



United States  
Department of  
Agriculture

Forest Service

**Northeastern Forest  
Experiment Station**

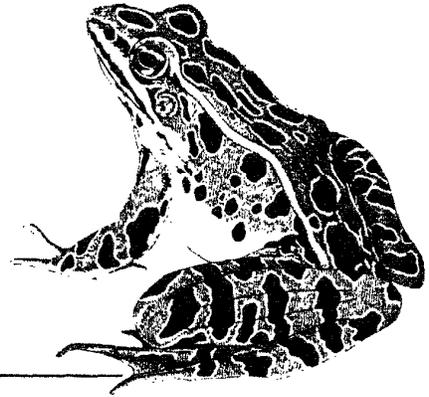
General Technical  
Report NE-108



# New England Wildlife: Habitat, Natural History, and Distribution

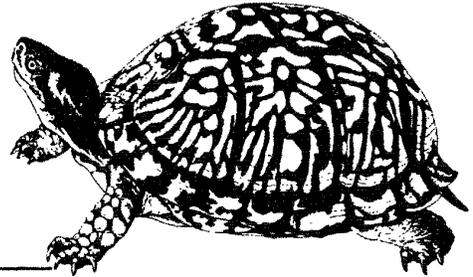
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Richard M. DeGraaf  
Deborah D. Rudis



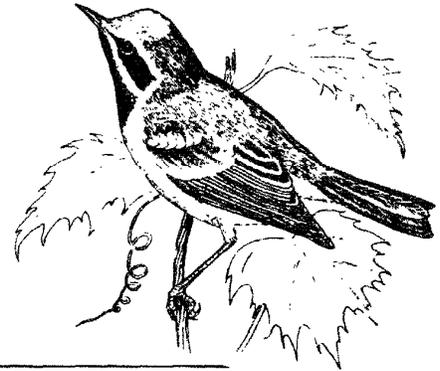
*Amphibians*

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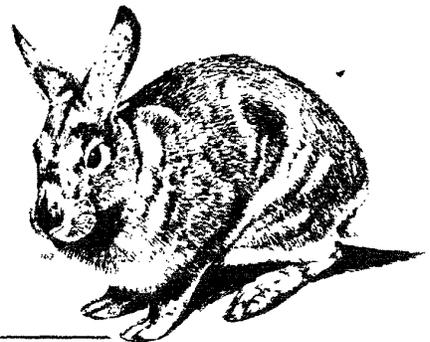
*Reptiles*

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*Birds*

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*Mammals*

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## **ABSTRACT**

Describes natural history profiles of New England wildlife species and their associations with forested and nonforested habitats. Provides a data base that will enable forest managers or wildlife biologists to describe the species or groups to be found in a given habitat.

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## **THE AUTHORS**

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## **ACKNOWLEDGMENTS**

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Slightly revised June 1987

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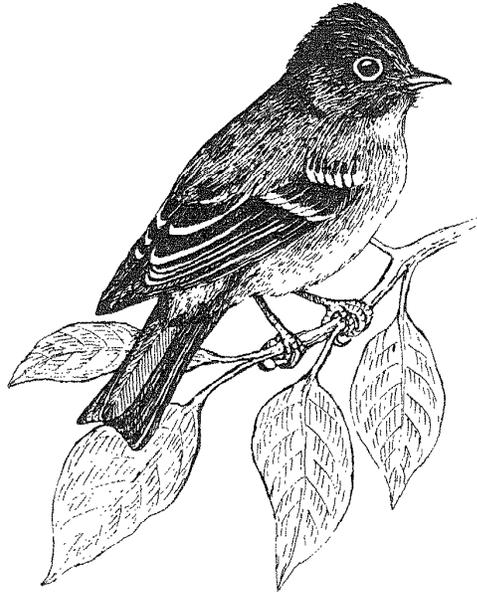
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**Alder Flycatcher**  
(*Empidonax alnorum*)

A.O.U. No. 466.3



**Range**



**RANGE:** Breeding: Newfoundland, w. to Alaska, s. to e. and n. Pennsylvania, c. Minnesota and c. British Columbia. Winter: Central and South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (s. New England).

**HABITAT:** Breeding: Low, damp thickets bordering bogs, swamps and marshes. Often in alders, willows, elders, sumacs, viburnums. Prefers open areas.

**SPECIAL HABITAT REQUIREMENTS:** Areas with dense, low shrubs and clearings (edges).

**NESTING:** Egg dates: June 11 to July 29, New York (Bull 1974:376). Clutch size: 3 to 4. Incubation period: 12 to 14 days. Nestling period: 13 to 16 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 1 to 6 feet (0.3 to 1.8 m), typically 3 to 4 feet (0.9 to 1.2 m). Nest site: In low tree or shrub saddled on a branch or in an upright fork.

**TERRITORY SIZE:** Singing males of three separate populations had average territory sizes of 3.2, 3.8, 7.7 acres (1.2, 1.5, 3.1 ha) (Stein 1958).

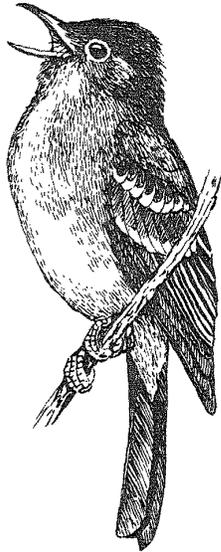
**FORAGING:** Major foods: Flying insects. Substrate: Air. Techniques: Hawking, flight gleaning.

**KEY REFERENCES:** Bent 1942, King 1955, Stein 1958.

## Willow Flycatcher

(*Empidonax traillii*)

A.O.U. No. 466.4



### Range



**RANGE:** Breeding: Southern Main, w. to British Columbia, s. to n. Virginia, c. Arkansas and s. New Mexico. Winter: Central and South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon.

**HABITAT:** Breeding: Prefers open, newly clearcut areas, damp to dry brushy fields, woodland edges, hedgerows, roadsides, and orchards. Frequents uplands and lowlands.

**SPECIAL HABITAT REQUIREMENTS:** Low trees and shrubs with clearings (edges).

**NESTING:** Egg dates: June 11 to July 29, New York (Bull 1974:376). Clutch size: 3 to 5, typically 3 or 4. Incubation period: 12 to 15 days. Nestling period: 15 to 18 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 3 to 25 feet (1.0 to 7.6 m). Typically 4 to 6 feet (1.2 to 1.8 m). Nest site: In a fork or saddled on a horizontal limb of a shrub, commonly willow, elder, viburnum, hawthorn, and others.

**TERRITORY SIZE:** 0.8 to 2.9 acres (0.3 to 1.2 ha) (average 1.74 acres (0.7 ha) for 73 territories in a dry marsh in Michigan (Walkinshaw 1966b). Singing males of three separate populations had average territory sizes of 2.6, 3.2, and 4.5 acres (1.1, 1.3, and 1.8 ha) (Stein 1958).

**SAMPLE DENSITIES:** 25 to 30 pairs per square mile (10 to 11 pairs/km<sup>2</sup>) in willow clump habitat in Illinois (8 to 9 birds per 100 acres (40 ha)) (Ford 1956 in Graber et al. 1974).

**FORAGING:** Major foods: Flying insects. Substrate: Air. Techniques: Hawking, flight gleaning.

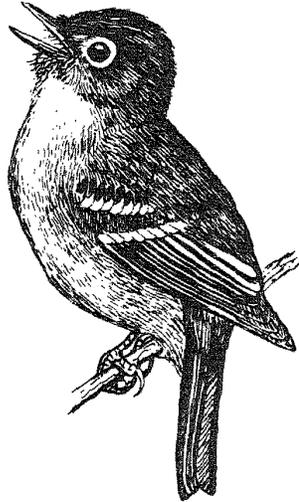
**COMMENTS:** Difficult to distinguish from Alder Flycatcher (both formerly Traill's) even when in hand. Most widely accepted diagnostic characteristic is voice difference: Willow -- "fitz-bew", Alder -- "fee-beé-o".

**KEY REFERENCES:** Graber et al. 1974, King 1955, Stein 1958, Walkinshaw 1966b.

## Least Flycatcher

(*Empidonax minimus*)

A.O.U. No. 467.0



### Range



**RANGE:** Breeding: Nova Scotia to Mackenzie district, Northwest territories, s. to Long Island and central New Jersey and the mountains of Georgia, w. to Wyoming and British Columbia. Winter: Mexico and Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Deciduous forest edges, burns and clearings, open shrublands, orchards, well-planted residential areas, edges of country roads, overgrown pastures and open deciduous woodlands.

**SPECIAL HABITAT REQUIREMENTS:** Open deciduous forest, edge (shade for nest and open space for feeding), moderately vegetated woodlands (intermediate openness in understory) (Breckenridge 1956).

**NESTING:** Egg dates: May 16 to July 28. New York (Bull 1974:377). Clutch size: 3 to 6, typically 3 or 4. Incubation period: About 14 days. Nestling period: 14 to 16 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 2 to 60 feet (0.6 to 18.3 m), typically 10 to 20 feet (3.0 to 6.1 m). Nest site: In crotch or on limb of deciduous or coniferous tree. Known to nest in apple, oak, pine, willow, sugar maple, and others.

**TERRITORY SIZE:** 0.35 to 0.55 acre (0.1 to 0.2 ha) in oak-chestnut woodland in Virginia (Davis 1959). 0.03 to 0.5 acre (0.01 to 0.2 ha) (average 0.18 acre (0.07 ha)) in Michigan for 33 territories (MacQueen 1950). Usually less than 1 acre (0.4 ha) (Breckenridge 1956).

**SAMPLE DENSITIES:** 2 nests per 27.67 acres (11.2 ha) of residential woodland in Illinois (Beecher 1942 in Graber et al. 1974). 9 nests per 19 acres (7.7 ha) in Virginia (Davis 1959) — oak-chestnut woodland. 2.7 pairs per acre (0.4 ha) in aspen-birch-maple habitat in Michigan (MacQueen 1950).

**FORAGING:** Major foods: Flying insects. Substrate: Air. Techniques: Hawking, flight-gleaning, gleaning.

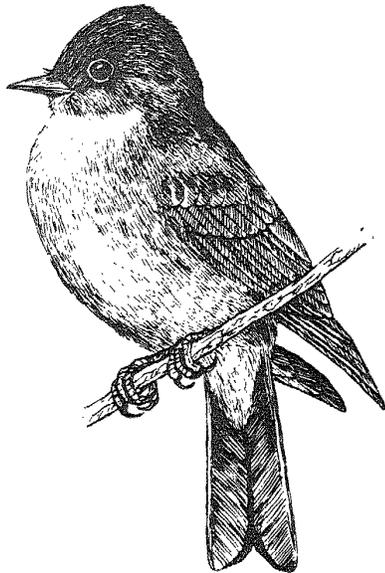
**COMMENTS:** Food studies have shown that Least Flycatchers eat 98 percent animal and 2 percent vegetable material in summer (Beal 1912 in Bent 1942:218).

**KEY REFERENCES:** Bent 1942, Breckenridge 1956, Graber et al. 1974, MacQueen 1950.

## Eastern Phoebe

(*Sayornis phoebe*)

A.O.U. No. 456.0



### Range

□ Breeding



**RANGE:** Breeding: Nova Scotia, w. to Alaska, s. to n. Georgia (mountains) and e. New Mexico. Winter: Maryland s. Rarely to s. New England (coast) and Long Island.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Woodland cliffs, ravines, agricultural and suburban areas, often near streams.

**SPECIAL HABITAT REQUIREMENTS:** Perches 5 to 15 feet (1.5 to 4.6 m) high. Cliffs or ledges at stream-side clearings or man-made structures at forest openings (Hespenheide 1971).

**NESTING:** Egg dates: April 20 to August 4, New York (Bull 1974:369). Clutch size: 3 to 8, typically 5. Incubation period: 15 to 17 days. Nestling period: 15 to 17 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: 2.5 to 20 feet (0.8 to 6.1 m), typically less than 15 feet (4.6 m). Nest site: On a ledge, usually sheltered above by an overhang, often under leaves or on window ledges, barn beams, bridge girders. Nest is frequently near water. Birds are very adaptable in nesting habits.

**TERRITORY SIZE:** 3.3 to 7.1 acres (1.3 and 2.9 ha) for 2 pairs nesting on buildings in Kansas (Fitch 1958). 0.7 acre (0.3 ha) in an Illinois floodplain forest (Fawver 1947 in Graber et al. 1974).

**SAMPLE DENSITIES:** 6 nests per 30 acres (12.1 ha) in optimum habitat in Illinois (Graber et al. 1974). 7 pairs per

100 acres (40 ha) in mixed agricultural habitats in Maryland. 0.6 pairs per 100 acres (40 ha) in mixed forests and fields in Maryland (Stewart and Robbins 1958:201).

**FORAGING:** Major foods: Flying insects, occasional small fruits. Substrate: Air. Technique: Hawking.

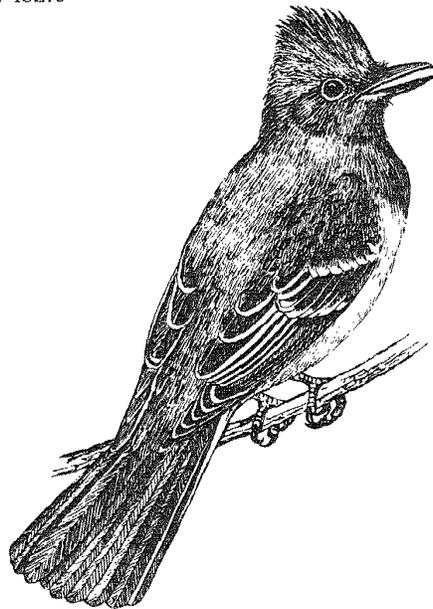
**COMMENTS:** Phoebes usually choose one or more favorite perches from which to hawk insects. They are common victims of cowbird parasitism. Blocher (1936) reports parasitism in 50 percent of the nests observed in Illinois. This species benefits from forest cuttings, moving into areas where cuttings have exposed ledge and rocks and creating sunny forest openings in the vicinity of ledge.

**KEY REFERENCES:** Bent 1942, Graber et al. 1974, Hespenheide 1971.

## Great Crested Flycatcher

(*Myiarchus crinitus*)

A.O.U. No. 452.0



### Range



**RANGE:** Breeding: New Brunswick, w. to se. Manitoba, s. to Florida and Texas. Winter: Southern Florida and s. Texas to n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Edges of deciduous or mixed woodlands, swamps, old orchards (with dead limbs or trees), woodland clearings, sometimes along sides of ravines, deep forests. Prefers forests with mature trees but also uses second-growth woodlands.

**SPECIAL HABITAT REQUIREMENTS:** Cavity for nesting (middle-aged to mature trees), deciduous forest, edge.

**NESTING:** Egg dates: May 22 to July 11, New York (Bull 1974:338). Clutch size: 4 to 8, typically 5 or 6. Incubation period: 13 to 15 days. Nestling period: 12 to 13 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 3 to 75 feet (0.6 to 22.9 m), typically 10 to 20 feet (3.0 to 6.1 m). Nest site: In a cavity in a live or dead tree; accepts nest boxes. Uses natural cavities or abandoned woodpecker holes.

**TERRITORY SIZE:** 0.6 to 4.6 acres (0.2 to 1.9 ha) (average 3.1 acres (1.3 ha)) for 26 territories in Illinois (Fawver 1947 in Graber 1974). 4 to 8 acres (1.6 to 3.2 ha) (Stewart and Robbins 1958). 7.2, 6.6, 5.6 acres (2.9, 2.7, 2.3 ha) in forest-field edge habitat in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** 50 birds per 100 acres (40 ha) in suburban habitats in Illinois (Ridgeway 1915). 8 pairs per 100 acres (40 ha) in mixed oak forest in Maryland. 7 pairs

per 100 acres (40 ha) in dense second-growth oak-maple in Maryland. 4 pairs per 100 acres (40 ha) in hedgerows and active and abandoned farmland in Maryland (Stewart and Robbins 1958:200).

**FORAGING:** Major foods: Flying insects, insect larvae, fruits. Substrates: Air, crevices in bark of trees, cracks in fallen logs, leaf surfaces. Techniques: Hawking, gleaning, hover-gleaning. Preferred feeding habitat: Birds spend much time foraging in forest canopy.

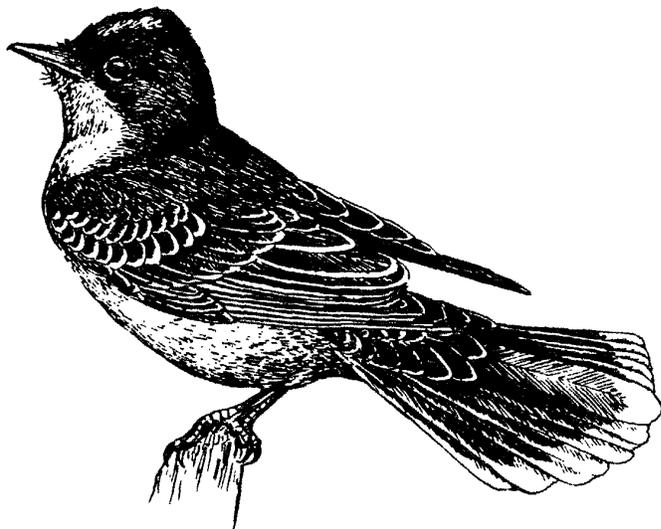
**COMMENTS:** High foraging (canopy) is more prevalent with interior woodland nesters than with edge nesters. Stomach analyses of 265 birds revealed a diet of 94 percent animal and 6 percent vegetable matter (Beal 1912 in Bent 1942:115). Originally a bird of forest interiors, this flycatcher has broadened its habitat to include more open areas and forest edges (Bent 1942).

**KEY REFERENCES:** Allen 1933a, Bent 1942, Graber et al. 1974, Mousley 1934.

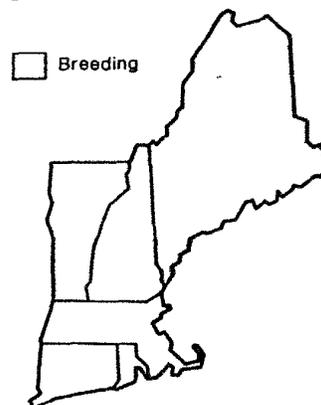
## Eastern Kingbird

(*Tyrannus tyrannus*)

A.O.U. No. 444.0



### Range



**RANGE:** Breeding: New Brunswick, w. to sw. British Columbia, s. to Florida, New Mexico, and Oregon. Winter: Central and South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Frequently in orchards, pastures, and shrubby borders, forest edges, along fields and highways, near streams with shrubby banks, swamps or marshes with dead stumps and snags, sometimes in open woodlands.

**SPECIAL HABITAT REQUIREMENTS:** Open situations, perches for flycatching.

**NESTING:** Egg dates: May 22 to July 16, New York (Bull 1974:364). Clutch size: 3 to 6, typically 3. Incubation period: 12 to 13 days. Nestling period: 13 to 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 2 to 60 feet (0.6 to 18.3 m), typically 10 to 20 feet (3.0 to 6.1 m). Nest site: Usually on a tree limb quite far from trunk and often over water. Less commonly nests in a crotch or on top of dead stub. Apple is a preferred nest tree.

**TERRITORY SIZE:** 14 to 35 acres (5.7 to 14.2 ha) (4 pairs) (Odum and Kuenzler 1955).

**SAMPLE DENSITIES:** Approximately 2 to 9 birds per 100 acres (40 ha) in suitable habitat in Illinois (Graber et al. 1974). 36 pairs per square mile (4 pairs/km<sup>2</sup>) (maximum density) in North Dakota (Stewart and Kantrud 1972). 10 pairs per 100 acres (40 ha) in residential-orchard-lawn habitat in Maryland (Stewart and Robbins 1958:198).

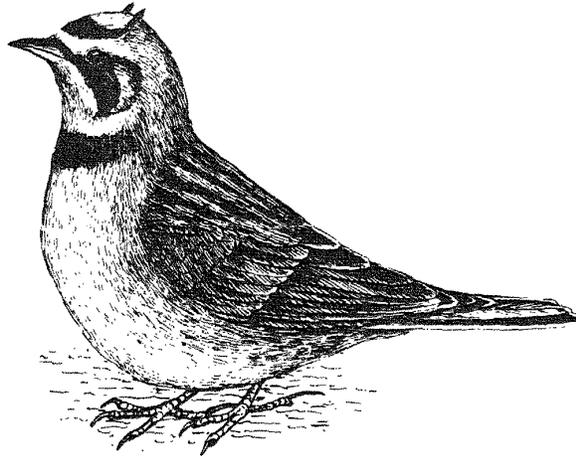
**FORAGING:** Major foods: Flying insects (staple), wild fruits; consumes over 200 kinds of insects and more than 40 kinds of fruits (Bent 1942). Substrate: Air. Techniques: Hawking, hovering, flight-gleaning; birds seem to have favorite hawking perches. Preferred feeding habitat: Over open land or water.

**COMMENTS:** Brewer (1958) found kingbirds nesting in young successional growth (6 to 20 years old) rather than older stands in strip-mining areas. Smith (1966) noted Kingbirds nesting in forested regions with internal clearings and extensive burned areas with standing trees.

**KEY REFERENCES:** Bent 1942, Graber et al. 1974, Johnston 1971.

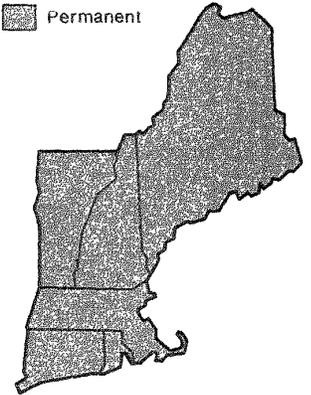
**Horned Lark**  
(*Eremophila alpestris*)

A.O.U. No. 474.0



**Range**

■ Permanent



**RANGE:** Breeding: Arctic North America, s. to n. South America. Winter: New Brunswick, w. to n. Minnesota and s. British Columbia, s. to Mexico and the Gulf States (rarely).

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common in summer and winter.

**HABITAT:** Breeding: Plowed fields and large open areas with closely cropped grasses, golf courses, athletic fields, cemeteries, airports, seashore. Prefers areas with a minimum of vegetation. Absent from wooded areas and high mountains. Wintering: Similar to breeding habitat. Concentrates on snowless wind-swept areas near coast where food is more accessible.

**SPECIAL HABITAT REQUIREMENTS:** Bare exposed earth within territory.

**NESTING:** Egg dates: February 28 to July 31, New York (Bull 1974:381). Clutch size: 3 to 5, typically 4. Incubation period: 11 days. Nestling period: 10 to 12 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest site: A hollow in ground, usually next to a tuft or dead of living grass or weeds. Nest is often paved with small pebbles along a portion of the rim.

**TERRITORY SIZE:** Approximately 0.8 ha (2 acres) on burned-over grassland in Evanston, Illinois (1 pair); 5.0 ha (approximately) in garden and grainfield for 1 pair in Ithaca, New York (Pickwell 1931:134). About 12 acres (4.9 ha) in field in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** 6 pairs occupied 72 acres (29.1 ha) of field in Kansas (Fitch 1958). 160 pairs per square miles (6 pairs/km<sup>2</sup>) (maximum density) in favorable habitat in North Dakota (Stewart and Kantrud 1972).

**FORAGING:** Major foods: Summer — mainly insects. Winter — seeds of grasses and weeds, waste grains. Substrates: Bare earth, short grasses, and weeds. Techniques: Gleaning, scratching, running and pausing and pecking. Preferred feeding habitat: Snowless barrens with abundant weed seeds in winter.

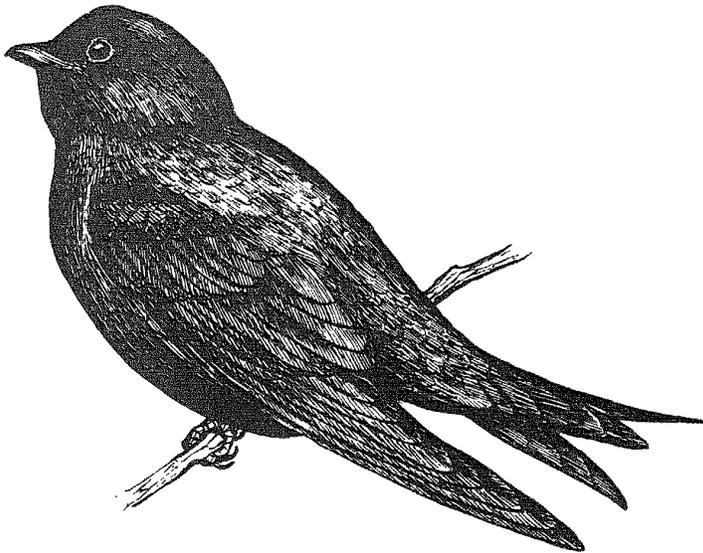
**COMMENTS:** Early eggs are occasionally destroyed by snowstorms. McAtee (1905 in Pickwell 1931:31) found that the vegetable portion of the diet taken in a year accounted for 79.4 percent of total. Birds are gregarious in winter.

**KEY REFERENCES:** Bent 1942, Pickwell 1931, Sutton 1927.

## Purple Martin

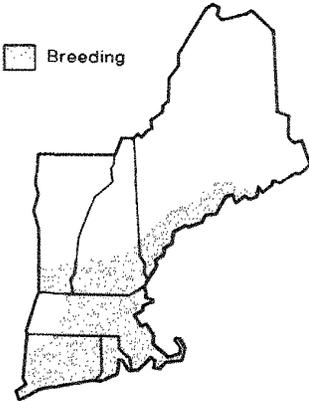
(*Progne subis*)

A.O.U. No. 611.0



### Range

 Breeding



**RANGE:** Breeding: Prince Edward Island, w. to s. British Columbia, s. to c. Mexico. Winter: Brazil.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common at local nest sites, rare elsewhere.

**HABITAT:** Breeding: Farmlands, parks, suburban yards, preferably near water.

**SPECIAL HABITAT REQUIREMENTS:** Large multi-roomed nest boxes, open space for foraging. May occasionally use natural cavities in trees.

**NESTING:** Egg dates: May 21 to July 13, New York (Bull 1974:390). Clutch size: 3 to 8, typically 4 or 5. Incubation period: 16 to 18 days. Nestling period: 26 to 31 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 15 to 20 feet (4.6 to 6.1 m). Nest site: Originally nested in cavities in trees; today nests almost exclusively in nest boxes, preferably near water. Birds favor large multi-roomed birdhouses set on poles 15 to 20 feet (4.6 to 6.1 m) high. Easily driven out of nest sites by starlings and house sparrows.

**TERRITORY SIZE:** Restricted to the nest cavity (Allen and Nice 1962).

**SAMPLE DENSITIES:** Colonies may consist of as many as 200 pairs (Bull and Farrand 1977).

**FORAGING:** Major foods: Flying insects. Substrate: Air. Techniques: Hawking, skimming water surface.

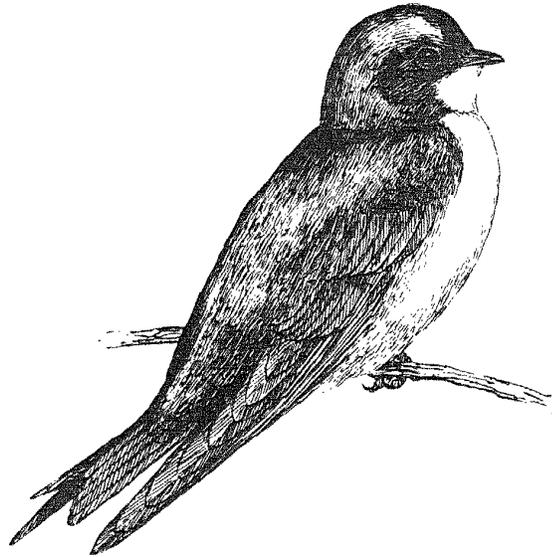
**COMMENTS:** In late summer, Martins gather in large flocks, often roosting in urban areas (Robbins et al. 1966) prior to their southward migration. Dependence on insects for food makes them vulnerable to starvation during long periods of cold, wet weather.

