

Species Status Assessment

Class: Birds
Family: Rallidae
Scientific Name: *Rallus elegans*
Common Name: King Rail

Species synopsis:

King rail is closely related to clapper rail (*Rallus longirostris*) and interbreeding between the two has been the subject of considerable scientific speculation. Some authorities consider the two forms to be conspecific.

The king rail is a rare breeder in New York. The northeastern edge of the distribution in North America just reaches into western New York and the Coastal Lowlands, thus producing the two populations—inland and coastal—that accounts of the species in New York. King rail breeds in a variety of wetlands including tidal and non-tidal freshwater marshes, brackish marshes, and marsh-shrub swamps (Poole et al. 2005).

King rail populations in North America have declined alarmingly in the past 30 years (Poole et al. 2005). Breeding Bird Survey data show a significant short-term decline in North America as well: - 3.7% per year from 2000-2010. King rail has historically been rare in New York. During the second Breeding Bird Atlas (2000-05), king rail was documented in only five survey blocks statewide (out of 5,335), producing a state distribution map much more sparse than that of Bull (1974).

I. Status

a. Current and Legal Protected Status

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

b. Natural Heritage Program Rank

- i. **Global** G4
- ii. **New York** S1B **Tracked by NYNHP?** Yes

Other Rank:

USFWS: "Gamebird Below Desired Condition" and a "Bird of Management Concern"
COSEWIC: Endangered

Status Discussion:

King rail is a very rare and local breeder in New York, occurring in freshwater and brackish marshes south of the Adirondacks (Able 1998). King rail has not been reported on Christmas Bird Counts in New York since the 1963-64 survey and Able (1998) refers to it as "very rare in winter, possibly resident."

II. Abundance and Distribution Trends

a. North America

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: 1999-2009

b. Regional

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Regional Unit Considered: Northeast

Time Frame Considered: 1999-2009

c. Adjacent States and Provinces

CONNECTICUT Not Present _____ No data X

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: _____

Listing Status: _____ Endangered _____ SGCN? Yes

MASSACHUSETTS Not Present _____ No data _____

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

 X declining ____ increasing ____ stable ____ unknown

Time frame considered: 1975-79 to 2007-11

Listing Status: _____ Threatened _____ 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: 1997-2006

Listing Status: _____ Special Concern _____ 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: Endangered

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

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

 X declining ____ increasing ____ stable ____ unknown

Time frame considered: 1984-89 to 2004-08

Listing Status: Endangered SGCN? Yes

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

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

d. NEW YORK

No data _____

i. Abundance

X declining ___ increasing ___ stable ___ unknown

ii. Distribution:

X declining ___ increasing ___ stable ___ unknown

Time frame considered: Last 30 years

Monitoring in New York.

A three-year pilot study of the National Marshbird Monitoring Program was conducted from 2009-2011 at selected wetlands across the state. Surveys continued in 2012. In addition, the Marsh Monitoring Program through Bird Studies Canada has long term marsh bird monitoring routes in the Great Lakes Basin part of New York. The king rail is a target species in both of these survey protocols.

Trends Discussion:

Breeding Bird Survey data across the king rail's range indicates a declining long-term (1966-2010) trend of 4.8% per year and a short-term (2000-2010) decline of 3.7% per year. Because of low relative abundance, many regional trends are not significant, but all are negative.

Bull (1974) shows 15 localities in New York, 7 of which were upstate and 8 of which were coastal. The first Breeding Bird Atlas (1980-85) documented none of the coastal records, but added two upper Hudson Valley records.

