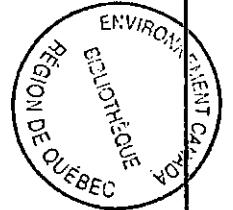
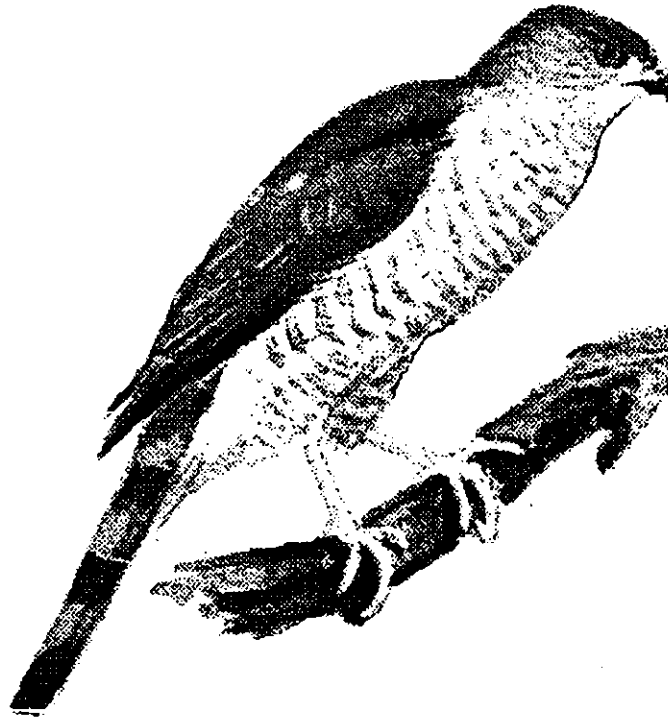


Update  
**COSEWIC STATUS REPORT**

on

**SHARP-SHINNED HAWK**  
*(Accipiter striatus)*

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David A. Kirk

**NOT AT RISK**  
1997

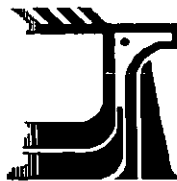
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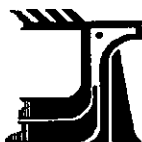
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**Cover illustrations:**

Sharp-shinned Hawk - J. Crosby, from *The Birds of Canada* by W. Earl Godfrey. Canadian Museum of Nature, Ottawa, ON.



## Sharp-shinned Hawk

**Reason for status:** Population abundant and widespread. No indication of decline in most areas of the country. [Found to be not at risk in 1986 and reconfirmed as not at risk in 1997.]

**Occurrence:** All provinces and territories.

### NOTES

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Update  
**COSEWIC Status Report**

on

**Sharp-shinned Hawk**  
*(Accipiter striatus)*

by

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Environment Canada**

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## Executive Summary

The Sharp-shinned Hawk (*Accipiter striatus*) is a small forest dwelling raptor (about 25-35 cm in length). The upper parts are dark grayish blue and the breast and abdomen are barred with reddish-brown and white. The tail is long and square tipped. As in most birds of prey, females are larger than males. In fact, this species shows the largest degree of sexual dimorphism of any raptor in North America: the female may weigh 1.8 times as much as the male. "Sharp-shins" or "Sharpies" are smaller than the Cooper's Hawk and Goshawk, two other accipiter species that occur in North America. They are distinguished from similar-sized falcons, the Merlin and American Kestrel, by their short rounded wings.

Sharp-shinned Hawks breed widely in forested areas of North America from Alaska through Canada and the U.S. to northern Mexico. They winter from extreme southern Canada to Costa Rica and Panama, migrating during the daylight hours.

Numbers of Sharp-shins appear to have declined from the 1940s-60s, particularly in the U.S., possibly due pesticide contamination, habitat loss, and/or shooting. Numbers appear to have stabilized during the 1970-80s. However, in the mid-1990s, serious declines were reported from coastal hawk migration sites in eastern North America (Cape May). Combined with the fact that organochlorine pesticide residues are still high in some adults, this led to concern. However, similar declines have not been reported from other parts of the continent or from other surveys, suggesting that numbers in the population as a whole are probably stable. The population size of Sharp-shinned Hawks is unknown. At a rough guess, there may be 500,000-1,000,000 individuals in Canada, making this species one of the most abundant raptors in the country.

