Update
COSEWIC STATUS REPORT
on
Barn Owl
(*Tyto alba*)

David A. Kirk

ENDANGERED - EASTERN POPULATION - ONTARIO
VULNERABLE - WESTERN POPULATION - BRITISH COLUMBIA
1999

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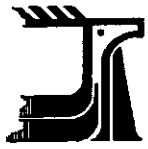

Barn Owl

Reason for status: (Eastern population - endangered). In eastern Canada this owl occurs in small and declining numbers limited by loss and degradation of wetlands and agricultural habitats and by severe winters at the northern edge of its range. (Western population - vulnerable). In British Columbia populations of this owl are limited by loss and degradation of agricultural habitats and by severe winters at the northern edge of its range

Occurrence: (Eastern population) - Ontario
(Western population) - British Columbia

NOTES

COSEWIC status reports are working documents used in assigning status. Reports are released in their original form in the interest of making scientific information available to the public.

Kirk David A. 1999. COSEWIC Status report on the Barn Owl, *Tyto alba*. Committee on the Status of Endangered Wildlife in Canada. 22 pp.

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COSEWIC Status Report

on

Barn Owl
(*Tyto alba*)

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Executive Summary

Distribution

The Barn Owl is the most widely distributed of all owl species; in the New World it is essentially a tropical or subtropical species occurring between 40° N and 40° S. In Canada, it is at the northern limit of its range, and it is extremely rare in eastern Canada where a few pairs may breed in southern Ontario (Carolinian forest region) and possibly southern Québec. The main Canadian population is in British Columbia (BC), where it is considered a widespread breeder throughout most of the coastal range, an uncommon resident throughout the Fraser Lowlands to Hope, a rare resident on south-

eastern Vancouver Island north to Nanaimo, very rare north to Campbell River, on the Gulf Islands and very rare in the central-southern interior. It is accidental elsewhere in Canada.

Protection

The species is protected by provincial game laws in Ontario. In BC, Barn Owls are protected by Section 34 of the Wildlife Act which prohibits the taking of eggs, nestlings or nesting adults or the destruction of active nests. The Barn Owl is on the blue list in BC.

Population

Despite the relatively large population of Barn Owls in BC, numbers may be declining there. The total breeding population in BC has been estimated at 250-275 pairs (or 1,000 individuals, including non-breeders). An 11 -year survey of 2,642 barns in the early 1980s revealed 232 nests and 443 roosting birds (giving a total population of 907 owls).

There are few data to document trends of the Barn Owl in BC. This province was only colonised by Barn Owls during the 20th century; the first sighting being in 1909. Numbers increased in 1940-1980 as a result of mild winters and expansion of suitable agricultural habitat. The species spread through the Fraser Lowlands to Hope and also colonised south-eastern Vancouver Island from Victoria to Nanaimo; the first record in the interior was in 1949, at Celista. However, numbers are expected to decline because of agricultural intensification and urban development.

Numbers in Ontario and Québec were probably never very large; Barn Owls possibly inhabited oak-savannah vegetation adjacent to tall grass prairie prior to European settlement. Decreases in the number of Barn Owls brought to rehabilitation centres in the Windsor-Hamilton area in Ontario during the 1980s reflected declines in wild populations.

During the Ontario breeding bird atlas (1981-1985), breeding was confirmed in four squares and was possible in two (six pairs); only three pairs were reported to the Ontario Rare Breeding Bird Program (ORBBP; 1989-1991). The main potential breeding area in Ontario is on the Niagara Peninsula (Fort Erie) and possibly in adjacent Haldimand Norfolk. Barn Owls have bred in the Thousand Islands area of Kingston, Amherst Island and in the Backus woods area at Long Point; a nest site used at Bradley Marsh, Lake St. Clair was abandoned after the adults were predated. Other breeding sites include under a bridge at Welland, St. Catherines, in an old steeple at Alexandria Bay, close to Kingston, and in a barn at Renton. Because the species is so secretive and nocturnal it is possible that it breeds on farms not known to local birders. However, recent evidence suggests that the species is extirpated in Ontario.

Only one possible record exists of relatively recent breeding in Québec (North Hatley on 30 July 1987); these birds could have been from the US. Other possible breeding records are from near Lacolle where eggs were

seen in a barn in 1979 and 1980 and two records unsubstantiated: Saint Hubert in 1961 (no details) and a female bird taken from a taxidermist at Masson that had recently laid eggs. Most sightings are in the Central St. Lawrence Lowland (south of the Laurentians and west of Québec City); the species is believed to nest in this area irregularly.

Habitat

Barn Owls occur in low elevation open country; especially agricultural areas, such as open cultivated and abandoned fields, farmsteads and orchards. Areas of pasture are preferred, as well as sedge meadows and marshes. The species also forages infrequently in cities and other residential areas. Nesting sites include hollow trees, cavities in cliffs and river banks, nest boxes and various types of human structures (barns, unused silos, belfry, mine shaft or other building).