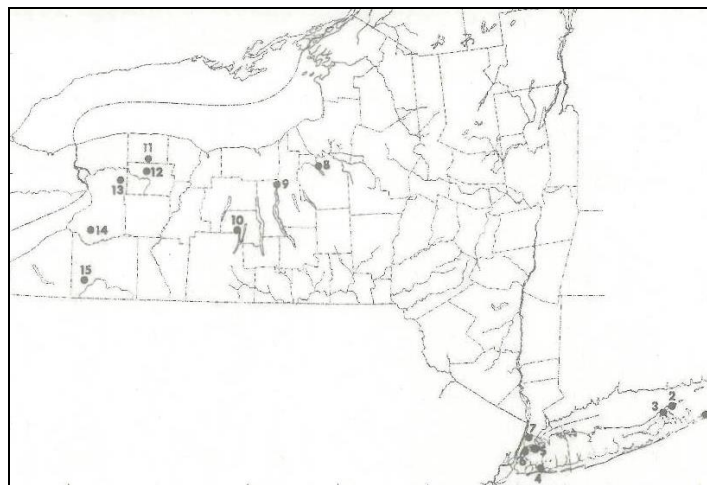


Figure 1. Historic locations of known breeding in New York (Bull 1974).

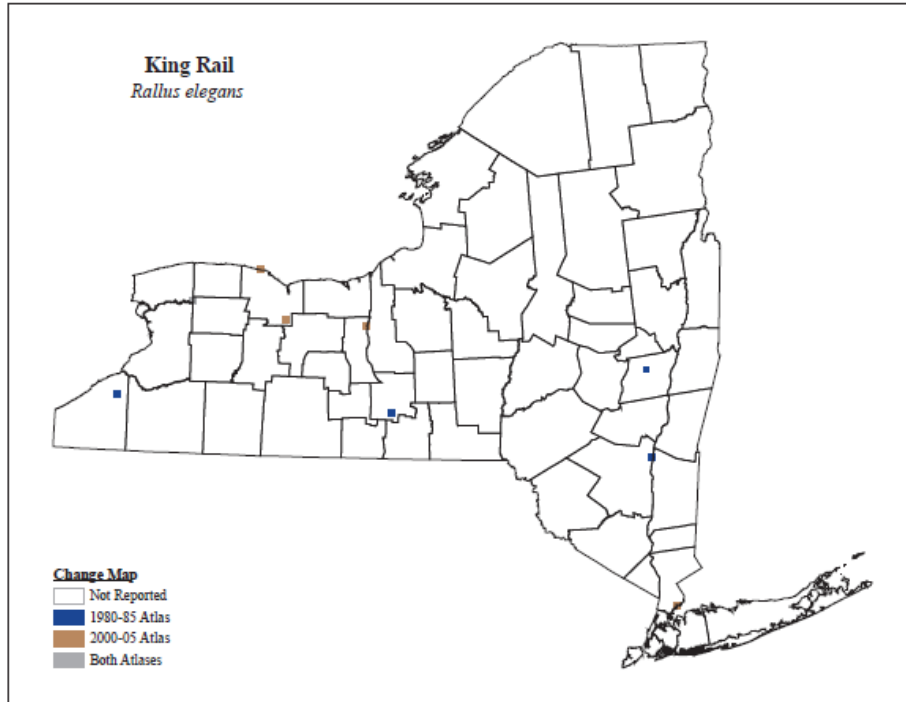


Figure 2. Known locations of king rail from the NYS Breeding Bird Atlas (NYSDEC).

