Species Status Assessment

Class: Birds
Family: Accipitridae
Scientific Name: *Buteo lineatus*
Common Name: Red-shouldered hawk

Species synopsis:

Red-shouldered hawks breed primarily in the eastern half of the United States, occurring as year-round residents across much of the range. Breeding also occurs in a narrow band along the west coast. It reaches the northern extent of the range in New York. This is a hawk of extensive, mature, mixed forest. In New York, red-shouldered hawks are found in bottomland hardwood forests, riparian habitats, and flooded swamps as well as in upland forests.

Peterson and Crocoll (1992) postulated that reforestation of former agricultural land in Northeast may result in reestablishment of red-shouldered hawks in some areas; this appears to have happened in New York. The second Breeding Bird Atlas documented a 23% increase in occupancy from 1980-85 to 2000-05. Similar increases have been documented throughout the Northeast.

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 S4B **Tracked by NYNHP?** No

Other Rank:
New York Natural Heritage Program – Watch List
USFWS – Migratory Nongame Bird of Management Concern

Status Discussion:
Red-shouldered hawk is an uncommon breeder in New York, but it is increasing in most upstate areas. Common to very common migrant. In spring, it is most numerous along the shores of the Great Lakes; in fall, in the Hudson Valley. In winter it occurs casually throughout the state except in the Adirondacks (Crocoll 1998).

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 BBS region _____
Time Frame Considered: _____2000-2010_____

c. Adjacent States and Provinces

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

i. Abundance

____ declining __X__ increasing ____stable ____unknown

ii. Distribution:

____ declining __X__ increasing ____stable ____ unknown

Time frame considered: __2000-2010_____
Listing Status: _____Not Listed_____ SGCN? __Yes____

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

i. Abundance

____ declining __X__ increasing ____stable ____unknown

ii. Distribution:

____ declining __X__ 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 ____increasing ____stable __X__ unknown

ii. Distribution:

____ declining ____increasing ____stable __X__ unknown

Time frame considered: _____
Listing Status: _Endangered/Threatened (breeding/nonbreeding)_ SGCN? __Yes___

ONTARIO **Not Present _____** **No data _____**

i. Abundance

____ declining ___ increasing __X__ stable ____unknown

ii. Distribution:

____ declining ___ increasing __X__ stable ____unknown

Time frame considered: __1981-85 to 2001-05_____
Listing Status: _____Not Listed_____

PENNSYLVANIA **Not Present _____** **No data _____**

i. Abundance

____ declining __X__ increasing ____stable ____unknown

ii. Distribution:

____ declining __X__ increasing ____stable ____unknown

Time frame considered: ___2000-2010_____
Listing Status: _____Not Listed_____ SGCN? __Yes___

QUEBEC **Not Present _____** **No data _____**

i. Abundance

____ declining __X__ increasing ____stable ____unknown

ii. Distribution:

____ declining __X__ increasing ____stable ____unknown

Time frame considered: ___2000-2010_____
Listing Status: _____Not Listed_____

VERMONT **Not Present _____** **No data _____**

i. Abundance

__X__ declining ____increasing ____stable ____unknown

ii. Distribution:

__X__ declining ____increasing ____stable ____unknown

Time frame considered: ___1976-81 to 2003-2007_____
Listing Status: _____Not Listed_____ SGCN? __Yes___

d. NEW YORK **No data _____**

i. Abundance

____ declining __X__ increasing ____stable ____unknown

ii. Distribution:

____ declining __X__ increasing ____stable ____unknown

Time frame considered: ____1980-85 to 2000-2005_____

Monitoring in New York.

Nest habitat monitoring around several individual nests in central New York occurs as part of a timber harvest management project (S.T. Crocoll, pers. comm.).

Trends Discussion:

The second Breeding Bird Atlas in New York documented a 23% increase in red-shouldered hawk occupancy from 1980-85 to 2000-05. Increases were apparent in the Hudson Valley, Catskill Peaks, western Appalachian Plateau, Oswego Lowlands, and Tug Hill Transition. This hawk disappeared from the Coastal Lowlands in the past 20 years, suggesting that the marginal population there could not survive the pressures of extensive human development (Crocoll 2008).