Biology

Barn Owls breed for the first time at one year old and pairs may stay together throughout their life. Second broods in one year are uncommon in temperate regions and usually coincide with abundant prey. Clutch size is very variable depending on latitude. Provided there is adequate suitable habitat, Barn Owls respond well to nest-box programs and so there is some potential for augmenting populations. Over 300 nest boxes have now been erected in BC. Similar potential exists for augmenting populations in Ontario and Québec.

Limiting factors

Because Barn Owls are poorly adapted to cold climates, the main limiting factor in eastern Canada is the severe winter. Even in BC, which is the stronghold for the species in Canada, severe winters cause widespread mortality. However, the primary factor limiting Barn Owl populations in its main range is agricultural intensification (especially the shift from pasture/grassland to rowcrops), as well as synthetic pesticides, rodenticides and mortality from road traffic. Livestock numbers have been reduced on farms (resulting in loss of pasture) and there has been a shift to monoculture rowcrops. Mechanization has replaced horses with the result that rodent populations on farms have declined. Coupled with the loss of old buildings such as barns and silos, both foraging and nesting habitat for Barn Owls has been eliminated.

Evaluation and status

Given the extremely low numbers of Barn Owls in Canada and their restricted distribution (reasonable populations exist in only one province) it is recommended that the species should remain listed as 'vulnerable' by COSEWIC. In Ontario the species is certainly endangered if not extirpated; there is currently interest among local government, NGOs and other interested parties in re-establishing Barn Owls in southwestern Ontario. If there is further evidence for declines in British Columbia, then this species should be listed as nationally 'threatened' by COSEWIC.

Résumé

Distribution

L'Effraie des clochers est le type de chouette le plus répandu de toutes les chouettes. Dans le Nouveau Monde, elle est essentiellement une espèce tropicale ou subtropicale présente entre le 40e degré de latitude Nord et le 40e degré de latitude Sud. Au Canada, l'espèce se trouve à la limite Nord de son aire de répartition. Elle est extrêmement rare dans l'Est du Canada où il est possible que quelques couples se reproduisent dans le Sud de l'Ontario (région de la forêt carolinienne) et peut-être même dans le Sud du Québec. La majeure partie de la population canadienne d'Effraies des clochers se trouve en Colombie-Britannique (C.-B.) où elle est considérée comme une espèce reproductrice très répandue dans presque toute la chaîne côtière, comme une résidente inhabituelle des basses-terres du Fraser jusqu'à Hope, comme une résidente rare dans le Sud-Est de l'île de Vancouver jusqu'au Nord à Nanaimo, et comme une espèce très rare au Nord à Campbell River, dans les Gulf Islands, ainsi que dans les terres du Centre-Sud. La présence de l'espèce dans le reste du Canada est accidentelle.

Protection

En Ontario, l'espèce est protégée par les lois provinciales sur le gibier. En C.-B., l'Effraie des clochers est protégée par l'article 34 de la *Wildlife Act* qui interdit la collecte des oeufs et la prise d'oisillons ou d'adultes nicheurs, ainsi que la destruction des nids actifs. L'Effraie des clochers figure sur la liste bleue de la C.-B.

Population

En dépit de la taille relativement importante de la population d'Effraies des clochers en C.-B., les chiffres ont peut-être une tendance à la baisse. On estime que la population totale d'oiseaux nicheurs de cette province se situe entre 250 et 275 couples (ou 1 000 individus, y compris les oiseaux non reproducteurs). Au début des années 1980, un sondage d'une durée de 11 ans portant sur 2 642 granges a révélé 232 nids et 443 oiseaux au repos (pour une population totale de 907 Effraies).

Il existe peu de données sur les tendances des Effraies des clochers en C.-B. Cette province n'a été colonisée par cette espèce qu'au cours du XXe siècle, la première observation étant en 1909. Les chiffres ont augmenté de 1940 à 1980 en raison des hivers doux et de l'expansion des habitats agricoles convenables. L'espèce s'est répandue dans les basses-terres du Fraser jusqu'à Hope et a également colonisé le Sud-Est de l'île de Vancouver, de Victoria à Nanaimo. La présence de l'espèce à l'intérieur des terres a été répertoriée la première fois en 1949, à Celista. Toutefois, on s'attend à ce que les chiffres diminuent en raison de l'intensification de l'agriculture et de l'aménagement urbain.

En Ontario et au Québec, les chiffres n'ont probablement jamais été très élevés; l'Effraie des clochers a peut-être habité les forêts de chênes et les savanes boisées adjacentes aux prairies d'herbes longues avant l'arrivée des Européens. Le nombre décroissant d'Effraies des clochers apportés dans les centres de réadaptation de la région de Windsor-Hamilton en Ontario au cours des années 1980 témoigne de la décroissance des populations sauvages.