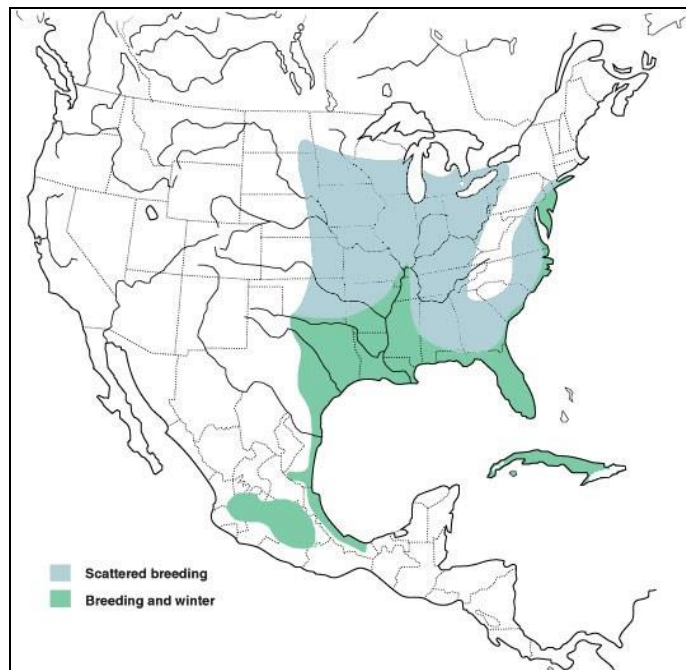


Figure 3. Distribution of king rail in North America (Birds of North America Online).

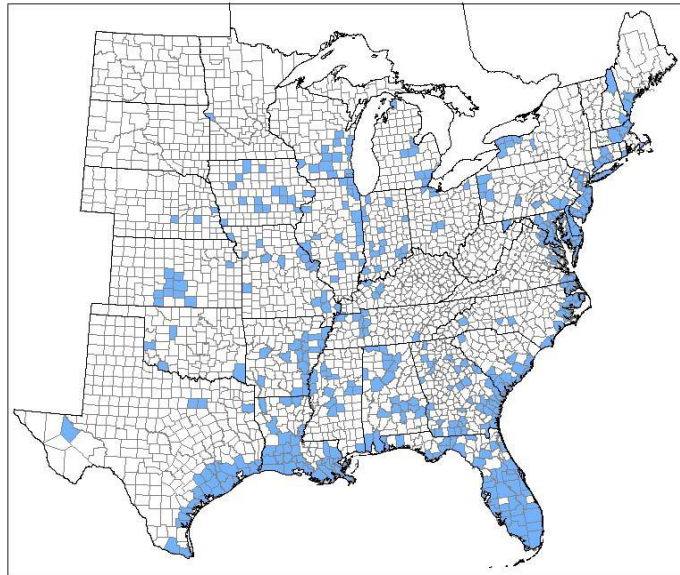


Figure 4. County-scale map showing counties/parishes where king rail presence has been confirmed, 1996-2006 (Cooper 2008).

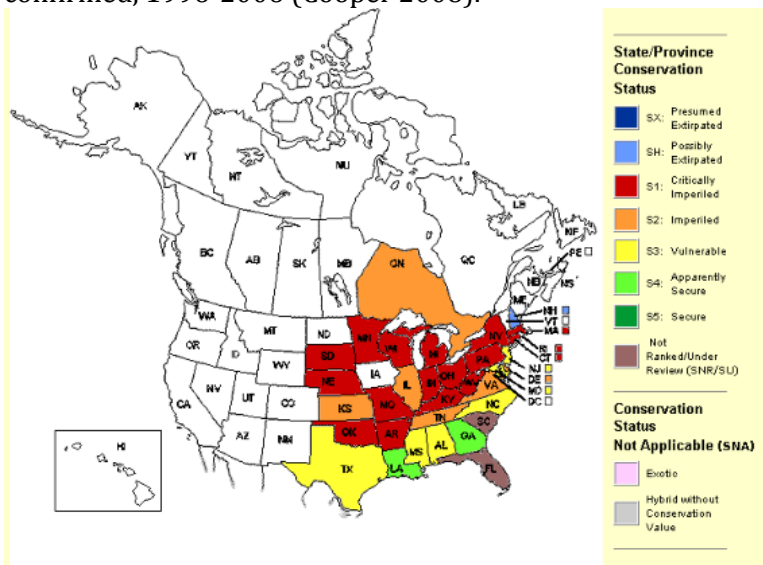


Figure 5. Conservation status of king rail in North America (NatureServe 2012).