Sharp-shinned Hawks inhabit open woodlands and wood margins. They often nest in stands of young or even-aged conifers that are close to clearings, open deciduous woodlands, and brushy areas where their songbird prey is abundant. However, in some parts of the range they may prefer to nest in older forests. It is important that the nest have a dense canopy cover for concealment.

The Sharp-shinned Hawk is a solitary, monogamous nester. The average clutch size is 4-5 eggs. Incubation lasts for 30-32 days and the young leave the nest 21-27 days after hatching. They depend on the adults for food for several weeks after fledging while they develop their hunting skills. The oldest known Sharp-shin was nearly 10 years old, although most probably live a much shorter time.

Sharp-shinned Hawks prey mainly on small to medium-sized birds, such as the Song Sparrow, House Sparrow, American Robin, and Tree Swallow. However, their diet may also include mammals, reptiles, and insects.

In eastern North America, Sharp-shins can typically be observed migrating in large numbers in the fall, their flight paths concentrated by the mountains and coastlines. Their migration is the most prolonged and continuous of any raptor in this part of the continent. It begins in late August and continues until mid-October or later. Juvenile birds migrate earlier than adults, and males generally migrate later than females. Individuals may take different routes from year to year. Different age and sex classes may also take different routes, possibly due to aerodynamic differences related to body size and feather lengths. In spring, Sharp-shins appear to trace a northward path similar to their southward route but scattered across a broader front.

The main factors affecting Sharp-shinned Hawk populations in the past have been pesticide contamination, habitat loss, and/or shooting. Sharp-shinned Hawks are particularly at risk from bioaccumulation of environmental contaminants like DDT, which can cause reproductive failure, because they prey primarily on other birds high in the food chain. DDT was banned in North America in the 1970s but is still in use in some Latin American countries where Sharp-shins winter, and residues are still being found in Canadian populations. However, no widespread problems have recently been reported. The shooting of large numbers of hawks at

migration sites is generally no longer a serious concern, and it is unclear what effects, if any, forest harvest practices have on the species. Thus, given the apparent stability and large size of the population in Canada, the species designation should remain "Not at Risk".

## Résumé

L'Épervier brun (*Accipiter striatus*) est un petit rapace forestier d'environ 25 à 35 centimètres de long. Il a le dos gris bleuâtre et la poitrine et les flancs crème striés de roux. Sa queue est longue au bout carré. Comme pour la plupart des oiseaux de proie, la femelle atteint une plus grande taille que le mâle. C'est l'espèce de rapace pour laquelle le dimorphisme sexuel est le plus notable, la femelle pouvant peser jusqu'à 1,8 fois plus que le mâle. L'Épervier brun est plus petit que l'Épervier de Cooper et l'Autour des palombes, deux autres espèces de la famille des Accipitridés vivant en Amérique du Nord. On le différencie d'autres faucons de même taille, comme le Faucon émerillon et la Crécerelle d'Amérique, par ses courtes ailes arrondies.

Pendant la période de reproduction, on retrouve l'Épervier brun dans les régions boisées de l'Amérique du Nord qui vont de l'Alaska au Canada et aux États-Unis jusqu'au nord du Mexique. Lorsque vient le temps d'hiverner, cette espèce se retrouve de l'extrême sud du Canada au Costa Rica et au Panama. La migration se fait de jour.

Le nombre d'Éperviers bruns semble avoir décliné depuis les années 1940 à 1960, particulièrement aux États-Unis, probablement en raison de la contamination par les pesticides, de la destruction des habitats et (ou) des tirs au fusil. De 1970 à 1980, ce nombre semble s'être stabilisé. Cependant, au milieu des années 1990, on a enregistré une baisse inquiétante de la population d'Éperviers bruns fréquentant les sites côtiers de migration de l'est de l'Amérique du Nord (Cape May). Certains adultes présentent toujours un taux alarmant de résidus de pesticides organochloriques. Toutefois, des baisses similaires n'ont pas été observées dans d'autres parties du continent, ni au moyen d'autres études, ce qui laisse entendre que la population dans son ensemble est probablement stable. Il existe peu d'information sur l'importance des populations d'Épervier brun. On estime que la population actuelle s'élève de 500 000 à 1 000 000 d'individus au Canada, ce qui en fait l'espèce de rapace la plus abondante au pays.