Durant la diffusion de l'Atlas des oiseaux nicheurs de l'Ontario (de 1981 à 1985), la reproduction de l'espèce a été confirmée dans quatre aires et peut-être dans deux autres aires également (six couples); seuls trois couples ont été déclarés dans le cadre du *Ontario Rare Breeding Bird Program* (ORBBP; 1989-1991). La principale aire de reproduction en Ontario se situe dans la péninsule du Niagara (Fort Érié) et peut-être dans la région adjacente de Haldimand-Norfolk. L'Effraie des clochers s'est reproduite dans la région des Mille-Îles de Kingston, de l'île Amherst et dans la région boisée de Backus à Long Point; un site de nidification utilisé à Bradley Marsh, au lac St-Clair, a été abandonné après que les adultes ont été victimes de prédateurs. Au nombre d'autres sites de reproduction, on compte un site situé sous un pont à Welland, St-Catherines, dans un vieux clocher à Alexandria Bay près de Kingston, et dans une grange à Renton. L'espèce étant secrète et nocturne, il est possible

qu'elle se reproduise dans des fermes non connues des ornithologues locaux. Toutefois, selon des données récentes, l'espèce serait disparue en Ontario.

Au Québec, un seul enregistrement possible existe concernant une reproduction assez récente (North Hatley, le 30 juillet 1987), mais ces oiseaux auraient pu venir des États-Unis. D'autres enregistrements de reproductions possibles proviennent des environs de Lacolle où des œufs auraient été aperçus dans une grange en 1979 et en 1980. Deux autres enregistrements existent, mais n'ont pas été corroborés, soit Saint-Hubert en 1961 (aucun détail), et chez un taxidermiste à Masson où l'on a trouvé une femelle qui venait de pondre. La plupart des découvertes d'Effraies ont lieu dans les basses-terres centrales du Saint-Laurent (au Sud des Laurentides et à l'Ouest de Québec); l'espèce ne nicherait que de façon irrégulière dans cette région.

Habitat

L'Effraie des clochers se retrouve dans les terrains vallonnés à basse altitude, particulièrement dans les régions agricoles, telles que les champs librès cultivés et abandonnés, les fermes et les vergers. Les aires de pâturage sont préférées, ainsi que les prés de carex et les marais. L'espèce cherche également, de façon sporadique, à se nourrir dans les villes et d'autres secteurs résidentiels. Les sites de nidification comprennent les arbres creux, les cavités dans les falaises et les rivages, les nichoirs et différents types de structures bâties par l'homme (granges, silos inutilisés, beffrois, puits de mine et autres bâtiments).

Biologie

L'Effraie des clochers se reproduit pour la première fois à l'âge d'un an, et les couples peuvent rester ensemble toute leur vie. Une deuxième couvée en un an est un phénomène inhabituel dans les régions tempérées et coïncide généralement avec une abondance de proies. La taille des couvées varie considérablement selon la latitude. Lorsqu'un habitat est adéquat, l'Effraie des clochers répond bien aux programmes de nichoirs; il y a donc un certain potentiel d'augmentation des populations. Plus de 300 nichoirs ont été érigés en C.-B. jusqu'à maintenant. Un potentiel semblable d'augmentation des populations existe en Ontario et au Québec.

Facteurs limitants

Étant donné que l'Effraie des clochers s'est mal adaptée aux climats froids, les rudes hivers constituent le principal facteur limitant dans l'Est du Canada. Même en C.-B., où se trouve la plus forte concentration de l'espèce au Canada, les rudes hivers entraînent un taux de mortalité élevé. Toutefois, le facteur fondamental limitant les populations d'Effraies des clochers dans leur aire de répartition principale est l'intensification de l'agriculture (particulièrement l'abandon du pâturage et des prairies pour la culture en lignes), ainsi que les pesticides synthétiques, les rodenticides et la mortalité causée par le trafic routier. Le nombre d'animaux d'élevage a été réduit sur les fermes (résultant en une perte de pâturage), et il y a eu un passage à la monoculture en lignes. La mécanisation a remplacé les chevaux, entraînant ainsi une diminution du nombre de rongeurs sur les fermes. Cette situation, en combinaison avec la perte de vieux bâtiments, tels que les granges et les silos, a causé l'élimination des habitats propres à l'alimentation et à la nidification de l'Effraie des clochers.

Évaluation et statut

Étant donné le nombre extrêmement petit d'Effraies des clochers au Canada et leur répartition limitée (une population raisonnable n'existant que dans une province), on recommande que l'espèce conserve la désignation d'espèce « vulnérable » du COSEPAC. En Ontario, l'espèce est certainement en danger de disparition si elle n'est pas déjà disparue. Le gouvernement local, les organismes non gouvernementaux et d'autres parties intéressées démontrent actuellement de l'intérêt pour le rétablissement de l'Effraie des clochers dans le Sud-Ouest de l'Ontario. Si les chiffres continuent d'indiquer une diminution de la population de cette espèce en C.-B., celle-ci devra donc être désignée espèce « menacée » par le COSEPAC.

Introduction

The Barn Owl is the most widespread owl species in the world. In Canada the species is at the extreme northern part of its range. It is an extremely rare breeding species in Ontario and possibly Quebec. The main population in Canada is in British Columbia. Because of its small populations and susceptibility to habitat change, Campbell and Campbell (1984) recommended that the Barn Owl be listed as 'vulnerable' by COSEWIC.

