

Species Status Assessment

Class: Birds
Family: Accipitridae
Scientific Name: *Accipiter gentilis*
Common Name: Northern goshawk

Species synopsis:

Northern goshawks formerly nested principally in Canada, but the breeding range has expanded southward into northeastern North America since around 1950 as forests have regenerated (Speiser and Bosakowski 1987). Goshawks occur in boreal or temperate forests, preferring large tracts of coniferous, deciduous, or mixed coniferous-deciduous forests with relatively open understory.

Population trends for Northern goshawk are poorly understood; as top-level carnivores, the density of breeding pairs is low and breeding is difficult to document because extensive nest searches are needed over large areas. Eastern populations apparently are increasing as forests regenerate. Breeding Bird Survey data for the Eastern region show a nonsignificant increase of 3.29% per year for the period 2000-2010. In New York, the second Breeding Bird Atlas showed a 20% decrease in occupancy from 1980-85 to 2000-05 but the percent of blocks with Confirmed records changed little.

I. Status

a. Current and Legal Protected Status

i. **Federal** Not Listed **Candidate?** No

ii. **New York** Special Concern; SGCN

b. Natural Heritage Program Rank

i. **Global** G5

ii. **New York** S3S4B, S3N **Tracked by NYNHP?** No

Other Rank:

New York Natural Heritage Program – Watch List

Status Discussion:

Northern goshawk is an uncommon breeder that is widely but sparsely distributed across the state with the exception of the Coastal Lowlands and the Erie-Ontario Plain. As a non-breeder, northern goshawk is a rare migrant and winter visitant across the state.

II. Abundance and Distribution Trends

a. North America

i. Abundance

___ declining X increasing ___ stable ___ unknown

ii. Distribution:

___ declining X increasing ___ stable ___ unknown

Time frame considered: 2000-2010

b. Regional

i. Abundance

___ declining X increasing ___ stable ___ unknown

ii. Distribution:

___ declining X increasing ___ stable ___ unknown

Regional Unit Considered: Eastern U.S.

Time Frame Considered: since 1950s

c. Adjacent States and Provinces

CONNECTICUT **Not Present** _____ **No data** _____

i. Abundance

_____ **declining** _____ **increasing** _____ **stable** X **unknown**

ii. Distribution:

_____ **declining** _____ **increasing** _____ **stable** X **unknown**

Time frame considered: very rare

Listing Status: Not Listed SGCN? Yes

MASSACHUSETTS **Not Present** _____ **No data** _____

i. Abundance

 X **declining** _____ **increasing** _____ **stable** _____ **unknown**

ii. Distribution:

 X **declining** _____ **increasing** _____ **stable** _____ **unknown**

Time frame considered: 1974-79 to 2007-11

Listing Status: Not Listed SGCN? No

NEW JERSEY **Not Present** _____ **No data** _____

i. Abundance

_____ **declining** X **increasing** _____ **stable** _____ **unknown**

ii. Distribution:

_____ **declining** X **increasing** _____ **stable** _____ **unknown**

Time frame considered: 1982 to 1993-97

Listing Status: Endangered (breeding) SGCN? Yes

Population trends are obscured by the lack of historic data, periodic fall irruptions of large numbers of individuals, and by the need for species-specific surveys to adequately track populations. Christmas Bird Count (CBC) data (1959-1988; Sauer et al. 1996), North American Breeding Bird Survey (BBS) data (1966-2010; Sauer et al. 2011), and counts of migrants in the eastern U.S. (1972-1987; Titus and Fuller 1990) do not indicate any significant changes in populations. Data derived from CBC and BBS are difficult to interpret due to low sample sizes and the possibility that birds counted may not be a random sample of the breeding population. Counts from migration monitoring stations are complicated by population fluctuations resulting from periodic invasions of large numbers of birds (Bednarz et al. 1990, Titus and Fuller 1990, USFWS 1998).