L'Épervier brun fréquente les terrains boisés découverts et les lisières des forêts. Il niche souvent parmi les conifères d'essence similaire non arrivés à maturité qui se trouvent près de clairières, de secteurs boisés et de régions broussailleuses, où les petits oiseaux dont il se nourrit abondent. Il arrive toutefois que, dans certaines régions, il préfère nicher dans des forêts matures ou vieilles, affectionnant les couverts végétaux denses qui servent à dissimuler son nid.

L'Épervier brun est solitaire et monogame. La nichée compte habituellement 4 ou 5 œufs, dont l'incubation dure de 30 à 32 jours. Les jeunes quittent le nid de 21 à 27 jours après l'éclosion et sont encore nourris par leurs parents plusieurs semaines après avoir acquis leurs plumes de vol, pendant qu'ils affinent leurs aptitudes à la chasse. Un spécimen a déjà vécu près de dix ans, mais la longévité moyenne est probablement beaucoup moins élevée.

L'Épervier brun se nourrit principalement d'oiseaux de petite et de moyenne taille, dont le Bruant chanteur, le Moineau domestique, le Merle d'Amérique et l'Hirondelle bicolore. Mammifères, reptiles et insectes composent également, à l'occasion, son régime.

Dans l'est de l'Amérique du Nord, l'automne venu, on observe souvent de grands groupes d'Éperviers bruns effectuer leur migration, survolant montagnes et côtes. Il s'agit de la migration la plus longue et la plus continue de tous les rapaces vivant sur cette partie du continent. Elle commence à la fin d'août et se poursuit jusqu'à la mi-octobre, voire plus tard. Les jeunes migrent plus tôt que les adultes, et les mâles en général plus tard que les femelles. Il arrive que l'itinéraire emprunté change d'une année à l'autre, ce qui peut se produire chez les individus d'âge et de sexe différents, probablement en raison de différences aérodynamiques liées à leur taille et à la longueur de leurs plumes. Au printemps, l'Épervier brun revient vers le nord en suivant un parcours semblable à celui qui l'a conduit vers le sud, mais réparti sur une plus grande surface.



Les principaux facteurs influant sur les populations d'Épervier brun sont la contamination par les pesticides, la destruction des habitats et (ou) les tirs au fusil. L'Épervier brun est particulièrement sensible à la bioaccumulation de polluants environnementaux comme le DDT, qui peut perturber sa reproduction, car il se nourrit principalement d'autres oiseaux qui se trouvent aux échelons supérieurs de la chaîne alimentaire. Le DDT a été proscrit en Amérique du Nord dans les années 1970, mais est toujours utilisé dans certains pays d'Amérique latine et du Sud où l'Épervier brun hiverne et, par conséquent, on retrouve encore des résidus de ce produit chez les populations canadiennes de ce rapace. Aucun problème significatif n'a toutefois été décelé récemment à ce titre. En général, le tir au fusil de grands nombres d'Éperviers bruns sur les sites de migration n'est plus préoccupant, et il est difficile de déterminer les répercussions (s'il en est) des pratiques de défrichement des terres boisées sur l'espèce. Ainsi donc, compte tenu de la stabilité et de l'importance des populations d'Épervier brun au Canada, la désignation pour cette espèce devrait rester la même, soit «Non en péril».

## Introduction

The purpose of this report is to provide an update on the status of the Sharp-shinned Hawk *Accipiter striatus* since the original COSEWIC report was produced (Flood and Bortolotti 1986). At that time the species was assigned the status "not in any category". It was known that:

- numbers appeared to have declined from the 1940s to the 1960s, particularly in the US, possibly due to pesticide contamination, habitat loss, and/or shooting,
- Sharp-shinned Hawks prey primarily on small birds and are thus particularly at risk from bioaccumulation of environmental contaminants, which may reduce hatching success,
- breeding habitat varies geographically but nest sites usually have a high density of trees with dense crowns, which might be affected by forestry,
- the North American population probably numbered tens of thousands of individuals and there appeared to be no serious current population decline.