**KEY REFERENCES:** Allen and Nice 1952, Bent 1942, Finlay 1971.

## Tree Swallow

(*Tachycineta bicolor*)

A.O.U. No. 614.0



### Range

Breeding



**RANGE:** Breeding: Newfoundland w. to n. Alaska, s. to Maryland, Virginia, Colorado, and California. Winter: Coastal areas from Virginia, s. to Mexico, Central America and s. California. A few winter as far north as Long Island.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant.

**HABITAT:** Breeding: Farmlands, river bottomlands, beaver ponds, wooded swamps or marshes with dead standing trees in or near water. Competition for suitable natural cavities in the Northeast has resulted in the heavy use of nest boxes. Wintering: Tidewater areas with bayberries.

**SPECIAL HABITAT REQUIREMENTS:** Cavity for nesting. Open feeding areas such as meadows, marshes, or water. The minimum d.b.h. of suitable nest trees is 10 inches (25.4 cm) (Thomas et al. 1979).

**NESTING:** Egg dates: May 5 to June 29, New York (Bull 1974:382). Clutch size: 4 to 7, typically 5 or 6. Incubation period: 13 to 16 days. Nestling period: 16 to 24 days (depending on food supply). Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 4 to 15 feet (1.2 to 4.6 m). Nest site: Natural cavity or old woodpecker hole in a trunk or dead limb of dead or living tree, holes in buildings, nest boxes. Is usually a solitary nester but may nest in small groups where suitable cavities abound and there is a good food supply. Prefers to nest over a body of water.

**TERRITORY SIZE:** Territory is restricted to the nest site (Kuerzl 1941).

**SAMPLE DENSITIES:** 40 occupied nest boxes in 28 acres (11.3 ha) of modified woodland in Illinois (Beecher 1942). Birds will nest within 7 feet (2.1 m) of each other in the presence of abundant food (Scott et al. 1977). Densities of up to 150 pairs per 0.3 ha (0.7 acres) are possible in nest boxes spaced no less than 2 m (6.6 feet) apart (Whittle 1926).

**FORAGING:** Major foods: Flying insects (summer), berries, and seeds are taken to supplement the winter diet when insects are less abundant. Substrates: Air, water. Techniques: Hawking, skimming water surface. Preferred feeding habitat: Over bodies of water.

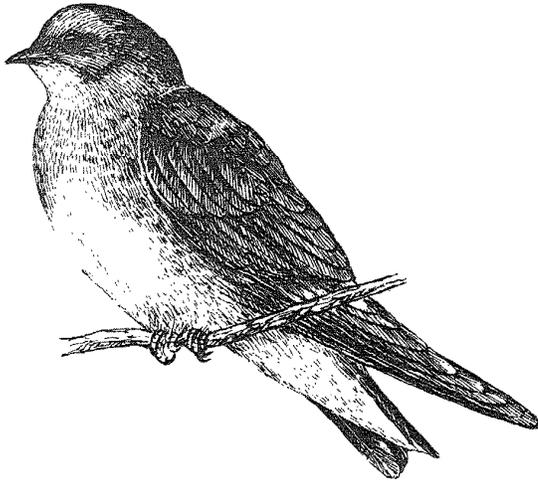
**COMMENTS:** The Tree Swallow's habit of eating bayberries enables it to return to the Northeast earlier in the spring, linger later in fall, and remain farther south in winter than other species of swallows. It commonly gathers in large coastal flocks in autumn.

**KEY REFERENCES:** Chapman 1955, Graber et al. 1972, Kuerzi 1941, Paynter 1954.

## Northern Rough-winged Swallow

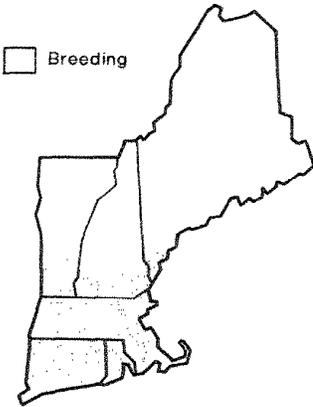
(*Stelgidopteryx serripennis*)

A.O.U. No. 617.0



### Range

Breeding



**RANGE:** Breeding: Maine to New Brunswick w. to British Columbia, s. to South America. Winter: Mexico to South America. Occasionally n. to coastal South Carolina.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to uncommon.

**HABITAT:** Breeding: Nearly any open area with adequate nest sites and a water supply (usually a stream). Often river valleys and lake shores.

**NESTING:** Egg dates: May 19 to July 5, New York (Bull 1974:385). Clutch size: 4 to 8, typically 6 or 7. Incubation period: 16 days. Nestling period: 20 to 21 days, to 30 days where food is scarce. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: Solitary or semi-colonial nester (colonies usually consist of 2 to 6 pairs). Nests in burrows in sandy banks, often along a stream, irrigation ditch, and less commonly in rock ledges, crevices in bridges and buildings, or drainage pipes under bridges. Often occupies abandoned bank swallow or Kingfisher holes.

**TERRITORY SIZE:** Territory is limited to the immediate vicinity of the nest entrance (Lunk 1962:29).

**FORAGING:** Major foods: Flying insects. Substrate: Air. Techniques: Hawking, skimming water surface.

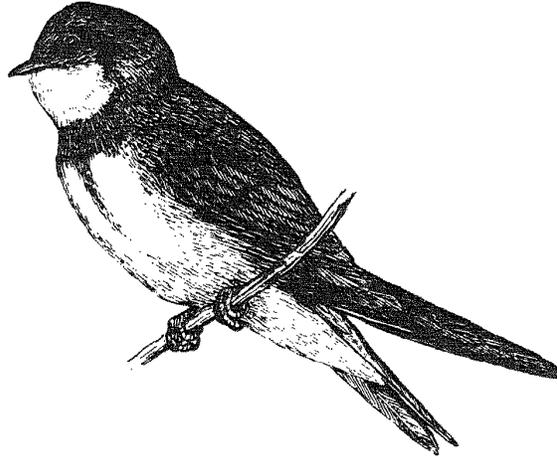
**COMMENTS:** Often one or a very few pairs of Rough-wings share a bank with Bank Swallows, especially along major water courses.

**KEY REFERENCES:** Bent 1942, Graber et al. 1972, Lunk 1962.

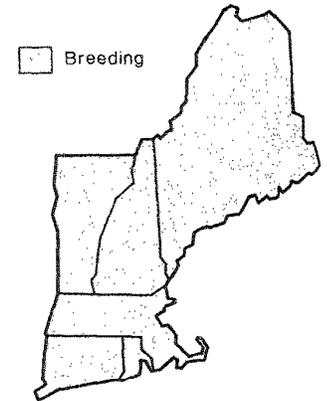
## Bank Swallow

(*Riparia riparia*)

A.O.U. No. 616.0



### Range



**RANGE:** Breeding: Labrador, w. to Alaska, s. to Virginia and the Carolinas (mountains), s. Texas and s. California. Winter: South America, mainly in Brazil.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common to uncommon depending on availability of nest sites.

**HABITAT:** Breeding: Riverbanks, gravel pits, road cuts, hardened sawdust piles, and clay banks. Prefers areas with grassland or cultivated fields at low elevations and near fresh water.

**SPECIAL HABITAT REQUIREMENTS:** Sand or clay banks that are stabilized by a grassy mat overhanging the top.

**NESTING:** Egg dates: May 15 to July 13 (second brood), New York (Bull 1974:383). Clutch size: 4 to 6, typically 5. Incubation period: 14 to 16 days. Nestling period: 18 to 22 days, to 30 days where food supply is limited. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: A burrow dug by both sexes usually near top of bank. Depth varies from 9 inches (22.9 cm) to 6 feet (1.6 m). Birds may restore existing burrows and form dense colonies where possible.

**TERRITORY SIZE:** Territory is restricted to the area immediately surrounding the nest site.

**SAMPLE DENSITIES:** Minimum spacing of nest holes in a Wisconsin study was 4 inches (10.2 cm). Most holes were 5 to 7 inches (12.7 to 17.8 cm) apart (Petersen 1955).

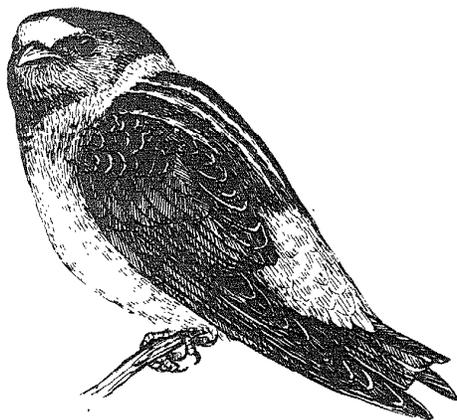
**FORAGING:** Major foods: Flying insects (nearly 100 percent of diet). Substrate: Air. Techniques: Hawking, skimming water surface. Preferred feeding habitat: Over water or grasslands, especially pastures.

**COMMENTS:** Colonial feeding may be an adaptation that allows for more effective discovery of insect swarms. Birds typically nest in dense colonies of 10 to more than 300 nests. Nesting is synchronized — more than 70 percent of the young leave the nest within a 6-day period (Emlen and Demong 1974).

**KEY REFERENCES:** Bent 1942, Beyer 1938, Graber et al. 1972, Petersen 1955.

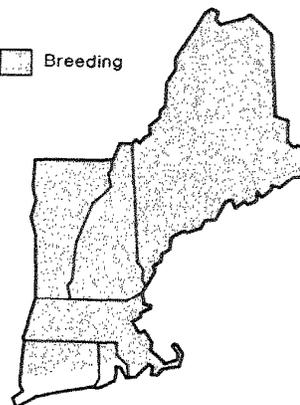
Cliff Swallow  
(*Hirundo pyrrhonota*)

A.O.U. No. 612.0



Range

■ Breeding



RANGE: Breeding: Nova Scotia, w. to n. Alaska, s. to Virginia, Missouri and Central America. Winter: South America.

RELATIVE ABUNDANCE IN NEW ENGLAND: Uncommon to rare.

HABITAT: Breeding: Farmlands, villages, cliffs, bridges, dams, fresh or salt water areas, open forests.

SPECIAL HABITAT REQUIREMENTS: Open foraging areas, vertical wall with an overhang for nest attachment, mud for nest construction, fresh water with smooth surface for drinking. Nesting success is higher when house sparrows are controlled at colonies.

NESTING: Egg dates: May 9 to July 14, New York (Bull 1974:389). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 15 to 16 days. Nestling period: About 24 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest site: Nests colonally under bridges or dams, eaves, and interior of barns and sheds. Solitary nesting occasionally occurs.

TERRITORY SIZE: Restricted to the distance the bird can reach with bill from rim of nest (Emlen 1952).

SAMPLE DENSITIES: More than 100 nests have been counted at a single barn (Bull 1974:389).

FORAGING: Major foods: Flying insects make up nearly 100 percent of diet (Bent 1942:476). Substrate: Air.

Techniques: Hawking, skimming water surface. Preferred feeding habitat: Often feed high in the sky (in excess of 100 feet) (30.5 m). Birds were seen feeding up to 4 miles (6.4 km) from nest site (Emlen 1954).

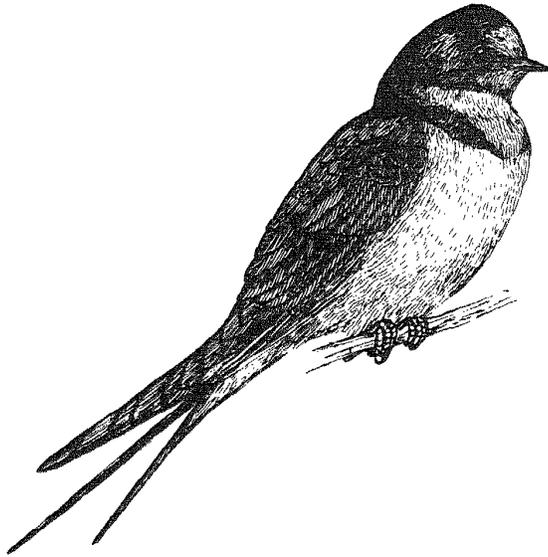
COMMENTS: Cliff and barn swallows may nest in the same barn, but competition is minimal because Cliff Swallows build near the entrance point and Barn Swallows nest deeper in the interior (Samuel 1971). Much of Cliff Swallow habitat has been usurped by House Sparrows.

KEY REFERENCES: Emlen 1952, 1954; Graber et al. 1972, Mayhew 1958, Samuel 1971.

## Barn Swallow

(*Hirundo rustica*)

A.O.U. No. 613.0



### Range



**RANGE:** Breeding: Labrador, west to Alaska, south to Georgia, Alabama, and Mexico. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Farmlands, rural and abundant areas.

**SPECIAL HABITAT REQUIREMENTS:** Man-made structures, especially buildings, for nesting. Open barns with suitable areas for nest construction on beams.

**NESTING:** Egg dates: May 11 to August 3, New York (Bull 1974:366). Clutch size: 4 to 6, typically 4 or 5. Incubation period: About 15 days. Nestling period: 16 to 23 days. Broods per year: 1 or 2 (at warmer latitudes). Age at sexual maturity: 1 year. Nest site: Nests inside sheds and barns (often in colonies), under bridges, culverts. Formerly nested on cliffs, in caves and in niches in rocks.

**TERRITORY SIZE:** Probably restricted to the nest site.

**SAMPLE DENSITIES:** Usually 6 to 8 nests per site is maximum, but as many as 55 nests have been reported in a single barn (Harrison 1975:132) and 63 at a Lunenburg, Massachusetts barn (Blodget, personal communication). 20 pairs per square mile (8 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 11 pairs per 100 acres (40 ha) in mixed agricultural and residential habitats including buildings (Stewart and Robbins 1958:214).

**FORAGING:** Major foods: Flying insects, occasionally takes fruits. Substrate: Air. Techniques: Hawking, skimming water surface. Preferred feeding habitat: Over ponds, lakes, rivers, and fields, seldom feeds more than 0.5 mile (0.8 km) from nest site (Samuel 1971).

**COMMENTS:** The diet consists almost entirely of animal matter (Bent 1942:450). Nearly all the food is taken on the wing. Swallows in Illinois spent much time feeding over edge shrub areas. Feeding densities averaged 26 birds per 100 acres (40 ha) (Graber et al. 1972).

**KEY REFERENCES:** Bent 1942, Davis 1937, Graber et al. 1972, Samuel 1971.

## Gray Jay

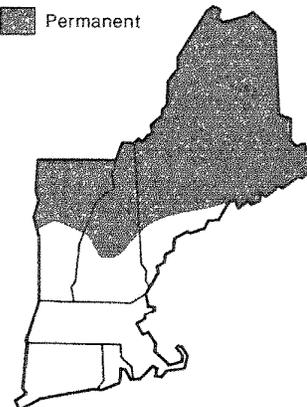
(*Perisoreus canadensis*)

A.O.U. No. 484.0



### Range

█ Permanent



**RANGE:** Breeding: Labrador, w. to n. Alaska, s. to n. New England, New York (Adirondacks), Michigan, and California. Winter: Same as breeding range, however, birds may wander as far s. as Pennsylvania and the s. Great Plains.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon to rare.

**HABITAT:** Breeding: Coniferous forest and nearby deciduous or mixed woodlands. Coniferous swamps, wooded mountain slopes. Wintering: Birds wander but seldom move south of the breeding range. In mountainous areas, they commonly seek lower elevations.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous forests.

**NESTING:** Egg dates: March to April (Goodwin 1976:250). Clutch size: 2 to 5, typically 3 or 4. Incubation period: 16 to 18 days. Nestling period: About 15 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 5 to 30 feet (1.5 to 9.1 m), typically 5 to 12 feet (1.5 to 3.7 m). Nest site: In solitary tree or clump of trees, usually conifers. Nest is often placed in crown of low tree or lower near trunk or branch tips and is usually well hidden.

**FORAGING:** Major foods: Insects, fruits, seeds, buds. Substrates: Leaf litter on ground, leaf and branch surfaces of trees and shrubs. Techniques: Gleaning.

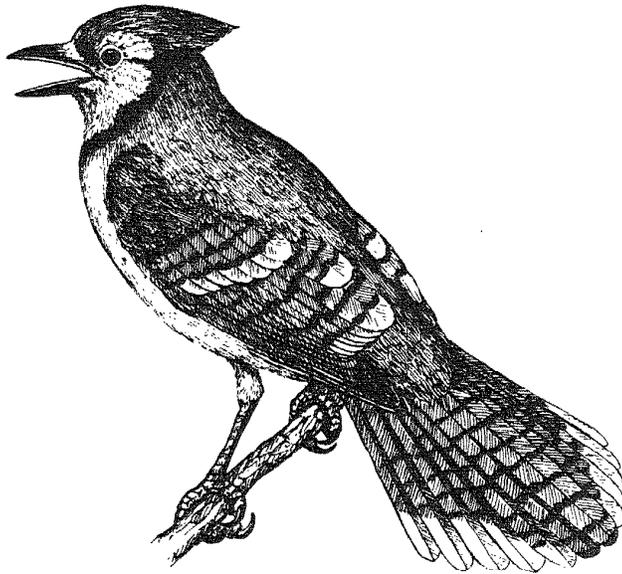
**COMMENTS:** Gray Jays cache food for future use.

**KEY REFERENCES:** Bent 1946, Goodwin 1976, Lawrence 1947.

## Blue Jay

(*Cyanocitta cristata*)

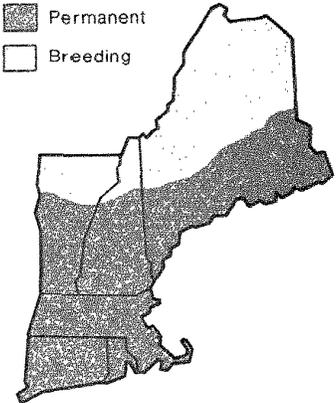
A.O.U. No. 477.0



### Range

■ Permanent

□ Breeding



**RANGE:** Breeding: Newfoundland w. to s. Alberta, s. to Florida and Texas. Winter: Same as breeding range.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Coniferous, deciduous, and mixed (preferred) woodlands representing a variety of forest types, wooded islands, farms, cities, suburbs, parks, and gardens. Prefers woodlands of oak, beech, and hickory. Wintering: Some northern birds move to more southern parts of breeding range (Goodwin 1976:263).

**NESTING:** Egg dates: April 28 to June 17, New York (Bull 1974:393). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 17 to 18 days. Nestling period: 17 to 21 days. Broods per year: 1 north, 2 south. Age at sexual maturity: 2 years (occasionally 1 year). Nest height: 5 to 50 feet (1.5 to 15.2 m), typically 10 to 25 feet (3.0 to 7.6 m). Nest site: Prefers to nest in conifer thickets in mixed woodlands. Also builds in deciduous trees, shrubs, and shrubs overrun with vines. Nest may be close to trunk of tree or well out on a horizontal limb.

**TERRITORY SIZE:** Territorial boundaries are not well defined (Goodwin 1976:267).

**SAMPLE DENSITIES:** 5 birds per 100 acres (40 ha) in well-defined floodplain forest in Maryland. 4 birds per 100 acres (40.5 h) in mixed-oak forest in Maryland (Stewart and Robbins 1958).

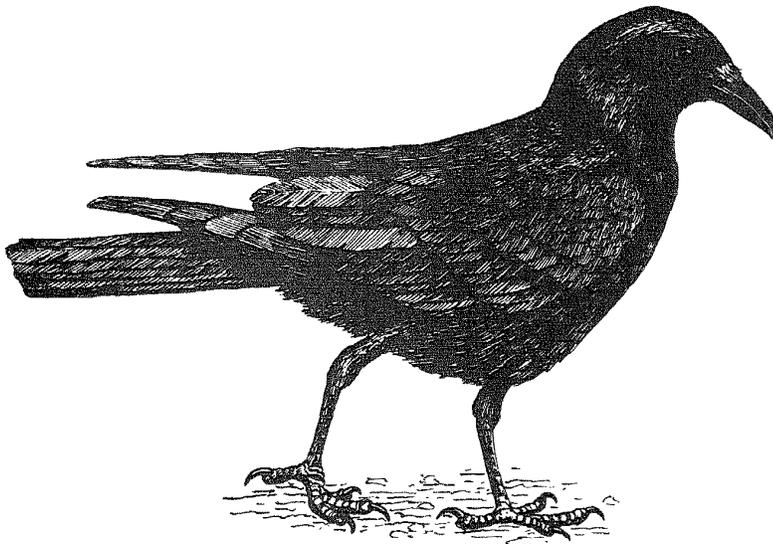
**FORAGING:** Major foods: Seeds, fruits, mast, occasionally takes insects, nestlings, young mice. Acorns are a staple food item throughout the year. Substrates: Ground (litter), tree tops, shrubs; birds feed at all levels in vegetation. Techniques: Hopping and gleaning.

**COMMENTS:** Beal (1897 in Bent 1946:39) found that 76 percent of the annual diet (292 stomachs taken throughout the year) was vegetable matter and 24 percent was animal matter. Birds cache food in various places, possibly for winter use.

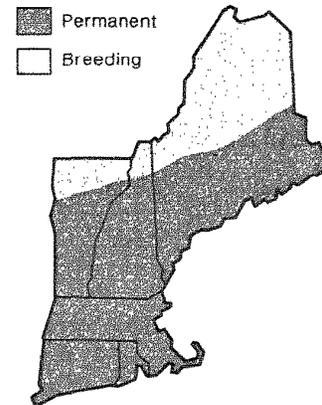
**KEY REFERENCES:** Bent 1946, Goodwin 1976.

**American Crow**  
(*Corvus brachyrhynchos*)

A.O.U. No. 488.0



**Range**



**RANGE:** Breeding: Newfoundland, w. to British Columbia, s. to Florida, the Gulf Coast and s. California. Winter: Southern Canadian Provinces, s.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Interior and edges of open deciduous, coniferous, and mixed forests and woodlots. Prefers woodland with adjacent farmland. Wintering: Large flocks often congregate in coastal areas where food is more accessible.

**NESTING:** Egg dates: March 30 to June 14, New York (Bull 1974:397). Clutch size: 3 to 8, typically 4 to 6. Incubation period: 18 days. Nestling period: About 25 days. Broods per year: 1 north, often 2 in south (Harrison 1975:139). Age at sexual maturity: 2 years. Nest height: 10 to 70 feet (7.6m). Nest site: Usually in crotch of tree near trunk or on a horizontal limb. Prefers to nest in conifers when available.

**TERRITORY SIZE:** Fitch (1958) found crows nonterritorial in Kansas and highly social in many activities.

**SAMPLE DENSITIES:** 0.6 pair per 100 acres (40 ha) in mixed woodland and farmland habitat in Maryland (Stewart and Robbins 1958). 4 pairs nested within a distance of 100 yards (91.4 m) in Kansas (Fitch 1958). 8 pairs per square mile (3 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972).

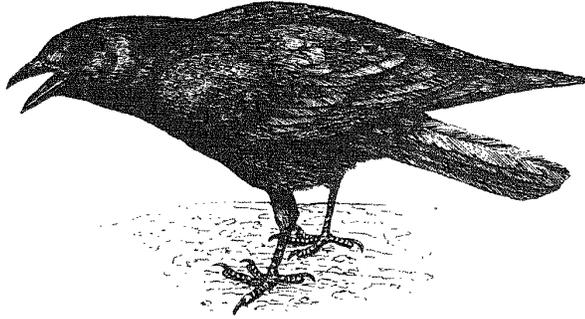
**FORAGING:** Major foods: Crows are omnivorous, taking mammals (mainly carrion), insects, small birds (nestlings), fruit, garbage, grain. Substrates: A variety of substrates. Techniques: Aerial searching, followed by quick descent to ground. Preferred feeding habitat: Cultivated grain fields.

**KEY REFERENCES:** Bent 1946, Goodwin 1976, Johnston 1961.

## Fish Crow

(*Corvus ossifragus*)

A.O.U. No. 490.0



### Range

■ Permanent



**RANGE:** Breeding: Atlantic coast from Massachusetts s. to Florida, w. along the Gulf Coast to e. Texas. Winter: New York, s.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon to rare.

**HABITAT:** Breeding: Low coastal areas especially wooded marine shorelines, coastal marshes and beaches and inland wetlands, especially along rivers affected by tides. Wintering: Same as breeding habitat.

**NESTING:** Egg dates: March 20 to June 5, New York (Bull 1974:399). Clutch size: 4 to 5. Incubation period: 17 to 18 days. Nestling period: About 21 days. Broods per year: 1. Age at sexual maturity: 2 years. Nest height: 20 to 80 feet (6.1 to 24.4 m), typically 50 feet (15.2 m). Nest site: Usually in small colonies in deciduous or coniferous trees.

**SAMPLE DENSITIES:** Colonies usually are made up of 2 to 4 pairs each nesting in a separate tree.

**FORAGING:** Major foods: Insects, grain wild fruits, aquatic organisms, birds' eggs, carrion. Substrates: Mud, sand, water, other birds' nests. Techniques: Hovering, followed by quick descent to food, ground-gleaning. Preferred feeding habitat: Tidal flats, beaches, rookeries, banks of brackish rivers.

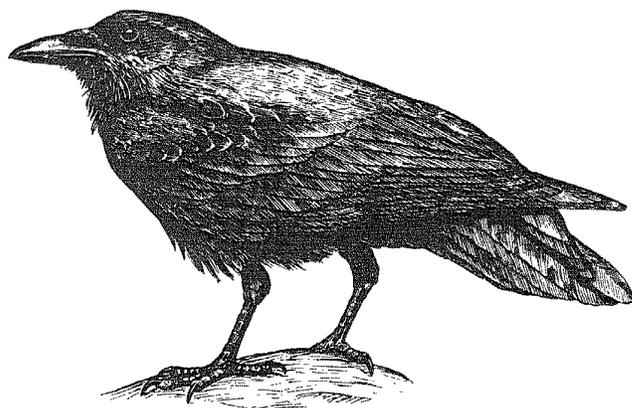
**COMMENTS:** Also breeds in fertile farmland well inland from coast (100+ miles (16.0+ km)) in Pennsylvania and Maryland. Fish crows often feed and roost in large flocks with common crows.

**KEY REFERENCES:** Bent 1946, Forbush 1929, Goodwin 1976.

## Common Raven

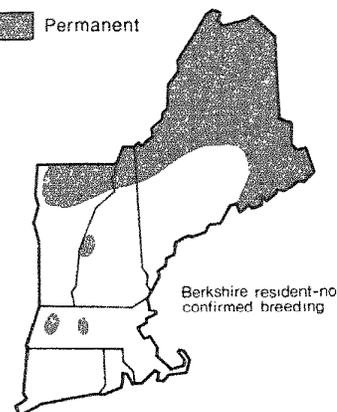
(*Corvus corax*)

A.O.U. No. 486.0



### Range

■ Permanent



**RANGE:** Breeding: Northern North America, s. to coastal Maine, the Dakotas, and the mountains to Georgia and Central America. Local in Adirondack Mountains. Winter: Some birds move to more southern parts of breeding range.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine).

**HABITAT:** Breeding: Remote mountain forests, seacoasts, wooded marine islands. Prefers open woodlands, clearings; avoids extensive, dense forests. Wintering: Ravens commonly move toward the coast or to southern parts of breeding range where foods is more accessible. Lake shores, rivers banks, mud flats.

**SPECIAL HABITAT REQUIREMENTS:** Cliffs or tall trees for nesting.

**NESTING:** Egg dates: March 24 to April 29, Maine (Bent 1946:214). Clutch size: 3 to 6, typically 4 or 5. Incubation period: About 21 days. Nestling period: About 40 days. Broods per year: 1. Age at sexual maturity: Probably 3 or more years (Hooper and Dachelet 1976). Nest site: Usually on a cliff or high in a coniferous tree. Ravens in Virginia nested on cliffs with an overhang above and a steep rock face below. Nests were found as close as 0.5 mile (0.8 km) to human dwellings (Hooper 1977).