Distribution

The Barn Owl is the most widespread owl species in the world (Marti 1992) and it is essentially a tropical or subtropical species occurring between 40° N and 40° S (Mikkola 1983). In the Old World, Barn Owls occur from the British Isles, and from southern Spain to southern Sweden and then east to the extreme of western Russia (Marti 1992). The species also occurs in the Arabian peninsula, the East Indies, (not Sumatra, Borneo and the Philippines), Australia, and east in the western Pacific to the Society Islands (Cramp 1985).

The Barn Owl is extremely rare in eastern Canada, where it is at the northern limit of its range, with a few pairs breeding in southern Ontario (all in the Carolinian forest region) and possibly southern Québec. There are only five known records of Barn Owls in Manitoba. In Saskatchewan there have been 10 records of Barn Owls wandering north (either spring transients or summer visitors) and all but one of these was from the south-eastern part of the province (Smith 1996). Only one record exists from Alberta (Semenchuk 1992). The main Canadian population is in British Columbia (Campbell and Campbell 1984, Campbell *et al.*, 1990). In interior British Columbia, Barn Owls have been recorded as far north as Shuswap Lake (Campbell *et al.*, 1990).

The global conservation rank for the Barn Owl is a G5; in British Columbia it is an S3 (rare or uncommon in province; 21-100 occurrences), while in Ontario and Québec it is an S1 (critically imperilled in province; D. Sutherland and M. Huot pers. comm.). The Barn Owl is accidental (SA) in both Saskatchewan and Manitoba (J. Duncan pers. comm.).

In the United States, the Barn Owl is resident from western Washington, Oregon, northern Utah, southern Wyoming, Nebraska, Iowa (it is found rarely in North Dakota and southern Minnesota), southern Wisconsin, southern Michigan, New York, southern Vermont and Massachusetts southwards in the United States to Mexico, Central and South America as far as Tierra del Fuego, and including the Galapagos Islands (AOU 1983, Johnsgard 1988, Marti 1992). It occurs locally in the west Indies (Cuba and Hispaniola) (Johnsgard 1988).

Habitat

This species occurs in low elevation open country; especially agricultural areas, such as open cultivated and abandoned fields, farmsteads and orchards. Areas of pasture are preferred, as well as sedge meadows and marshes. The species also forages infrequently in cities and other residential areas.

Nesting sites include hollow trees, cavities in cliffs and river banks, nest boxes and various types of human structures (barns, unused silos, belfry, mine shaft or other building - Campbell *et al.*, 1990, Marti 1992, David 1995). In British Columbia the nest record scheme showed that most nests are on wooden platforms (51%) in old wooden barns (71%, n =221), as well as new wooden barns, concrete silos, metal silos, church spires, airport hangars, apartment buildings, water towers, bridges, and nest boxes. Natural sites included tree cavities (10 nests), cliffs and disused hawk nests (Campbell *et al.*, 1990).

Population Numbers, Size, and Trends

The overall Canadian population is likely in the order of 250 pairs (Campbell and Campbell 1984, Kirk and Hyslop 1998). Barn Owl numbers in Ontario and Québec were probably never very

large, although the species possibly inhabited oak-savannah vegetation adjacent to tall grass prairie prior to European settlement (Austen et al.,1996). Colonisation of southern Canada is attributed to clearance of forests for agriculture which created open habitats supporting high rodent populations (Weir 1987; see Marti and Marks 1989).

There is only one possible record of recent breeding in Québec (North Hatley on 30 July 1987; David 1995). The latter incident was of five young birds calling near a farmhouse and was 20 km from the United States border. While it is possible that these birds bred in the United States, the tendency for very young Barn Owls to stay close to their natal site means that they probably bred in Quebec (David 1995). There is also another possible breeding record from near Lacolle where Barn Owl eggs were seen in a barn in 1979 and 1980. A further two possible breeding records are unsubstantiated; Saint Hubert in 1961 (no details) and a female bird taken from a taxidermist at Masson that had recently laid eggs (David 1979). Most Quebec sightings are in the Central St. Lawrence Lowland (south of the Laurentians and west of Quebec City); the species is believed to nest in this area irregularly (David 1995). Of the 42 sightings of Barn Owls reported to the Quebec atlas, 20 have been since 1970 as a consequence of improved communication networks among increasing numbers of birders.

In 1982, Campbell and Campbell (1984) suggested an upper limit of 25-30 pairs of Barn Owls in Ontario. However, this is an ambitiously high estimate. For example, during the Ontario breeding bird atlas, breeding was confirmed in only four squares and was possible in only two, giving a maximum of six pairs (Weir 1987). Moreover, only three pairs were reported to the ORBBP (1989-1991; Austen *et al.,* 1996). The main area where Barn Owls potentially breed in Ontario is on the Niagara Peninsula (Fort Erie) and possibly in adjacent Halimand-Norfolk. The species has also bred in the Thousand Isands area of Kingston, Amherst Island and in the Backus woods area at Long Point. A traditional nest site used by a pair of owls at Bradley Marsh, Lake St. Clair was abandoned after the adults were predated by Great Horned Owls (*Bubo virginianus*) (D. Sutherland pers. comm.). Other breeding sites included under a bridge at Welland, St. Catherines, in an old steeple at Alexandria Bay, close to Kingston and a barn at Renton (D. Sutherland pers. comm.). Because the species is so secretive and nocturnal it is possible that it breeds on farms not known to local birders. Recent evidence suggests that the species is extirpated in Ontario (J. McCracken pers. comm.).