### A. Population size and trends

Populations of Sharp-shinned Hawks *Accipiter striatus* apparently declined in the DDT era (1946-1973) because of widespread reproductive failure (Evans 1982). Like its close relative, the Eurasian Sparrowhawk *Accipiter nisus* (Newton 1986), this species is one of the most vulnerable to contamination by organochlorine pesticides because its diet is composed almost exclusively of birds. Sharp-shinned Hawks were also one of the species most seriously affected by shooting at migration sites during the 1930s and 1940s (Henny and Wight 1972, Evans 1982). There are few data in Canada on the breeding densities, reproductive success and nesting habitats of the Sharp-shinned Hawk; knowledge of re-occupancy rates and adult turnover are important to document population changes because of the inadequacies of most other data sources (see Rosenfield et al. 1991). Because they are a forest-dwelling raptor, populations of Sharp-shinned Hawks are difficult to monitor and nests are extremely hard to find. A Ph.D. research project in Fundy National Park, New Brunswick found only 12 nests in seven years of study (Erskine 1992). At a rough guess there may be 500,000-1,000,000 individual Sharp-shinned Hawks in Canada (Kirk et al. 1995, Kirk and Hyslop in review), making this species and the Broad-winged Hawk *Buteo platypterus* the most abundant raptors in the country. Below, recent population trends suggested by migration counts, the Breeding Bird Survey (BBS), and the Christmas Bird Count (CBC) are summarized.

### Migration counts

Analyses of counts from hawkwatches from eastern and western North America suggest somewhat different trends. Although Sharp-shinned Hawks are one of the species thought to be affected by DDT, analyses from hawkwatch data at Hawk Mountain, Pennsylvania did not reveal this effect. According to Hawk Mountain migration counts populations were apparently stable during the DDT era (Table 1). This is surprising given that significant negative trends were found for both Cooper's Hawks *Accipiter cooperi* and Northern Goshawks *Accipiter gentilis* (Bednarz et al. 1990). However, there were decreased numbers of Sharp-shinned Hawks post 1949. Bednarz et al. (1990) estimated the inflection year from paired linear regression and found that the species began to decrease in 1949. Because Sharp-shinned Hawks crashed and increased during the pre-selected 'DDT era' of 1946-1972, no significant trend was found (Table 3 in Bednarz et al. 1990). Populations recovered in the mid-1960s. Since 1970, Sharp-shinned Hawks at Hawk Mountain have increased and reached levels not previously attained (Bednarz et al. 1990; Fig. 4).

Titus and Fuller (1990) examined migration count data from six hawk look-outs and found that populations of Sharp-shinned Hawks were stable (a non-significant increase of 0.38% per year). At Grimsby, Ontario, migration counts of the species increased significantly from 1974-1989 (% change per year = 4.3 %,  $P < 0.05$ ; although the pattern was non-linear and from 1974 to 1988 the trend was a slightly declining one (Hussell and Brown 1992).

In contrast to reports at other migration count sites, Goodrich and Struve (1994) reported 'precipitous declines' in counts of Sharp-shinned Hawks at coastal hawk-look outs in eastern North America. By far the highest counts of Sharp-shinned Hawks are from Cape May, New Jersey (mean 39,633 compared to less than 10,000 at other hawk lookouts; Titus and Fuller 1990), so that declines at Cape May are especially significant. Counts in 1992 were lower than in previous years and organochlorine pesticide residues are still high in adult hawks (Viverette et al. 1994).

There are at least four explanations for the declining counts of Sharp-shinned Hawks at Cape May (P. Kerlinger pers. comm.):

- 1) Declines may have occurred due to organochlorine residues in eggs affecting productivity of breeding hawks. Relatively high levels of organochlorine pesticides still occur in eggs of breeding birds in the Bay of Fundy National Park, New Brunswick (S. Woodley pers. comm.). These levels are presumably obtained by feeding on contaminated songbird prey either in Mexico, where many individuals spend the boreal winter, or from songbird prey on the breeding grounds.
- 2) Declines may have occurred as a result of declines in songbird prey populations. It has been suggested that an indirect effect of acid rain reducing forest growth may be a decline in invertebrate populations that provide food for songbirds.
- 3) Numbers may not have declined but there may have been changes in migration routes. Weather and other factors can cause great variability in the numbers of birds seen at Cape May.
- 4) Numbers may not have declined but more Sharp-shinned Hawks may be wintering further north with the increased availability of songbird prey at feeders maintained by birdwatchers (P. Kerlinger pers. comm.).