Breeding Bird Survey data for New York are sparse, as the protocol is not always reliable for hawks, but they show no significant trend over the past 20 years. Breeding Bird Survey trends for North America show a significant increase in red-shouldered hawk abundance of 3.0% per year from 1966 to 2011 and a significant increase of 3.25% per year from 2000-2010. Hawk migration count data indicate that populations in the East have shown no long-term geographic trends over the past 30 years (Farmer et al. 2008).

The population in Ontario has been stable over the last 10 to 20 years but it is small and depressed relative to its historic abundance (Crewe and Badzinski 2006).

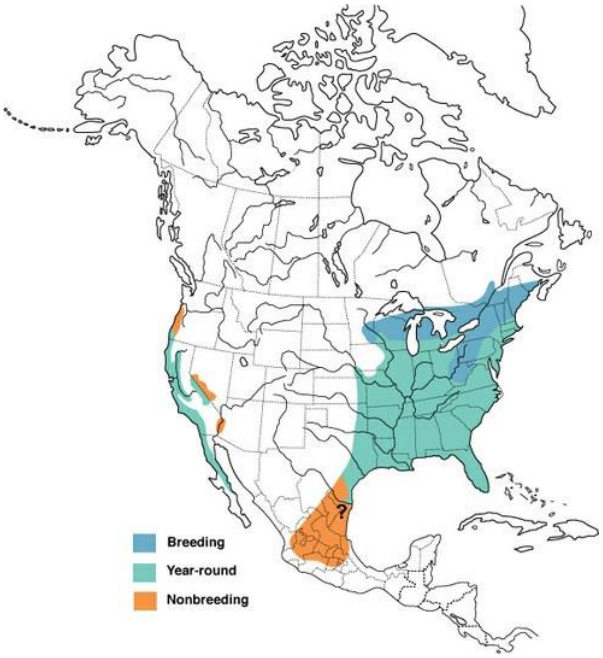

Figure 1. Range of red-shouldered hawk in North America (Birds of North America Online).

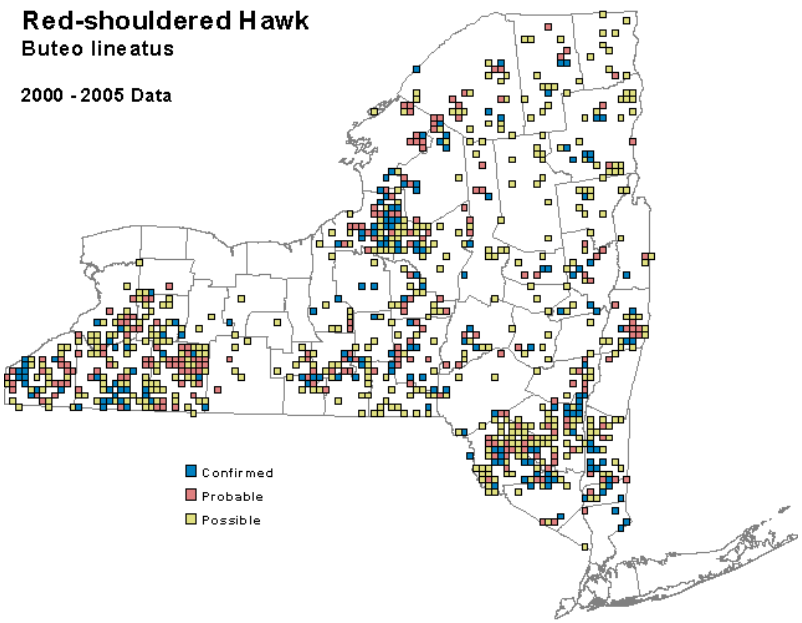

Figure 2. Known occurrences from the NYS Breeding Bird Atlas (McGowan and Corwin 2008).