There was a decline in the numbers of owls brought to rehabilitation centres in the Windsor-Hamilton area in Ontario during the 1980s which likely reflects declines in populations in the wild. Barn Owls were brought to the Owl Foundation in Vineland, Ontario, until about 1977 (K. McKeever pers. comm.). After 1977 there were a series of very long winters which may have caused high mortality in the Ontario population. Since the 1920s there have also been a number of changes in agricultural practices that have been detrimental to Barn Owls. These include a drastic reduction in numbers of cattle and thus pasture for grazing. This reduction in livestock has meant that fewer forage crops are grown, and there has also been a shift to monoculture rowcrops. Moreover, increasing mechanisation has drastically reduced the numbers of horses kept in barns. The result has been a decline in rodent populations. Coupled with the loss of old buildings such as barns and silos, both foraging and nesting habitat for Barn Owls has been eliminated.

There are currently three captive Barn Owls at the Owl Foundation (K. McKeever pers. comm.). Between 1974-1986, over 182 Barn Owls were released from the Owl Foundation at Vineland Station in southern Ontario (Weir 1987). To date over 200 Barn Owls have been released; of those recovered most were in the Chesapeake Bay area or in New Jersey (K. McKeever pers. comm.). The success of these releases is unknown and was not assessed at the time, but judging by the very high mortality incurred during the first year of life, such releases are usually ineffectual in re-establishing populations (Marti 1992). Young Barn Owls also disperse over very large distances (up to 1,900 km - Marti 1992) which means that most owls leave their release location immediately, never to return. Barn Owls have good colonising and reproductive capabilities, so suitable habitat is the main limiting factor (Blodget 1989). If such habitat is absent or declining, then releasing owls into such areas may not an effective use of conservation resources. There is currently interest among local government, NGOs and interested parties (local Ontario Ministry of Natural Resources officials, Bird Studies Canada, Norfolk Field Naturalists, The Ontario Federation of Anglers and Hunters and local farmers) in re-establishing Barn Owls in south-western Ontario (J. McCracken, D. Sutherland pers. comm.). While this is well intentioned it requires a careful appraisal of all the factors likely to affect Barn Owl numbers in southern Ontario.

The only province in Canada where Barn Owls breed in moderate numbers is in British Columbia, which holds some of the highest densities in North America (Campbell *et al.*, 1990). However, colonisation of this province occurred only during this century; the first sighting was in 1909 near the mouth of the Fraser River. Numbers increased from the 1940s to the 1980s as a result of mild winters and expansion of suitable agricultural habitat. The species spread through the Fraser Lowlands to Hope and also colonised south-eastern Vancouver Island from Victoria to Nanaimo; the first record in the interior was in 1949 at Celista (Campbell *et al.*, 1990).

The total breeding population in British Columbia is estimated at 250-275 pairs (or 1,000 individuals, including non-breeders). Campbell and Campbell (1984) conducted an 11-year survey of 2,642 barns; they found 232 nests and 443 roosting birds (giving a total population of 907 owls). However, numbers are predicted to decline because of agricultural intensification and urban development. The general impression of land-owners over this time frame was that Barn Owls were seen less often in recent years (Campbell *et al.*, 1990).

Despite the relatively large population of Barn Owls in British Columbia, Campbell and Campbell (1984) suggested numbers might be declining. Campbell *et al.*, (1990) described the Barn Owl as 'a widespread breeder throughout most of its coastal range; an uncommon resident throughout the Fraser Lowlands to Hope; a rare resident on south-eastern Vancouver Island north to Nanaimo; it is very rare north to Campbell River and on the Gulf Islands and very rare in the central-southern interior'. Elsewhere the species is accidental. Barn Owls breed throughout the year in British Columbia, depending on food supply.

There are few data to document trends of the Barn Owl in British Columbia. On Christmas Bird Counts (CBCs), the species was recorded from nine of 28 localities on the coast and 27% of all counts. High numbers were 49 on 18 December 1977 (the highest total in Canada), 16 at Ladner (27 December 1982) and seven at White Rock (2 January 1982; Campbell *et al.*, 1990).

Although Barn Owl populations are apparently stable in most western states (Marti and Marks 1989), numbers may have declined in central coastal California (Tate 1986) and marked declines have occurred in the mid-west (Colvin 1985). Based on National Wildlife Federation questionnaires to 12 mid-west states, Barn Owls are considered endangered in seven, of special concern in two, while no designation was given for the remainder (Martell 1991). In the north-eastern states, the Barn Owl is dependent largely on coastal marshes and tidewaters; it is considered a species of special concern in Vermont, Massachusetts, New York, Pennsylvania and Maryland and state-threatened on Rhode Island (Blodget 1989). Few data are available from this species from migration counts sites. Duffy and Kerlinger (1992) believed that because numbers of Barn Owls were declining from 1980-1988, the species was declining in New Jersey.

