

Species Status Assessment

Class: Birds
Family: Turdidae
Scientific Name: *Catharus bicknelli*
Common Name: Bicknell's Thrush

Species synopsis:

Formerly known as a subspecies of the gray-cheeked thrush, the Bicknell's thrush was classified as a distinct species in 1995 (AOU 1995), a designation that has heightened conservation interest. This species occurs in montane fir forest in the northeastern United States and adjacent Canadian provinces. Following the narrow habitat preferences, populations are localized and disjunct. In New York, breeding occurs only in the Adirondack Mountains and Catskill Mountains; other U.S. populations occur in Vermont, Maine and New Hampshire.

Bicknell's thrush is considered vulnerable due to its restricted breeding range in high elevation forests (North American Bird Conservation Initiative 2010). The Mountain Birdwatch (MBW) program has conducted species-specific monitoring of Bicknell's thrush in New York, Vermont, New Hampshire, and Maine since 2000. The trend analysis of observed abundance in MBW data from 2001-2010 indicate significant increases in the Adirondack and Catskill mountains, and across the five regions (Scarl 2011). Populations in Nova Scotia and New Brunswick are declining severely (Campbell and Stewart 2012).

I. Status

a. Current Legal Protected Status

i. **Federal** Not Listed **Candidate:** Yes

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

b. Natural Heritage Program Rank

i. **Global** G4

ii. New York S2S3B Tracked by NYNHP? Yes

Other Rank:

Partners in Flight – Species of Continental Conservation Concern
IUCN Red List – Globally Vulnerable
Audubon Watch List – Red List
Canada – Candidate for Federal Listing
USFWS – Candidate for Federal Listing
COSEWIC – recommended Threatened in 2009
Species of Northeast Regional Conservation Concern (Therres 1999)

Status Discussion:

Bicknell’s thrush is endemic to the northeastern U.S. and nearby Canadian provinces; it is ranked as vulnerable, imperiled, or critically imperiled in each state and province. A population on Mount Greylock in Massachusetts was extirpated during the early 1900s. Bicknell’s thrush is an uncommon breeder at high elevations (above 3,000 feet) in the Adirondack and Catskill mountains. It is an uncommon migrant in eastern and coastal portions of the state. The Catskill Mountains population represents the southernmost edge of the breeding range.

In August 2012, the USFWS released a positive 90-day finding for Bicknell’s thrush, which will result in a 12-month finding to determine whether it should be listed under the Endangered Species Act.

II. Abundance and Distribution Trends

a. North America

i. Abundance

 declining increasing X stable unknown

ii. Distribution:

 declining increasing X stable unknown

Time frame considered: 2001-10

b. Regional

i. Abundance

___ declining X increasing ___ stable ___ unknown

ii. Distribution:

___ declining X increasing ___ stable ___ unknown

Regional Unit Considered: Northeast (NY, VT, NH, ME)

Time frame considered: 2001-09

c. Adjacent States and Provinces

CONNECTICUT Not Present X No data ___

MASSACHUSETTS Not Present X (extirpated) No data ___

NEW JERSEY Not Present X No data ___

PENNSYLVANIA Not Present X No data ___

ONTARIO Not Present X No data ___

QUEBEC

i. Abundance

X declining ___ increasing ___ stable ___ unknown

ii. Distribution:

X declining ___ increasing ___ stable ___ unknown

Time frame considered: 2001-07

Listing Status: Not Listed

VERMONT

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: 2001-09

Listing Status: Not Listed SGCN? Yes

d. New York

No data _____

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: 2001-2009

Monitoring in New York.

Mountain Birdwatch surveys are conducted annually, although not all sites are surveyed each year.

Trends Discussion:

Scarl (2011) summarizes Mountain Birdwatch (MBW) data from 2001-2010 for five regions where Bicknell's thrush breed: Catskill Mountains, Adirondack Mountains, Green Mountains, White Mountains, Maine high peaks. In all five regions combined, the observed abundance increased significantly by 4.0% annually. The observed abundance increased significantly in the Adirondack Mountains by 9.41% per year and in the Catskills by 11.28% per year. Only the population in the Green Mountains of Vermont declined, showing a change in observed abundance of -0.2% per year.

The High Elevation Landbird Program (HELP) monitors long-term trends in Bicknell's thrush populations in Nova Scotia and New Brunswick. From 2002-2011, the number of Bicknell's thrush reported on survey routes declined by 11.5% annually in New Brunswick and by 7.4% annually in Nova Scotia (Campbell and Stewart 2012).