**HOME RANGE:** 2.6 to 4.2 square miles (6.7 to 10.9 km<sup>2</sup>) (observed areas) in Wyoming (Craighead and Craighead 1969). Hooper (1977) observed ravens flying more than 1.2 miles (2 km) from nest sites.

**SAMPLE DENSITIES:** Nests are often spaced several miles apart (Harrison 1975). Hooper and others (1975) found ravens nesting as close as 2.2 km (1.4 miles) and with an average distance of 4.3 km (1.7 miles).

**FORAGING:** Major foods: Ravens are omnivorous, taking small to large mammals (carrion), birds, insects and plant material (Harlow et al. 1975). Substrates: Lake shores, mud flats (coast), forest floor. Technique: Scavenging. Preferred feeding habitat: Seabird colonies (coast), garbage heaps; highways (road kills).

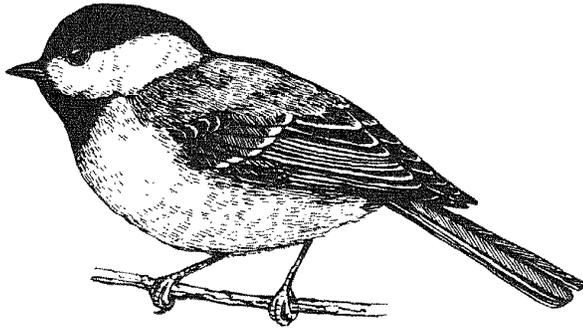
**COMMENTS:** Harlow and others (1975) found that medium to large mammals were the predominant food items taken in winter and spring in Virginia. They were apparently in the form of carrion supplied by road kills or natural mortality.

**KEY REFERENCES:** Bent 1946, Goodwin 1976, Harlow 1922, Hooper 1977, Murray 1940, Tyrrell 1945.

## Black-capped Chickadee

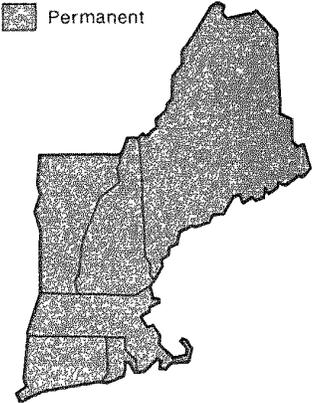
(*Parus atricapillus*)

A.O.U. No. 735.0



### Range

■ Permanent



**RANGE:** Breeding: Newfoundland, w. to c. Alaska, s. to North Carolina (mountains), n. New Mexico and n. California. Winter: Resident in breeding range.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Deciduous, coniferous, or mixed woodlands (mixed preferred). Frequents both heavily forested and residential areas. Wintering: Frequents city parks and residential areas with feeding stations adjacent to breeding habitat. Birds generally remain in breeding areas.

**SPECIAL HABITAT REQUIREMENTS:** Require dead standing trees (minimum d.b.h. 4 inches (10.2 cm)) for excavating cavities or trees with existing cavities for nesting (Thomas et al. 1979). Comparatively open situations (nesting) near deeper woods (feeding) (Odum 1941).

**NESTING:** Egg dates: April 29 to July 15, New York (Bull 1974:401). Clutch size: 5 to 10, typically 6 to 8. Incubation period: 12 to 13 days. Nestling period: About 16 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 1 to 50 feet (0.3 to 15.2 m), typically 4 to 10 feet (1.2 to 3.0 m). Nest site: In a cavity in a standing dead tree or stub, preferably birch, aspen, pin cherry, or other tree that undergoes rapid decay. Accepts nest boxes. Prefers stubs with firm shells and decayed interiors (Brewer 1961). Usually excavated in decaying wood. Rarely uses old woodpecker holes and natural cavities.

**TERRITORY SIZE:** Sizes ranged from 8.4 to 17.1 acres (3.4 to 6.9 ha) (average 13.2 acres (5.3 ha)) in different habitats (Odum 1941). 2.3 acres (0.9 ha) for 1 pair in Kansas (Fitch 1958).

**HOME RANGE:** Winter — approximately 21 to 55 acres (8.5 to 22.3 ha) (average 36 acres (14.6 ha)) in New York (Odum 1942:523). 19.1 acres (7.7 ha) in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** Average 1 pair per 22 acres (8.9 ha) in suitable habitat (Odum 1941). Winter—1 bird per 2.66 acres (1.1 ha) in bottomland woods in New York (Butts 1931). Maximum 27 pairs per 40 ha (100 acres) (Hardin and Evans 1977).

**FORAGING:** Major foods: Insects, seeds, fruits. Substrates: Bark crevices; leaf, branch, and twig surfaces. Techniques: Gleaning, probing of tree trunk, branches, leaves. Preferred feeding habitat: Chickadees feed where food is most abundant. Kluyver (1961) found that birds fed more often in pine groves with abundant caterpillars than in adjacent oak woods.

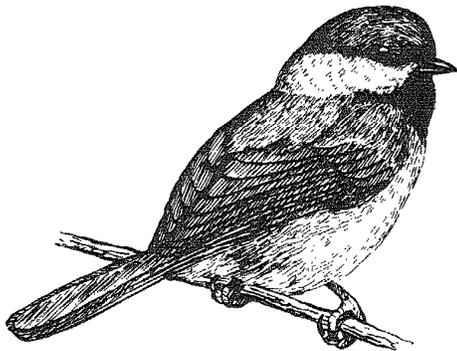
**COMMENTS:** A study by Odum (1941) revealed that nests were often located in open woods or forest edges and feeding was heaviest in deep woods.

**KEY REFERENCES:** Brewer 1961; Kluyver 1961; Odum 1941, 1942.

## Boreal Chickadee

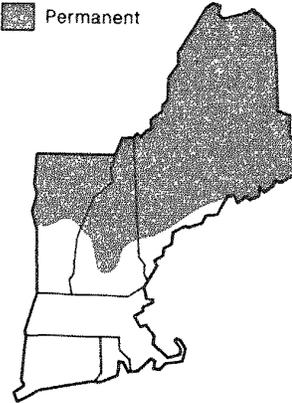
(*Parus hudsonicus*)

A.O.U. No. 740.0



### Range

■ Permanent



**RANGE:** Breeding: Labrador, w. to nw. Alaska, s. to Maine, n. New York and s. British Columbia. Winter: Same as breeding range. Wanders to se. New York and s. New Jersey.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) and rare (Massachusetts).

**HABITAT:** Breeding: Northern coniferous woods, wooded swamps, bogs. Wintering: Same as breeding habitat.

**SPECIAL HABITAT REQUIREMENTS:** Decaying trees for excavating cavities. McLaren (1975) found that Chickadees preferred to nest in trees with soft wood and hard exterior layers and bark.

**NESTING:** Egg dates: June 11 to July 17 (late), New York (Bull 1974:402). Clutch size: 4 to 9, typically 6 or 7. Incubation period: 12 to 13 days (Harrison 1975). Nestling period: About 18 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 1 to 10 feet (0.3 to 3.0 m). Nest site: Decaying stub or tree, preferably with firm exterior and soft interior. Bird may excavate several holes before choosing one for nest. Sometimes uses natural cavities or old woodpecker holes.

**TERRITORY SIZE:** Larger than 5 ha (12.4 acres) in spruce-fir forest (McLaren 1975).

**FORAGING:** Major foods: Insects, seeds, fruits. Substrates: Bark crevices, leaves, twigs, branches. Techniques: Gleaning, probing of tree trunk, branches, needles, cover.

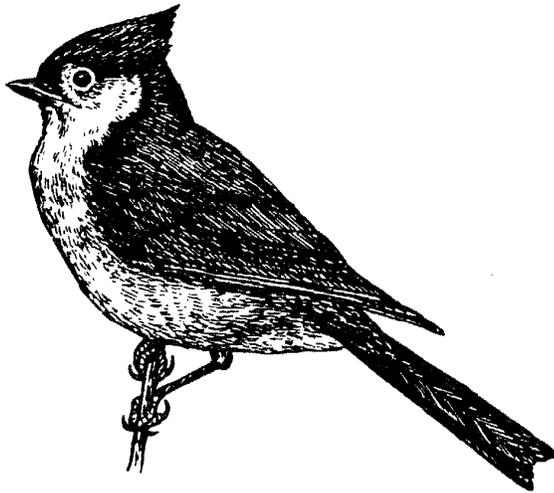
**COMMENTS:** Nest site selection seems to be influenced more by the softness of the wood than by species of tree (McLaren 1975).

**KEY REFERENCES:** Bent 1946, Forbush 1929, McLaren 1975.

## Tufted Titmouse

(*Parus bicolor*)

A.O.U. No. 731.0



### Range

■ Permanent



**RANGE:** Breeding: Central New England, w. to Illinois and n. Nebraska, s. to Florida, the Gulf Coast and Texas. Increasing and spreading n. in the Northeast. Winter: Same as breeding range.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common except at limits of range.

**HABITAT:** Breeding: Low rich woodlands, moist bottomlands and swamps, residential areas in shade trees. Wintering: Same but with preference for feeding stations.

**SPECIAL HABITAT REQUIREMENTS:** Nesting cavities, commonly in mixed woods.

**NESTING:** Egg dates: April 29 to May 27, New York (Bull 1974:404). Clutch size: 4 to 8, typically 5 or 6. Incubation period: 12 days. Nestling period: 15 to 18 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 3 to 90 feet (0.9 to 27.4 m). Nest site: A natural tree cavity or old woodpecker hole. It is generally believed that Tufted Titmice do not excavate their own nest sites. Accept nest boxes.

**TERRITORY SIZE:** 2.9 acres (1.2 ha) in oak-hickory-elm habitat in Kansas (Fitch 1958).

**HOME RANGE:** 5 birds were repeatedly recorded year-round within a 0.6 mile (0.9 km) radius from a banding station in Michigan (Van Tyne 1948). Average sizes of minimum home ranges in winter ranged from 10.4 to 19.7 acres (4.2 to 8.0 ha) in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** Maryland—13 pairs per 100 acres (40 ha) in well-drained floodplain forest. 13 pairs per 100 per 100 acres (40 ha) in upland oak forest. 11 pairs per 100 acres (40 ha) in second-growth river swamp. 6 pairs per 100 acres (40 ha) in pine-oak forest (Stewart and Robbins 1958:226).

**FORAGING:** Major foods: Insects, seeds, and fruits, especially mast. Substrates: Branch and leaf surfaces (spring and summer), branch surfaces (winter); ground, especially exposed soil (Fitch 1958). Techniques: Gleaning, probing. Preferred feeding habitat: Often in canopy, but very frequently near the ground when not disturbed by observers.

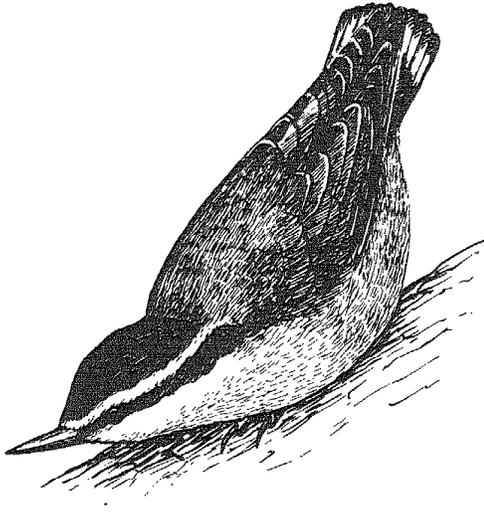
**COMMENTS:** Pairs may mate for life (Gillespie 1930). Beal (1916 in Bent 1946:399) found the food of 186 birds consisted of 67 percent animal and 33 percent vegetable matter. May have extended its range in the Northeast via reduced winter mortality due to suburban feeding stations.

**KEY REFERENCES:** Bent 1946, Boyd 1962, Forbush 1929, Gillespie 1930, Laskey 1957.

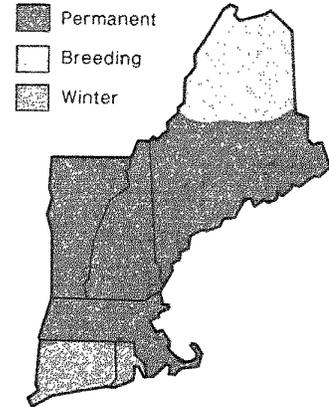
## Red-breasted Nuthatch

(*Sitta canadensis*)

A.O.U. No. 728.0



### Range



**RANGE:** Breeding: Newfoundland, w. to Alaska, s. to New Jersey, North Carolina (mountains) and s. California. Winter: Northern United States, irregularly s. to Florida, the Gulf Coast and n. Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine).

**HABITAT:** Breeding: Coniferous forests, sometimes in mixed woodlands. Wintering: Mainly coniferous forests but also frequents mixed woodlands with cone-bearing trees. Less often in deciduous woods (winter only).

**SPECIAL HABITAT REQUIREMENTS:** Coniferous woods, cavity for nesting in tree with minimum d.b.h. of 12 inches (30.5 cm) (Thomas et al. 1979).

**NESTING:** Egg dates: April 13 to June 17, New York (Bull 1974:409). Clutch size: 4 to 7, typically 5 or 6. Incubation period: 12 days. Nestling period: 21 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 5 to 40 feet (1.5 to 12.2 m), typically 15 feet (4.6 m). Nest site: A cavity in a rotted stub or dead branch, usually excavated but occasionally uses an old woodpecker hole.

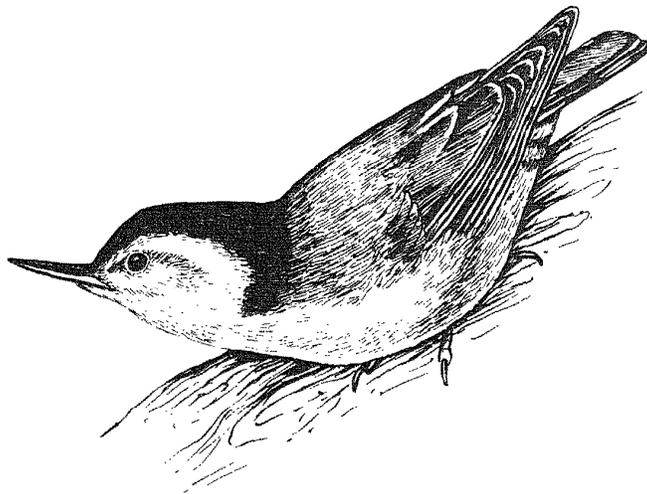
**FORAGING:** Major foods: Small insects, seeds—especially of pine, spruce and fir. Substrates: Mainly along twigs and small branches (Bull 1974:409). Techniques: Gleaning, probing.

**KEY REFERENCES:** Bent 1948, Lawrence 1952.

## White-breasted Nuthatch

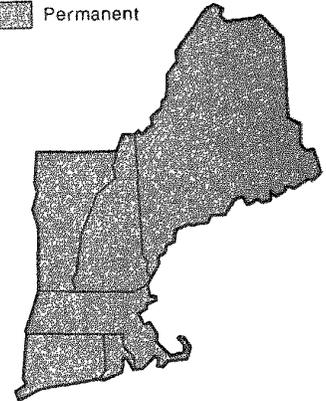
(*Sitta carolinensis*)

A.O.U. No. 727.0



### Range

Permanent



**RANGE:** Breeding: Southern Quebec, w. to s. British Columbia, s. to Florida and Mexico. Winter: Same as breeding range.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Mixed or deciduous woodlands with large trees, orchards, villages. Wintering: Birds tend to remain in breeding areas.

**SPECIAL HABITAT REQUIREMENTS:** Natural cavities for nesting. Trees with minimum d.b.h. of 12 inches (30.5 cm) (Thomas et al. 1979) are most suitable.

**NESTING:** Egg dates: April 3 to June 6, New York (Bull 1974:407). Clutch size: 5 to 9, typically 8. Incubation period: 12 days. Nestling period: About 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 15 to 50 feet (4.6 to 15.2 m). Nest site: Cavity in a live, dead, or dying tree at almost any height above ground. Seems to prefer rotted out knot holes or similar natural openings to old woodpecker holes (Pough 1949:95). Rarely, if ever, excavates own cavity. Much competition for natural cavities occurs between White-breasted Nuthatches and gray and red squirrels (Kilham 1968b).

**TERRITORY SIZE:** Winter feeding territories ranged from 25 to 30 acres (10.1 to 12.1 ha) per pair in woodlands and about 50 acres (20.2 ha) per pair in semiwooded country (Butts 1931).

**SAMPLE DENSITIES:** 1 pair per 24 acres (9.6 ha) in New York (Butts 1931). 6 pairs per 100 acres (40 ha) in oak, tulip-poplar forest in Maryland. 5 pairs per 100 acres (40 ha) in semi-open floodplain forest (sycamore, ash, elm) in Maryland (Stewart and Robbins 1958:228).

**FORAGING:** Major foods: Insects, seeds, fruits, mast. The main summer diet consists of gypsy moth larvae and tent caterpillars, beetles, spiders, and ants (Hardin and Evans 1977). Substrates: Trunks and larger branches of trees, bark crevices. Techniques: Gleaning, probing. Preferred feeding habitat: Often uses feeding stations, especially in winter.

**COMMENTS:** The spring diet consists of more than 79 percent insects. The winter diet contained 26 percent animal and 67 percent vegetable (Forbush 1929). Birds commonly store food in crevices of bark (Kilham 1974).

**KEY REFERENCES:** Bent 1948, Butts 1931, Forbush 1929, Kilham 1968b.

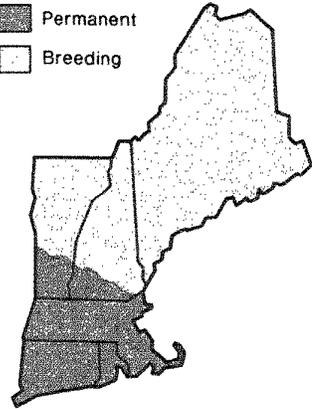
**Brown Creeper**  
(*Certhia americana*)

A.O.U. No. 726.0



**Range**

-  Permanent
-  Breeding



**RANGE:** Breeding: Nova Scotia, w. through the s. Canadian provinces to Alaska, s. to Maryland (locally), the mountains of North Carolina and the Rockies. Winter: Northern United States, s. to Florida, the Gulf Coast, and c. Texas.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to uncommon.

**HABITAT:** Breeding: Dense coniferous, deciduous, or mixed woodlands, wooded swamps. Wintering: Same but birds retreat to lower altitudes.

**SPECIAL HABITAT REQUIREMENTS:** Standing dead trees with loose bark. The minimum d.b.h. of suitable nest trees is 10 inches (25.4 cm) (Thomas et al. 1979).

**NESTING:** Egg dates: April 24 to June 30, New York (Bull 1974:412). Clutch size: 5 to 9, typically 5 or 6. Incubation period: 14 to 15 days. Nestling period: 13 to 15 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 5 to 15 feet (1.5 to 4.6 m). Nest site: Low on trunk of coniferous or deciduous tree under a strip of loose bark, less often in a rotted knothole or old woodpecker cavity (probably only when loose bark is unavailable).

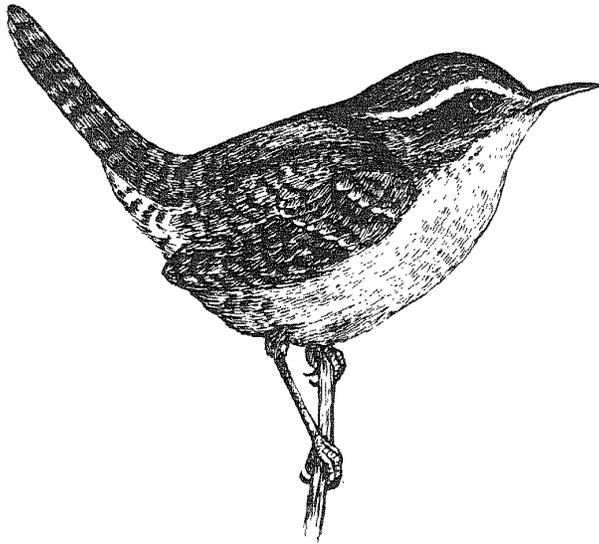
**FORAGING:** Major foods: Insects; a small amount of vegetable material, mainly mast. Substrates: Bark crevices, trunk, sides and undersides of limbs. Techniques: Gleaning, probing, scaling. Preferred feeding habitat: Sometimes attracted to suet at feeding stations in winter.

**KEY REFERENCES:** Bent 1948, Forbush 1929.

## Carolina Wren

(*Thryothorus ludovicianus*)

A.O.U. No. 718.0



### Range

Permanent



**RANGE:** Breeding: Southern New England, c. New York (except mountains), w. to se. Wisconsin and Iowa, s. to the Gulf Coast and Mexico. Winter: Same as breeding range.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare (Massachusetts).

**HABITAT:** Breeding: A variety of places from lowland stream bank tangles to upland brushy slopes, woodland edges, slash piles, vicinity of buildings. Prefers moist areas. Wintering: Low, flat ground near tidewater creeks (New Jersey—Bent 1948). Narrow Valleys and deep ravines in parts of winter range. Trautman (1940) observed wrens in Ohio that moved from partly exposed areas to sheltering woodlands in extremely cold weather.

**SPECIAL HABITAT REQUIREMENTS:** Low brushy vegetation.

**NESTING:** Egg dates: April 15 to August 15, birds in s. New York have at least 2 broods (Bull 1974:417). Clutch size: 4 to 8, typically 5 or 6. Incubation period: 14 days. Nestling period: 13 to 14 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: To 10 feet (0.3 m), typically less than 10 feet (3 m). Nest site: Commonly nests in a cavity in a variety of places both natural and man-made. Less often builds a matted ball of sticks in a low shrub or in grasses that has a side entrance and central cavity.

**TERRITORY SIZE:** Wrens occupied a wooded ravine-pond habitat in Kansas for 4 years and defended the following areas: 5.8, 9.2, 3.9, and 7.6 acres (2.3, 3.7, 1.6, and 3.1 ha) (Fitch 1958). Average 0.3 acre (0.1 ha) in a swamp-thicket in Illinois (Brewer 1955).

**SAMPLE DENSITIES:** Maryland: 11 territorial males per 100 acres (40 ha) in hardwood forest (oaks, tulip-poplar) with scattered pine. 6 territorial males per 100 acres (40 ha) in well-drained flood-plain forest (Stewart and Robbins 1958:235).

**FORAGING:** Major foods: Insects, occasionally takes wild fruits. Substrates: Trunks of trees, branches of shrubs, leaf surfaces, ground litter. Techniques: Tree, shrub, leaf gleaning, creeping.

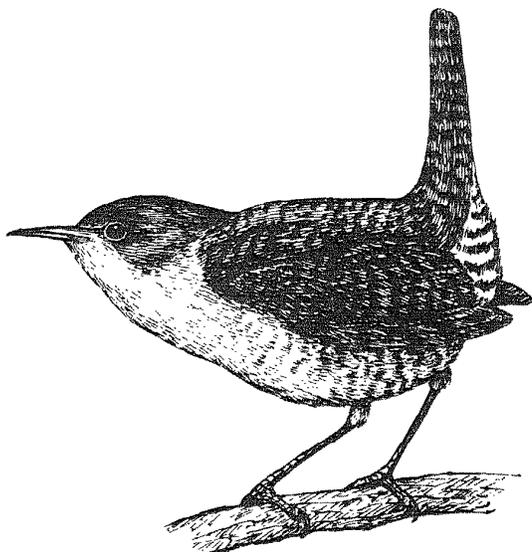
**COMMENTS:** Northern limit of this species varies with the degree of winter severity (expands in mild winters and recedes with harsh weather). The contents of 291 stomachs collected throughout the year held 94 percent animal and 6 percent vegetable matter (Beal et al. 1916 in Bent 1948:209).

**KEY REFERENCES:** Bent 1948, Nice and Thomas 1948.

## House Wren

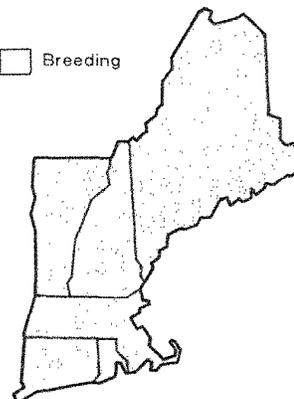
(*Troglodytes aedon*)

A.O.U. No. 721.0



### Range

□ Breeding



**RANGE:** Breeding: New Brunswick w. to British Columbia, s. to South Carolina, Missouri, and Texas. Winter: Southern Maryland w. to California, s. to s. Mexico. Rarely farther n.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (s. New England) to uncommon (Maine).

**HABITAT:** Breeding: Near human dwellings with sufficient woody vegetation and cavities for nesting, edges of woodlands, farmland, open forests and clearings, suburban gardens, orchards, swampy woodlands. Very adaptable in nesting habits. Avoids deep forest interiors and high elevations. Wintering: Thickets, brushpiles.

**SPECIAL HABITAT REQUIREMENTS:** Cavity for nesting in tree with minimum d.b.h. of 10 inches (25.4 cm) (Thomas et al. 1979).

**NESTING:** Egg dates: May 15 to July 31 (second brood), New York (Bull 1974:413). Clutch size: 5 to 8, typically 6 to 8. Incubation period: About 15 days. Nestling period: 12 to 18 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: To 10 feet (0.3 m), typically less than 10 feet (0.3 m). Nest site: nests in cavity in a variety of sites such as trees, fence posts, tin cans, eaves of buildings, nest boxes. Cavity may be natural, excavated by a woodpecker, or man-made.

**TERRITORY SIZE:** 178 territories ranged from 0.25 to 2.75 acres (0.1 to 1.1 ha) in forest edge and shrubby pasture habitat in Ohio (Kendeigh 1941b).

**SAMPLE DENSITIES:** 40 pairs per square mile (15 pairs/km<sup>2</sup>) (maximum density) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 100 territorial males per 100 acres (40 ha) in farmyard and orchard in Maryland. 50 territorial males per 100 acres (40 ha) in damp deciduous scrub with standing snags in Maryland. 14 territorial males per 100 acres (40 ha) in unsprayed orchard in Maryland (Stewart and Robbins 1958:232).

**FORAGING:** Major foods: Small insects, beetles, caterpillars, and bugs. Substrates: Low woody vegetation. Techniques: Ground and shrub stem gleaning, hawking.

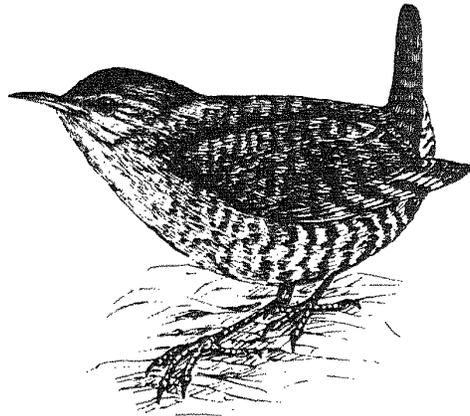
**COMMENTS:** Males are polygynous.

**KEY REFERENCES:** Bent 1948, Forbush 1929, Kendeigh 1941b, Odum and Johnston 1951.

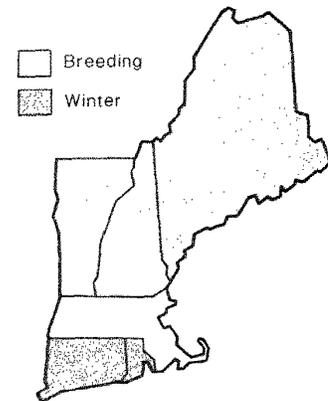
## Winter Wren

(*Troglodytes troglodytes*)

A.O.U. No. 722.0



### Range



**RANGE:** Breeding: Newfoundland w. to s. Alaska, s. in the mountains to n. Georgia and n. Colorado. Winter: Southern New England w. to Colorado, s. to the Gulf States.