There were no significant changes in trends in counts of Sharp-shinned Hawks from four hawkwatches in western North America (Hoffman et al. 1992; see Table 1).

Migration counts may have limited use to assess population trends for the Sharp-shinned Hawk because known changes in populations show no correlation with counts (Evans 1982, Fuller and Mosher 1987). Counts are also affected by weather, date or year (Hussell 1985). Insufficient information is available on the source populations of migration counts (changes in geographical distributions can suggest apparent declines or increases), and how weather and food supply affect migration routes.

### **Breeding bird survey (BBS)**

BBS data are not especially suitable for monitoring population trends in the Sharp-shinned Hawk, because of the secretive behaviour of the species and its tendency to breed and hunt in continuous forest. However, these data provide some information at the national and regional levels. Overall analyses for Canada from the BBS indicate that Sharp-shinned Hawk populations increased significantly between 1966-1994 (proportional annual change 0.7,  $n = 137$  routes,  $P < 0.05$ ). The declining trend was not significant, for the more recent period 1980-1994 (proportional annual change -0.5,  $n = 111$ ) also indicating the relative stability of Sharp-shinned Hawk populations (C. Downes, CWS, pers. comm.). The overall results for Canada are confirmed by analyses for separate ecozones, although generally there were too few routes per zone for analyses to be statistically meaningful.

One exception was the Boreal Shield ecozone where populations were apparently stable between 1966-1994 (proportional annual change 0.9,  $n = 39$ ,  $P < 0.1$ ), and 1980-1994 (proportional annual change -1.6,  $n = 32$ ).

### Christmas bird counts (CBC)

An analysis of Christmas Bird Counts, using route-regression techniques similar to those used for the BBS, indicates that winter counts of Sharp-shinned Hawks increased significantly for the period 1959-1988 (% annual change 1.4,  $n = 1,709$  circles,  $P < 0.01$ , mean birds per party hour 0.26; Sauer *et al.* 1996).

### Breeding bird atlases and regional studies

During the Maritime Breeding bird atlas (1986-1990), Sharp-shinned Hawks were recorded in 402 squares (or 26% of the total of 1,529 squares surveyed). Breeding was confirmed in only 16.7% ( $n=67$ ) of these squares and was probable in 59 (15% of the total) (Erskine 1992). Most records were of single sightings only and may have comprised possible breeders ( $n=276$  squares, 69%). Erskine (1992) estimated the population in the Maritimes at  $3,400 \pm 500$  pairs ( $1,700 \pm 300$  in New Brunswick;  $1,600 \pm 300$  in Nova Scotia and  $150 \pm 80$  on Prince Edward Island).

During the Québec breeding bird atlas (1984-1989), Sharp-shinned Hawks were found in 526 squares (21%) out of the 2,464 surveyed. Of these, breeding was confirmed in 77 squares (15%), was probable in 68 squares (13%) and possible in 381 squares (72%; Gauthier and Aubry 1995). The remaining records were of observations ( $n = 28$ ).

Although Sharp-shinned Hawks declined in southern Ontario, where there are dense human populations, evidence suggests that current populations are stable (Weir 1987). During the Ontario breeding bird atlas (1981-1985), the species was found in 666 out of 1,824 squares in southern Ontario. Breeding was confirmed in 113 of these (17%), probable in 104 (16%) and possible in 449 (67%). Overall the species was found in 87 (64%) of 137 blocks in Ontario.

Few data are currently available for this species from Manitoba. In southwest Manitoba, Cuthbert *et al.* (1990) suggested that the species was uncommon from mid-April to mid-September. It is known to nest in Riding Mountain and Turtle Mountain Provincial Parks. Cleveland *et al.* (1988) also considered the Sharp-shinned Hawk to be uncommon in southeastern Manitoba from May to the third week in September.

Smith (1996) reported that the Sharp-shinned Hawk is 'by far the most widespread' of the three breeding accipiters in Saskatchewan. Most records compiled are of possible breeders ( $n = 114$ ), while only five were probable breeders and 15 confirmed breeders (Smith 1996). This reflects the difficulty in finding nests of this secretive species. The remaining records were of spring ( $n = 29$ ) and fall ( $n = 23$ ) transients and winter resident birds ( $n = 14$ ; a total of 200 records or 28% of all squares in the province; Smith 1996).