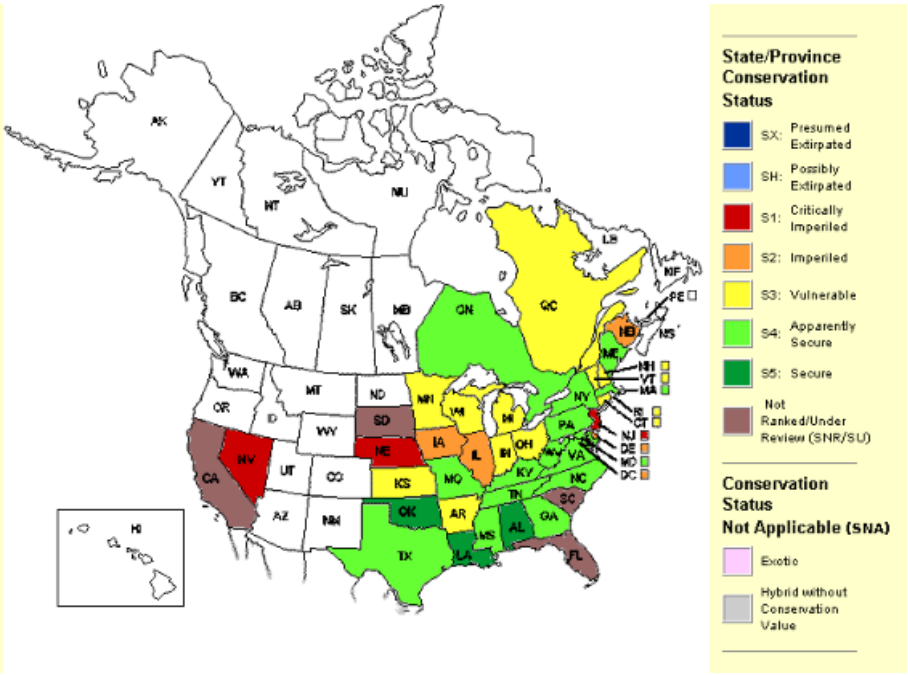

Figure 3. Conservation status of the red-shouldered hawk in North America (NatureServe 2012).

III. New York Rarity, if known:

Historic	# of Animals	# of Locations	% of State
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	13%

Details of historic occurrence:

The first Breeding Bird Atlas (1980-85) documented occupancy in a total of 702 survey blocks statewide, 15% of which were Confirmed breeding. Records were concentrated in the Appalachian Plateau, Catskill Peaks, and the Tug Hill Transition.

Current	# of Animals	# of Locations	% of State
	_____	_____	16%

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in a total of 865 survey blocks statewide, 22% of which were Confirmed breeding. The Hudson Valley and areas of concentration identified during the first Atlas showed increases. No records were reported on the Coastal Lowlands and the species remained absent from the Great Lakes Plain. There was probable under-reporting during the first Atlas due to survey coverage of raptors (S.T. Crocoll, pers. comm.).

New York's Contribution to Species North American Range:

% of NA Range in New York	Classification of New York Range
____ **0-5%**	X **Core**
____ **6-10%**	____ **Peripheral**
X **11-25%**	____ **Disjunct**
____ **26-50%**	**Distance to core population:**
____ **>50%**	_____

IV. Primary Habitat or Community Type:

1. Mixed Northern Hardwoods

2. Plantation and Disturbed Land Pioneer Forests

3. Oak Forest

4. Floodplain Forest

5. Riparian

6. Hardwood Swamp

Habitat or Community Type Trend in New York:

____ Declining __X__ Stable ____ Increasing ____Unknown

Time frame of decline/increase: _____

Habitat Specialist? _____ Yes __X__ No

Indicator Species? _____ Yes __X__ No

Habitat Discussion:

Red-shouldered hawk is a bird of extensive, mature forests with a preference for bottomland hardwood forests, riparian areas, and flooded swamps (Dykstra et al. 2008). It prefers large expanses of habitat.