**FORAGING:** Major food: Insects. Substrate: Ground. Technique: Gleaning.

**KEY REFERENCES:** Armstrong 1956, Bent 1948.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (Massachusetts).

**HABITAT:** Breeding: Usually in or near dense undergrowth of damp coniferous forests, in thickets near woodland streams, banks of marshy ditches, piles of slash, boreal bogs, usually with a dead log from which to sing. Wintering: Dense undergrowth, especially in moist areas.

**SPECIAL HABITAT REQUIREMENTS:** Moist coniferous woodlands with low woody vegetation or low-lying cold bogs or swamps. Stevens (1976), however, noted birds in mixed and hardwood forests on north-facing slopes in the mountains of Virginia.

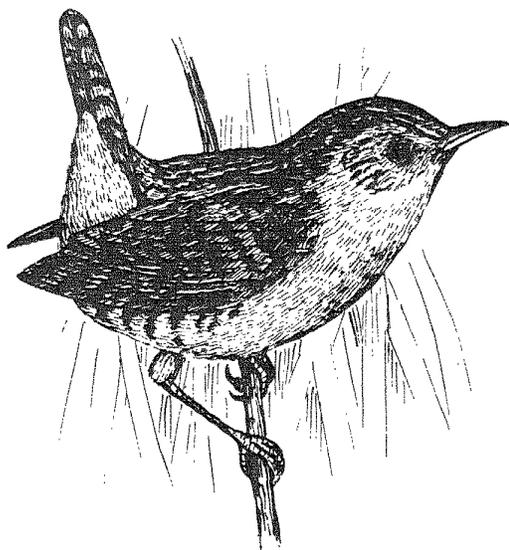
**NESTING:** Egg dates: May 22 to July 7, New York (Bull 1974:415). Clutch size: 4 to 7, typically 5 or 6. Incubation period: 14 to 16 days. Nestling period: Probably about 2 weeks (Harrison 1975). Broods per year: 2. Age at sexual maturity: 1 year. Nest site: In hollow at base of stump or tree, tangled roots of fallen trees, in cavities in man-made structures, old woodpecker holes.

**TERRITORY SIZE:** Approximately 1 to 7 acres (0.4 to 2.8 ha) (average 2 to 3 acres (0.8 to 1.2 ha)) in garden-woodland areas (Armstrong 1956:430).

## Sedge Wren

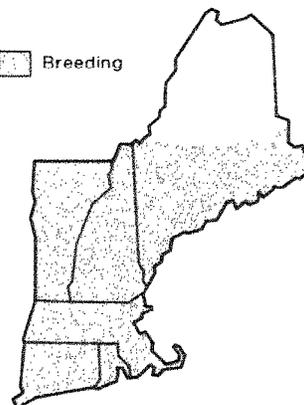
(*Cistothorus platensis*)

A.O.U. No. 724.0



### Range

 Breeding



**RANGE:** Breeding: Maine s. to Maryland, w. to Indiana and Kansas. Winter: Coastal areas—s. Maryland, s. to Florida and along the Gulf of Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare. Very local throughout e. parts of range during breeding season. Isolated individuals usually found.

**HABITAT:** Breeding: Sedge meadows, shallow sedge marshes with scattered shrubs and little or no standing water, coastal brackish marshes of *Spartina patens* with scattered low shrubs and herbs. Wintering: Tidal sedge meadows and marshes.

**SPECIAL HABITAT REQUIREMENTS:** Sedge meadows.

**NESTING:** Egg dates: May 28 to July 30, New York (Bull 1974:419). Clutch size: 4 to 8 typically 7. Incubation period: 12 to 14 days. Nestling period: 12 to 14 days. Broods per year: 1 to 3. Age at sexual maturity: 1 year. Nest height: 1 to 3 feet (0.3 to 0.9 m), typically 2 to 3 feet (0.6 to 0.9 m). Nest site: Usually close to the ground and well hidden in meadow grasses. Nests singly or in loose colonies in good habitat. Male builds many unlined dummy nests in territory.

**SAMPLE DENSITIES:** 35 to 40 singing males were counted in a 10-acre (4-ha) marsh (Harrison 1975:152). 10 territorial males per 100 acres (40 ha) in switchgrass marsh-meadow in Maryland (Stewart and Robbins 1958:238).

**FORAGING:** Major foods: Insects, spiders. Substrates: Ground, marsh vegetation. Technique: Gleaning.

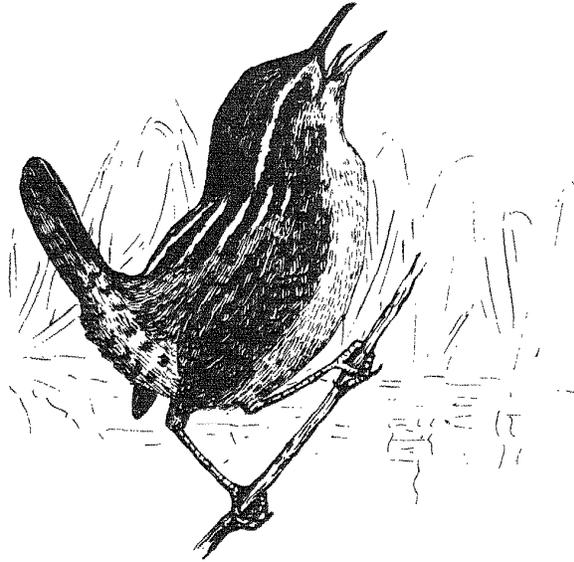
**COMMENTS:** The secretive habits of this species have made it difficult to study. Seldom found in same area 2 years in succession in New Hampshire (C. Anderson, personal communication).

**KEY REFERENCES:** Bent 1948, Walkinshaw 1935.

## Marsh Wren

(*Cistothorus palustris*)

A.O.U. No. 725.0



### Range



**RANGE:** Breeding: Southern New Brunswick w. to British Columbia s. to Florida and s. California. Winter: Mid-Atlantic States, w. to Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (Massachusetts).

**HABITAT:** Breeding: Large fresh or brackish marshes with abundant tall herbaceous vegetation such as cattails, purple loosestrife, sedges or rushes, shores of sluggish rivers, inland ponds. Wintering: Tidal marshes with tall herbaceous vegetation.

**SPECIAL HABITAT REQUIREMENTS:** Marshes.

**NESTING:** Egg dates: May 22 to August 7 (second brood), New York (Bull 1974:419). Clutch size: 3 to 8, typically 5. Incubation period: 12 to 16 days. Nestling period: 14 to 16 days. Independence when about 23 days old (Verner 1965). Broods per year: 2. Age at sexual maturity: 1 year. Nest height: 1 to 3 feet (0.3 to 0.9 m). Nest site: Usually in tall marsh plants growing in shallow water, less often in small bushes or trees. Constructs many dummy nests that may be used for roosting (Bull 1974:419).

**TERRITORY SIZE:** 11 territories averaged 60 m<sup>2</sup> (71.8 square yards) in tall marsh grasses interspersed with shorter grasses along a river in Georgia. 22 territories averaged 85.3 m<sup>2</sup> (102 square yards) in *Spartina* spp. along a creek in Georgia (Kale 1965). Territories ranged from 2,600 square feet (241.5 m<sup>2</sup>) to 38,700 square feet

(3,595 m<sup>2</sup>) (average 15,000 square feet (1,393.3 m<sup>2</sup>)) in cattails with scattered stands of bulrush. Territories ranged from 1,800 to 9,600 square feet (167.2 to 891.7 m<sup>2</sup>) (average 5,000 square feet (464.4 m<sup>2</sup>)) in narrow-strips and patches of bulrush in Washington (Verner 1965). The territories of monogamous males ranged from 13,000 to 15,000 square feet (1,207.6 to 1,393.3 m<sup>2</sup>) in cattail-sedge association and 30,000 square feet (2,786.7 m<sup>2</sup>) in grasses in New York (Welter 1935).

**SAMPLE DENSITIES:** Maryland—104 territorial males per 100 acres (40 ha) in uniform needlerush marsh. 36 territorial males per 100 acres (40 ha) in cattail marsh (Stewart and Robbins 1958:236).

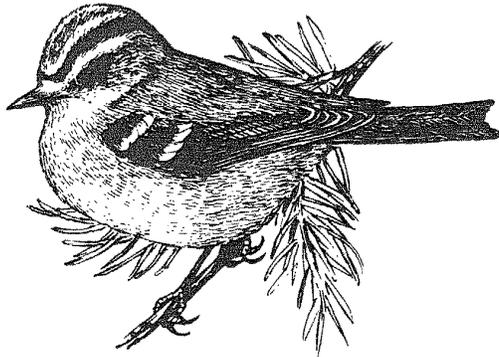
**FORAGING:** Major foods: Insects, spiders. Substrates: Stems and leaves of marsh vegetation, water. Techniques: Gleaning, hawking.

**KEY REFERENCES:** Kale 1965, Verner 1965, Welter 1935.

## Golden-crowned Kinglet

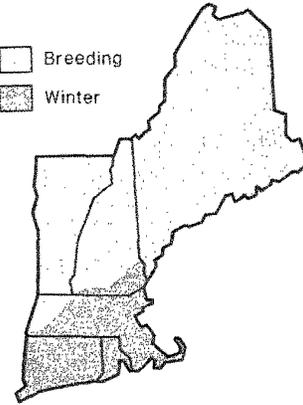
(*Regulus satrapa*)

A.O.U. No. 748.0



### Range

-  Breeding
-  Winter



**RANGE:** Breeding: Nova Scotia w. to se. Alaska, s. to Massachusetts, the mountains of North Carolina, New Mexico, and s. California. Winter: Southern New England w. to Ohio and British Columbia, s. to n. Florida and s. California.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common to uncommon.

**HABITAT:** Breeding: Mainly in dense, northern coniferous forests of spruce but nests in pine, fir, hemlock, and tamarack woods and cedar bogs. Evergreen plantations in central and western New York provide suitable habitat (Bull 1974:443). See comments. Wintering: Moist coniferous, mixed, or deciduous forests (Lepthien and Bock 1976), thickets and low tangles of weedy growth (Pough 1949:126).

**NESTING:** Egg dates: May 28 to June 26, New York (Bull 1974:444). Clutch size: 5 to 10, typically 8 or 9. Incubation period: Unknown. Probably 14 to 15 days. Broods per year: 2. Nest height: 6 to 60 feet (1.8 to 18.2 m), typically 30 to 60 feet (9.1 to 18.2 m). Nest site: Usually woven into twigs of a horizontal limb of a conifer.

**SAMPLE DENSITIES:** 1 pair per 2 acres (0.8 ha) in Adirondack coniferous forest (Andrle 1971). 32 pairs per 100 acres in virgin spruce-hemlock bog forest in Maryland (Stewart and Robbins 1958:255).

**FORAGING:** Major food: Insects. Substrates: Leaves, branches and twigs, trunks (bark crevices). Techniques: Gleaning, hawking, hover-gleaning.

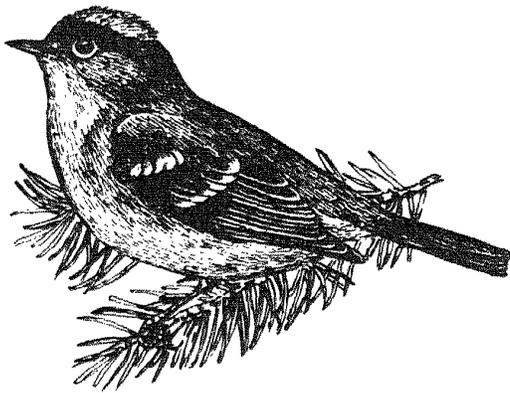
**COMMENTS:** Golden-crowned Kinglets have been extending their breeding range in New York by nesting in plantations of spruce with a minimum d.b.h. of 6 inches (15 cm) and dense, closed canopies (Andrle 1971). In New Hampshire this species is limited to boreal habitats (C. Anderson, personal communication).

**KEY REFERENCES:** Andrle 1971, Bent 1949, Lepthien and Bock 1976.

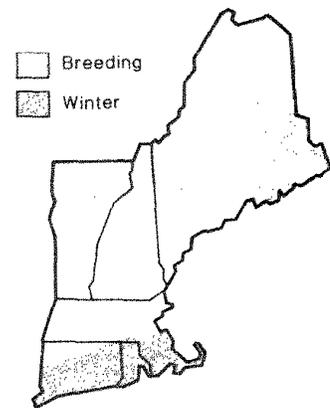
## Ruby-crowned Kinglet

(*Regulus calendula*)

A.O.U. No. 749.0



### Range



**RANGE:** Breeding: Quebec w. to Alaska, s. to n. Maine, Adirondacks of New York, Ontario, New Mexico and s. California. Winter: Southern New England w. to British Columbia, s. to s. Florida and Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common to uncommon.

**HABITAT:** Breeding: Northern coniferous forests in pure or mixed stands of spruce, fir, tamarack or pine, forest edges, open stands, bogs. Wintering: Coniferous or deciduous forest understory, open or edge situations, especially in dry oak woodland (Lepthien and Bock 1976).

**NESTING:** Clutch size: 5 to 11, typically 7 to 9. Incubation period: Believed to be about 12 days. Nestling period: Possibly 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 2 to 100 feet (0.6 to 30.5 m), typically 15 to 60 feet (4.6 to 18.2 m). Nest site: Nest is usually well concealed in coniferous shrub or tree at tip of horizontal branch, typically in spruce.

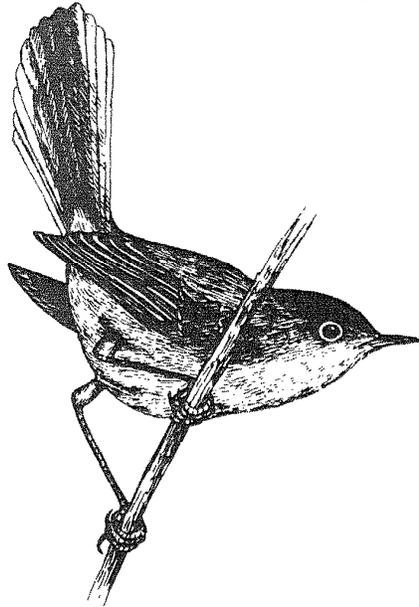
**FORAGING:** Major foods: Insects (summer), insects supplemented with seeds and fruits (winter). Substrates: Leaf litter; leaves and stalks of herbaceous plants; bark of twigs, branches, and trees; clusters of needles. Techniques: Hawking, gleaning, hover-gleaning. Preferred feeding habitat. In winter, birds forage close to the ground—frequenting thickets and saplings in deciduous as well as coniferous woodlands.

**KEY REFERENCES:** Bent 1949, Forbush 1929, Lepthien and Bock 1976.

## Blue-gray Gnatcatcher

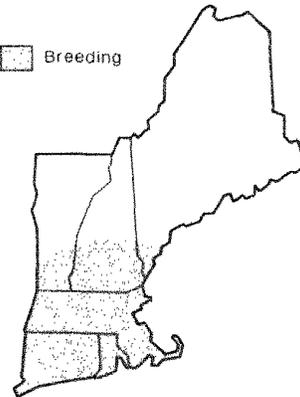
(*Poliptila caerulea*)

A.O.U. No. 751.0



### Range

 Breeding



**RANGE:** Breeding: Southern New England, w. Pennsylvania, w. to ne. California, s. to s. Mexico. Winter: South Carolina s. through the coastal states to s. California, s. to Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare (Maine).

**HABITAT:** Breeding: Open, moist woodlands interspersed with brushy clearings, often oak, pine, or mixed woods, bottomland forests with closed canopies, wooded swamps, stream-side thickets. Favors tall trees.

**SPECIAL HABITAT REQUIREMENTS:** An abundant supply of arthropods (Root 1967).

**NESTING:** Egg dates: May 14 to June 17, New York (Bull 1974:441). Clutch size: 3 to 5, typically 4 or 5. Incubation period: 13 to 15 days. Nestling period: 10 to 13 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 4 to 70 feet (1.2 to 21.3 m), typically less than 25 feet (7.6 m). Nest site: Usually high in a deciduous or coniferous tree saddled on a horizontal limb or in a fork. Nests in a variety of trees—limb size and shape seem to be more important than tree species (Bent 1949).

**TERRITORY SIZE:** 9 territories ranged from 2.2 to 7.4 acres (0.9 to 3.0 ha) average 4.6 acres (1.8 ha) in oak woodland and chaparral in California (Root 1970). 1 territory covered 2.2 acres (0.9 ha) along a wooded ravine and grove of trees in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** Maryland—7 pairs per 100 acres (40 ha) in semi-open floodplain forest. 6 pairs per 100 acres (40 ha) in unsprayed orchard (Stewart and Robbins 1958:254).

**FORAGING:** Major foods: Apparently feeds exclusively on arthropods, primarily insects. Substrates: Tips of branches, leaf surfaces, bark. Techniques: Hawking, hover-gleaning, twig and leaf gleaning. Preferred feeding habitat: High canopy of forest trees.

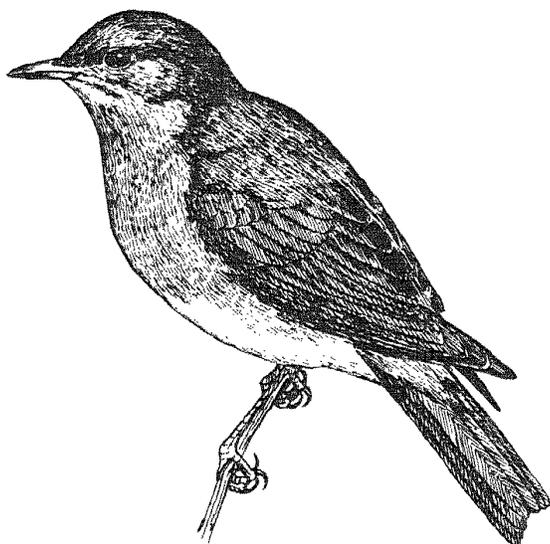
**COMMENTS:** Most breeding birds in New York were seen near lakes or rivers (Bull 1974:441).

**KEY REFERENCES:** Forbush 1929; Nice 1932, Root 1967, 1970.

## Eastern Bluebird

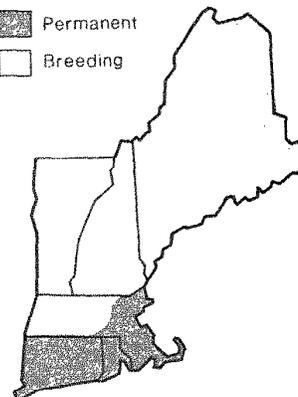
(*Sialia sialis*)

A.O.U. No. 766.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Newfoundland w. to s. Manitoba, s. to Florida, the Gulf Coast and Central America. Winter: Southern New England w. to s. Michigan, s.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon to rare.

**HABITAT:** Breeding: Open country with scattered trees (savannas), farmlands, open woods, swamps, sparsely inhabited residential areas, roadside fencelines, woodland edges beside fields and meadows, orchards, clearings created by fire, flood, or logging. Wintering: Graber and Graber (1963) found that bluebirds in Illinois favored grasslands, shrub areas, and forest edges in winter.

**SPECIAL HABITAT REQUIREMENTS:** Low cavities for nesting. Abundant perches for foraging (Pinkowski 1977).

**NESTING:** Egg dates: April 1 to August 18, New York (Bull 1974:438). Clutch size: 3 to 7, typically 4 or 5. Incubation period: 13 to 15 days. Nestling period: 15 to 18 days. Broods per year: 2 or 3. Age at sexual maturity: 1 year. Nest height: 5 to 20 feet (1.5 to 6.1 m), typically 5 to 12 feet (1.5 to 3.7 m). Nest site: Natural cavities, old woodpecker holes, or nest boxes.

**TERRITORY SIZE:** 5.4, 8.6, and 7.0 acres (2.2, 3.5, and 2.8 ha) for 3 territories in Kansas (Fitch 1958). 2.5 acres (1.0 ha) (Thomas 1946).

**HOME RANGE:** Pinkowski (1977) found bluebirds foraging on areas ranging in size from 4.5 to 38.9 ha (11.1 to 96.1 acres during nestling periods).

**SAMPLE DENSITIES:** 30 birds per 100 acres (40 ha) in orchard in Illinois. 34 birds per 100 acres (40 ha) in edge shrubbery in Illinois. 25 birds per 100 acres (40 ha) in residential habitat in Illinois. 13 birds per 100 acres (40 ha) in second-growth or cutover woods in Illinois (Graber et al. 1971).

**FORAGING:** Major foods: Insects, especially grasshoppers, crickets, beetles, and caterpillars, make up about 68 percent of diet; fruit represents about 32 percent of diet (Bent 1949:247). Substrates: Leaf and branch surfaces, leaf litter on ground, air. Techniques: Gleaning, flight-gleaning, dropping to ground from perch, hawking. Preferred feeding habitat: Areas with poor soil and sparse ground cover (Pinkowski 1977).

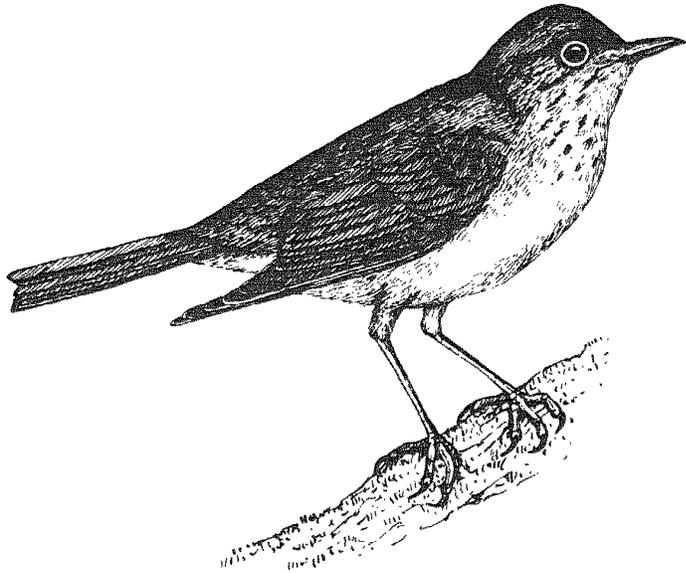
**COMMENTS:** Suitable nest sites are scarce since many snags have been removed. Starlings, House Sparrows, Tree Swallows, and Wrens compound the problem by competing successfully for cavities. Conner and Adkisson (1974) found that clearcuts with standing, cavity-bearing snags provided bluebird nesting habitat for at least 12 years following cutting.

**KEY REFERENCES:** Bent 1949, Graber et al. 1971, Hartshorne 1962, Lasky 1940, Peakall 1970, Thomas 1946.

## Veery

(*Catharus fuscescens*)

A.O.U. No. 756.0



### Range



**RANGE:** Breeding: Newfoundland w. to British Columbia, s. to Long Island and c. New Jersey, and the mountains of Georgia, and New Mexico. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Low, moist deciduous woods, bottomland forests, wooded swamps, damp ravines. Prefers thickets of early deciduous second-growth and open woods with fairly dense high undergrowth of ferns, shrubs, and trees. Avoids mountains.

**SPECIAL HABITAT REQUIREMENTS:** Moist woodlands with understory of low trees and shrubs.

**NESTING:** Egg dates: May 16 to June 25, New York (Bull 1974:436). Clutch size: 3 to 5, typically 4. Incubation period: 10 to 12 days. Nestling period: 16 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: To 3 feet (0.9 m), typically on ground. Nest site: On ground or low in a shrub, tree, or brush pile, often well hidden on a tussock of ferns or other groundcover.

**SAMPLE DENSITIES:** 12 pairs on a 3-acre (1.2 ha) plot of lake-side forest with laurel understory in New Hampshire (Harding 1925). 8 territorial males per 100 acres (40 ha) in virgin hemlock stand (Stewart and Robbins 1958:251).

**FORAGING:** Major foods: Mainly insects (about 60 percent) and wild fruits and seeds (40 percent). Substrates: Forest floor (leaf litter), leaf and branch surfaces in lower canopy. Techniques: Ground gleaning, turning leaves with bill.

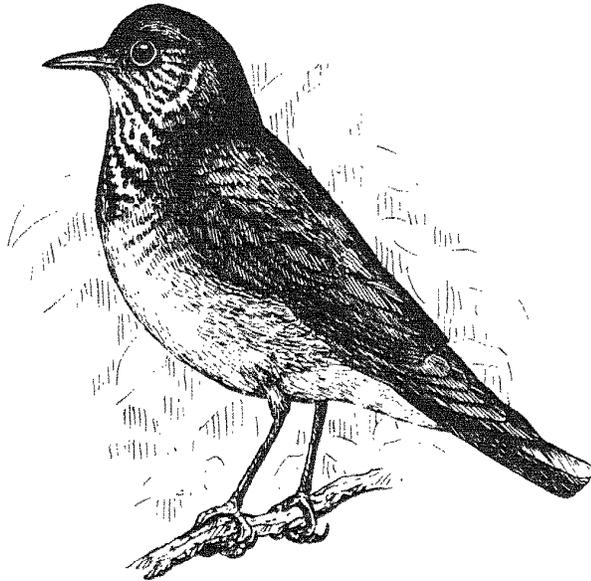
**COMMENTS:** Bertin (1977) found Veeries in cool wet areas of both early successional and mature woodlands. In mature woodlands, Veeries used areas with cool microclimates.

**KEY REFERENCES:** Bent 1949, Bertin 1977, Dilger 1956, Forbush 1929.

## Gray-cheeked Thrush

(*Catharus minimus*)

A.O.U. No. 757.0



### Range

□ Breeding



**RANGE:** Breeding: Northern Newfoundland w. to Alaska s. to the mountains of n. New England and se. New York, and the s. Canadian provinces. Locally in Berkshires and Catskills in highest mountains. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon (Maine).

**HABITAT:** Breeding: Moist northern coniferous forests, especially in stunted spruce-fir tangles of mountain tops.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous forests.

**NESTING:** Egg dates: June 12 to June 27, New York (Bull 1974:435). Clutch size: 3 to 5, typically 4. Incubation period: 13 to 14 days. Nestling period: About 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: To 20 feet (6.1 m), typically about 6 feet (1.8m). Nest site: Usually in bush or the fork of a low conifer limb, occasionally in a birch, sometimes builds on ground under low-hanging limb.

**FORAGING:** Major foods: Insects, wild fruits. Substrates: Forest floor which is usually carpeted with sphagnum and other mosses. Techniques: Ground gleaning. Preferred feeding habitat: On ground in forest interior.

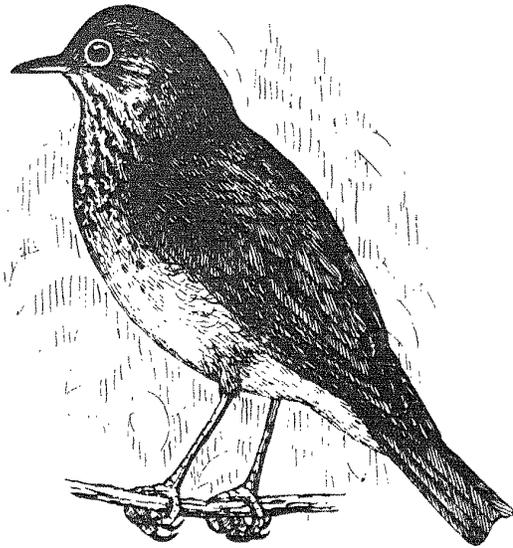
**COMMENTS:** About 75 percent of the diet is animal matter and 25 percent vegetable matter (Beal 1915 in Bent 1949:192).

**KEY REFERENCES:** Bent 1949, Dilger 1956, Forbush 1929, Wallace 1939.

## Swainson's Thrush

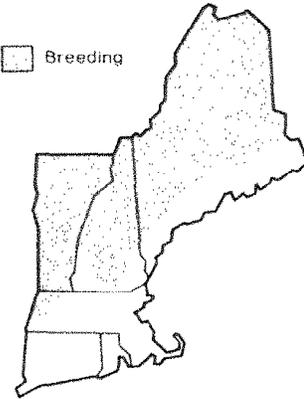
(*Catharus ustulatus*)

A.O.U. No. 758.0



### Range

 Breeding



**RANGE:** Breeding: Newfoundland w. to Alaska, s. to n. New England, Pennsylvania, Colorado, and s. California. Rarely in mountains of West Virginia and Maryland. Winter: Central and South America.