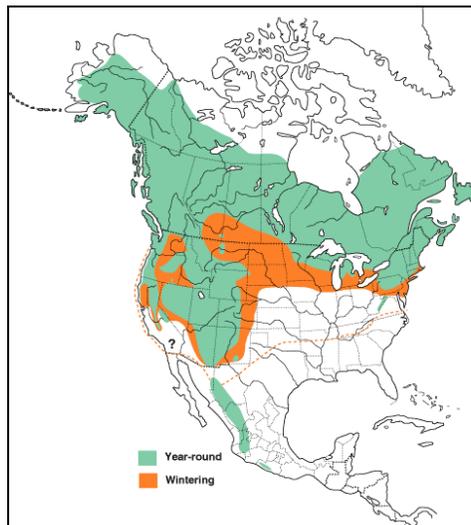


Figure 1. Distribution of northern goshawk in North America (Birds of North America Online).

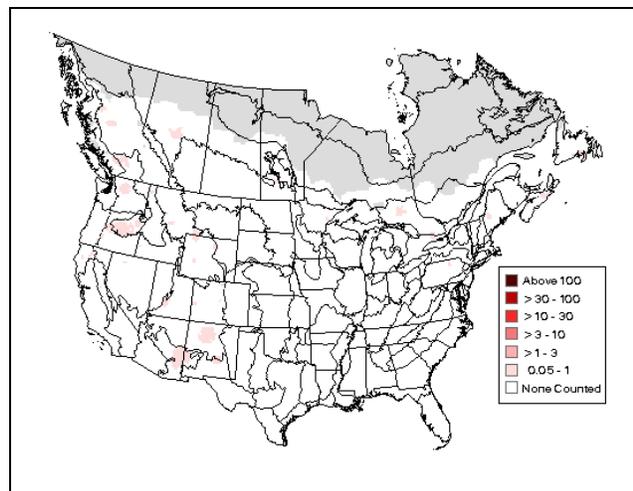


Figure 2. Breeding Bird Survey summer distribution map 2006-2010.

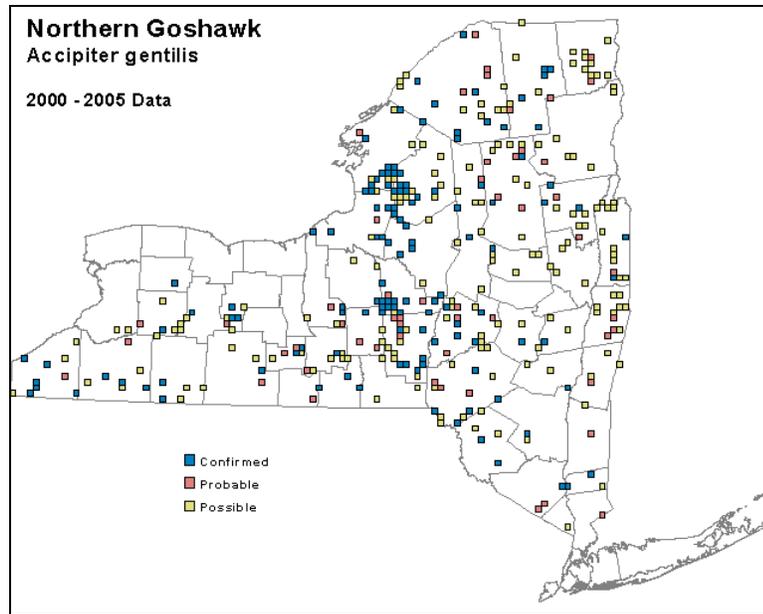


Figure 3. Occurrence of northern goshawk during the NYS Breeding Bird Atlas (McGowan and Corwin 2008).