During the Alberta breeding bird atlas (1987-1991), Sharp-shinned Hawks were found in all forest regions (mainly in the Canadian Shield, Boreal forest, Foothills and Parkland regions). The absence of records in the northern part of the province was due to lack of coverage. Breeding was confirmed in 35 squares (2% out of a total of 2,206 squares), it was probable in 21 (1%) and possible in 116 squares (5%; Semenchuk 1992). The species had previously been on the Blue List for the province, but now will be on the Green List of species not at risk.

In British Columbia, Campbell *et al.* (1990) have compiled 14 breeding and 3,542 nonbreeding records for the Sharp-shinned Hawk. They describe the Sharp-shinned Hawk as being 'uncommon in summer' but it is a 'widespread breeder'. However, it is a 'common to very common spring and autumn migrant throughout most of the province'. In winter 'it is uncommon in coastal areas and the southern interior and casual in the northern interior' (Campbell *et al.* 1990). The Sharp-shinned Hawk is the most common raptor recorded on migration

watches in British Columbia, but these are inadequately documented. During Christmas Bird Counts in the interior, Sharp-shinned Hawks were recorded in eight of nine localities and 35% of all counts. On the coast they were recorded from 24 of 28 localities and 69% of all counts. The Canadian all-time high Christmas count of this species was from Vancouver (24 birds in 1982; Campbell et al. 1990).

### ÉPOQ (Studies of bird populations in Québec)

A recent analysis of check list data from Québec (Études des populations des Oiseaux du Québec) indicated no significant change in populations of Sharp-shinned Hawks from 1970-1989 (% annual change 0.0721, number of mentions = 4,430; Cyr and Lariveé 1995).

### Nature Conservancy rankings

Nature Conservancy rankings for the Sharp-shinned Hawk are S4 for Québec (widespread, abundant and apparently secure, but of long-term concern; M. Huot pers. comm.), S4 for Ontario (this will likely be re-assigned to S5; demonstrably abundant and secure, ineradicable under present conditions; D. Sutherland pers. comm.), S4B for Saskatchewan (as above for breeding birds; J. Duncan pers. comm.), and S5 for B.C. (S. Cannings pers. comm.).

## B. Habitat

### General

Sharp-shinned Hawks occur in a wide variety of forest habitats from relatively open woodland to dense forest interspersed with openings (AOU 1983). Most Sharp-shinned Hawks in North America breed in boreal forest according to Palmer (1988); however, their range covers a wide variety of habitat types from northern Central America to Alaska. Palmer (1988) further suggests that they prefer to nest in stands of young or even-aged conifers that are close to clearings, open deciduous woodland or brushy areas; however, this may not be true in some parts of the species range where older forests appear to be preferred (e.g., New England; De Graaf et al. 1992). Because songbird populations are generally more abundant in mixed woods, Sharp-shinned Hawks prefer to forage in such habitats. The species may also occasionally breed in deciduous forests, but these must have dense canopy cover for nest concealment (Palmer 1988).

### Breeding habitat

In the Maritimes, coniferous and mixed woods are used in the breeding season; nests are usually located in spruce trees (Erskine 1992). In Québec, the highest percentage of squares with observations of Sharp-shinned Hawks during the breeding bird atlas was in yellow birch *Betula alleghaniensis* and balsam fir *Abies balsamea* (Gauthier and Aubry 1995). Of 200 nests examined near Montreal, most were in black spruce, with a few in balsam fir; very few were located in other conifers (W.J. Brown in Palmer 1988).

Preferred nesting habitat in Ontario is apparently closed canopy dense wet coniferous forest or bogs and occasionally in mixed woods (Peck and James 1983, Weir 1987). Of the 47 nests found in the Ontario nest record scheme, all were in conifers (14 in spruce), seven in hemlock, six in cedar and five in pine (Peck and James 1983).