**KEY REFERENCES:** Bent 1949, Forbush 1929, Graber et al. 1971.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine).

**HABITAT:** Breeding: Spruce-fir forests especially in low damp areas near water. Occurs in both young stands and mature forest. Prefers forest interiors to edges. Occasionally breeds in mixed woodlands.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous or mixed forests.

**NESTING:** Egg dates: June 10 to July 11, New York (Bull 1974:433). Clutch size: 3 to 5, typically 4. Incubation period: 10 to 13 days. Nestling period: 10 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 2 to 20 feet (0.6 to 6.1 m), typically 4 to 8 feet (1.2 to 2.4 m). Nest site: Usually in a crotch close to trunk or on a horizontal limb of a spruce or fir tree.

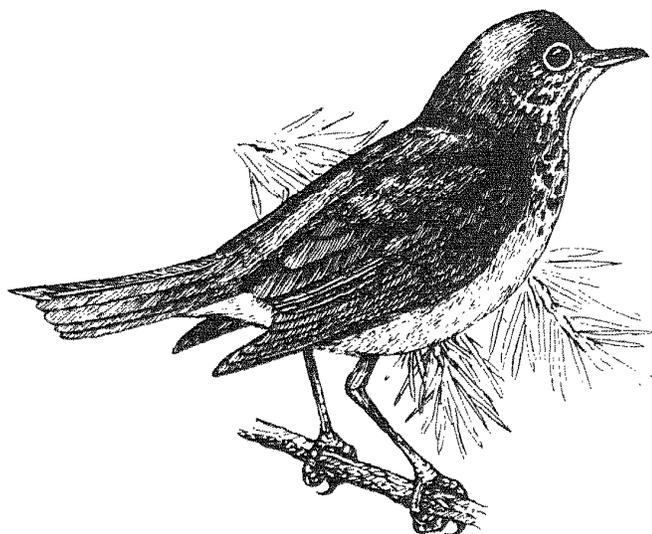
**FORAGING:** Major foods: Insects, wild fruits. Substrates: Forest floor, foliage and branch surfaces, often high in trees. Techniques: Ground gleaning, hawking. Preferred feeding habitat: Forest interior, mainly in trees.

**COMMENTS:** Beal (1915 in Bent 1949:181) found that the March to November diet of 403 birds consisted of 64 percent animal and 36 percent vegetable matter.

## Hermit Thrush

(*Catharus guttatus*)

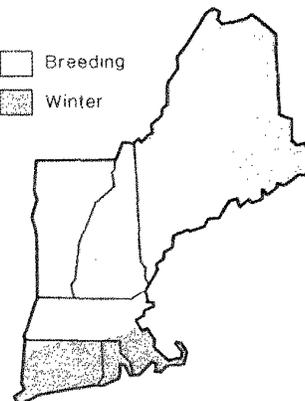
A.O.U. No. 759.0



### Range

□ Breeding

■ Winter



**RANGE:** Breeding: Labrador w. to Alaska, s. to s. New York, the mountains of West Virginia and Maryland, e. Minnesota and through the Rockies to New Mexico. Winter: Southern Massachusetts, e. Pennsylvania and s. Ohio s. to Florida and Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (Massachusetts).

**HABITAT:** Breeding: Lowlands in wooded swamps and damp forests and uplands in dry, brushy clearings in coniferous or mixed forests. Also frequents woodland edges and brushy pastures and cool north-facing slopes. Wintering: Borders of wooded swamps where birds find shelter in thick hummocks. Areas with persistent fruits on shrubs or vines or well-stocked feeding stations (New York) (Bull 1974:432).

**SPECIAL HABITAT REQUIREMENTS:** Coniferous or mixed woodlands with dense young undergrowth. In winter, birds require abundant native fruits.

**NESTING:** Egg dates: May 12 to August 24, New York (Bull 1974:431). Clutch size: 3 to 6, typically 3 or 4. Incubation period: 12 days. Nestling period: 12 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: typically on ground. Nest site: Usually on ground on a hummock, or in dense ferns or other cover, or under a low-hanging conifer limb. Occasionally to 4 feet (1.2 m) in a sapling.

**SAMPLE DENSITIES:** 40 to 93 birds per 100 acres (40 ha) in second-growth or cut-over woods (Fawks 1937, 1938). 20 birds per 100 acres (40 ha) in bottomland forest in Illinois (Karr 1968). 6 to 10 birds per 100 acres (40 ha) in upland forest in Illinois (Weise 1951 in Graber et al. 1971).

**FORAGING:** Major foods: Insects, fruits. Substrate: Leaf litter. Technique: Ground gleaning.

**COMMENTS:** Beal (1915 in Bent 1949:153) found the stomach contents of 551 Hermit Thrushes contained 65 percent animal and 35 percent vegetable matter. Birds switch to mainly vegetable materials in fall and winter (berries and buds).

**KEY REFERENCES:** Bent 1949, Dilger 1956, Graber et al. 1971, Morse 1972.

**Wood Thrush**  
(*Hylocichla mustelina*)

A.O.U. No. 755.0



**Range**



**RANGE:** Breeding: Maine w. to South Dakota, s. to Florida and Texas. Winter: Mexico and Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Mature lowland forests (mainly deciduous or mixed); shady, cool, mature upland forests, often near a swamp, pond, stream, or lake; sometimes in residential areas. Requires abundant undergrowth. Absent from higher mountains of New England.

**SPECIAL HABITAT REQUIREMENTS:** Deciduous or mixed forests with tall trees and abundant sapling growth. Cool, moist conditions. Apparently requires a tree at least 40 feet (12 m), possibly for song perches (Bertin 1977).

**NESTING:** Egg dates: May 17 to July 7, New York (Bull 1974:429). Clutch size: 2 to 5, typically 3 or 4. Incubation period: 13 to 14 days. Nestling period: 12 to 14 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: 5 to 50 feet, (1.5 to 15.2 m), typically 5 to 12 feet (1.5 to 3.7 m). Nest site: In a fork or saddled on a horizontal limb of a sapling or tree (often elm or maple), or well hidden in dense shrubbery.

**TERRITORY SIZE:** 0.2 to 2 acres (0.08 to 0.8 ha) (Weaver 1939). 2 to 7 acres (0.8 to 2.8 ha) in forested habitat in central Illinois (Graber et al. 1971). 1.4 acres (0.6 ha) in woodland edge in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** Maryland—40 territorial males per 100 acres (40 ha) in virgin hardwood deciduous forest.

16 territorial males per 100 (40 ha) in shrub swamp. 11 territorial males per 100 acres (40 ha) in mature northern hardwood forest. 10 territorial males per 100 acres (40 ha) in mixed oak forest. 4 territorial males per 100 acres (40 ha) in pine-oak forest (Stewart and Robbins 1958:246).

**FORAGING:** Major foods: Insects, fruits. Substrates: leaf litter on ground, understory vegetation. Techniques: Ground gleaning, scratching, turning leaves over with bill.

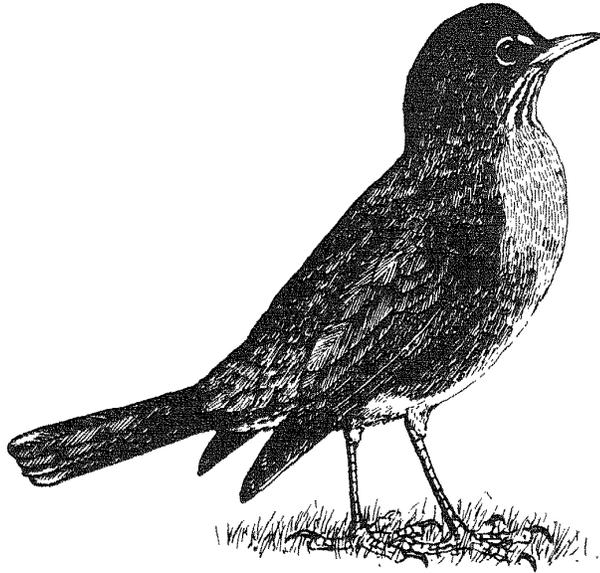
**COMMENTS:** Stomach analyses revealed a diet of 62 percent animal and 38 percent vegetable matter (Bent 1949:113).

**KEY REFERENCES:** Bent 1949, Bertin 1977, Dilger 1956, Graber et al, 1971, Longcore and Jones 1969.

## American Robin

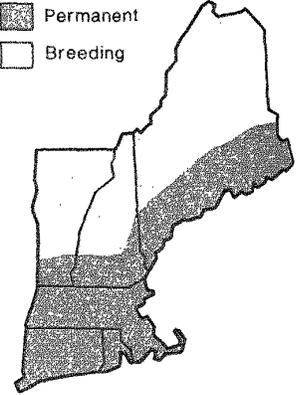
(*Turdus migratorius*)

A.O.U. No. 761.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Newfoundland w. to Alaska, s. to South Carolina, Texas, Mexico and s. California. Winter: Southern Maine w. to British Columbia, s. to Mexico and Gulf Coast.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant.

**HABITAT:** Breeding: Open woodlands and woodland edges and clearings, fields, orchards, shade trees in residential areas. Densities are frequently greater in residential areas than in the wild (Pough 1949:113), though urban populations may not be self-supporting (Howard 1974). Wintering: Frequents sheltered wooded areas more than open exposed pasturelands. Roosts among evergreens in swamps and feeds on persistent wild and cultivated fruits.

**NESTING:** Egg dates: March 23 to July 19, New York (Bull 1974:428). Clutch size: 2 to 7, typically 3 or 4. Incubation period: 11 to 14 days. Nestling period: 14 to 16 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: to 70 feet. (21.3 m), typically 5 to 15 feet. (1.5 to 4.5 m). Nest site: Robins use a variety of sites for nesting. They prefer to build on a horizontal branch or in a fork of a tree but commonly use shrubs and ledges of buildings. First nest of season is often in a conifer and successive nests in hardwoods. White pine, maple, and apple trees are preferred nest trees (DeGraaf et al. 1975).

**TERRITORY SIZE:** 0.30 to 0.75 acre (0.1 to 0.3 ha) (Collins and Boyajian 1965:133). 0.11 to 0.60 acres (0.4 to 0.24 ha) (average 0.30 acres (0.1 ha)) in Wisconsin (Young 1951).

**SAMPLE DENSITIES:** 132 birds per 100 acres (40 ha) in urban residential areas in Illinois (Graber et al. 1971). 56 birds per 100 acres (40 ha) in edge shrubbery in central Illinois (Graber et al. 1971). 14 birds per 100 acres (40 ha) in second growth or cut-over woods in Illinois (Fawks 1937, 1938).

**FORAGING:** Major foods: Wild and cultivated fruits, earthworms, insects. Substrates: Rich loamy soil, fruit-bearing trees, shrubs and vines. Techniques: Running, pausing and seizing prey, gleaning. Preferred feeding habitat: Grassy fields, orchards, lawns, gardens.

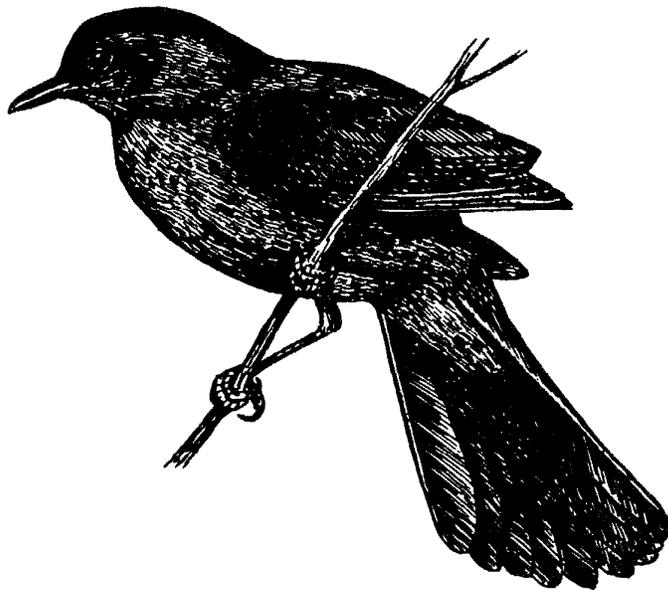
**COMMENTS:** A study of banding returns by Hickey (1943) indicated that almost three-fourths of the young robins that survived their first winter returned to nest within 16 km (10 miles) of their birthplaces. About 60 percent of the diet is vegetable matter and 40 percent animal matter (Bent 1949:25).

**KEY REFERENCES:** Bent 1949, Graber et al. 1971, Howard 1974, Howell 1942, Nickell 1944, Young 1955.

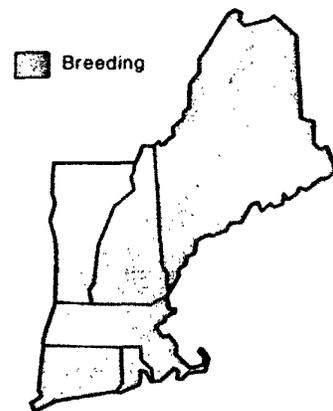
## Gray Catbird

(*Dumetella carolinensis*)

A.O.U. No. 704.0



### Range



**RANGE:** Breeding: Nova Scotia w. to British Columbia, s. to Florida and New Mexico. Winter: Coastal sections from Long Island (a few) s. to Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common in breeding season.

**HABITAT:** Breeding: Dense thickets of shrubs, briars, vines along woodland borders, lowland tangles near streams, ponds and swamps, shrubbery around buildings especially in hedgerows and gardens, forest clearings with brushy edges. Rare at high elevations. Wintering: Milder coastal regions where persistent fruits are available throughout the winter.

**SPECIAL HABITAT REQUIREMENTS:** Low, dense, woody vegetation for nesting, usually with an overtopping deciduous tree layer 10 to 30 feet (3 to 9 m) above (DeGraaf 1975).

**NESTING:** Egg dates: May 5 to June 13, New York (Bull 1974:422). Clutch size: 3 to 5, typically 4. Incubation period: 12 to 15 days. Nestling period: 9 to 15 days, typically 11 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: 3 to 10 feet (0.9 to 3.0 m). Typically 5 feet (1.5 m). Nest site: Builds in dense thickets of briars, vines, shrubs or low trees. Nests are typically well hidden by foliage. Grape vines, hawthorns, and multiflora rose are favored sites.

**HOME RANGE:** 0.16 to 0.36 acres (0.06 to 0.1 ha) (average 0.26 acre (0.1 ha)) in swamp-thicket in Illinois (Brewer 1955).

**SAMPLE DENSITIES:** 1 nest per 8 acres (3.2 ha) in mixed shrub—small tree habitat within beech-maple-hemlock community in New York (Kendeigh 1946). 40 pairs per square mile (15 pairs/km<sup>2</sup>) (maximum density) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 80 territorial males per 100 acres (40 ha) in shrub swamp. 35 territorial males per 100 acres (40 ha) in brushy abandoned farmland in Maryland (Stewart and Robbins 1958:241).

**FORAGING:** Major foods: Small fruits, insects. Substrates: Fruit-bearing shrubs, leaf litter on ground. Technique: Ground gleaning.

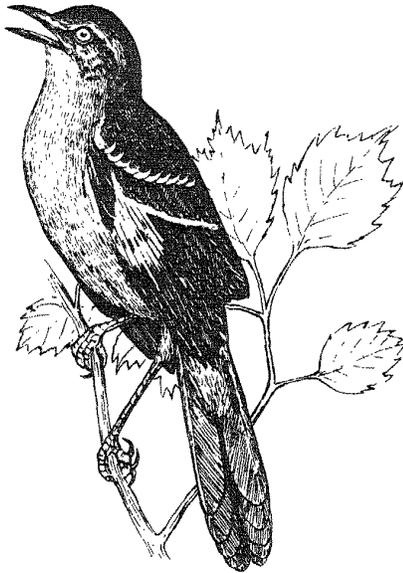
**COMMENTS:** Catbirds use a variety of habitats. Tree and shrub associations are not as important as edge and density of vegetation within the edges (Nickell 1965). Forest edge is preferred to hedgerows in open (Graber et al. 1970).

**KEY REFERENCES:** Bent 1948, Graber et al. 1970, Nickell 1965.

## Northern Mockingbird

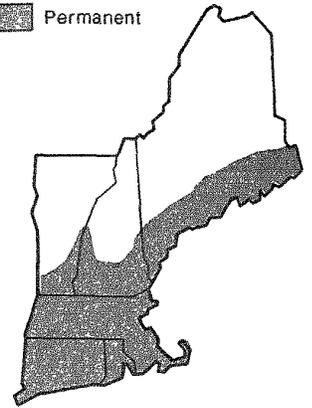
(*Mimus polyglottos*)

A.O.U. No. 703.0



### Range

■ Permanent



**RANGE:** Breeding: Southern Maine w. through Ohio to c. California, s. to the Gulf Coast and s. Mexico. Spreading n. Winter: Southern New England, s. and w.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Woodland edges, pastures with scattered fruit-bearing shrubs, small trees or groves of large trees, often in cities and habitat. Wintering: Similar to breeding habitat; among thickets that bear persistent fruits, especially multiflora rose.

**SPECIAL HABITAT REQUIREMENTS:** Low, dense woody vegetation, elevated perches, a variety of edible fruits.

**NESTING:** Egg dates: April 27 to July 21, New York (Bull 1974:425). Clutch size: 3 to 6, typically 4 or 5. Incubation period 14 days. Nestling period: 10 days (10 to 12 days in Tennessee (Laskey 1962) ). Broods per year: 2. Age at sexual maturity: 1 year. Nest height: 1.5 to 10 feet (0.5 to 3.0 m). Typically 3 to 10 feet (0.9 to 3.0 m). Nest site: Usually in a thicket of shrubs or vines or in a dense tree (often an evergreen). Prefers sites near houses, especially porch vines, garden, lawn and foundation plantings. Prefers to nest in multiflora rose (DeGraaf et al. 1975).

**TERRITORY SIZE:** Territories of 5 pairs of mockingbirds ranged from 26,650 to 60,000 square feet (2,475.5 to 5,573.3 m<sup>2</sup>) (Michener and Michener 1935). Winter: four females defended areas that ranged from 3,750 to 20,000 square feet (348.3 to 1857.8 m<sup>2</sup>) (Michener and Michener 1935).

**HOME RANGE:** 2 pairs in Michigan occupied home ranges of 45 acres (18.2 ha) compared with an average of 2.5 acres (1.0 ha) in Tennessee (Adkisson 1966:104).

**SAMPLE DENSITIES:** Maryland: 15 territorial males per 100 acres (40 ha) in suburban-residential habitat. 2 territorial males per 100 acres (40 ha) in mixed agricultural habitats (Stewart and Robbins 1958:239).

**FORAGING:** Major foods: Wild or cultivated fruits, seeds, insects. Substrates: Ground litter and grasses, shrubs, trees. Techniques: Ground, shrub gleaning.

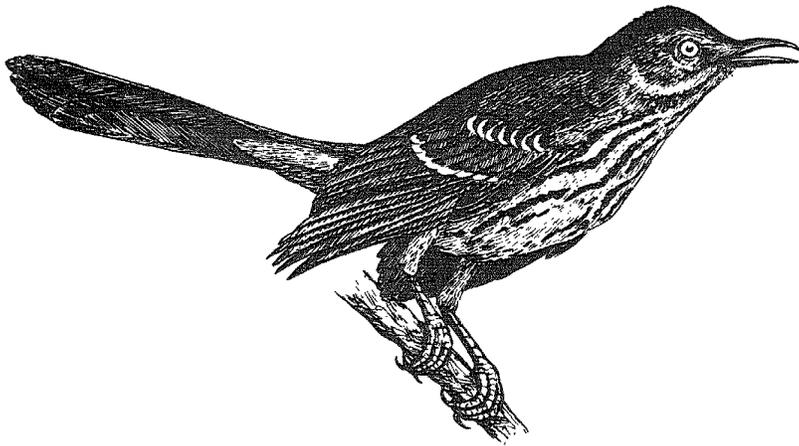
**COMMENTS:** Studies by Beal and others (1916) revealed that in May the bulk of the diet consists of animal matter (85 percent) and in December and January mockingbirds eat mainly vegetable matter (87 percent) (Bent 1948:305).

**KEY REFERENCES:** Bent 1948, Laskey 1962, Michener and Michener 1935.

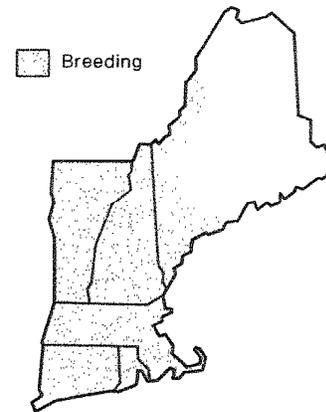
## Brown Thrasher

(*Toxostoma rufum*)

A.O.U. No. 705.0



### Range



**RANGE:** Breeding: Maine w. to s. Alberta s. to Florida and the Gulf Coast. Winter: Long Island and coastal sections of New Jersey s. to Maryland, coastal and inland Virginia to Missouri s. to Florida and Texas.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine).

**HABITAT:** Breeding: Bushes, low trees, tangle of vines in open pastures or woodland edges and clearings in early stages of second growth. Hedgerows along roadsides and fields are preferred (Graber et al. 1970). Absent from higher mountains of New England. Wintering: Coastal areas where climate is mild and sparse snow cover allows birds to find fruits.

**SPECIAL HABITAT REQUIREMENTS:** Low, dense woody vegetation for nesting and cover (Graber et al. 1970).

**NESTING:** Egg dates: May 6 to June 26, New York (Bull 1974:423). Clutch size: 3 to 6, typically 4. Incubation period: 12 to 13 days. Nestling period: 12 to 13 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: To 14 feet (4.3 m), typically 2 to 7 feet (0.6 to 2.1 m). Nest site: On ground or low in dense cover of a shrub or vine. Less often in a low tree.

**TERRITORY SIZE:** Average 1.6 acres (0.6 ha) in forest edge in Illinois (Graber et al. 1970).

**SAMPLE DENSITIES:** 3 pairs per 100 acres (40 ha) in forest edge (Holmes 1950 in Graber et al. 1970). 189 birds per 100 acres (40 ha) in hedgerows and 76 birds per 100

acres (40 ha) in edge shrubbery (Graber and Graber 1963). 86 birds per 100 acres (40 ha) in second-growth or cut-over woods (Fawks 1937).

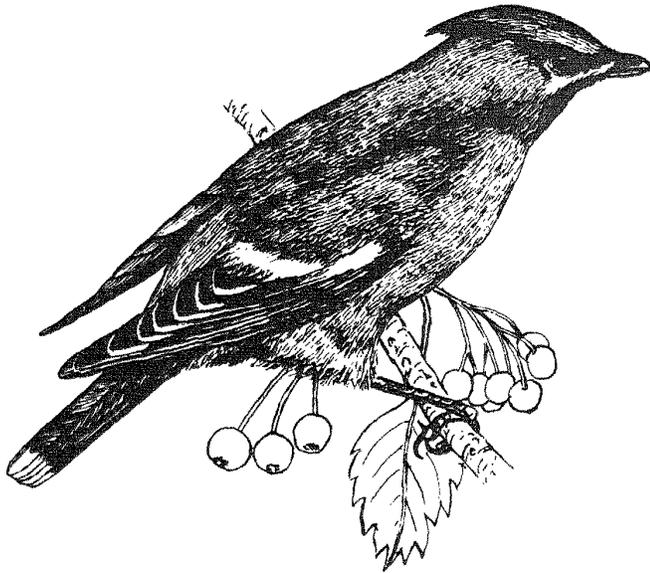
**FORAGING:** Major foods: Insects (about 66 percent; berries, mast (acorns), and grain (about 33 percent) (Pough 1949: 110). Substrates: Leaf litter, soft earth, low vegetation. Techniques: Ground and shrub gleaning.

**KEY REFERENCES:** Bent 1948, Erwin 1935, Graber et al 1970.

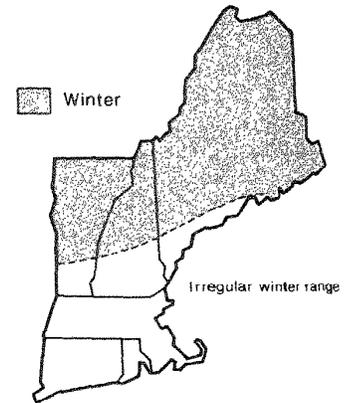
## Bohemian Waxwing

(*Bombycilla garrulus*)

A.O.U. No. 618.0



### Range



RANGE: Breeding: Boreal and temperate areas of North America. Winter: Irregularly to s. California, the Prairie States, and the Mid-Atlantic states.

RELATIVE ABUNDANCE IN NEW ENGLAND: Rare.

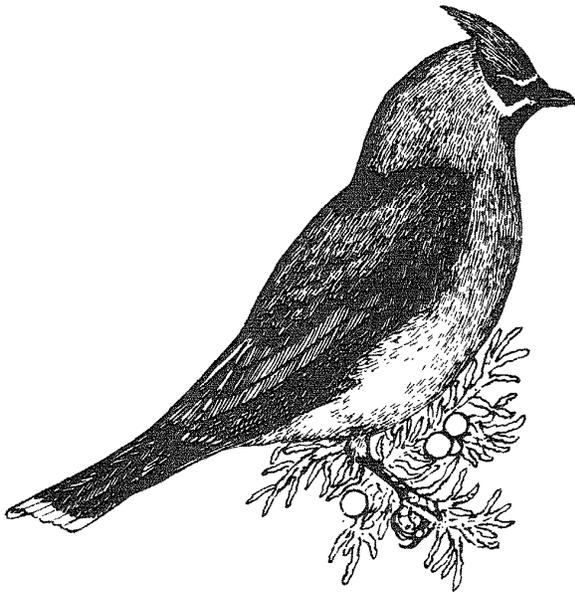
HABITAT: Unreported.

FORAGING: Major foods: Berries in winter. Substrate: Fruit-bearing trees and shrubs. Techniques: Gleaning.

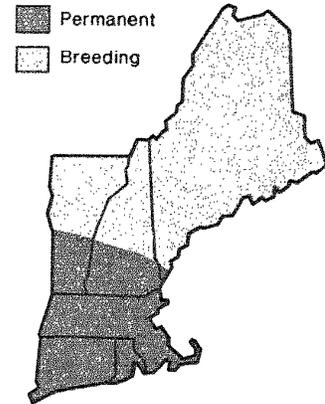
KEY REFERENCE: Forbush 1929.

Cedar Waxwing  
(*Bombycilla cedrorum*)

A.O.U. No. 619.0



Range



RANGE: Breeding: Nova Scotia, w. to British Columbia, s. to Georgia, New Mexico and n. California. Winter: Central New England, w. to Oregon, s. to Central America.

RELATIVE ABUNDANCE IN NEW ENGLAND: Locally common to uncommon.

HABITAT: Breeding: Open deciduous and coniferous woodlands (avoids dense forests), orchards, shade trees. Semi-open country, commonly in agricultural areas and near water. Wintering: same.

NESTING: Egg dates: June 5 to September, New York (Bull 1974:450). Clutch size: 2 to 6, typically 4 or 5. Incubation period: 12 to 16 days. Nestling period: 12 to 18 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 4 to 50 feet (1.2 to 15.2 m). Typically 6 to 20 feet (1.8 to 6.1 m). Nest site: Prefers dense coniferous thickets (often cedar) but nests in a variety of deciduous trees and shrubs. Nest is placed on a horizontal limb, often in a crotch next to main trunk.

TERRITORY SIZE: 3 territories on an island in Lake Erie had the following areas: 0.06 acre, 0.5 acre and 0.23 acre (0.02, 0.2, and 0.09 ha) (Putnam 1949).