Bicknell's Thrush

Catharus bicknelli

2000 - 2005 Data

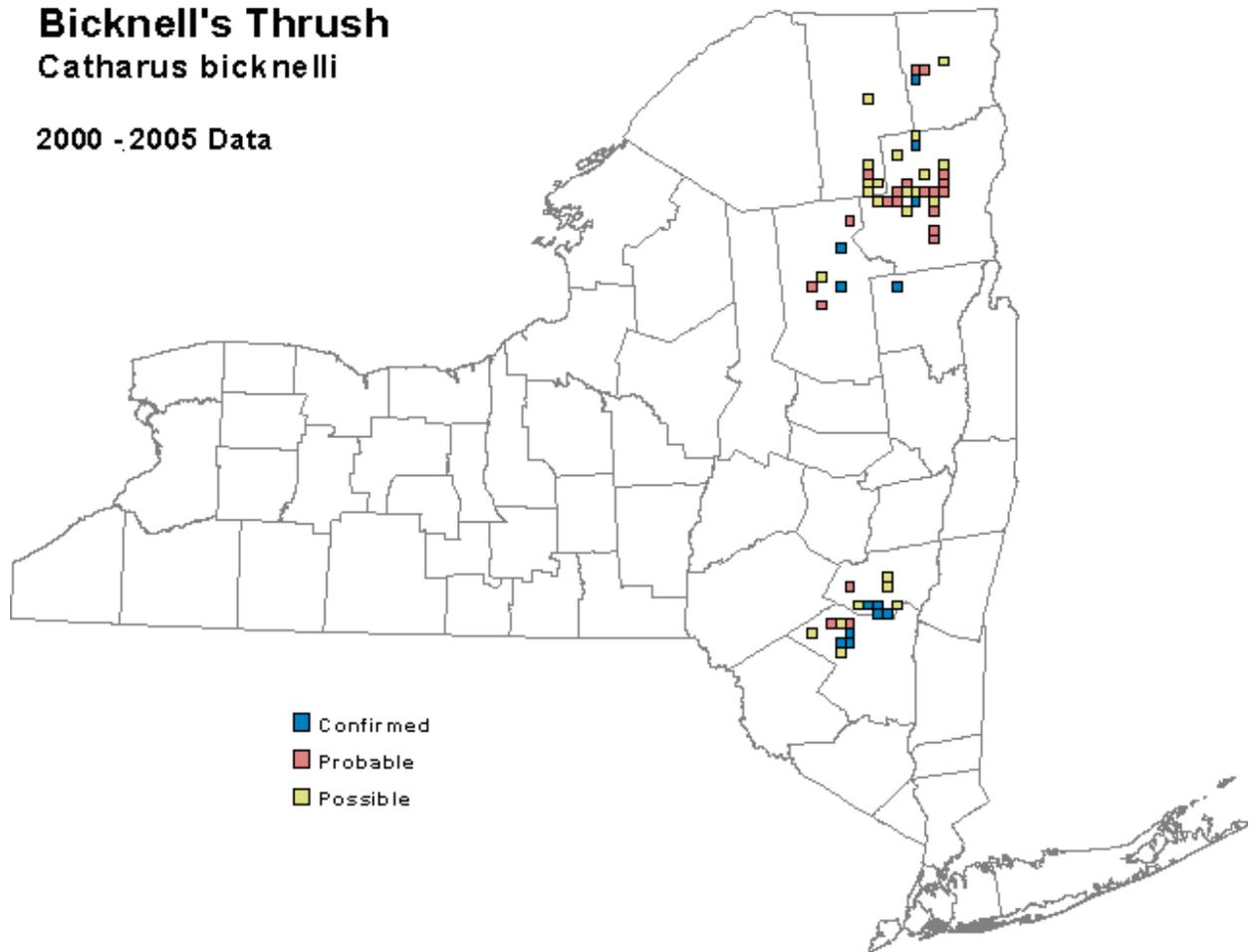


Figure 1. Distribution of Bicknell's thrush in North America (IBTCG 2010).

