

Species Status Assessment

Class:	Birds
Family:	Odontophoridae
Scientific Name:	<i>Colinus virginianus</i>
Common Name:	Northern bobwhite

Species synopsis:

Northern bobwhites breed and winter in New York—the northern extent of the range—where they occur in open, early-successional habitats and farmland. Northern bobwhite is a game species with an open season. Individuals were released in western New York in the 1930s and 1950s, though the influence of these introductions is unclear (McGowan 2008). Two subspecies, *mexicanus* and *marilandicus*, occurred historically in New York, with the former arriving from the west and the latter from the south. The populations within the original ranges of these subspecies are now heterogenous and the species is considered binomial.

Northern bobwhites have been declining at an alarming rate for the past 40 years across their range. Breeding Bird Survey data show significant long-term (1966-2010) and short-term (2000-2010) declines of -3.8% and -4.0% per year respectively for the United States, and -5.1% and -5.3% respectively for the Eastern region. Long-term and short-term BBS trends for New York are significant and declining as well, at -7.3% and -6.4% respectively, though caution is warranted because of small sample sizes. Christmas Bird Count data have documented fewer than 15 individuals in total since the 2006-07 season (McGowan 2007, 2011).

Currently in New York, populations of wild, self-sustaining quail are restricted to Long Island. A long-term call-count survey in Suffolk County conducted since 1979 shows a precipitous decline in this region from an annual average of 101 calling males in the 1980s, to 41 calling males in the 1990s, and 10 calling males over the past 12 years. No calling males were heard during the 2011 and 2012 surveys. A severe winter in 2011 may have contributed to the dearth of calling males heard the last two years. DEC staff are considering expanding the survey routes to see if birds are heard in other areas.

I. Status

a. Current and Legal Protected Status

- i. Federal Not Listed Candidate? No
- ii. New York SGCN

b. Natural Heritage Program Rank

- i. Global G5
- ii. New York S4 Tracked by NYNHP? No

Other Rank :

Audubon Watchlist – green
Audubon’s Common Birds in Decline

Status Discussion:

Northern bobwhite is a rare breeder in New York, except in the Coastal Lowlands where it is severely declining.

II. Abundance and Distribution Trends

a. North America

i. Abundance

X declining ___increasing ___stable ___unknown

ii. Distribution:

X declining ___increasing ___stable ___unknown

Time frame considered: Severe Decline from 2000-2010

b. Regional

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Regional Unit Considered: Eastern BBS

Time Frame Considered: Severe Decline from 2000-2010

c. Adjacent States and Provinces

CONNECTICUT Not Present No data

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: Severe Decline from 2000-2010

Listing Status: Not Listed SGCN? Yes

MASSACHUSETTS Not Present No data

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: Severe Decline, time frame unknown

Listing Status: Not Listed SGCN? Yes

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

i. Abundance

 X declining ___increasing ___stable ___unknown

ii. Distribution:

 X declining ___increasing ___stable ___unknown

Time frame considered: _____

Listing Status: _____ Not Listed _____ SGCN? Yes _____

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

i. Abundance

 X declining ___increasing ___stable ___unknown

ii. Distribution:

 X declining ___increasing ___stable ___unknown

Time frame considered: _____ 2000-2010 _____

Listing Status: _____ Endangered _____

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

i. Abundance

 X declining ___increasing ___stable ___unknown

ii. Distribution:

 X declining ___increasing ___stable ___unknown

Time frame considered: _____

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: Severe Decline from 2000-2010

Monitoring in New York.

A call-count survey is conducted annually in Suffolk County.

Trends Discussion:

Breeding Bird Survey trends for the United States, the Eastern region, and New York all show steep and significant declines for both long-term and short-term trends. Christmas Bird Count data for New York show nearly a complete loss of bobwhite from the state, with the “lowest total yet” of 14 birds in the 2006-07 season (McGowan 2007) diminishing to none seen on Long Island—their remaining stronghold—during the 2010-11 season (McGowan 2011).