SAMPLE DENSITIES: 20 nests were found in a 2.3-acre (0.9-ha) white pine plantation in Michigan (Rothstein 1971). 11 nests were located within a radius of 25 feet (7.6 m) in Ontario (Harrison 1975:166). 16 pairs per 100 acres (40 ha) in open hemlock-spruce bog in Maryland (Stewart and Robbins 1958).

FORAGING: Major foods: Fresh and dried fruits and flowers (80 percent), insects (20 percent). Substrates: Leaf surfaces, fruit-bearing branches. Techniques: Gleaning, hawking.

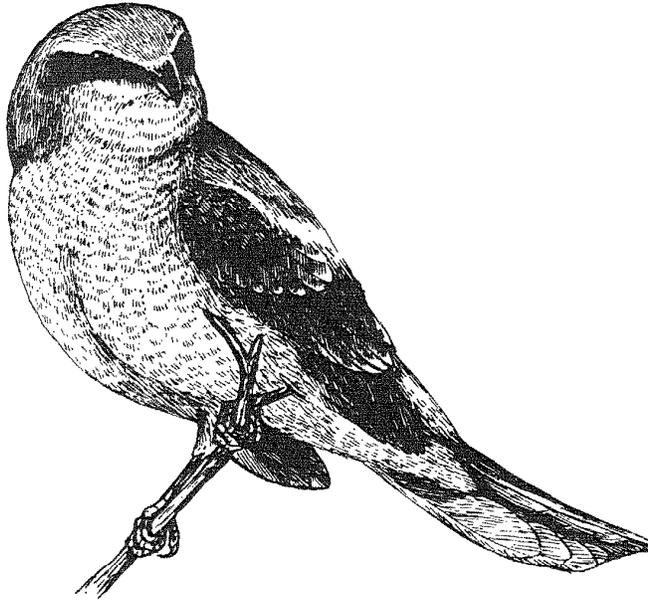
COMMENTS: Waxwings tend to nest late in summer when there is an abundant supply of wild fruits. Birds nest singly or in loose colonies. A second nest is often begun and eggs laid before the young in the first nest have fledged. During most of the year they roam the countryside in small to large flocks.

KEY REFERENCES: Bent 1950, Lea 1942, Putnam 1949.

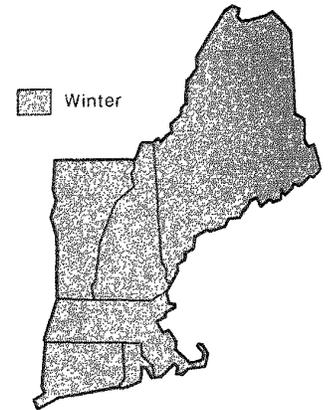
## Northern Shrike

(*Lanius excubitor*)

A.O.U. No. 621.0



### Range



**RANGE:** Breeding: Northern North America, s. to s. Canada. Winter: Same as above but occasionally wanders s. to Virginia, New Mexico and n. California.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare (winter).

**HABITAT:** Wintering: Semi-open country with short grasses and scattered trees or shrubs for perches. Fences and utility wires also used.

**SPECIAL HABITAT REQUIREMENTS:** Elevated perches, short vegetation.

**FORAGING:** Major foods: Rodents, especially mice, small birds. Substrates: Meadow grasses, air. Techniques: Hawking, diving and pouncing from a perch, hovering. Preferred feeding habitat: Open fields with scattered perches.

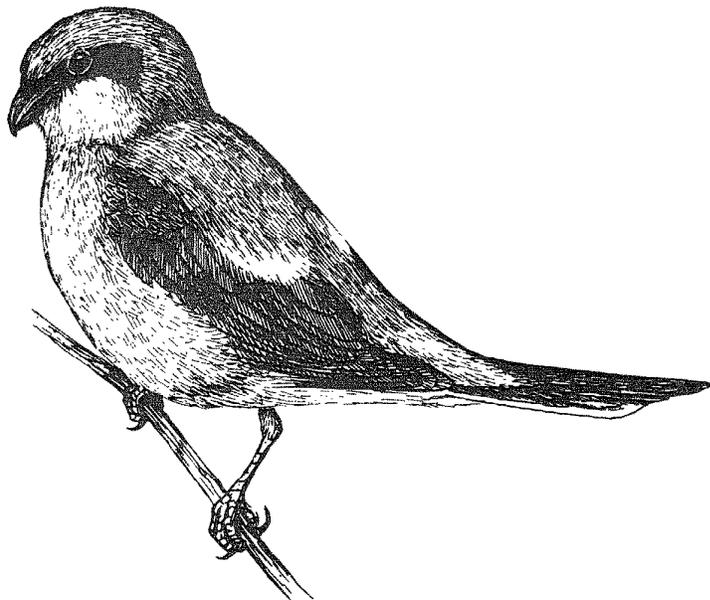
**COMMENTS:** Northern shrikes are seen in the Northeast in winter when northern rodent populations are low—about every 4 years (Pough 1949:133).

**KEY REFERENCES:** Bent 1950, Cade 1967, Miller 1931.

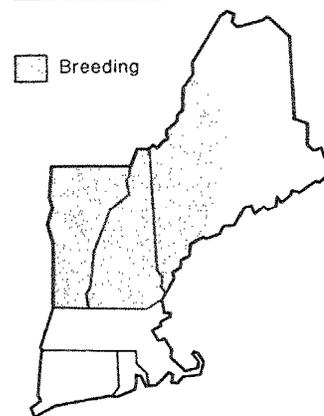
## Loggerhead Shrike

(*Lanius ludovicianus*)

A.O.U. No. 622.0



### Range



**RANGE:** Breeding: New Brunswick, w. to British Columbia, s. to s. Florida and s. Mexico. Winter: s. New Jersey, w. to n. California, s. to s. Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare and local breeder in Northeast.

**HABITAT:** Breeding: Open country with scattered trees, shrubs, roadside hedges. Is attracted to areas with thorny trees such as hawthorn and honey locust. Favors low elevations.

**SPECIAL HABITAT REQUIREMENTS:** Open areas with short grasses, elevated perches from which to spot prey.

**NESTING:** Egg dates: April 18 to June 28, New York (Bull 1974:453). Clutch size: 4 to 7, typically 4 or 5. Incubation period: 16 days. Nestling period: 16 to 20 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: 5 to 30 feet (1.5 to 9.1 m). Typically 8 to 15 feet (2.4 to 4.6 m). Nest site: Builds in the dense foliage of a tree or shrub. Prefers to nest in thorny plants but is known to nest in oaks, pines, orchard trees, and grapevine.

**TERRITORY SIZE:** 18.7 acres (7.6 ha) (Miller 1931).

**SAMPLE DENSITIES:** 1.9 nests per mile (1.6 km) of hedge in Illinois (Graber et al. 1973).

**FORAGING:** Major foods: Insects, small reptiles, amphibians, birds, and mammals. Substrate: Meadow grasses. Techniques: Hovering or perching and diving, hawking.

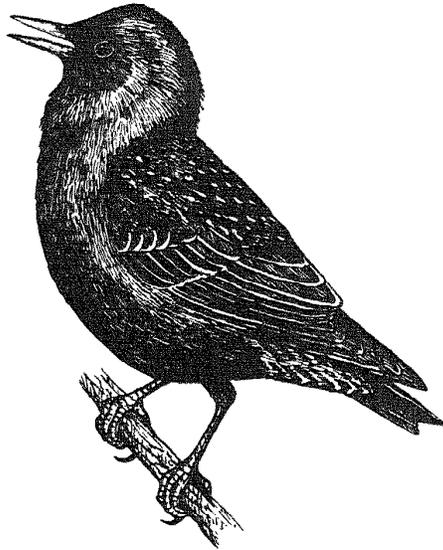
**COMMENTS:** Beal (1912 in Bent 1950:137) found that the contents of 88 stomachs held mainly animal matter (97.5 percent) and a trace of vegetable matter (2.5 percent). Shrikes habitually impale their prey in thorn trees or on barbed wire fences or hang the prey in the fork of a branch. Formerly nested in New Hampshire (C. Anderson, personal community).

**KEY REFERENCES:** Bent 1950, Graber et al. 1973, Miller 1931.

## European Starling

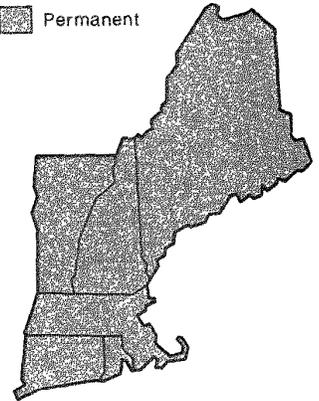
(*Sturnus vulgaris*)

A.O.U. No. 493.0



### Range

■ Permanent



**RANGE:** Breeding: Southern half of Canada s. throughout most of United States except in extreme sw. portions, though now invading n. Sonoran Desert. Winter: Throughout United States.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant.

**HABITAT:** Breeding: Farms, cities, orchards, gardens, parks. Prefers rural areas with pastures, cultivated fields and hayfields. Wintering: Roost in dense vegetation or on buildings in villages and cities. Probably absent from high mountains.

**SPECIAL HABITAT REQUIREMENTS:** Cavities for nesting. Minimum d.b.h. of trees suitable for nesting is 10 inches (25.4 cm) (Thomas et al. 1979).

**NESTING:** Egg dates: April 10 to June 15, New York (Bull 1974:541). Clutch size: 2 to 7, typically 4 to 6. Incubation period: 11 to 13 days. Nestling period: 18 to 22 days. Broods per year: 1 or 2. May be single-brooded north of 48° latitude (Kessel 1953). Age at sexual maturity: 1 year. Nest height: 2 to 60 feet (0.6 to 18.3 m). Typically 10 to 25 feet (3.0 to 7.6 m). Nest site: A cavity almost anywhere, including crevices created by highway construction in exposed rock ledges. Often in natural or existing excavated cavities in trees, barns and other buildings, drain pipes, cupolas.

**TERRITORY SIZE:** Birds defended a 10- to 20-inch (25.4 to 50.8 cm) radius around nest holes (Kessel 1957).

**SAMPLE DENSITIES:** 78 breeding females per square mile (20 breeding females/km<sup>2</sup>) (some in nest boxes) on a farm in Scotland (Dunnet 1955).

**FORAGING:** Major food: Insects, seeds, fruits, cultivated grains. Substrates: Soil surface, sub-surface to depths not exceeding length of bill. Techniques: Ground gleaning, probing. Preferred feeding habitat: Lawns, meadows, grazed fields; starlings prefer to forage in low vegetation; feeds up to three-fourths of a mile from nest site (Kessel 1957).

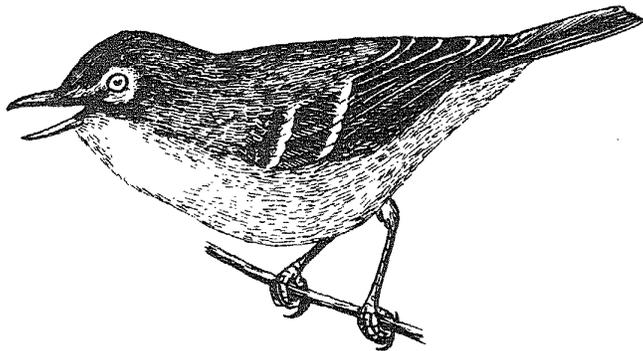
**COMMENTS:** Introduced from Europe, starlings are highly adaptable and compete successfully with other birds for nest cavities. Stomach analyses of 2,301 birds taken throughout the United States in all seasons revealed a diet of 57 percent animal and 43 percent vegetable matter (Kalmbach and Gabrielson 1921 in Bent 1950:194).

**KEY REFERENCES:** Dunnett 1955, Kessel 1957, Williamson and Gray 1975.

## White-eyed Vireo

(*Vireo griseus*)

A.O.U. No. 631.0



### Range

□ Breeding



**RANGE:** Breeding: Southern New England and se. New York, w. to Wisconsin and Nebraska, s. to Mexico and the Gulf Coast. Winter: South Carolina w. to s. Texas.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common (Long Island) to rare (Maine).

**HABITAT:** Breeding: Dense shrubby lowlands, briar patches, deciduous forest undergrowth and forest edges, hedgerows, old fields, low swampy areas. Less often on drier hillsides and along rural roads.

**SPECIAL HABITAT REQUIREMENTS:** Low shrubby vegetation that provides foraging and nesting substrates.

**NESTING:** Egg dates: May 17 to July 17, New York (Bull 1974:454). Clutch size: 3 to 5, typically 4. Incubation period: 14 to 15 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 1 to 8 feet (0.3 to 2.4 m). Typically 2 to 6 feet (0.6 to 1.8 m). Nest site: Suspended from the fork of a low branch, usually well hidden by surrounding vegetation. Most often placed in a small sapling or shrub.

**TERRITORY SIZE:** Approximately 2.5 to 3.5 acres (1.0 to 1.4 ha) per male (Stewart and Robbins 1958). Territories may be as small as 0.33 (0.13 ha) acre per male (Brewer 1955). 6.5 and 5.4 acres (2.6 to 2.2 ha) in stream and woodland edge thickets in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** Maryland—40 territorial males per 100 acres (40 ha) in shrub swamp. 32 territorial males per

100 acres (40 ha) in second-growth river swamp. 28 territorial males per 100 acres (40 ha) in brushy abandoned farmland (Stewart and Robbins 1958:263).

**FORAGING:** Major foods: Insects, wild fruits. Substrates: Branches and twigs, leaf surfaces. Techniques: Gleaning, hover-gleaning. Preferred feeding habitat: Feeds mainly in the inner canopy of trees and shrubs.

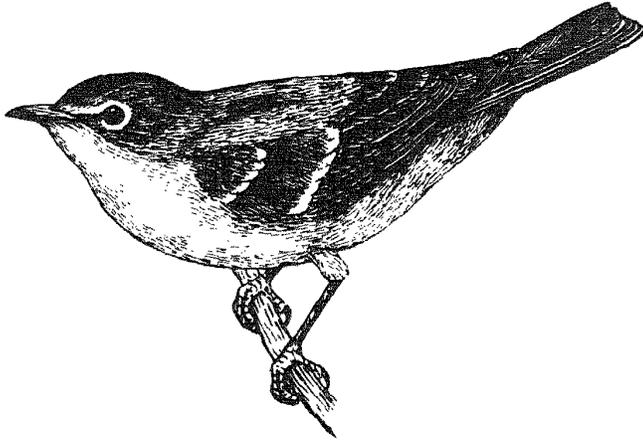
**COMMENTS:** The White-eyed Vireo prefers close-growing stands of trees 8 to 25 feet (2.4 to 7.6 m) tall (either saplings or mature low trees such as *Crataegus* spp.) (Nolan 1960). The bird is a common victim of cowbird parasitism.

**KEY REFERENCES:** Bent 1950, Nolan 1960, Saunders 1915.

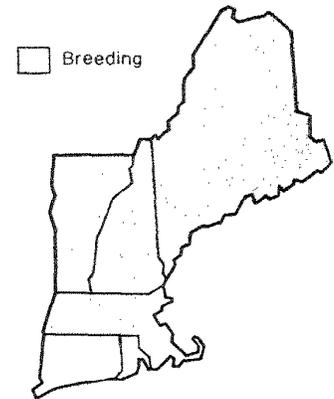
## Solitary Vireo

(*Vireo solitarius*)

A.O.U. No. 629.0



### Range



**RANGE:** Breeding: Nova Scotia, w. to British Columbia, s. to Connecticut (uplands), Georgia (mountains), c. Minnesota and Mexico (mountains). Winter: South Carolina to Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (s. Connecticut).

**HABITAT:** Breeding: Coniferous or mixed woodlands especially those with openings in canopy and a dense understory. Shows preference for pine, hemlock, or spruce. Prefers mountain elevations but occurs locally in highlands.

**NESTING:** Egg dates: May 14 to July 22, New York (Bull 1974:459). Clutch size: 3 to 5, typically 4. Incubation period: 13 to 15 days. Nestling period: 15 to 17 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 3.5 to 20 feet (1.1 to 6.1 m). Typically less than 10 feet (3.0 m). Nest site: Suspended from a forked horizontal branch, usually a conifer.

**SAMPLE DENSITIES:** Average 29 birds per 100 acres (40 ha) in ponderosa pine forest in Colorado (Cruz 1975). 27 territorial males per 100 acres (40 ha) in virgin hemlock forest in Maryland. 17 territorial males per 100 acres (40 ha) in mature northern hardwood forest in Maryland (Stewart and Robbins 1958:265).

**FORAGING:** Major foods: Insects, especially moths and caterpillars, small amounts of fruits. Substrates: Bark of branches, often at bases of horizontal branches and dead

stubs. Techniques: Gleaning, hover-gleaning, hawking. Preferred feeding habitat: Lower and middle canopy.

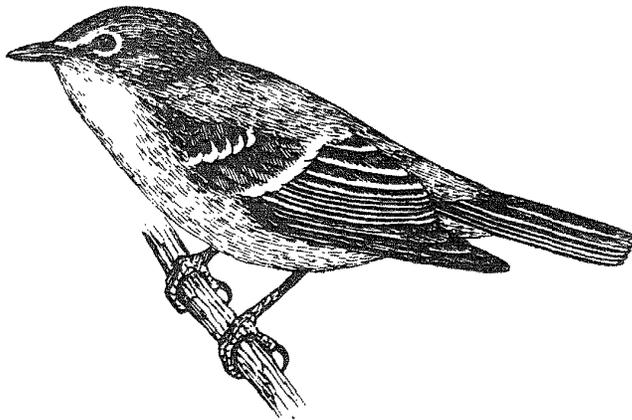
**COMMENTS:** Chapin (1925 in Bent 1950:296) found the bulk of diet (306 stomachs) to be animal matter (96 percent) supplemented by small amounts of vegetable matter (4 percent).

**KEY REFERENCES:** Bent 1950, Cruz 1975, James 1976.

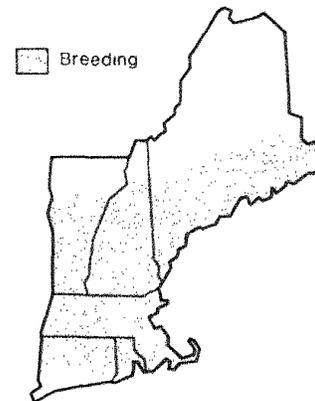
## Yellow-throated Vireo

(*Vireo flavifrons*)

A.O.U. No. 628.0



### Range



**RANGE:** Breeding: Maine, w. to Saskatchewan, s. to Florida and Texas. Winter: Southern Mexico to South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare (Maine).

**HABITAT:** Breeding: Tall deciduous trees in woodlands with partially opened canopy, seldom in dense forests, rarely in conifers. Frequents roadsides, borders of streams, orchards and woodland borders, swampy woods.

**SPECIAL HABITAT REQUIREMENTS:** Tall deciduous trees.

**NESTING:** Egg dates: May 24 to June 18, New York (Bull 1974:457). Clutch size: 3 to 5, typically 4. Incubation period: 14 days. Nestling period: About 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 3 to 60 feet (0.9 to 18.3 m). Typically over 20 feet (6.1 m). Nest site: Suspended between a fork formed by slender branches of a horizontal limb, typically over 20 feet (6.1 m) above ground.

**TERRITORY SIZE:** About 10 acres (4.0 ha) (Robbins, unpublished data cited in Williamson 1971).

**SAMPLE DENSITIES:** Maryland: 19 territorial males per 100 acres (40 ha) in virgin hardwood deciduous forest. 8 territorial males per 100 acres (40 ha) in second growth river swamp. 7 territorial males per 100 acres (40 ha) in mixed oak forest. 3 territorial males per 100 acres (40 ha) in well-drained floodplain forest (Stewart and Robbins 1958:264).

**FORAGING:** Major foods: Insects, especially adult and larval moths. Substrates: Twig and branch surfaces, less often on leaf surfaces. Techniques: Gleaning—typically feeds slowly and deliberately, occasionally hovering or hawking. Preferred feeding habitat: Top of canopy (upper half), periphery and central portions (Williamson 1971).

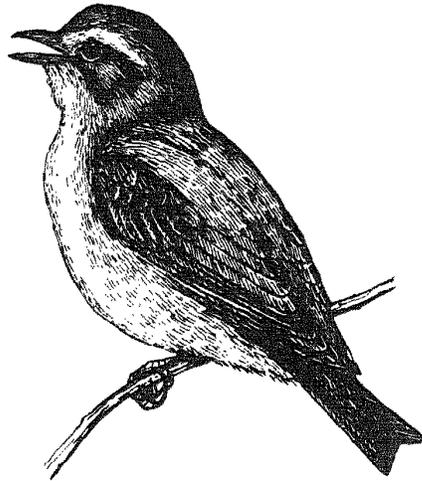
**COMMENTS:** Chapin (1925 in Williamson 1971) found that the diet over a 1-year period consisted of 98 percent animal and 2 percent vegetable matter.

**KEY REFERENCES:** Bent 1950, James 1976, Williamson 1971.

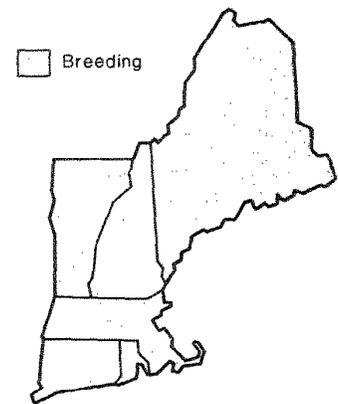
## Warbling Vireo

(*Vireo gilvus*)

A.O.U. No. 627.0



### Range



**RANGE:** Breeding: Nova Scotia, w. to British Columbia, s. to North Carolina, n. Mexico and s. California. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to uncommon and widespread.

**HABITAT:** Breeding: Open mixed or deciduous woodlands, roadside and village shade trees, riverbottoms with mature trees, orchards. Avoids high elevations.

**SPECIAL HABITAT REQUIREMENTS:** Deciduous trees.

**NESTING:** Egg dates: May 16 to June 16, New York (Bull 1974:462). Clutch size: 3 to 5, typically 4. Incubation period: about 12 days. Nestling period: About 16 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 20 to 90 feet (6.1 to 27.4 m). Nest site: In horizontal fork of a slender branch usually well away from trunk. Typically protected by a canopy of leaves. Usually nests higher than other Vireos.

**SAMPLE DENSITIES:** 10 territorial males per 100 acres (40 ha) in field with shrubs and stream-bordered trees in Maryland (Stewart and Robbins 1958:269).

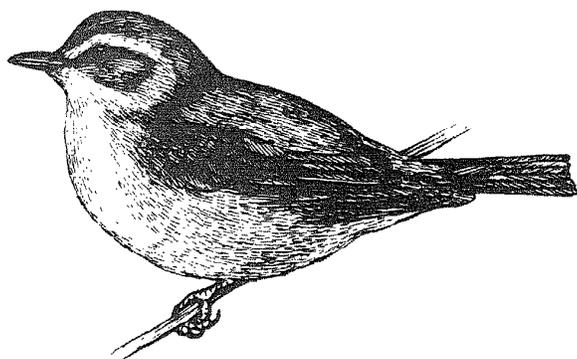
**FORAGING:** Major foods: Insects, especially caterpillars. Substrates: Leaf surfaces. Techniques: Flight-gleaning, gleaning. Preferred feeding habitat: Middle and upper canopy of tall deciduous trees, largely on branch tips.

**KEY REFERENCES:** Bent 1950, James 1976.

## Philadelphia Vireo

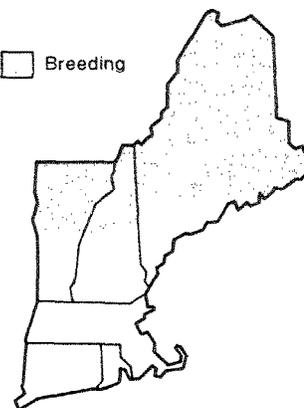
(*Vireo philadelphicus*)

A.O.U. No. 626.0



### Range

□ Breeding



**RANGE:** Breeding: New Brunswick, w. to Alberta, s. to n. New England (rarely), Michigan and North Dakota. Winter: Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon (Maine).

**HABITAT:** Breeding: Deciduous, coniferous or mixed forests, woodland edges, clearings, and burned-over areas with young deciduous second growth, neglected farmlands grown up to small trees and tall shrubs interspersed with clearings, willow and alder thickets along streams. Rarely in villages.

**SPECIAL HABITAT REQUIREMENTS:** Deciduous trees for nesting.

**NESTING:** Egg dates: June 15 to July 15, Maine (Bent 1950:362). Clutch size: 3 to 5, typically 4. Incubation period: 14 days. Nestling period: 13 days. Brood per year: 1 Age at sexual maturity: 1 year. Nest height: 10 to 40 feet (3.0 to 12.2 m). Nest site: Nest is hung in the fork a slender horizontal twig of a deciduous tree or shrub.

**FORAGING:** Major foods: Insects, especially caterpillars; some wild fruits in autumn (less than 10 percent). Substrates: Leaf surfaces, branches. Techniques: Flight-gleaning, gleaning, hawking. Preferred feeding habitat: Tree tops, dense shrubbery.

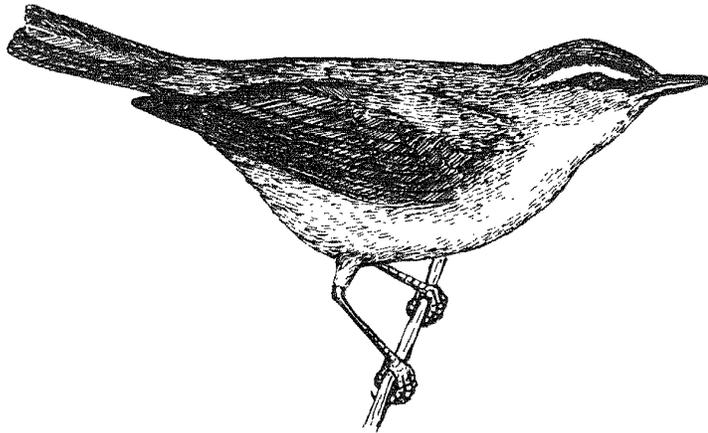
**COMMENTS:** Animal matter represented 73 percent of the diet during the breeding season (McAtee 1926 in Bent 1950:356).

**KEY REFERENCES:** Bent 1950. Lewis 1921.

## Red-eyed Vireo

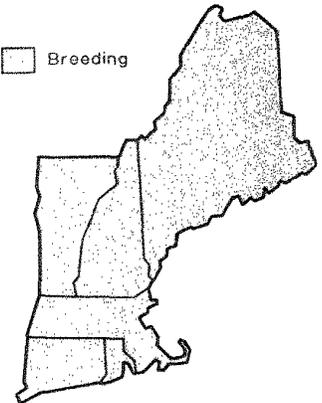
(*Vireo olivaceus*)

A.O.U. No. 624.0



### Range

□ Breeding



**RANGE:** Breeding: Quebec, w. to British Columbia, s. to Florida and s. South America. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant.

**HABITAT:** Breeding: Open deciduous and second-growth woodlands (less often in mixed woods) with thick undergrowth of saplings. Frequents residential areas with abundant shade trees that provide a continuous canopy. Ubiquitous and common in deciduous woodland, yet shows preference for mesic stands in the deciduous forest (Bond 1957).

**SPECIAL HABITAT REQUIREMENTS:** Deciduous trees. A continuous canopy rather than presence of an understory may be the chief habitat requirement (Lawrence 1953).

**NESTING:** Egg dates: May 13 to July 7, New York (Bull 1974:459). Clutch size: 2 to 5, typically 4. Incubation period: 12 to 14 days. Nestling period: 10 to 12 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 2 to 60 feet (0.6 to 18.3 m). Typically 5 to 10 feet (1.5 to 3.0 m) DeGraaf and others (1975) found Red-eyed Vireos ( $n = 20$ ) nesting at an average height of 17 feet (5.2 m) in a nest site study in Massachusetts. Nest site: Suspended in the fork of a horizontal limb often in a sapling, usually in a peripheral area of canopy.