A wide range of forest types are occupied in Saskatchewan; the species is common in the boreal forest, uncommon in the Cypress Hills, Parklands and Subarctic regions, and very local in the grasslands (Smith 1996). Smith (1996) suggested that Sharp-shinned Hawks required larger tracts of forest than did the Cooper's Hawk. In Alberta, dense deciduous, coniferous or mixed woods are preferred (Semenchuk 1992). In British Columbia, the Sharp-shinned Hawk occurs in fairly dense coniferous forest (e.g., second growth Engelmann spruce - subalpine fir - western larch

and Douglas fir - western red cedar - and western hemlock). Of the five nests found in the province, two were in mixed conifer and trembling aspen; most nests were close to water bodies (creeks, bogs or lakes).

In New England, the special habitat requirements of the Sharp-shinned Hawk are extensive, open undisturbed woodlands (De Graaf et al. 1992). Preferred forest types for breeding, wintering and foraging in both seasons are sawtimber (at least half of stocking with trees of diameter at breast height (dbh) 23 cm softwoods, 31 cm hardwoods), large sawtimber (half stocking dbh 51 cm softwoods, 61 cm hardwoods) and uneven-aged (all size classes) northern hardwood forests, as well as sawtimber and large sawtimber red spruce *Picea rubra*-balsam fir and sawtimber and large sawtimber white pine *Pinus strobus*-northern red oak *Quercus rubra*-red maple. All other forest types and age classes are used for foraging (aspen, white birch, northern hardwoods, red maple, balsam fir, red spruce-balsam fir, red spruce, eastern hemlock, northern red oak, white pine-red oak-red maple and eastern white pine). However, regenerating stands with seedlings are not used either for breeding or wintering (De Graaf et al. 1992). In the western and southwestern United States, the species breeds in conifer groves on valley slopes (Palmer 1988).

### **Trends in habitat**

It is unclear what effects, if any, logging has on Sharp-shinned Hawks. It is possible that a decline in average age of forest or conversion to monocultures could affect populations in boreal forest areas. However, complete removal of forest cover on a permanent basis is much more likely to affect populations of this species. Direct loss of forest habitat in southern Ontario may have caused declines in populations of Sharp-shinned Hawks earlier this century (Weir 1987).

### **C. Evaluation and proposed status**

In 1986, COSEWIC concluded that because the Sharp-shinned Hawk had a large, widespread population that was apparently stable or increasing, it did not require any national designation (Flood and Bortolotti 1986). Given the apparent stability of populations since, and the large population size, the status of the species should remain the same. However, because the Sharp-shinned Hawk migrates to the southern United States, Mexico and Central America where use of DDT continues (Evans 1982, Evans and Rosenfield 1985), and residues are still being found in Canadian populations (Noble et al. 1993 - including PCBs - J. L. Shutt pers. comm.), it may be susceptible to population declines. Despite its apparent abundance, the Sharp-shinned Hawk should therefore be monitored regularly.

## D . Literature Cited

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Observatory.

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Dr. David 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 rehabilitated raptors to the wild that were orphaned or were incapacitated (1969-1978).

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**Table 1 Trends in migration counts of Sharp-shinned Hawks for eastern and western North America**

			HAWK MOUNTAIN						
Grimsby <sup>1</sup> 1975-1990	Duluth <sup>1</sup> 1974-1989	Six hawk look-outs <sup>2</sup> 1972-1987	1934-1942 <sup>3</sup>	1946- 1972 <sup>3</sup>	1973- 1986 <sup>3</sup>	Goshute Mountains <sup>4</sup> (1983-1990)	Manzano Mountains <sup>4</sup> (1985-1990)	Sandia Mountains <sup>4</sup> (1985-1991)	Four western lookouts <sup>4</sup> (1983- 1991)
4.3*	-0.7	0.38	-1.877	0.501	-0.604	0.090	-1.4951	-0.5943	4.63

Levels of significance

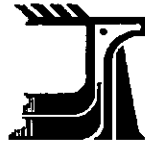
+ =  $P > 0.05 < 0.1$ , \* =  $P < 0.05$ , \*\* =  $P < 0.01$ , \*\*\* =  $P < 0.001$ , # = trend non-linear)

<sup>1</sup> Proportional annual change calculated by logistic multiple regression (Hussell and Brown 1992)

<sup>2</sup> Proportional annual calculated by parametric route regression (Titus and Fuller 1990)

<sup>3</sup> Proportional annual change calculated by linear regression (Bednarz et al. 1990)

<sup>4</sup> Proportional annual change calculated by linear regression (Hoffman et al. 1992)



## 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

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