III. New York Rarity, if known:

Historic	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	<u>15</u>	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

A distribution map in Bull (1974) shows 15 historic locations: 7 coastal and 8 inland. Dates of these records range from 1902 to 1960. The first Breeding Bird Atlas (1980-85) documented two additional locations in the Hudson Valley: Albany County and Ulster County.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>5</u>	<u><1%</u>

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in 5 survey blocks statewide. The two localities documented in the Hudson Valley during the first Breeding Bird Atlas (1980-85) were not documented during the second Atlas. Neither atlas survey period documented confirmed breeding. Medler (2008) noted that one location where king rail was reported during the second Atlas, the Marshlands Conservancy in Rye (Westchester County), had a confirmed breeding record in 1997 but that king rails had not been observed there since a common reed control project began in 2003. The breeding event of a king rail and a clapper rail was documented in 2006 at the Marine Nature Study area in Oceanside (Nassau County) when the pair produced 10 eggs in June and were seen in mid-August tending three chicks (Farina 2006, Guthrie 2007, NYSARC 2009). In 2013, a king rail was documented by L. Federman at the Great Vly WMA in Greene County.

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. Freshwater Marsh
2. Great Lakes Freshwater Estuary Marsh
3. Wet Meadow/Shrub Swamp
4. Estuarine, Brackish Intertidal, Tidal Wetland
5. Estuarine, Freshwater Intertidal, Tidal Wetland

Habitat or Community Type Trend in New York:

Declining Stable Increasing Unknown

Time frame of decline/increase: Since the 1950s

Habitat Specialist? Yes No

Indicator Species? Yes No

Habitat Discussion:

The King Rail uses a variety of wetland habitats throughout its range including freshwater marshes (tidal and non-tidal), brackish marshes, shrub swamps, and rice fields (Meanley 1969, Sikes 1984, Reid et al. 1994, Poole et al. 2005). Meanley (1969) stated, "The King Rail probably occurs in a wider variety of habitats than any other rail." Typical habitat includes dense, emergent vegetation and shallow water. Micro-topography is also important with sites usually containing an interspersions of hummocks, swales, and dry patches.

Bull (1974) reports on seven nests examined in New York: five were in cattails, one in Phragmites, and one in a potato field near a salt marsh.

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 age at first breeding for king rail is unknown (Poole et al. 2005). In 16 Arkansas nests, survival rate of young from hatching until two weeks of age was approximately 50%. Raccoons, fish crows (*Corvus ossifragus*), and red foxes eat eggs and possibly young. Adults have been reported predated by Northern harriers (*Circus cyaneus*) in north-central U.S. (Errington and Breckenridge 1936) and great horned owls (*Bubo virginianus*) in Wisconsin (Errington 1932). Some males and females return to the same breeding territory in consecutive years. Immatures may disperse widely. Only one of 41 juveniles banded at Maryland ponds in summer remained in same area through fall (12 July to 12 December) (Poole et al. 2005).

VI. Threats:

Wetland loss is thought to be the main cause for king rail population declines and the biggest limiting factor throughout the species range (Reid et al. 1994; Poole et al. 2005).

Other threats associated with wetland loss that decrease the value of remaining wetlands, as identified from multiple sources, include: 1) invasive, non-native plant species displacing native wetland vegetation (i.e.; reed canary grass and phragmites); 2) wetland fragmentation through construction of roads, utility right-of-ways, and levees; 3) siltation and excess nutrient loads from the surrounding landscape; 4) saltwater intrusion into tidal, freshwater marshes associated with climate change and sea-level rise; 5) dredging and stream channelization; 6) excessive disturbance from recreational activities; 7) management practices targeted toward other species (i.e., waterfowl); and 8) contaminant runoff causing direct mortality or indirectly disturbing food supplies (i.e., Eddleman et al. 1988, James 2000, Hunter et al. 2006, MANEM 2006, Cooper 2006, Wires et al. 2007).

Despite its threatened status, the king rail is a game bird in some 13 Gulf and Atlantic coast states, although rarely hunted. Connecticut had an open season in 2006-07. It is not a game species in New York. Wading birds tend to be susceptible to many diseases such as avian cholera, botulism, lice and mites, but little is known about the effects of disease and parasites on reproduction (NatureServe 2013). As a nocturnal migrant, king individuals may strike illuminated structures such as television towers, tall buildings and light houses (Poole, et al 2005). Some individuals also collide with telephone lines, barbed-wire fences, and automobiles.