**TERRITORY SIZE:** 45 territories in Michigan averaged 1.7 acres (0.7 ha) per pair (Harrison 1975:172). 5 territories in mixed woods in Ontario ranged from 0.7 to 2.4 acres (0.3 to 1.2 ha) (average 1.4 acres (0.6 ha)) (Lawrence 1953).

**SAMPLE DENSITIES:** Maryland — 60 territorial males per 100 acres (40 ha) in mature northern hardwood forest. 100 territorial males per 100 acres (40 ha) in virgin hardwood deciduous forest. 52 territorial males per 100 acres (40 ha) in dense second-growth forest. 34 territorial males per 100 acres (40 ha) in pine-oak forest. 10 territorial males per 100 acres (40 ha) in open slash area (Stewart and Robbins 1958:266).

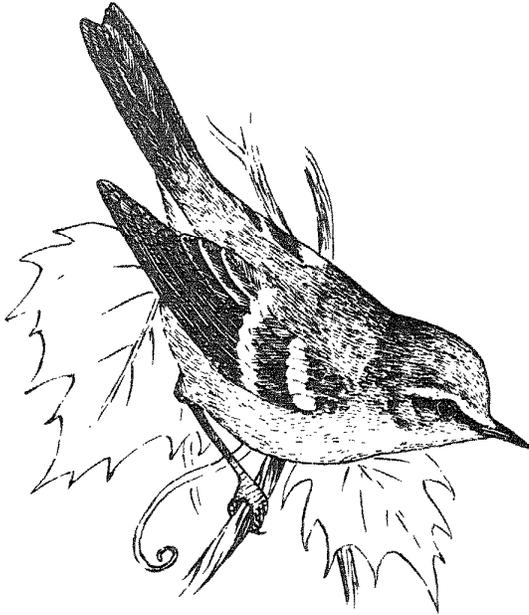
**FORAGING:** Major foods: Insects (more than 85 percent of diet), mainly caterpillars, moths, beetles, bugs, ants. Substrates: Leaf surfaces, especially undersides. Techniques: Gleaning, flight-gleaning, hawking (uncommon), glides rather than hops from branch to branch. Preferred feeding habitat: Uppermost branches of trees; most feeding occurs in periphery of middle and upper canopy; little feeding takes place in core.

**KEY REFERENCES:** Bent 1950, James 1976, Lawrence 1953, Southern 1958, Williamson 1971.

## Blue-winged Warbler

(*Vermivora pinus*)

A.O.U. No. 641.0



### Range

□ Breeding



**RANGE:** Breeding: Southern Wisconsin, s. Michigan, n. Ohio, w. Pennsylvania, w. and se. New York, s. New England, s. to s. Illinois, c. Tennessee, Kentucky, n. Alabama, n. Georgia, North Carolina, n. Virginia, ne. Maryland, Delaware. Winter: Winters from s. Mexico to Guatemala, and Nicaragua and casually to Panama and Colombia; also w. Cuba.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon to locally common.

**HABITAT:** Breeding: Edges of woods, bushy overgrown fields or borders of wooded swamps. Prefers old fields with saplings greater than 10 feet tall (Robbins et al. 1966:254). Often near streams.

**SPECIAL HABITAT REQUIREMENTS:** Old fields with scattered shrubs and small trees.

**NESTING:** Egg dates: May 18 to June 17, New York (Bull 1974:468). Clutch size: 4 to 7, typically 5. Incubation period: 10 to 12 days. Nestling period: 8 to 10 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: On the ground on a foundation of dry leaves, surrounded by bushes or tangles of vines and grasses.

**TERRITORY SIZE:** Less than 1 acre (0.4 ha) to almost 2 acres (0.8 ha) per pair (New York) (Ficken and Ficken 1968). Burke Lake, Michigan (2.0 ha (5 acres) per pair) — habitat: an extensive tamarack swamp surrounded by higher, drier oak-hickory woods. Island Lake, Michigan (1.3 ha (4.6 acres) per pair) — habitat: a low swamp of

tamarack, poison sumac, red osier and gray dogwoods and poplars (Murray and Gill 1976).

**FORAGING:** Major foods: Caterpillars, beetles, ants, spiders. Substrates: Branches at tops of trees. Techniques: Twig and leaf gleaning.

**KEY REFERENCES:** Bent 1953, Short, 1962.

## Golden-winged Warbler

(*Vermivora chrysoptera*)

A.O.U. No. 642.0



### Range

□ Breeding



**RANGE:** Breeding: Wisconsin, s. Michigan, c. New York, s. Connecticut, c. Massachusetts, s. Vermont, s. to n. Illinois, n. Indiana, s. Ohio, w. Pennsylvania, n. New Jersey; in mountains to n. Georgia. Winter: Winters from Guatemala s. to n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare (Vermont).

**HABITAT:** Breeding: Damp fields heavily vegetated with thick grass, clumps of bushes and briars, deciduous damp woods, especially gray birch stands; sometimes found on higher ground. Avoids mountains.

**SPECIAL HABITAT REQUIREMENTS:** Brushy open areas, especially clearings in deciduous woodlands with saplings, forbs, grasses.

**NESTING:** Egg dates: May 18 to June 16, New York (Bull 1974:469). Clutch size: 4 to 6, typically 5. Incubation period: 10 days. Nestling period: 10 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: On the ground generally supported by a base of dead leaves and weed stalks.

**TERRITORY SIZE:** Less than 1 acre (0.4 ha) to almost 2 acres (0.8 ha) per pair (New York) (Ficken and Ficken 1968). Territories usually consisted of overgrown fields with many shrubs and small trees (under 20 feet) (6.0 m), bordered by taller deciduous trees. Burke Lake, Michigan (2.7 ha (6.7 acres) per pair) — habitat: an extensive tamarack swamp surrounded by higher, drier oak-hickory woods. Island Lake, Michigan (1.9 ha (4.7 acres) per pair) — habitat: a low swamp of tamarack, poison sumac,

red osier and gray dogwood and poplars (Murray and Gill 1976).

**SAMPLE DENSITY:** 17 territorial males per 100 acres (40 ha) in dense second-growth forest in Maryland (Stewart and Robbins 1958:276).

**FORAGING:** Major foods: Small bugs and larvae, canker worms, spiders. Substrates: Terminal twigs of high branches in tall trees. Techniques: Twig hopping and gleaning.

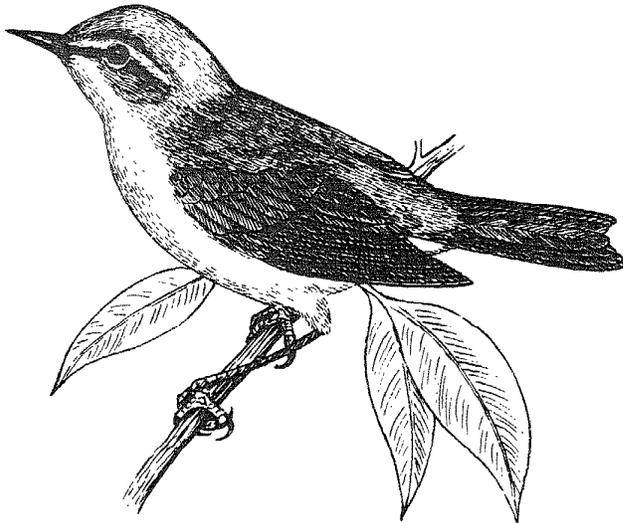
**COMMENTS:** Chickadee-like in feeding habits. Occupies similar habitat as Blue-winged Warbler with which it interbreeds. Golden-winged Warblers may breed at higher elevations and slightly farther north than Blue-winged Warblers (Bull 1974:469).

**KEY REFERENCES:** Griscom and Sprunt 1957, Short 1962.

## Tennessee Warbler

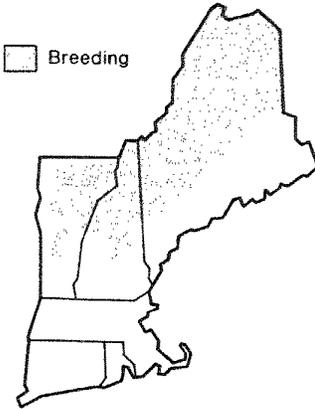
(*Vermivora peregrina*)

A.O.U. No. 647.0



### Range

 Breeding



**RANGE:** Breeding: Northern border of United States s. to n. Wisconsin, n. Michigan, ne. New York, s. Vermont, c. New Hampshire, s. Maine. Winter: From Guatemala e. to w. Colombia and n. Venezuela.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) (Bull 1974:475)).

**HABITAT:** Breeding: Associated with openings in northern deciduous or mixed woodlands with grasses, dense shrubs, and scattered clumps of young deciduous trees (Pough 1949:156). Often in boggy areas, occasionally on dry pine lands.

**SPECIAL HABITAT REQUIREMENTS:** Brushy, semi-open country.

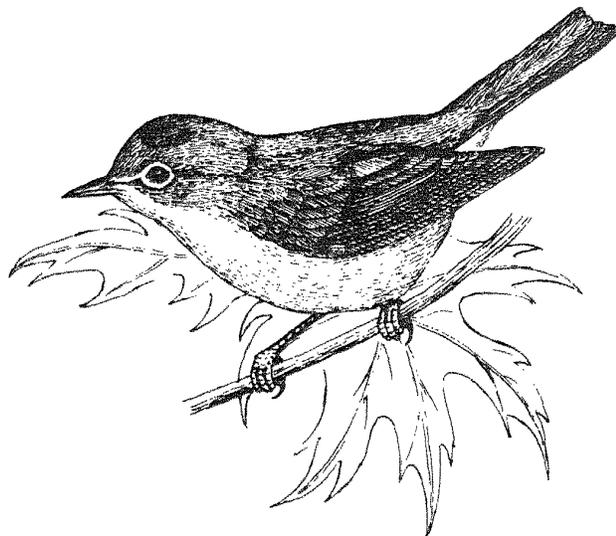
**NESTING:** Egg dates: June 10 to July 10. Peak: June 17 to June 26, New Brunswick (Bent 1953:89). Clutch size: 4 to 7, typically 6. Incubation period: 11 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: On moist ground, in moss or grass, often at base of shrub. Is usually well concealed.

**FORAGING:** Major foods: Almost entirely insectivorous, takes weevils, flies, plant-lice, grasshoppers, caterpillars, grubs, beetles, spiders, some fruit. Substrates: The terminal foliage of trees, generally feeding to 40 feet (12.2 m) high (MacArthur 1958). Techniques: Branch hopping and foliage gleaning.

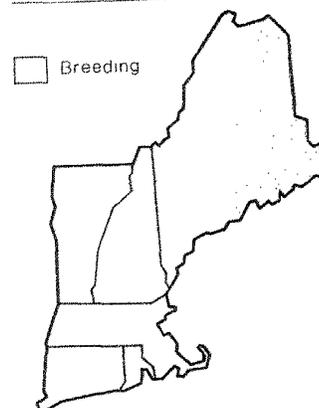
**KEY REFERENCES:** Bent 1953, Bowdish and Philipp 1916, Forbush 1929.

**Nashville Warbler**  
(*Vermivora ruficapilla*)

A.O.U. No. 645.0



**Range**



**RANGE:** Breeding: Southern Canada and n. United States. In the Northeast the range extends s. to Maryland (mountains) and rarely to Connecticut and Long Island. Winter: Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Moist open deciduous woods, overgrown pastures and fields, swampy areas, edges of woodlands, clearings with much young second-growth vegetation, especially young trees 10 to 12 feet tall (Pough 1949:158). Birds reportedly breed in both dry and moist situations, favoring spruce-sphagnum bogs in central New York (Bull 1974:477).

**SPECIAL HABITAT REQUIREMENTS:** Scattered trees interspersed with brush.

**NESTING:** Egg dates: May 19 to June 10, New York (Bull 1974:477). Clutch size: 3 to 5. Incubation period: 11 days. Nestling period: 11 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: Depression in moss or beneath canopy of dried, dead bracken fern; well hidden.

**TERRITORY SIZE:** About 1/2 acre (0.2 ha) per pair in Ontario (Lawrence 1948).

**SAMPLE DENSITIES:** 39 territorial males per 100 acres (40 ha) in scrub spruce bog in Maryland. 21 territorial males per 100 acres (40 ha) in open hemlock-spruce bog in Maryland (Stewart and Robbins 1958:280).

**FORAGING:** Major foods: Adults, larvae, and eggs of various insects including small grasshoppers, plant-lice, caterpillars, and beetles. Substrates: Trunks, branches, and leaves of trees. Techniques: Hopping from bottom to the top of a tree hawking insects encountered.

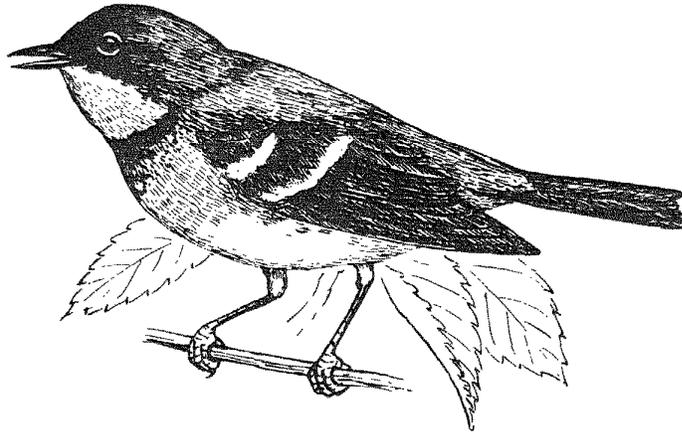
**COMMENTS:** Flying insects sometimes taken in flycatcher fashion; mostly insectivorous (Griscom 1957:83).

**KEY REFERENCES:** Bent 1953, Forbush 1929, Griscom and Sprunt 1957, Lawrence 1948.

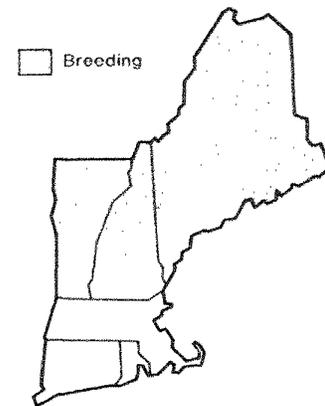
## Northern Parula

(*Parula americana*)

A.O.U. No. 648.0



### Range



**RANGE:** Breeding: Southern Canada to the Gulf States. Winter: Central America and the West Indies.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine).

**HABITAT:** Breeding: Wooded bogs, swamps, prefers conifers in areas where bearded lichen (*Usnea*) grows.

**SPECIAL HABITAT REQUIREMENTS:** Prefers to nest in bearded lichen or use the lichen as nesting material.

**NESTING:** Egg dates: May 17 to June 27, New York (Bull 1974:480). Clutch size: 3 to 7, typically 4 or 5. Incubation period: 12 to 14 days. Nestling period: 11 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 6 to 100 feet (1.8 to 30.5 m). Nest site: Usually hanging near the distal end of a limb that is covered with *Usnea*.

**SAMPLE DENSITIES:** Maryland — 47 territorial males per 100 acres (40 ha) in well-drained floodplain forest. 29 territorial males per 100 acres (40 ha) in poorly drained floodplain forest. 19 territorial males per 100 acres (40 ha) in second-growth river swamp. 12 territorial males per 100 acres (40 ha) in pine-oak forest (Stewart and Robbins 1958:281).

**FORAGING:** Major foods: Beetles, plant-lice, inchworms, small hairy caterpillars, spiders. Substrates: Branches, twigs, and leaves of trees. Techniques: Foliage and twig gleaning — often hangs upside down, chickadee fashion.

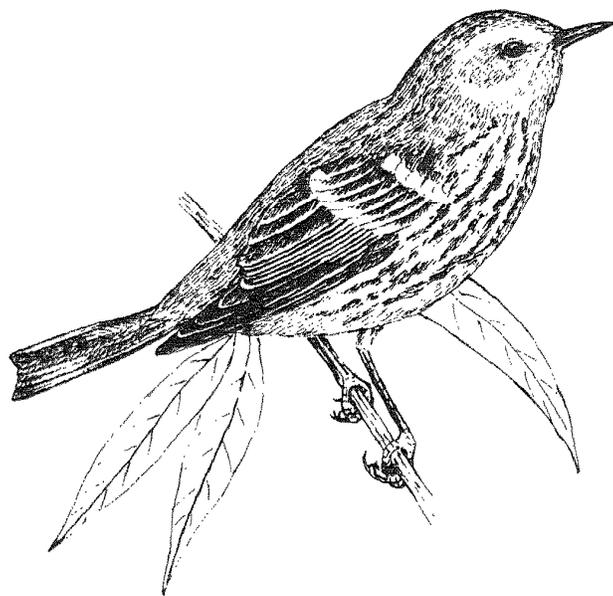
**COMMENTS:** Composition of diet is 98 percent animal, 2 percent vegetable (Wetmore 1916 in Bent 1953:143).

**KEY REFERENCES:** Bent 1953, Forbush 1929, Graber and Graber 1951.

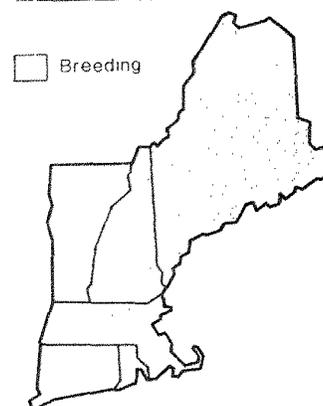
## Yellow Warbler

(*Dendroica petechia*)

A.C.U. No. 652.0



### Range



**RANGE:** Breeding: Canada and Alaska to n. South America. Winter: Central and South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Farmlands, orchards, roadsides and along streams and lakes.

**SPECIAL HABITAT REQUIREMENTS:** Scattered small trees or dense shrubbery.

**NESTING:** Egg dates: May 15 to July 3, New York (Bull 1974:481). Clutch size: 3 to 5, typically 4 or 5. Incubation period: 10 or 11 days. Nestling period: 9 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 2 to 15 feet (0.6 to 4.6 m). Typically 3 to 8 feet (0.9 to 2.4 m). DeGraaf and others (1975) found 19 Yellow Warbler nests at an average height of 22 feet (6.6 m) in five habitat types ranging from rural to urban in Massachusetts. Nest site: Securely placed in a fork or crotch of a shrub, sapling, or tree; often in stream-side thickets and shrubbery associated with suburban gardens. Adaptable in choice of nest site.

**SAMPLE DENSITIES:** 68 pairs per square mile (26 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 63 territorial males per 100 acres (40 ha) in shrubby field with stream-bordered trees in Maryland. 5 territorial males per 100 acres (40 ha) in field and edge habitat in Maryland (Stewart and Robbins 1958:282).

**FORAGING:** Major foods: Insects — caterpillars of gypsy moth and brown-tail and tent caterpillars, cankerworms, beetles, weevils, plant-lice, and grasshoppers. Also takes spiders. Substrates: Small tree limbs generally 4 to 40 feet (1.2 to 12.2 m) high (MacArthur 1958). Techniques: Branch hopping and gleaning, hawking.

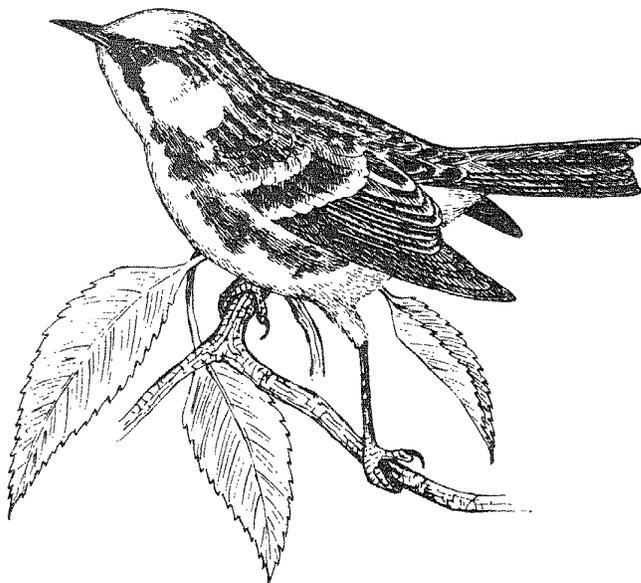
**COMMENTS:** Food composition is 94 percent animal, 6 percent vegetable (Forbes 1883 in Bent 1953:171).

**KEY REFERENCES:** Bent 1953, Forbush 1929, Schrantz 1943.

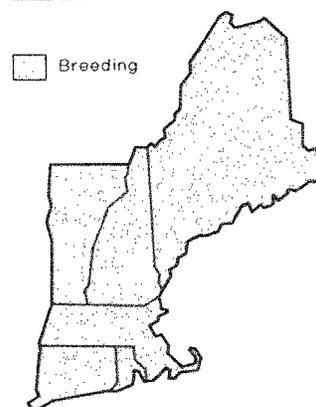
## Chestnut-sided Warbler

(*Dendroica pensylvanica*)

A.O.U. No. 659.0



### Range



**RANGE:** Breeding: Southern Canada s. through mountainous uplands to e. Tennessee and n. Georgia. Winter: Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Second growth woodland edges and abandoned fields; along brushy brooksides and hillsides, roadside thickets, woodland clearings and burns.

**SPECIAL HABITAT REQUIREMENTS:** Early second growth — sprouts and bush at wood margins, hardwood regeneration.

**NESTING:** Egg dates: May 20 to July 25, New York (Bull 1974:495). Clutch size: 4 to 5, typically 4. Incubation period: 12 to 13 days. Nestling period: 10 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 1 to 4 feet (0.3 to 1.2 m), typically 2 feet (0.6 m). Nest site: Well concealed in low bush, sapling, briars, or vines.

**TERRITORY SIZE:** Prior to mating, 4 territories measured 1.2, 1.3, 1.3, and 2.5 acres (0.5, 0.5, 0.5, 1.0 ha). During incubation, males increased territory size by 200 to 700 feet (61 to 213.4 m) to encompass 2 to 12 acres (0.8 to 4.9 ha) in New York (Kendeigh 1945b).

**SAMPLE DENSITIES:** 79 territorial males per 100 acres (40 ha) in dense second growth in Maryland. 67 territorial males per 100 acres (40 ha) in open slash (oak-maple) area (Stewart and Robbins 1958:294).

**FORAGING:** Major foods: Beetles, caterpillars, plant-lice, leaf hoppers, ants, spiders. Substrates: Foliage of shrubs or low plants to 35 feet (10.7 m) tall. Techniques: Hopping along branches and gleaning foliage.

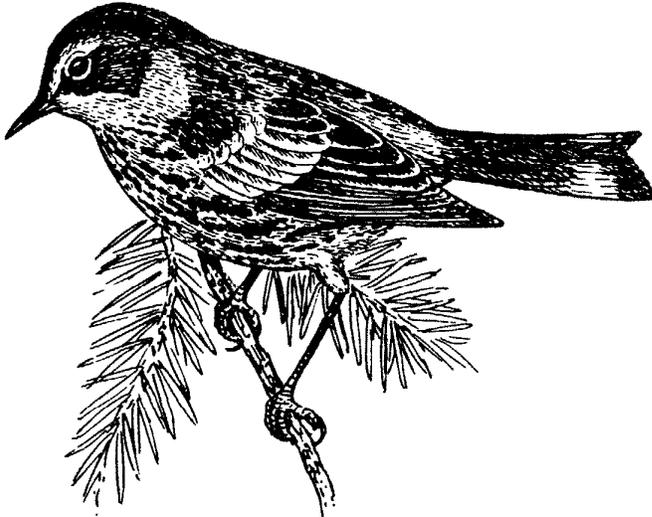
**KEY REFERENCES:** Griscom and Sprunt 1957, Kendeigh 1945b, Lawrence 1948.



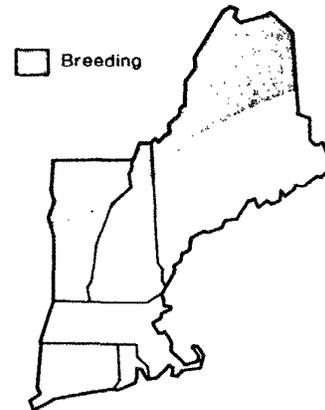
# Cape May Warbler

(*Dendroica tigrina*)

A.O.U. No. 650.0



## Range



**RANGE:** Breeding: Central and e. Canada, s. to n. Wisconsin, ne. New York, n. New Hampshire and n. Maine. Winter: West Indies n. to the Bahamas.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine).

**HABITAT:** Breeding: Fairly open coniferous forest with a high percentage of mature spruces; dense spruce forest with a scattering of taller spires above the canopy level; in more open land among small trees.

**SPECIAL HABITAT REQUIREMENTS:** Tall stands of spruce.

**NESTING:** Egg dates: June 10 to June 29. Peak: June 12 to June 20, New Brunswick (Bent 1953:224). Clutch size: 4 to 9, typically 6 or 7. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 2 to 60 feet (0.6 to 18.3 m). Typically 30 to 60 feet (9 to 18 m). Nest site: Usually in the top of a coniferous tree.

**SAMPLE DENSITIES:** 28 pairs per 100 acres (40 ha) spruce — fir forest near Lake Nipigon, Ontario (Kendeigh 1947 in Griscom and Sprunt 1957:118).

**FORAGING:** Major foods: Insects, ants, small adults and larvae of moths, flies, beetles, small crickets, termites, and larvae of dragonflies. Also takes spiders. Substrates: Tips of dense branches and new buds of firs and spruces near tops of trees. Techniques: Gleaning, hawking.

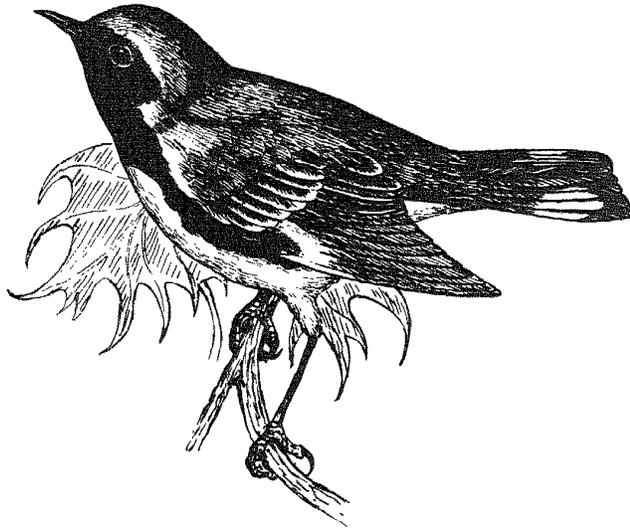
**COMMENTS:** Cape May Warblers are probably dependent on sporadic outbreaks of insects such as the spruce budworm that result in super-abundant food supplies (MacArthur 1958).

**KEY REFERENCES:** Forbush 1929, Griscom and Sprunt 1957, MacArthur 1958.

## Black-throated Blue Warbler

(*Dendroica caerulescens*)

A.O.U. No. 654.0



### Range



**RANGE:** Breeding: Northern Minnesota, e. through Ontario, s. Quebec and Nova Scotia, s. to Connecticut and the mountains of Georgia. Winter: West Indies.

**KEY REFERENCES:** Bent 1953, Griscom and Sprunt 1957, Nice 1930.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Commonly found in or near mixed and deciduous forests with heavy undergrowth or at edges of woodland clearings generally in moist places.

**SPECIAL HABITAT REQUIREMENTS:** Woodlands with thick, shrubby undergrowth (Pough 1949:164).

**NESTING:** Egg dates: May 29 to July 16, New York (Bull 1974:484). Clutch size: 4 to 5. Incubation period: 12 days. Nestling period: 10 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 4 inches (10 cm) to 20 feet (6.1 m), New York (Bull 1974:484). Nest site: In coniferous or deciduous trees, or in shrubs.