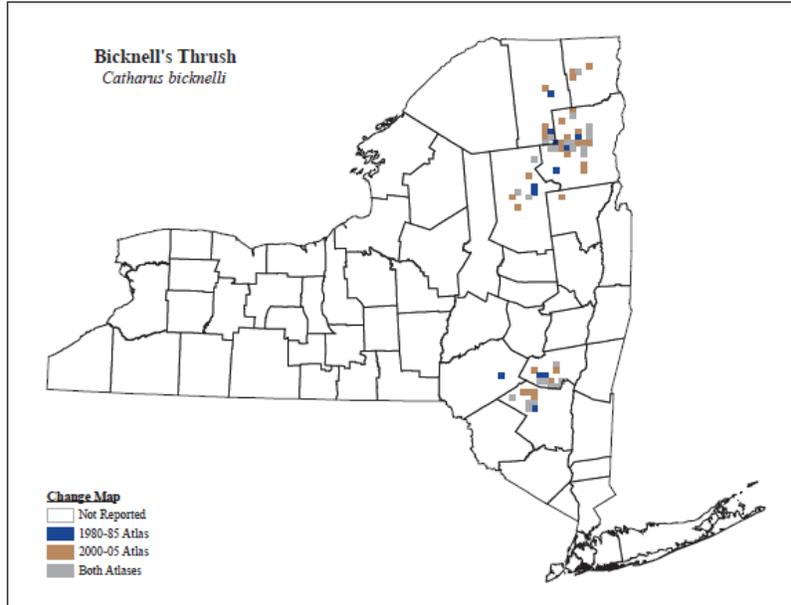


Figure 2. Change in Bicknell's thrush occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

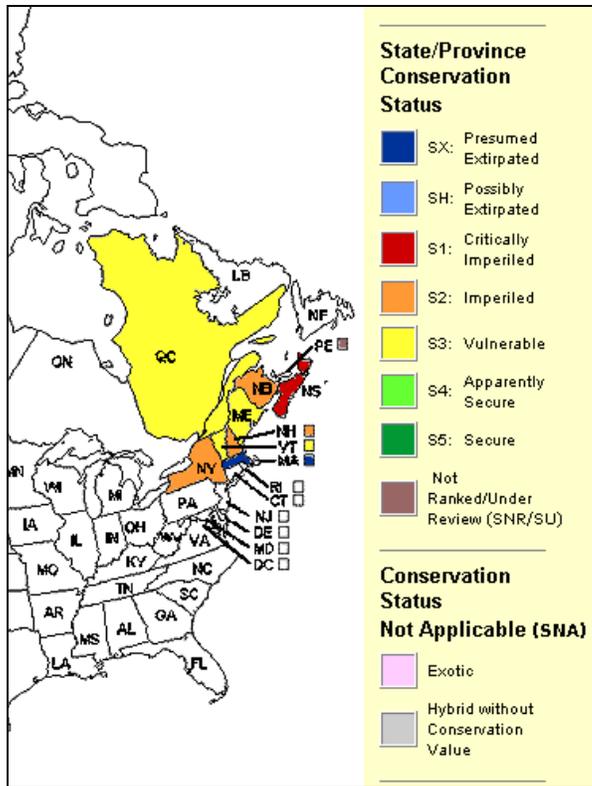


Figure 3: Conservation status of Bicknell's thrush in North America (NatureServe 2013).

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>39 blocks</u>	<u><1%</u>

Details of historic occurrence:

The first breeding bird atlas (1980-85) documented occupancy in 39 survey blocks, 8 of which had confirmed breeding (Andrle and Carroll 1988).

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>57 blocks</u>	<u>1%</u>

Details of current occurrence:

From 2001 to 2010, Mountain Birdwatch documented nesting season reports on 38 mountains in New York: 14 in the Catskills and 24 in the Adirondacks. The second breeding bird atlas (2000-05) documented occupancy in a total of 57 blocks (17 in Catskills, 40 in Adirondacks), 13 of which were records of confirmed breeding (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

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

Abundance (within NY distribution)

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

NY's Contribution to North American range

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

Classification of New York Range

Core

Peripheral

Disjunct

Distance to core population:

70 miles

IV. Primary Habitat or Community Type:

1. Spruce-Fir Forest and Flats
2. Mountain Spruce-Fir Forests

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:

Lambert et al. (2005) estimated that 24% of Bicknell's thrush habitat in the U.S. is found in New York; 93% of those known lands are conserved in some manner. This thrush nests in dense montane forests dominated by balsam fir with lesser amounts of red and black spruce, white birch, and mountain-ash. Regenerating spruce/fir "waves" (trees of progressing ages) are preferred habitat. In a statewide survey in 1992-94, Rimmer (2013) reports that the lowest elevation where Bicknell's thrush was reported was 3,780 feet.