Breeding Bird Atlas data reported an -80% decline in Confirmed records between the atlas surveys (1980-85 to 2000-05) and a decline in occupancy of -26% statewide. McGowan (2008) notes that the scattered nature of upstate records with a few clusters of contiguous blocks suggests the presence of captive-raised birds. On Long Island, where native populations exist, bobwhite was recorded in 35% fewer blocks and confirmations of breeding declined from 105 during the first Atlas to 17 in the second. Bobwhite nearly disappeared from Nassau County and only one report came from Kings County.

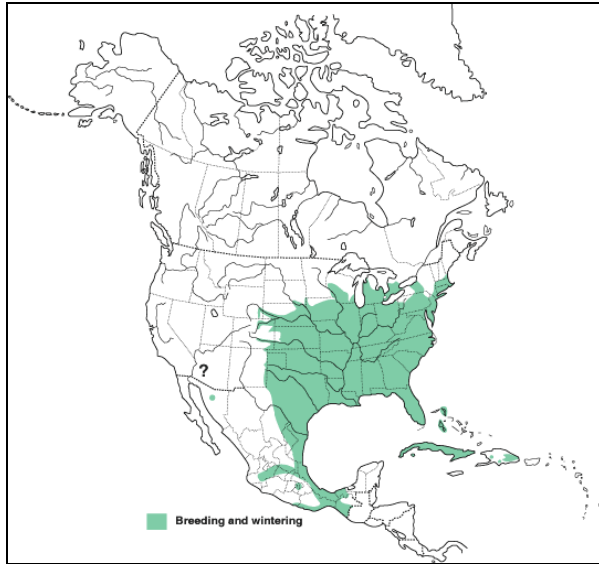


Figure 1. Range of the Northern bobwhite in North America (Birds of North America Online 2013).

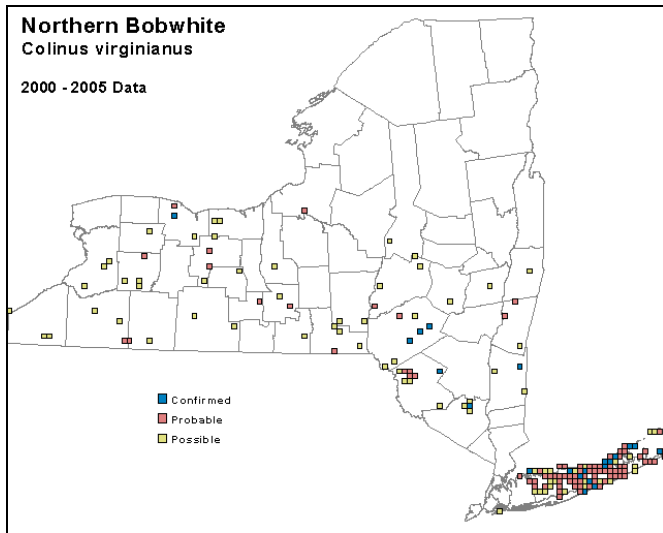


Figure 2. Northern bobwhite occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