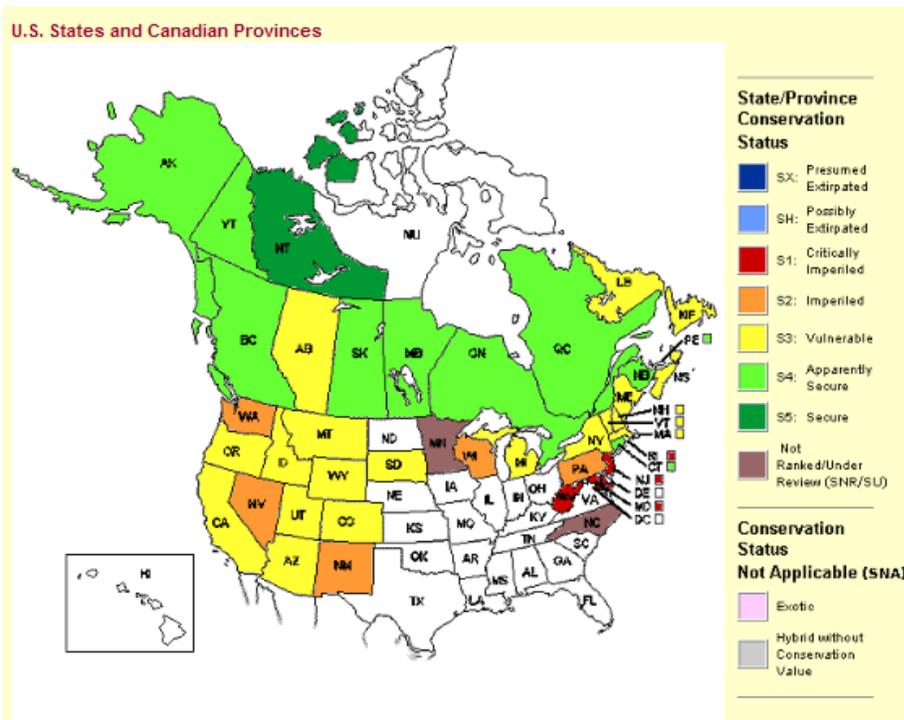


Figure 4. Conservation status of the northern goshawk in North America (NatureServe 2012).

III. New York Rarity, if known:

Historic	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	<u>8</u>

Details of historic occurrence:

Northern goshawk was a rare breeder in New York with only a handful of records from the early part of the century (Eaton 1914, Bull 1974). A dramatic increase in breeding across the state began in 1952 and by the 1970s, 52 new breeding locations had been recorded. The first Breeding Bird Atlas (1980-85) documented occupancy in a total of 445 survey blocks statewide. Confirmed breeding was reported in 128 blocks (29%).

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	_____	<u>7</u>

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in a total of 355 survey blocks statewide. Confirmed breeding was reported in 130 survey blocks. Occupancy decreased between the two Atlas periods by 20% but the occurrence of Confirmed breeding remained unchanged (+2%).

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

- ___ 0-5%
- X 6-10%
- ___ 11-25%
- ___ 26-50%
- ___ >50%

Abundance (within NY distribution)

- ___ abundant
- ___ common
- ___ fairly common
- X uncommon
- ___ rare

NY's Contribution to North American range

- X 0-5%

- 6-10%
- 11-25%
- 26-50%
- >50%

Classification of New York Range

- Core
- Peripheral
- Disjunct

Distance to core population: _____

IV. Primary Habitat or Community Type:

1. Mixed Northern Hardwoods
2. Plantation and Disturbed Land Pioneer Forests
3. Oak-Pine Forest

Habitat or Community Type Trend in New York:

Declining Stable Increasing Unknown

Time frame of decline/increase: _____

Habitat Specialist? Yes No

Indicator Species? Yes No

Habitat Discussion:

Northern goshawks nest in a wide variety of forest types including deciduous, coniferous, and mixed forests as well as conifer plantations. They typically nest in mature or old-growth forests (Reynolds et al. 1982, Speiser and Bosakowski 1987, Hayward and Escano 1989, Squires and Ruggiero 1996) and generally select larger tracts of forest over smaller tracts (Bosakowski and Speiser 1994, Woodbridge and Detrich 1994). In the eastern United States, goshawks nest in hardwood-hemlock forests, where black birch and American beech are preferred nest trees (Speiser and Bosakowski 1987).