Limiting Factors

The Barn Owl is poorly adapted to cold climates (Marti and Wagner 1985). In eastern Canada the main limiting factor is undoubtedly the severe winter climate. Even in British Columbia, which is the stronghold for the species in Canada, severe winters cause widespread mortality. However, the primary factor limiting Barn Owl populations in its main range is agricultural intensification (especially the shift from pasture/grassland to rowcrops), as well as synthetic pesticides, rodenticides and mortality from road traffic. Loss of nest sites is also an important limiting factor.

Special Significance

The Barn Owl is an important ecological indicator in agricultural areas. Because it is associated with traditional small-scale mixed farming, trends in its population have reflected intensification of agriculture. There have been global declines in this species as a result of habitat loss, toxic chemicals, human disturbance and severe winters (Marti 1992). The species is economically beneficial to farmers in its role as predator of rodent populations.

Protection

The species is protected by provincial game laws in Ontario. In British Columbia it is protected by Section 34 of the Wildlife Act which prohibits the taking of eggs, nestlings or nesting adults or destroying active nests. The species is on the blue list in B.C.

Evaluation and Proposed Status

Global declines have occurred in Barn Owl populations because of changing agricultural practices (habitat loss), human disturbance and severe winters (Mikkola 1983, Marti 1992). The species is also vulnerable to contamination by persistent organochlorine pesticides and new generation organophosphate pesticides, as well as rodenticides. The Barn Owl is at the periphery of its range in Canada. In eastern Canada, the species breeds rarely and it is extremely susceptible to cold winters and snow cover that prohibits access to its food supply. In British Columbia, habitat loss poses the main threat.

Given the extremely low numbers of Barn Owls in Canada and their restricted distribution (reasonable populations exist in only one province) I recommend that the species should remain listed as 'Vulnerable' by COSEWIC (Campbell and Campbell 1984). In eastern Canada, the Barn Owl is certainly endangered. If there is evidence for declines in British Columbia, then this species should be listed as 'threatened' by COSEWIC.

Provided there is adequate suitable habitat, Barn Owls respond well to nest-box programs and so there is some potential for augmenting populations in British Columbia. Over 300 nest boxes have now been installed in the province (L. Andrusiak pers. comm.). The same may be true in Ontario and Quebec. The pilot recovery program in Ontario could become a nationally co-ordinated program (McCracken 1998).

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Biographical Summary of Author

David A. Kirk obtained his Masters degree in conservation from University College London in England in 1983 and his Ph. D. in zoology from the University of Glasgow (Scotland) in 1989. He has 16 years experience as a research ecologist designing and conducting fieldwork and scientific writing. He has a special interest in applied ecological research and has worked the last nine years as a consulting research ecologist. He has provided recommendations on forest management or farmland management to enhance and conserve wildlife, especially birds. More specifically, he has a long--standing interest in raptor conservation and management and for nine years he re--habilitated raptors to the wild that were orphaned or were incapacitated (1969--1978).

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Figure 1. Breeding distribution of the Barn Owl *Tyto alba* in North America.
(From McCracken 1998.)