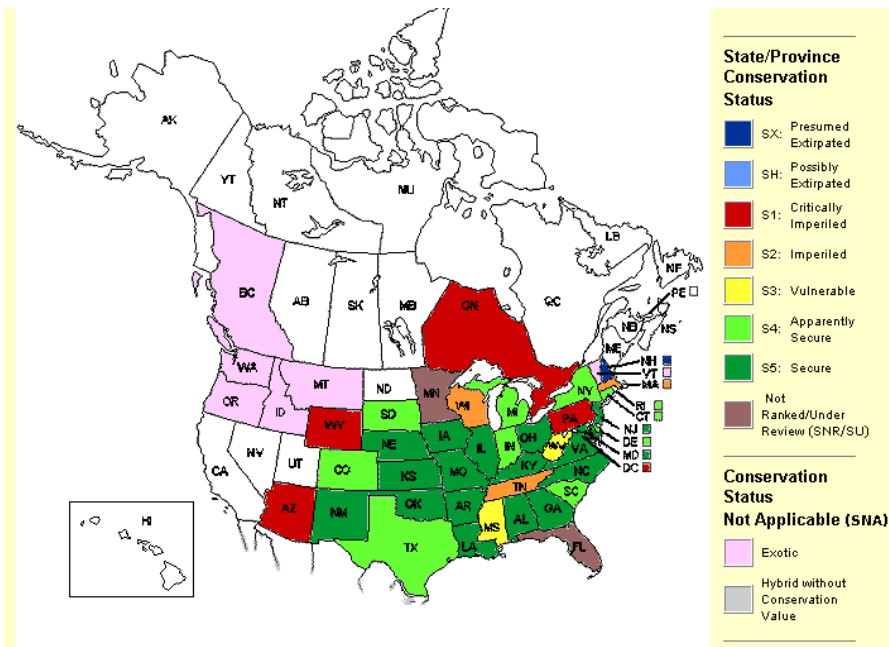


Figure 3. Conservation status of the Northern bobwhite in North America (NatureServe 2012).

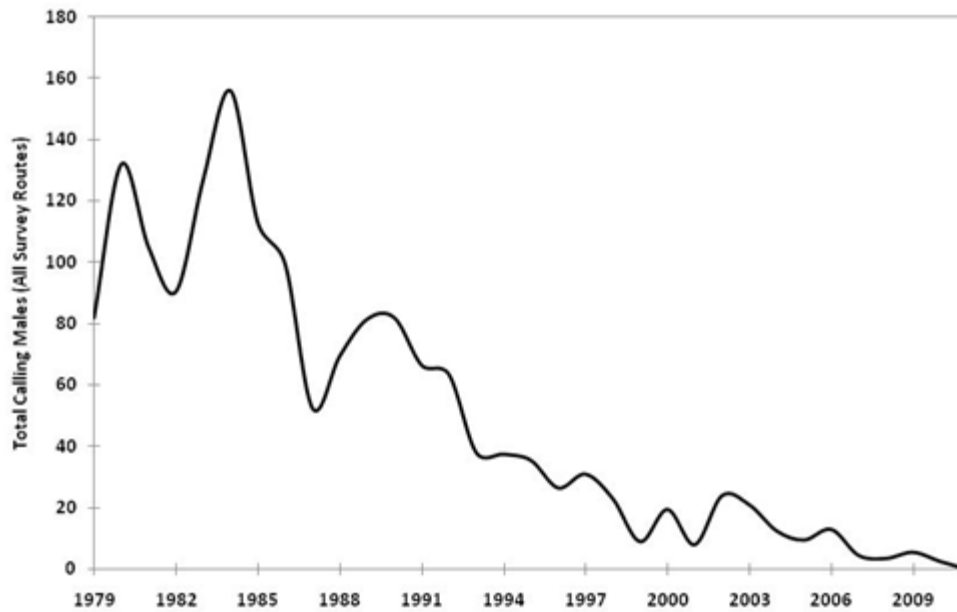


Figure 4. Northern bobwhite call-count survey, Long Island, New York, 1979-2012.

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>236 blocks</u>	<u>4</u>

Details of historic occurrence:

The first Breeding Bird Atlas (1980-85) documented Northern bobwhite in 236 survey blocks statewide.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>175 blocks</u>	<u>3</u>

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented Northern bobwhite in 175 survey blocks statewide, a decline in occupancy of 26%. On Long Island alone, the change in occupancy was -35%. The number of blocks with Confirmed breeding records fell from 105 during the first Atlas to 17 during the second Atlas.