V. New York Species Demographics and Life History

__X__ Breeder in New York

__X__ Summer Resident

__X__ Winter Resident

_____ Anadromous

_____ Non-breeder in New York

_____ Summer Resident

_____ Winter Resident

_____ Catadromous

_____ Migratory only

_____Unknown

Species Demographics and Life History Discussion:

Red-shouldered hawks usually do not breed until ≥ 1 year old, but yearlings reported breeding with adults (Henny et al. 1973, Wiley 1975, Apanius 1977). Females are more common as yearling breeders than males, and pairs appear to breed once per year. Nest success and number of fledglings produced per nest vary widely and annually; variables include food supply and timing of nesting. Some populations at the northern edge of the species' range have very low productivity (McLeod 1996), possibly due to decreased food supply and spring ice and snowstorms. Data available to calculate lifetime reproductive success are insufficient (Dykstra et al. 2008).

In one study of 899 nestlings banded 1955-2002 in southwestern Ohio and northern Kentucky, analyses indicated that 50% of hawks were dead by age 1.2 yr, 75% by 2.4 yr, and 95% by 5.2 yr (Dykstra et al. 2004). Longevity records include a recovered bird 19 years, 11 months (Clapp et al. 1982) and a 26-year-old female in San Diego County, CA (P. Bloom, pers. comm.).

In addition to predation, mortality caused by trapping, shooting, and road kills (Keran 1981). High wind may dislodge nests or blow down nest trees, causing failure (Wiley 1975, Dijak et al. 1990, J. Jacobs pers. comm.). Indirect nest failure may be caused by timber harvest activity near an active nest (S.T. Crocoll, pers. obs.).

VI. Threats:

At 7 of 10 failed nests in 1 year in California in the 1970s, nest failure was caused by human disturbance near the nest, logging and other forestry practices, and climbing of nest trees and removal of young for falconry (Wiley 1975). Disturbance from human activities was thought to have caused red-shouldered hawks to retreat into remote areas in the Pequannock watershed of New Jersey (Bosakowski and Smith 1989). Others, however, have found this species to be tolerant of human presence around nest sites (Bloom and McCrary 1996, Wheeler 2003a, G. Johnson and J. Bednarz pers. comm.).

Cutting of large contiguous forest tracts is thought to have brought declines of breeding populations in several areas (Brown 1971, Woodrey 1986, Hands et al. 1989, Preston et al. 1989, Peterson and Crocoll 1992). Break-up of contiguous forest into small blocks of forest surrounded by other habitat has created habitat more suitable to the larger and more aggressive great horned owl and red-tailed hawk, the red-shouldered hawk's closest competitor (Bednarz and Dinsmore 1981, 1982, Bryant 1986). Even selective thinning of forest has favored great horned owls in Wisconsin, reducing numbers of red-shouldered hawks there.

Several insecticides and industrial chemicals have been found in eggs and body tissues: DDE, DDD, DDT, dieldrin, heptachlor epoxide, hexochlorobenzine, mercury, chlordane, dieldrin, Furadan 10, and organochlorine and polychlorinated biphenyls (Havera and Duzan 1986, Hands et al. 1989). Eggshell thinning has been less extensive in red-shouldered hawks than in other raptors. Adults have died from a combination of chlordane, heptachlor epoxide, and dieldrin (Blus et al. 1983) and Furadan 10 (Balcomb 1983).

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

_____ No **____ Unknown**

__X__ Yes

The red-shouldered hawk 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:

Large areas of contiguous forest are beneficial for this species. Opinions differ about need for creating small openings in forest. Because the red-shouldered hawk has so frequently been associated with water (wetlands, ponds, or other), preservation, maintenance, or even construction of appropriate water bodies may be useful for conservation and management.

Recommendations by Crocoll (2012):

- No disturbance to nest territory from 1 March to 31 July
- Maintain a tree canopy closure in the territory of greater than 70%
- The tree density should be about 240 trees per hectare
- An uncut buffer of 100m should be maintained around active nests
- Single tree selection appears to have less impact on nesting than other harvest methods

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

Conservation Actions	
Action Category	**Action**
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 red-shouldered hawk.

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).

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