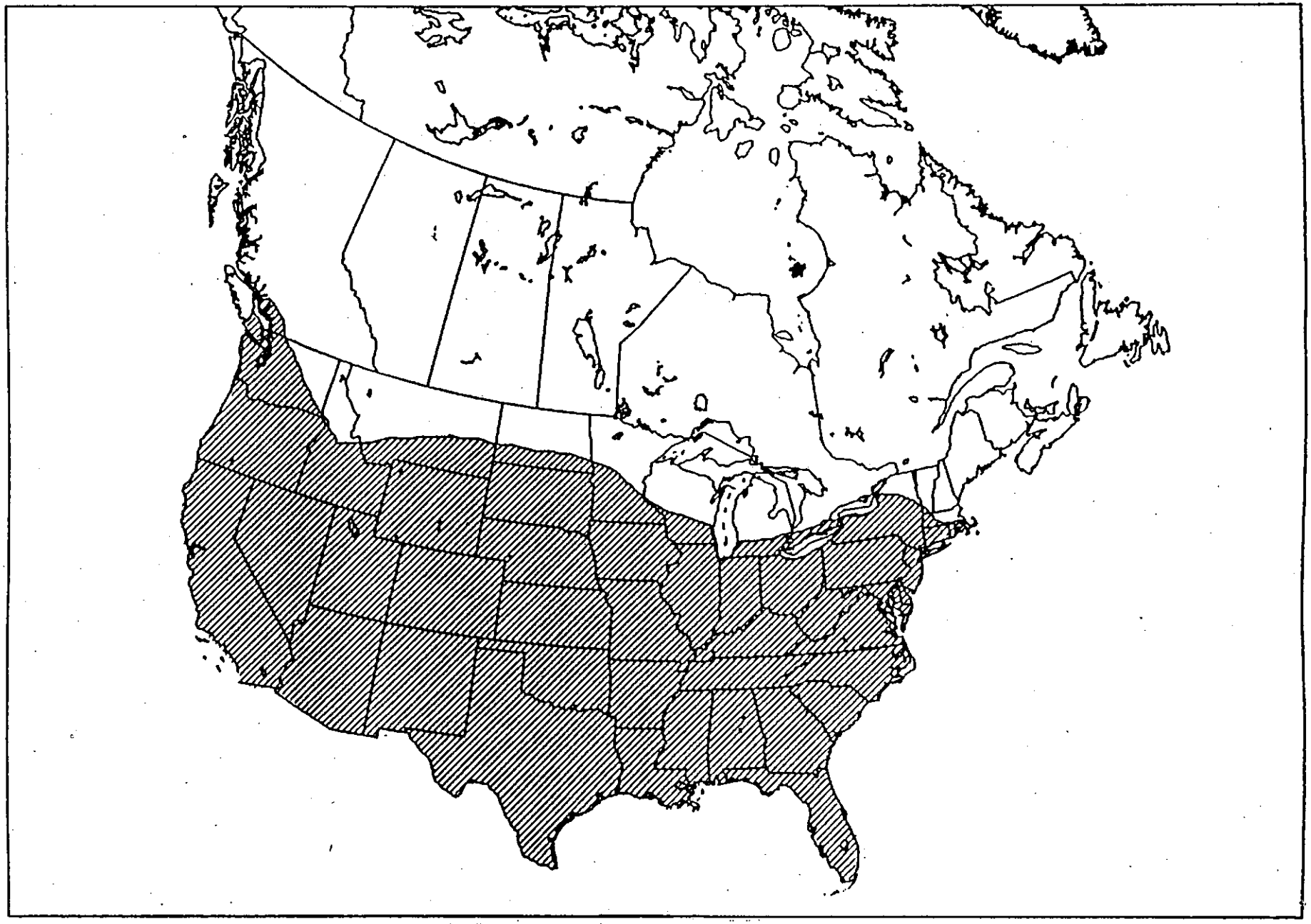


Figure 2. Distribution of the Barn Owl *Tyto alba* in Ontario.
(From McCracken 1998.)