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%
- 26-50%
- >50%

Classification of New York Range

- Core
- Peripheral
- Disjunct

Distance to core population:

IV. Primary Habitat or Community Type:

1. Old Field Managed Grasslands
2. Cultivated Crops
3. Pasture/Hay
4. Oak-Pine Forest

Species Demographics and Life History Discussion:

Northern bobwhites have a high annual mortality rate, and hence rapid population turnover and a short life span. The species' robust reproductive capability can compensate for these factors, however; when weather and habitat conditions permit, an adult pair can successfully produce 2 or more broods (≥ 25 offspring) during a single breeding season (Brennan 1999). Northern bobwhite have a short life span. The longevity record in wild is 6 years, 5 months (Marsden 1961). Very few individuals exceed 5 years (Rosene 1969) and most bobwhites (about 80%) live < 1 year (Brennan 1999).

Both males and females attempt to breed in first year after hatching (Stoddard 1931, Rosene 1969). Some males (about 5–10% of population) do not pair (Stoddard 1931), or possibly are involved with hens in multiple-brood situations. Within-year intervals between breeding, under ideal conditions, are very short. In some situations, female may re-nest within 1–2 days after the first clutch hatches if she pairs with new mate, and original mate broods chicks (Curtis et al. 1993). In less-than-ideal conditions (i.e., drought or poor habitat), intervals between breeding can be much longer (e.g., 43 days in Texas; Taylor 1992), or breeding will cease (Brennan 1999).

Exposure is an important source of mortality during winter in northern parts of range (Kabat and Thompson 1963, Roseberry and Klimstra 1984). Deep winter snows and prolonged periods of cold can cause extensive losses (up to 50%) during severe winters (Errington and Hammerstrom 1936). Avian predation (29%) and mammalian predation (29%) are also important sources of mortality (Burger et al. 1995). Snakes are known to destroy nests and eat adults and eggs (Stoddard 1931). Females are subject to high levels of mammalian predation while nesting; breeding males are vulnerable to avian predation because of displaying and calling from prominent locations (Burger et al. 1994).

VI. Threats:

Loss and degradation of early-successional and grassland habitats at both the local and landscape level are the primary causes of bobwhite's decline. Specifically, a lack of nesting and brood-rearing cover has resulted from the long-term practice of replacing native warm-season grasses with exotic grasses and completely eliminating nesting habitat in intensive cropland and dense pine forests (Dimmock et al. 2002 in McGowan 2008). On Long Island, the loss of woodland, old field, and hedgerow were likely important factors in the decline there (Salzman and Parkes 1998 in McGowan 2008).

In New Jersey, a high annual adult mortality rate (91%) is noted to be the cause of the decline. Two primary sources of mortality are avian predators (43.5%) and both feral cats and housecats (10%).

Land-use changes are traditionally believed to be most important in affecting overall grassland bird abundance on regional and continental scales. From 1940 to 1986 in 18 northeastern states, the area in hay fields declined from 12.6 to 7.1 million ha. During the same period, hay fields planted to

alfalfa and alfalfa mixtures, a vegetation type not normally used by many species of grassland birds, increased from 20 to 60% (Bollinger and Gavin 1992). Also, hay fields now are cut 2–3 weeks earlier than they were in 1940s and 1950s, with mowing coinciding with the peak nesting period.

Declines in some areas have been attributed to decrease in hayfield area, earlier and more frequent hay-cropping, and shift from timothy and clover to alfalfa; earlier, agricultural practices that converted wooded land to open land resulted in an increase in range (Bollinger et al. 1990, Bollinger and Gavin 1992). In New York, primary disturbance to nesting is hay-cropping; 100% of nests with eggs and young nestlings affected by mowing were abandoned or destroyed, but proportion of young lost declined with age of nestlings (Bollinger et al. 1990).

Since the mid-1940s, the eastward expansion has reversed in northeastern U.S. and southern Ontario as agricultural lands have been abandoned, reverting to deciduous forest (Robbins et al. 1986, Hussell 1987). Sibley (1988) noted that declines had resulted from the replacement of grain crops by corn and alfalfa, despite the use of corn fields for breeding noted by other authors.