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

No Unknown

Yes

The king rail is listed as a threatened species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6

NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species.

King rail is protected under the Migratory Bird Treaty Act of 1918. The small wetlands that are used for breeding are not protected, though this rail will also use large wetlands. The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law.

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

Given that at least a couple of the king rail sites documented during Breeding Bird Atlas surveys were on Wildlife Management Areas, it would perhaps be worthwhile to initiate species-specific surveys and habitat measurement to see if there are any management activities that could be adapted to favor king rail at these protected sites.

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

Conservation Actions	
Action Category	Action
Education and Awareness	Awareness & Communications
Education and Awareness	Training
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 & Natural Process Restoration

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for freshwater marshbirds.

Curriculum development:

___ Utilize education as a tool for reducing wetland loss and the possible detrimental effects of human disturbance.

Fact sheet:

___ Promote the establishment of buffer areas around agricultural fields and developments.

Habitat management:

___ Restore wetland habitat and improve water level control.

___ Evaluate the extent to which management actions can reduce nest and chick losses via predator management and water level regulation.

___ Promote the use of Farm Bill and Landowner Incentive program funds to manage and restore appropriate habitat.

___ Adapt wetland management practices throughout the range of these species so they can simultaneously benefit waterfowl, marsh birds, and other water birds.

___ For endangered, threatened or rapidly declining marsh bird species/populations, protect all sites currently in use, and all historic sites of suitable habitat.

Habitat monitoring:

___ Identify and prepare a catalog of key migratory staging, molting areas, and wintering grounds.

___ Prepare a catalog, where possible, of breeding sites, identifying and mapping sites at a course scale to select those worthy of monitoring.

___ Investigate diet and nutrition in relation to breeding habitat quality and prey populations.

Habitat research:

___ Evaluate habitats by a variety of techniques at multiple scales to better understand the micro- and macro- habitat features important to nest site selection.

___ Conduct controlled experiments to see which management actions are effective locally in producing habitat suitable for marsh birds.

Invasive species control:

___ Identify invasive species which have the potential to negatively impact marsh birds and quantify impact.

___ Reduce the spread and colonization of new sites by invasive exotic species.

___ Where feasible, control invasive species, which are known to have detrimental effects on marsh birds, to reduce negative impact (i.e. promote the implementation of biological controls to combat purple loosestrife).

Life history research:

___ Conduct demographic studies at selected sites across the species' breeding range to identify "source" and "sink" populations, thus the regions most important for maintaining a breeding population.

___ Conduct studies of habitat use, prey availability, and diet at migratory staging and molting areas and wintering grounds to assess possible threats and limiting factors.

___ Investigate aspects of behavioral ecology, such as mate selection, mate fidelity, spacing behavior, coloniality, dispersal, and post-fledging parental care.

___ Periodically monitor the levels of contaminants in marsh birds and their eggs to assess trends and determine effects on eggshell thinning, behavioral modification, chick development, nesting success, and juvenile survival.

Modify regulation:

___ Concurrently with management actions, efforts should be pursued vigorously to protect the quality and quantity of available wetland habitat and minimize wetland loss.

New legislation:

___ Develop and implement a noxious weed law to control the introduction and distribution of invasive exotic species.

New regulation:

- Maintain water quality in nesting marshes and discourage use of pesticides on public lands to prevent reduction of insect populations and contamination of wetlands.

Population monitoring:

- Refine monitoring techniques to better detect population trends and determine the cause of these changes.
- Initiate baseline population surveys to determine abundance and distribution and periodically resurvey to detect trends
- Study metapopulation dynamics and demography, focusing on such parameters as survival, age at first breeding, recruitment, dispersal, and the factors that affect them, using color-banded or radio-tagged birds.

Regional management plan:

- Collaborate with existing planning initiative such as the North American Waterbird Plan, Bird Conservation Regional Plans and other regional efforts.

VII. References

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