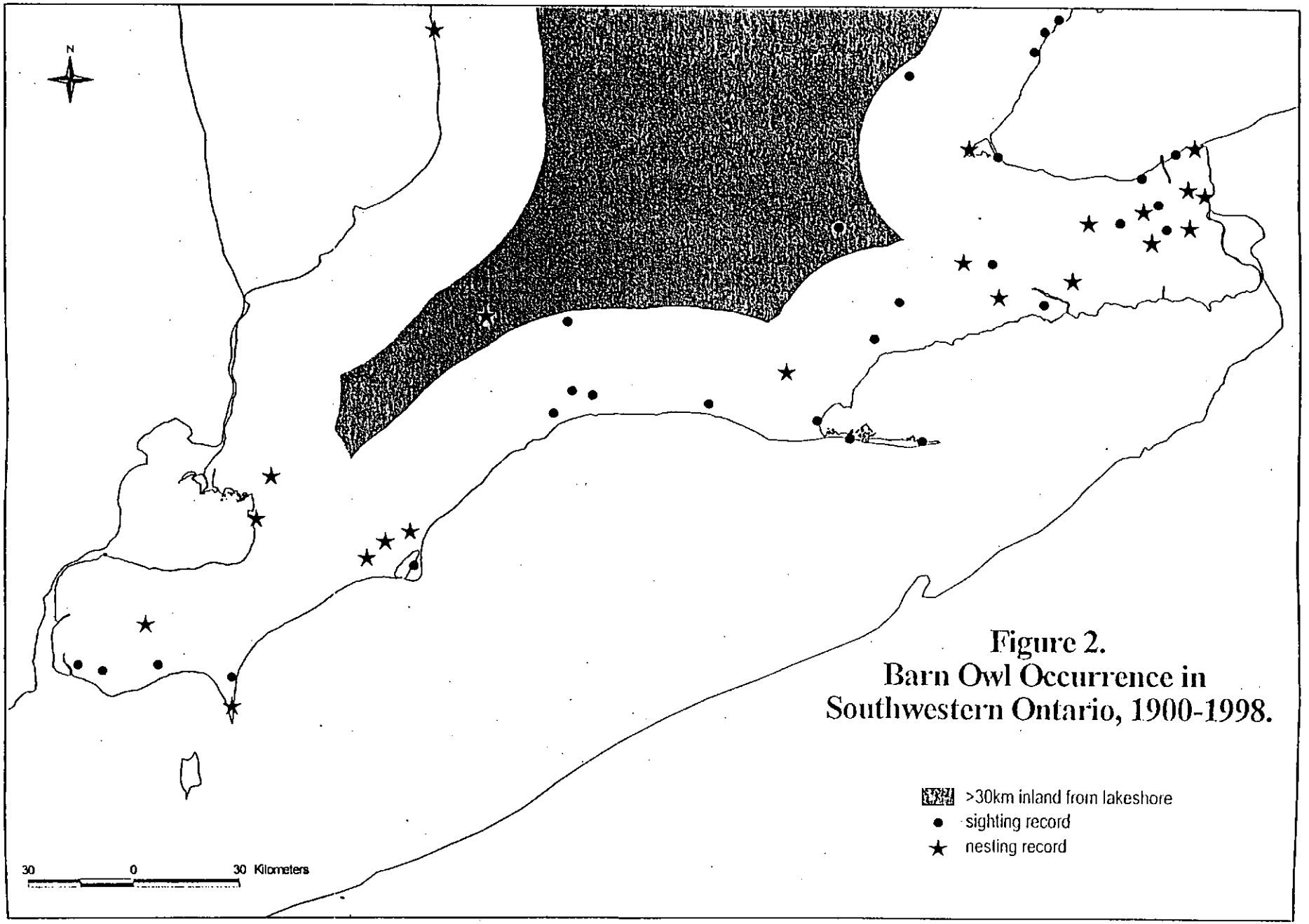
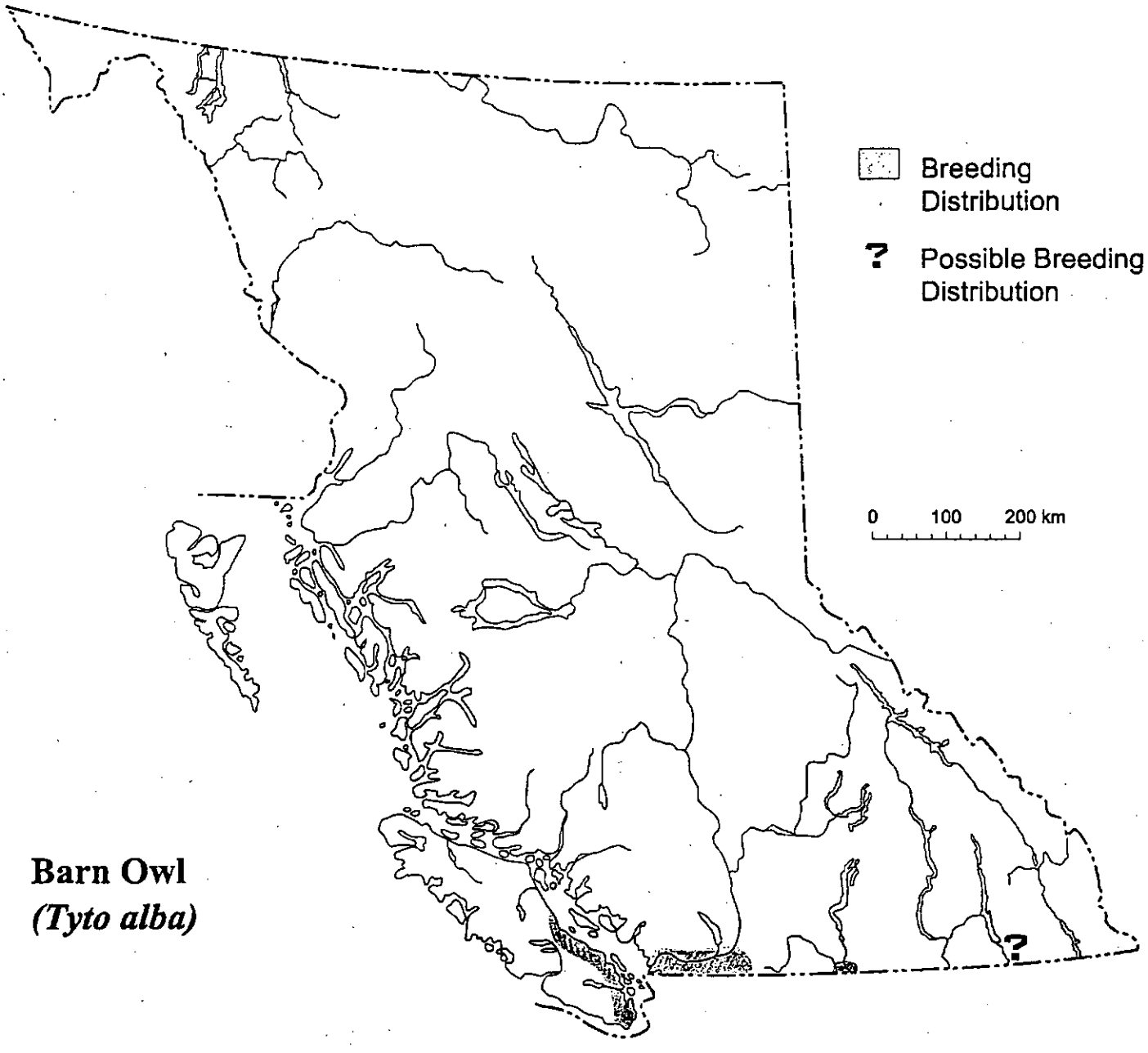
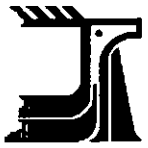


Figure 3. Distribution of the Barn Owl *Tyto alba* in British Columbia.
(From Fraser et al. 1999.)





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.

MEMBERSHIP

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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