According to the NYSDEC Comprehensive Wildlife Conservation Strategy (CWCS) (2005), probably the most serious threat to the grasslands in NY would arise from failure to address the viability of dairy farming, especially smaller “family” farms. Grassland habitats are being lost due to conversion to development, row crops, more intensive agriculture, and reversion to shrublands and forests. As grasslands are lost, many of the remaining grasslands become even more scattered and isolated, further reducing their ability to function as part of the overall grassland ecosystem. Farming methods that result in more frequent and earlier mowing are a very serious threat. Many of the fire dependent pine barren type communities also support grassland species. Due to fire suppression, many of these habitats have undergone significant changes and no longer support grassland species.

A new study led by a Canadian toxicologist identified acutely toxic pesticides as the most likely leading cause of the widespread decline in grassland bird numbers in the United States. The 23-year assessment, which looked at five other causes of grassland bird decline besides lethal pesticide risk, including change in cropped pasture such as hay or alfalfa production, farming intensity or the proportion of agricultural land that is actively cropped, herbicide use, overall insecticide use, and change in permanent pasture and rangeland, concluded that lethal pesticides were nearly four times more likely to be associated with population declines than the next most likely contributor, changes in cropped pasture— an important component of habitat loss associated with agricultural lands (Mineau and Whiteside 2013).

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

No Unknown

Yes

Northern bobwhite populations on Long Island have declined over the past several decades to a level that can no longer sustain reasonable sport harvest opportunity. Currently, bobwhite hunting

seasons on Long Island are established in law, and therefore the Department has no regulatory authority to adjust or close seasons there.

To change this, a bill would have to pass both houses of the legislature and be signed by the governor that amended ECL 11 0903(2) (a) to include "and bobwhite quail" and to revise 11 0903(2) (c) to strike "except on Long Island." Also, the bill would have to amend 11 0905(2) (d) and (e) under "Open Season" and "Bag Limit" to simply read "Fixed annually by regulation." These changes would give the Department full authority to annually adjust hunting regulations for quail statewide.

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

Habitats must be actively managed to maintain an early-successional stage. A variety of management actions are known to increase populations, including planting of native grass buffers around agricultural fields, burning, strip-disking, and creation of forest openings. 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	Invasive/Problematic Species Control
Land/Water Management	Habitat and Natural Process Restoration
Education and Awareness	Training
Education and Awareness	Awareness & Communications
Law and Policy	Policies and Regulations

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for early-successional forest/shrubland birds, which includes northern bobwhite.

Curriculum development:

___ Educate public to the benefits and need for early successional habitat including even-aged management.

Easement acquisition:

- ___ Implement a Landowner Incentive Project for early successional birds that will direct \$600,000 per year at conserving and creating habitat for early successional forest/shrub birds.

Habitat management:

- ___ Work with Utilities to manage ROWs in a manner that will provide for maximum benefit to early successional species.
- ___ Double the amount of early successional forest and shrub habitat on public and private land through sound planned management.
- ___ Increase early successional management on public and private lands.
- ___ Maintain, restore, and enhance fire adapted ecosystems. Increase use of prescribed fire in fire adapted ecosystems.
- ___ Promote management of Utility ROWs that will provide the maximum benefit to shrub bird species.

Habitat monitoring:

- ___ Precisely monitor trends of all species, in particular those that are not currently adequately monitored.
- ___ Complete an inventory and analysis for high priority focus species that identifies core habitats (highest abundance) and geographic areas (where appropriate).

Habitat research:

- ___ Determine effects of viburnum leaf beetle on early successional forest/shrub habitats and species utilizing them.

Population monitoring:

- ___ Encourage full completion of BBS routes.

Statewide management plan:

- ___ Develop a management plan that provides guidance on maintaining, enhancing and restoring early successional forest/shrub bird species.

Other actions:

- ___ Develop better mechanisms for directing federal (NRCS and USFWS) funding programs into early successional forest/shrub habitats.
- ___ Develop BMPs for forest management in riparian areas that recognize the critical need maintain, enhance and restore early successional forest/shrub habitat in these areas.

VII. References

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