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:

Breeding system is “female-defended polygynandry” in which both males and females mate with multiple partners (Goetz et al. 2003). Bicknell’s thrush produce one brood per season. Rates of predation on eggs and nestlings are strongly linked to biennial mast cycle in montane coniferous forest in which alternating years of high cone crops result in high red squirrel populations the following spring and summer. Annual survival estimate of adult birds at survey sites in VT is 65%.

In Vermont, annual reproductive success among males is skewed but generally low. Of 21 males with known paternity at nests in 1998 and 1999, 13 (62%) sired only 1 chick, 4 (19%) sired 2 chicks, 3 (14%) sired 3 chicks, and 1 (5%) sired 4 chicks; these are minimum estimates. Percentage of females that raise one brood to independence each year in Vermont: Stratton Mtn. 1997 = 85.7%, 1998 = 88.8%, 1999 = 0%, 2000 = 90.9%; Mt. Mansfield 1999 = 62.5%, 2000 = 62.5% (See Rimmer et al. 2001).

VI. Threats:

While most mountain peaks where breeding is known in New York are within Forest Preserve lands (93% of suitable habitat in New York is protected in some manner), habitat loss and degradation remain a concern. Although threats to habitat are most severe in Canada and on wintering grounds, breeding habitat in New York may be removed, fragmented or altered by construction and operation of wind power, telecommunication facilities, and recreational skiing.

Acid deposition can reduce the vitality or outright kill conifer forests, can reduce prey quantity, and could be reducing populations of land snails, which are an important source of calcium during the breeding season. Hames et al. (2002) found that acid deposition and resulting calcium depletion are linked to wood thrush declines; this may be problematic for Bicknell's thrush as well (Rimmer et al. 2005). Bicknell's thrush are exposed to high levels of mercury at in their montane breeding habitat (Osborne et al. 2011). Townsend et al. (2013) found that thrushes wintering in cloud forest habitats on Hispaniola had surprisingly high blood mercury concentrations. The effects of mercury bioaccumulation are unknown for Bicknell's thrush.

Loss of habitat has not been proven to be a threat in large part because almost all of the peaks with known breeding occurrence are on state land and protected by forest preserve regulations. However, Bicknell's thrush is vulnerable to habitat loss from predicted climate change. Boreal forests are expected to decrease in area, with major changes occurring along the southern boundaries as ranges of tree species shift northward (North American Bird Conservation Initiative (2010). Climate warming models predict an upward shift in the elevational distribution of Bicknell's thrush habitat. Warming of as little as 1°C is predicted to reduce potential habitat by more than half, while an increase of 2°C may eliminate habitat in the Catskill Mountains and most of Vermont (Rodenhouse et al. 2008). Climate change could also cause disruption of the cone-red squirrel cycle; change the timing of the prey base emergence; and increase interspecific competition (IBTCG 2010).

Bicknell's Thrush was classified as "moderately vulnerable" to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011).

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

No Unknown

Yes

Bicknell's thrush is protected under the Migratory Bird Treaty Act of 1918.

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

Recommended conservation actions are described in the Conservation Action Plan for Bicknell's Thrush and are listed below (IBTCG 2010). The Plan states the goal, "to increase the global population of Bicknell's Thrush by 25% over the next fifty years (2011–2060), with no further net loss of distribution."

Recommended actions on breeding grounds:

- Partner with management agencies to develop and implement Best Management Practices (BMPs) for Bicknell's Thrush.
- Maintain a target amount of Bicknell's thrush habitat in industrial forests.
- Reduce acid precipitation through policy and regulation.
- Reduce mercury pollution through pollution policy and regulation.

Recommended actions on wintering grounds:

- Improve protection of current winter habitat
- Expand Bicknell's Thrush Habitat Protection Fund
- Develop habitat management plans and secure implementation funding
- Pilot winter habitat restoration projects
- Develop strong links with Caribbean partners

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
External Capacity Building	Alliance & Partnership Development

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for boreal forest birds, which includes Bicknell's thrush.

Habitat research:

- ___ Develop a study to determine if active management (creation of habitat, such as regenerating fir waves) can be an effective management tool.

Other action:

- ___ Evaluate the long term viability of this species as a part of NY's breeding fauna.

Population monitoring:

- Continue the Mountain Birdwatch monitoring protocol on all Adirondack and Catskill peaks where Bicknell's thrush are known to occur; implement other long term monitoring if needed to determine population trend.

Statewide management plan:

- Develop a management plan for high elevation birds, including Bicknell's thrush.

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Date last revised: July 2014