V. New York Species Demographics and Life History

Breeder in New York

Summer Resident

Winter Resident

Anadromous

Non-breeder in New York

Summer Resident

Winter Resident

Catadromous

Migratory only

Unknown

Species Demographics and Life History Discussion:

The lifetime reproductive success for this species is little studied. In Europe, two studies estimated that 15.5% of nesting females produced 50% of the young (Kenward 2006).

Females occasionally nest as subadults (1–2 years old, juvenile plumage) and young adults (2–3 years old, retaining some juvenal plumage). The proportion of young nesting females varies among populations; there is a high frequency of nesting subadults in increasing populations and low frequency in stable populations (Reynolds and Wight 1978). In New York and New Jersey, only 2 females ($n = 35$ nesting attempts) were in immature plumage and all males ($n = 18$) were in adult plumage (Speiser and Bosakowski 1991). The maximum life span is at least 11 years (Fowler 1985). Sources of mortality are little reported in North America (Squires and Reynolds 1997).

VI. Threats:

Timber harvest is the principal threat to breeding populations (Squires and Reynolds 1997, Palis et al. 1999). In addition to the relatively long-term impacts of removing nest trees and degrading habitat by reducing stand density and canopy cover, logging activities conducted near nests during the incubation and nestling periods can have an immediate impact: nest failure due to abandonment (Boal and Mannan 1994, Squires and Reynolds 1997). Following canopy reduction by logging, goshawks are often replaced by other raptors including red-shouldered hawk, red-tailed hawk, great horned owl, and long-eared owl (Crocker-Bedford 1990, Erdman et al. 1998). Fire suppression, grazing, and insect and tree disease outbreaks can result in the deterioration or loss of nesting habitat (Graham et al. 1999).

The incursion of great horned owls is especially significant as they prey on both adult and nestling goshawks (Boal and Mannan 1994, Erdman et al. 1998, Rohner and Doyle 1992). Other known or suspected predators include martens, fishers, and wolverines (Doyle 1995, Erdman et al. 1998, Paragi and Wholecheese 1994, Graham et al. 1999).

Presently, pesticides do not appear to be a major threat, presumably since agricultural landscapes are seldom used. In the early 1970s, pesticide levels in tested birds were low, and egg thinning due to DDT contamination had not occurred in most populations (Snyder et al. 1973). In addition, population trends derived from counts of migrants at Hawk Mountain, Pennsylvania, were generally upward during DDT period, 1946-1972 (Squires and Reynolds 1997).

The loss of interior mature forest caused decline when Europeans settled New England. This species does not nest in small forest tracks bounded by roads (DeGraaf & Yamasaki 2001).

Are there regulatory mechanisms that protect the species or its habitat in New York?

No **Unknown**

Yes

Northern goshawk is protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

It is important to maintain large tracts of forest and to prevent disturbance of nesting pairs. Trails may need to be closed when goshawks are nesting near suburban areas, partly to protect humans from injury, but also to reduce disturbance to nesting pairs.

Based on study currently ongoing in central New York (Crocoll 2012), the following recommendations have been made to maintain nesting in goshawk territories: (1) no disturbance near an active nest between 1 March and 31 July, (2) canopy closure post-harvest should be greater than 70%, (3) minimum tree density should be 200-300 trees per hectare, (4) maintain an uncut buffer of 100m around the active nest, (5) row thinning can be used in goshawk territories, but single tree selection is a better harvest method.

Conservation actions following IUCN taxonomy are categorized in the table below.

Conservation Actions	
Action Category	Action
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Habitat/Natural Process Restoration

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for forest breeding raptors, which includes northern goshawk.

Habitat management:

— Habitat management for all these species (except the golden eagle, which is effectively extirpated as a breeder) is largely unknown and it is therefore important to experiment with different techniques. Examples include different cutting regimes and different buffer distances (and potentially fire management where appropriate), in both hardwoods and conifers (plantations and native). An opportunity exists on some Region 7 State Forests where timber harvest of red pine stands is planned in areas where known northern goshawk nests occur.

VII. References

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