.* 1992). However, the continued concern for a species that was probably still in decline because of habitat loss prompted a recommendation that the status be upgraded to threatened.

Although details are lacking, there has been a decline in the last few years in at least some marshes along the Great Lakes shorelines. Birds have all but disappeared from Long Point marshes, where they were considered common through the early 1980's (Ridout 1992, D. Sutherland, pers. comm.). They have also disappeared from Point Pelee marshes (D. Sutherland, pers. comm.). It is possible that sustained high water levels on the Great Lakes in recent years, siltation and/or plant succession have been contributing to these declines (D. Sutherland, pers. comm.).

However, it is not known whether birds have actually declined throughout the Great Lakes marshes, or just some of them, or whether there is a real decline, or whether they are just being pushed inland into smaller marshes. The Natural Heritage Information Centre, still rates the Least Bittern as S3 (rare or uncommon) and it has not been considered by the Committee on the Status of Species at Risk in Ontario (D. Sutherland, pers. comm.).

In Manitoba, the Least Bittern was thought to nest in only 2 or 3 large marshes in the extreme south of the province (Sandilands and Campbell 1987). It now appears that it may be somewhat more dispersed there. The Conservation Data Centre, in consultation with local naturalists has listed it as S3, or estimated to occur at between 21 and 100 localities (J. Duncan, pers. comm.). Rather than any increase, however, this is probably only the result of a more adequate search for the birds. The overall population there is small.

The Least Bittern is also a species considered to be facing serious problems in the adjacent northern states. It is listed as Endangered in Illinois and Ohio, Threatened or proposed Threatened in Pennsylvania and Michigan, a species of special concern in New York and Vermont, and ranked S1 in New Hampshire. However, the Marsh Monitoring Program to monitor wetlands throughout the Great Lakes basin, begun in 1994, has as yet not got sufficient data that it is likely any trends could be established (R. Weeber, pers. comm.). A more detailed analysis with marsh sizes and habitats occupied will be some time

in coming, if in fact the census method employed proves to be adequate to reliably estimate change in this cryptic species.

Habitat

Least Bitterns nest in freshwater marshes, with dense tall aquatic vegetation, interspersed with clumps of woody vegetation and open water. They are most regular in marshes that exceed 5 ha in area. Smaller marshes may be used on occasion, but do not sustain populations. In the northern part of their range they are most strongly associated with cattails (*Typha*) which is the most common tall emergent (Gibbs *et al.* 1992), but they may also nest in bulrush (*Scirpus*), reed grass (*Phragmites*), horse tail (*Equisetum*), sedges (*Carex*), grasses (*Graminaceae*), Willows (*Salix*), and dogwood (*Cornus*) (Peck and James 1983).

Destruction of wetland habitat is the greatest single threat to Least Bitterns (Gibbs *et al.* 1992) and has been a major factor in loss of habitat in Canada. Drainage for agriculture has been the principal reason for the conversion of more than 70% of southern Ontario's pre-settlement marshes (Bardecki 1981). Losses to urbanization have taken more than 40% of Lake Ontario shoreline marshes, and more than 80% in the most heavily populated sections (McCullough 1981). More than 90% of the original marshes in southwestern Ontario are now gone (Snell 1978).

In Quebec filling and draining of marshes for agriculture and urban development have been identified as major causes of wetland losses in the St Lawrence Lowlands (Lands Directorate 1986). In the United States, more than 4.75 million acres of wetland habitat was lost in only two decades from the mid 1950's to the mid 1970's (Tiner 1984).

Remaining wetlands are still being degraded by continuing development. The Spring 1995 issue of *Seasons* magazine, for example, cites an aggregate company threatening a Class 2 wetland, an urban development proposal threatening a Class 1 wetland, and a highway extension proposal impacting various smaller wetlands. Surviving marshes are often surrounded by development, regularly disturbed by people and their pets, subject to raccoon populations enhanced by urban situations and generally poorly suited any longer for this bittern.

The new planning act in Ontario attempts to streamline planning, but reduces the possibility of input from Ministry of Natural Resources or the general public, and removes considerable protection from wetlands on the Canadian Shield. Weakened protective legislation in the interests of streamlining processes may save costs, but raises concern about whether we can effectively

protect species such as the Least Bittern as development continues to eat away at wetlands.

Runoff from agricultural fields may also pose threats to wetland habitats (Gibbs *et al.* 1992). However, there are no data to indicate any problems.

Because Least Bitterns tend to fly very low, collisions with cars, fences, and transmission wires are another important source of mortality (Gibbs *et al.* 1992). If development is allowed through or too close to wetlands the habitat is obviously degraded for the bitterns. But, if wetlands can be left undisturbed and unpolluted, Least Bitterns are relatively tolerant of human presence within reasonably close proximity. Preservation and protection from pollution and runoff are the most urgent long term needs (Gibbs *et al.* 1992).

Evaluation and Proposed Status

The clear perception among many field observers is that the Least Bittern is still declining. There has been an obvious loss of numbers in some Great Lakes marshes. It is not know if populations might simply be shifting inland until water levels decline. However, such a shift may result in a decline as smaller marshes, where some will end up, do not sustain healthy populations. Following the Rare Breeding Bird program in Ontario, there was sufficient concern for this species that the recommendation was to upgrade to threatened status (Austin *et al.* 1994). But, there is no reliable data to verify a population decline.

The troubling aspect for this species is that it could all but disappear before we are aware of that fact. Without surveys specifically devoted to this species and the development of some reliable survey methods, we will remain in ignorance of its status. The Marsh Monitoring Program in the Great Lakes basin may be able to offer some insights in the future, but because of the behaviour of this species it is not certain yet that any clear population estimates or trends can be established. However, this is a species for which some form of monitoring must be attempted as long as pressures on wetland habitats are allowed to continue.

It is a species with specific habitat needs, using a habitat type that continues to be degraded. The population is likely to be continuing in a slow decline. But, because there never were any reliable population estimates, and still are not, there is no information on which to base a change in status. For the present status report, it is recommended that the status of vulnerable be retained. However, this species should be reconsidered within 5 years, with careful evaluation of the effectiveness of the current Marsh Monitoring Program to provide useful data. If declines appear to be continuing, consideration should be given to upgrading the status to threatened.

Acknowledgements

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Knowledgeable Persons

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Biographical Summary of Author

Ross James is a Departmental Associate and former Curator of Ornithology at the Royal Ontario Museum in Toronto, Ontario. He studied the foraging behaviour of vireos in southern Ontario, and the ecological and behavioural relationships of Blue-headed and Yellow-throated Vireos for masters and doctoral research at the University of Toronto. He has also conducted bird population studies in boreal forest and southern woodlands and wetlands. He is interested in the status and distribution of birds in Ontario, authoring an Annotated checklist of Ontario Birds, and coauthoring two volumes on the Breeding Birds of Ontario. He was a committee member for and a contributor to the Atlas of Breeding Birds of Ontario, and a coauthor of Ontario Birds at Risk. He is an author of two accounts for the Birds of North America, and has published more than 80 papers on birds. He spent more than a decade as chair and cochair of the Birds Subcommittee of COSEWIC. In this capacity he was familiar with previous status reports and the status of this species.



MANDATE

COSEWIC determines the national status of wild species, subspecies, varieties and nationally significant populations that are considered to be at risk in Canada. Designations are made on all native species for the following groups: fish, amphibians, reptiles, birds, mammals, molluscs, lepidoptera, vascular plants, mosses and lichens.

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COSEWIC is comprised of representatives from each provincial and territorial government wildlife agency, four federal agencies (Canadian Wildlife Service, Parks Canada, Fisheries and Oceans, Canadian Museum of Nature), three national conservation organizations (Canadian Nature Federation, Canadian Wildlife Federation, and World Wildlife Fund Canada) and the chairs of the scientific species specialist groups. The Committee meets annually in April to consider status reports on candidate species.

DEFINITIONS

Species	- Any indigenous species, subspecies, variety or geographically defined population of wild fauna and flora.
Extinct (X)	- A species that no longer exists.
Extirpated (XT)	- A species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	- A species facing imminent extirpation or extinction.
Threatened (T)	- A species likely to become endangered if limiting factors are not reversed.
Vulnerable (V)	- A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
Not at Risk (NAR)	- A species that has been evaluated and found to be not at risk.
Indeterminate (I)	- A species for which there is insufficient scientific information to support status designation.



The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. COSEWIC meets annually in April each year. Species designated at this meeting are added to the list.



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