**SAMPLE DENSITIES:** Maryland — 58 territorial males per 100 acres (40 ha) in virgin hemlock forest. 48 territorial males per 100 acres (40 ha) in young second growth. 17 territorial males per 100 acres (40 ha) in scrub spruce bog (Stewart and Robbins 1958:286).

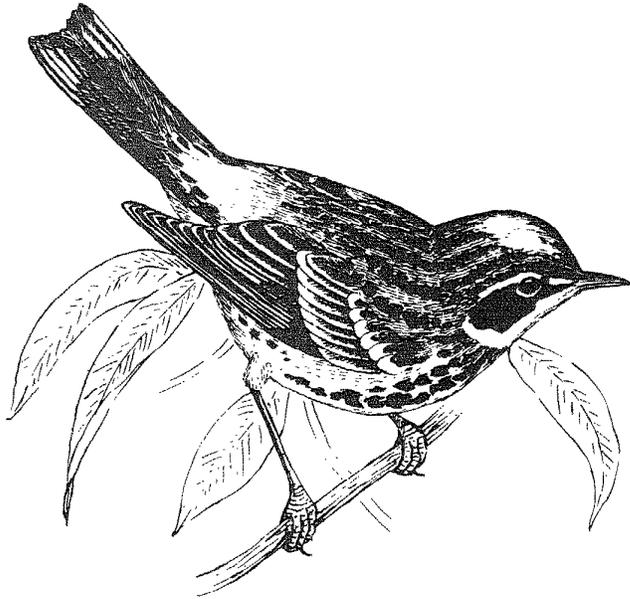
**FORAGING:** Major foods: Insects — mainly hairy caterpillars, moths, crane-flies, mosquitoes, plant-lice. Substrates: Upper branches. Techniques: Hawking, branch and twig gleaning.

**COMMENTS:** Considered a deep woods Warbler, but also common in clearcuts after 15 years.

## Yellow-rumped Warbler

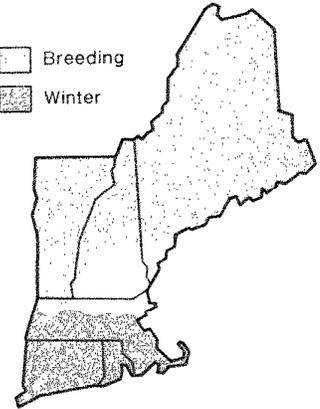
(*Dendroica coronata*)

A.O.U. No. 655.0



### Range

-  Breeding
-  Winter



**RANGE:** Breeding: Alaska and Canada s. to Massachusetts (Berkshires), Pennsylvania (Poconos), and New York (Catskills). Winter: Central New England, s. through the United States, Central America, Bermuda, Bahamas, and the Virgin Islands.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common breeder at higher elevations.

**HABITAT:** Breeding: Coniferous woods (especially in spruce-fir) or in young coniferous growth near the edges of woods; sometimes in mixed woods. Wintering: Along the coast in any type of woodland, in thickets, gardens.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous trees (summer), bayberry thickets (winter).

**NESTING:** Egg dates: May 19 to July 10, New York (Bull 1974:486). Clutch size: 3 to 5, typically 4. Incubation period: 12 to 13 days. Nestling period: 12 to 14 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 4 to 50 feet (1.2 to 15.2 m). Typically 15 to 20 feet (4.6 to 6.1 m). Nest site: Usually in a small coniferous tree, typically saddled on a branch of spruce, hemlock, or cedar. Sometimes in a deciduous tree such as maple or birch.

**SAMPLE DENSITIES:** 30 pairs per 40 ha (100 acres) Loud's Island, Maine, 83 percent red spruce and 14 percent white spruce (Morse 1976). 39 pairs per 40 ha (100 acres) Marsh Island, Maine, 100 percent white spruce (Morse 1976). 31 pairs per 40 ha (100 acres) Harbor Island, Maine, 100 percent white spruce (Morse 1976).

**FORAGING:** Major foods: Insects in summer—plant lice, caterpillars, small grubs, ants, and leaf beetles. In winter—eggs and larvae of some insects, bayberries, berries of red cedar, woodbine, viburnums, honeysuckle, mountain ash, poison ivy, and so on. Substrates: Trunks and branches from tops of trees to ground level, air. Techniques: Trunk and branch gleaning and hawking.

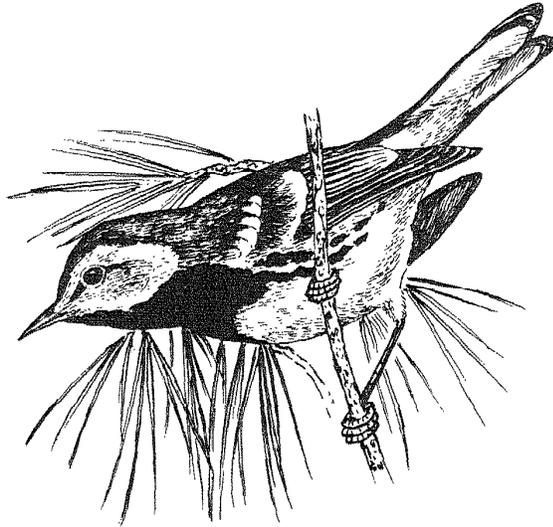
**COMMENTS:** Also uses evergreen plantations (New York) (Bull 1974:486).

**KEY REFERENCES:** Bent 1953, Forbush 1929, MacArthur 1958, Morse 1976.

## Black-throated Green Warbler

(*Dendroica virens*)

A.O.U. No. 667.0



### Range

□ Breeding



**RANGE:** Breeding: Central Canada to c. New Jersey and s. in the mountains to Alabama and Georgia. Winter: Southern Texas and sc. Florida, s. to Greater Antilles, e. Mexico to Panama.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Usually in hemlocks, but sometimes in other northern conifers: pine, spruce, fir, and cedar. Rarely in maples, birches, and other hardwoods.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous or mixed woodlands.

**NESTING:** Egg dates: May 24 to July 2, New York (Bull 1974:489). Clutch size: 4 to 5, typically 4. Incubation period: 12 days. Nestling period: 8 to 10 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 1 to 70 feet (0.3 to 21.3 m). Typically 15 to 20 feet (4.6 to 6.1 m). Nest site: Usually on a horizontal or drooping branch.

**TERRITORY SIZE:** 21 territories ranged from 0.6 to 2.5 acres (0.2 to 1.0 ha); average size 1.6 acres (0.6 ha) (New York) (Kendeigh 1945); habitat: hemlock-beech.

**SAMPLE DENSITIES:** 71 pairs per 40 ha (100 acres) Loud's Island, Maine; 83 percent red spruce, 14 percent white spruce (Morse 1976). 61 pairs per 40 ha (100 acres) Marsh Island, Maine 100 percent white spruce (Morse 1976). 83 pairs per 40 ha (100 acres) Harbor Island,

Maine, 100 percent white spruce (Morse 1976). 36 territorial males per 100 acres (40 ha) in mature oak-maple forest in Maryland. 9 territorial males per 100 acres (40 ha) in mature northern hardwood forest (Stewart and Robbins 1958:288).

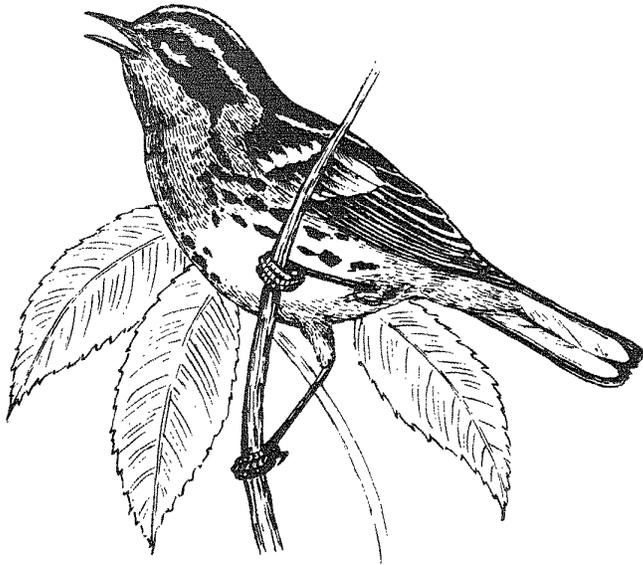
**FORAGING:** Major foods: Insects—leaf rollers, leaf-eating caterpillars, beetles, flies, gnats, and plant lice. Also takes mites, cankerworms, spiders, some berries. Substrates: Often limbs and foliage of evergreens 10 to 50 feet (3.0 to 15.2 m) above ground. Techniques: Hopping, rapid peering or hovering followed by gleaning, occasional hawking.

**COMMENTS:** Strongly associated with hemlocks.

**KEY REFERENCES:** Forbush 1929, Kendeigh 1945, MacArthur 1958, Morse 1976.

**Blackburnian Warbler**  
(*Dendroica fusca*)

A.O.U. No. 662.0



**Range**

Breeding



**RANGE:** Breeding: Southern Canada to nw. Connecticut, se. New York and n. New Jersey s. to the mountains of South Carolina. Winter: Southern Central America, n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common, especially in higher elevations.

**HABITAT:** Breeding: Deep coniferous woods or swampy woods where spruces are thickly draped with bearded lichen (*Usnea*); often associated with very tall hemlocks; also said to inhabit stands of second growth deciduous woods.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous woodlands.

**NESTING:** Egg dates: June 1 to June 24, New York (Bull 1974:492). Clutch size: 4 to 5, typically 4. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 5 to 84 feet (1.5 to 25.6 m). Typically 30 to 50 feet (9.1 to 15.2 m). Nest site: High up in a tree (usually a spruce) situated well away from the trunk or in small fork near top of tree.

**TERRITORY SIZE:** 9 territories averaged 1.3 acres (0.5 ha) in size per pair in New York; habitat: hemlock-beech (Kendeigh 1945).

**SAMPLE DENSITIES:** 26 pairs per 40 ha (100 acres) Loud's Island, Maine, 83 percent red spruce, 14 percent white spruce (Morse 1976). 17 pairs per 40 ha (100 acres) Marsh Island Maine, 100 percent white spruce (Morse

1976). 100 territorial males per 100 acres (40 ha) in virgin hemlock forest in Maryland. 96 territorial males per 100 acres (40 ha) in virgin spruce-hemlock bog forest in Maryland. 39 territorial males per 100 acres (40 ha) in scrub spruce bog in Maryland (Stewart and Robbins 1958:291).

**FORAGING:** Major foods: Almost entirely insects such as beetles, caterpillars, ants, crane-files. Substrates: High tree limbs. Techniques: Passing from limb to limb with rapid gleaning, occasionally hovering or hawking.

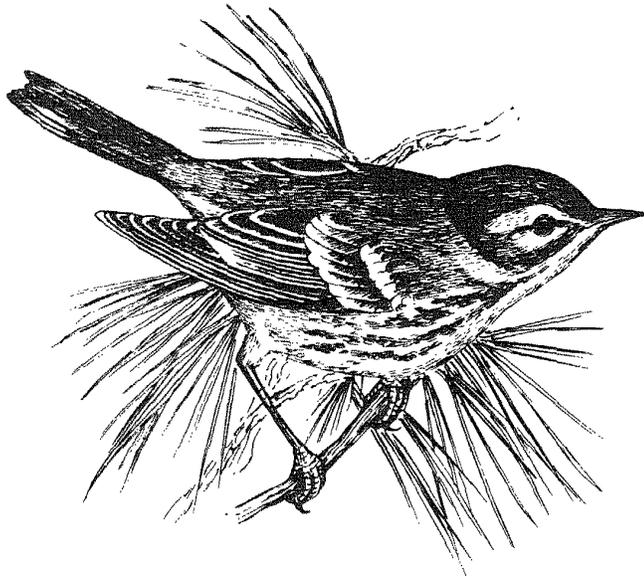
**COMMENTS:** Considered a deep-woods warbler; lives in the the tops of northern conifers, especially spruces.

**KEY REFERENCES:** Bent 1953, Griscom and Sprunt 1957, Kendeigh 1945, MacArthur 1958, Morse 1976.

## Pine Warbler

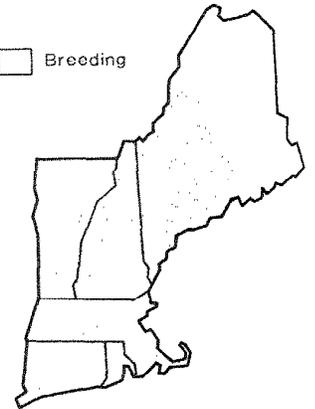
(*Dendroica pinus*)

A.O.U. No. 671.0



### Range

Breeding



**RANGE:** Breeding: Southern edge of Canada to the Gulf States. Winter: In the s. third of breeding range; some strays may be found as far n. as Massachusetts.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to rare.

**HABITAT:** Breeding: Exclusively in pines, favoring open pitch pine woods with tall trees. Frequents coastal pine barrens, less common inland. Wintering: Mature loblolly pine stands, especially those near tidewater.

**SPECIAL HABITAT REQUIREMENTS:** Pines. Pitch pine is preferred but other species of pine are used as well.

**NESTING:** Egg dates: May 4 to June 6, New York (Bull 1974:502). Clutch size: 3 to 5, typically 4. Incubation period: Probably 12 to 13 days (period unknown). Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 8 to 800 feet (2.4 to 24.4 m). Typically 30 to 50 feet (9.1 to 15.2 m). Nest site: saddled on a horizontal branch well out from the trunk; sometimes situated among the small twigs towards the end of a limb, obscured from below by a cluster of pine needles.

**SAMPLE DENSITIES:** Maryland—76 territorial males per 100 acres (40 ha) in immature loblolly-shortleaf pine stand. 20 territorial males per 100 acres (40 ha) in pine-oak forest. 10 territorial males per 100 acres (40 ha) in mature scrub pine (Stewart and Robbins 1958:297).

**FORAGING:** Major foods: Insects—adult and larvae of beetles, ants, grasshoppers, moths, bugs, flies, and scale insects. Also takes spiders and small amounts of pine and birch seeds, berries of wax myrtle. Substrates: Trunks and larger branches of pines. Techniques: Trunk and branch gleaning.

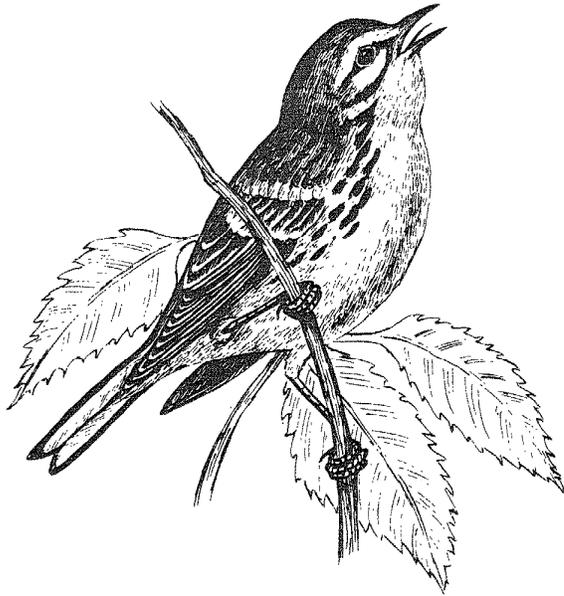
**COMMENTS:** Generally associated with pines, especially pitch, loblolly and Virginia where they occur within its breeding range in the Northeast. Distribution is spotty.

**KEY REFERENCES:** Bent 1953, Forbush 1929.

## Prairie Warbler

(*Dendroica discolor*)

A.O.U. No. 673.0



### Range



**RANGE:** Breeding: Northern Michigan, s. Ontario, c. New York and c. New England, s. Winter: Throughout the West Indies.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common to uncommon.

**HABITAT:** Breeding: Open sandy or gravelly areas with scattered pitch pines, scrub oaks and other plants with similar requirements; prefers barren lands, dry, rocky or brushy pasture, and dry sproutland often with scattered redcedars. Young stands of pine 10 to 30 feet (3 to 9 m) tall (Robbins et al. 1966:268) and deciduous saplings. Logging and burning create favorable habitat.

**SPECIAL HABITAT REQUIREMENTS:** Favors coniferous cover. Avoids high elevations.

**NESTING:** Egg dates: May 25 to June 29, New York (Bull 1974:505). Clutch size: 3 to 5, typically 4. Incubation period: 10 to 14, typically about 12 days (Nolan 1978:235). Nestling period: 8 to 11 days, typically 9 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: Less than 1 foot (0.3 m) to 45 feet (13.7 m). Typically 3.3 to 6.6 feet (1.0 to 2.0 m) (Nolan 1978:127). Nest site: usually well hidden in upright fork of sapling or shrub. Less frequently in vines. American elm, sugar maple, hawthorn, scrub oak, and bayberry are important nest plants (Nolan 1978:133, Bent 1953:431).

**TERRITORY SIZE:** Maximum territories ranged in size from 0.4 to 3.5 ha (1 to 9 acres). Average 1.6 ha (0.6 acres) in Indiana (Nolan 1978:332).

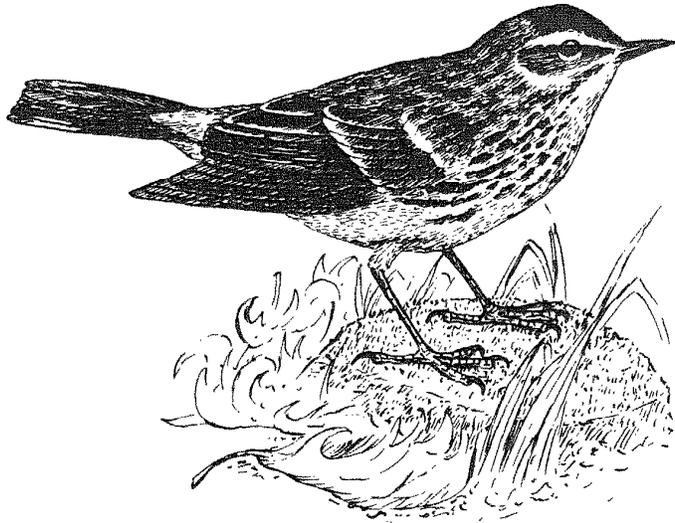
**FORAGING:** Major foods: Larvae and adults of beetles, bugs, butterflies and moths, wasps, bees, flies, and grasshoppers. Also takes spiders. Substrates: Trees, saplings, shrubs, herbaceous vegetation, bare ground, air. Techniques: Branch, twig and leaf gleaning; flycatching; hovering; clinging to vertical stems; dropping to ground.

**COMMENTS:** Breeding range is expanding northward— influenced to a great extent by availability of Christmas tree plantations (Harrison 1975:196).

**KEY REFERENCES:** Bent 1953, Forbush 1929, Nolan 1978.

**Palm Warbler**  
(*Dendroica palmarum*)

A.O.U. No. 672.0



**Range**

Breeding



**RANGE:** Breeding: Southeastern Canada to c. Maine and c. New Hampshire. Winter: Southeastern United States casually n. along coast to New Jersey and Connecticut.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon in breeding season. Rare in winter.

**HABITAT:** Breeding: Frequents sphagnum bogs and wet muskegs, open barrens, and dry spruce forests.

**NESTING:** Egg dates: May 18 to June 8, Nova Scotia (Bent 1953:449). Clutch size: 4 to 5. Incubation period: 12 days. Nestling period: 12 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest site: A dry spot on ground such as a hummock where nest is concealed by grasses or other nearby vegetation; rarely on low branches of small spruce trees. Nests singly or in loose colonies.

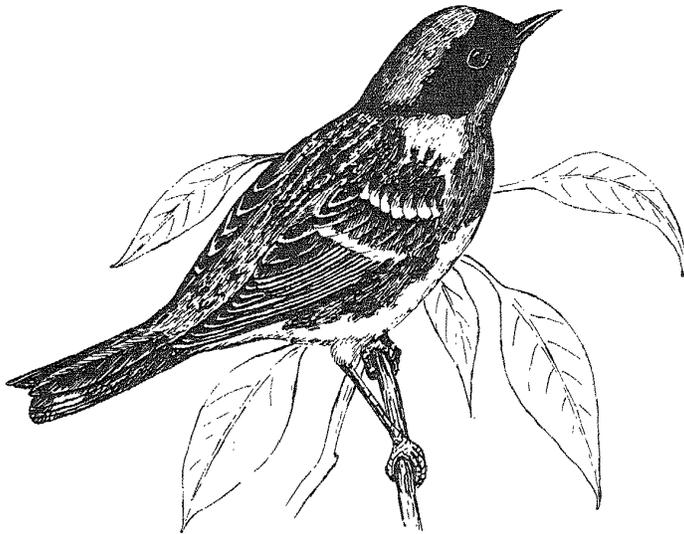
**FORAGING:** Major foods: Mainly insects such as beetles, ants, caterpillars, grasshoppers, gnats, mosquitoes, flies, and mayflies. Vegetable matter, especially barberries during the winter months. Substrates: On the ground, in the air. Technique; Hawking.

**KEY REFERENCES:** Bent 1953, Forbush 1929, Walkinshaw and Wolf 1957.

## Bay-breasted Warbler

(*Dendroica castanea*)

A.O.U. No. 660.0



### Range

Breeding



**RANGE:** Breeding: Central Canada to ne. New York, c. Vermont and New Hampshire and s. Maine. Winter: Central and e. Panama to n. Colombia and w. Venezuela.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Fairly common to rare.

**HABITAT:** Breeding: Northern coniferous or mixed forests, especially in young trees along ponds, streams, in bogs or forest clearings.

**SPECIAL HABITAT REQUIREMENTS:** Early coniferous second growth of trees 6 to 10 feet (1.8 to 3.4 m) tall (Pough 1949:174).

**NESTING:** Egg dates: June 5 to July 2, peak: June 17 to June 25, New Brunswick (Bent 1953:389). Clutch size: 4 to 7, typically 5 or 6. Incubation period: 12 to 13 days. Nestling period: 11 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 4 to 40 feet (1.2 to 12.2 m). Typically 15 to 25 feet (4.6 to 7.6 m). Nest site: Along a horizontal branch of a conifer or in the top of a small tree, usually 5 to 10 feet (1.5 to 3.0 m) out from trunk.

**FORAGING:** Major foods: Locusts, caterpillars, ants, beetles, leafhoppers, houseflies, spiders. Substrates: Foliage of trees at all heights but mainly in interior of tree tops. Techniques: Searching and foliage gleaning with slow deliberate movements, often spending much time in same tree (MacArthur 1958). Occasionally hangs upside-down. Rarely hovers.

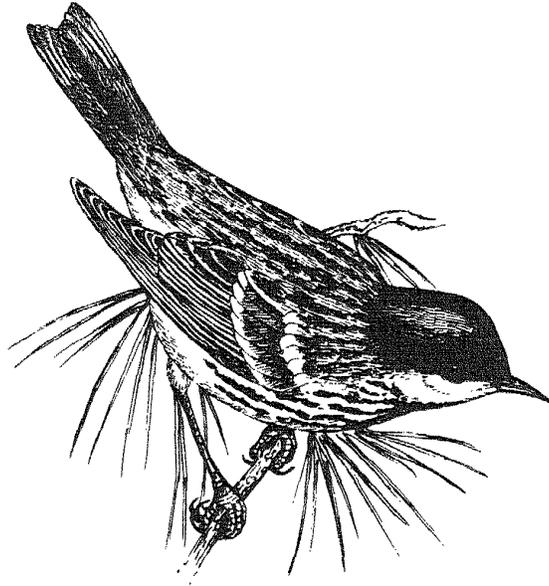
**COMMENTS:** Bay-breasted warblers may depend on periodic outbreaks of abundant insects such as the spruce budworm (MacArthur 1958).

**KEY REFERENCES:** Chapman 1907, Forbush 1929, Griscom and Sprunt 1957, Mendall 1937.

## Blackpoll Warbler

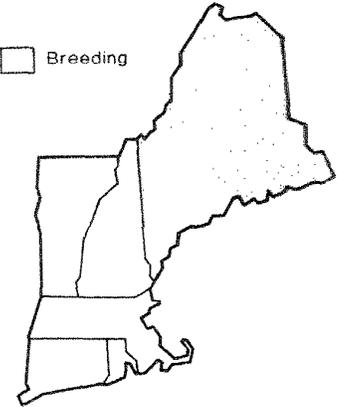
(*Dendroica striata*)

A.O.U. No. 661.0



### Range

Breeding



**RANGE:** Breeding: Edge of timber from nw. and s. Alaska across to Newfoundland, s. to s. Nova Scotia, and islands off e. Maine; New England mountains. Winter: Northern South America to e. Brazil.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common, local on Mt. Greylock (Massachusetts) (Bull 1974:497).

**HABITAT:** Breeding: Among low coniferous trees at high elevations, often in swampy groves, in stunted spruce and fir on the upper slopes of mountains. Favors small growth (stunted, young or medium-sized conifers).

**SPECIAL HABITAT REQUIREMENTS:** Low coniferous growth.

**NESTING:** Egg dates: June 5 to July 10, New York (Bull 1974:499). Clutch size: 3 to 5, typically 4 or 5. Incubation period: 11 to 12 days. Nestling period: 10 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 1 to 12 feet (0.3 to 3.7 m). Typically 5 feet (1.5 m). Nest site: Usually low in a spruce or other conifer; rarely on the ground.

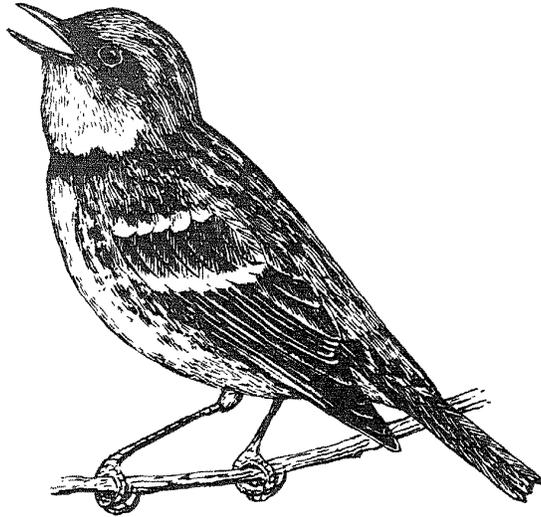
**FORAGING:** Major foods: Insects such as spruce-gall lice, cankerworms, mosquitoes, fall webworms, locusts, ants, gnats; some seeds and berries. Substrates: Leaves and twigs. Techniques: Foliage gleaning.

**KEY REFERENCES:** Bent 1953, Forbush 1929.

## Cerulean Warbler

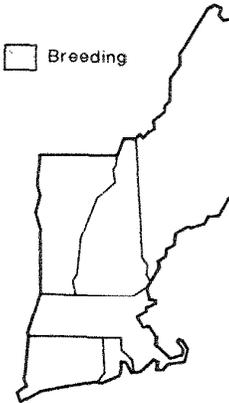
(*Dendroica cerulea*)

A.O.U. No. 658.0



### Range

Breeding



**RANGE:** Breeding: In the East from se. Ontario and c. New York, s. Also found in Sandbar State Park, Vermont. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common at low elevations in the Champlain Valley.

**HABITAT:** Breeding: Swamps and bottomlands. Favors open stands of tall trees along riverbanks or dense deciduous forests with little undergrowth. Generally occupies upper canopy.

**SPECIAL HABITAT REQUIREMENTS:** Tall deciduous trees.

**NESTING:** Egg dates: May 19 to June 23, New York (Bull 1974:490). Clutch size: 3 to 5, typically 4. Incubation period: 12 to 13. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 20 to 60 feet (6.1 to 18.3m). Nest site: Usually in the fork of a tall tree, some distance from the trunk with an open area below. Elm was a favorite nest tree in New York State (Bull 1974:490).

**SAMPLE DENSITIES:** 4.8 territorial males per 20 ha (50 acres) in birch-basswood habitat in Pennsylvania (Van Velzen 1977).

**FORAGING:** Major foods: Mainly insects such as wasps, ants, bees, beetles, weevils, and caterpillars. Substrates: Air, leaves. Techniques: Hawking, foliage gleaning.

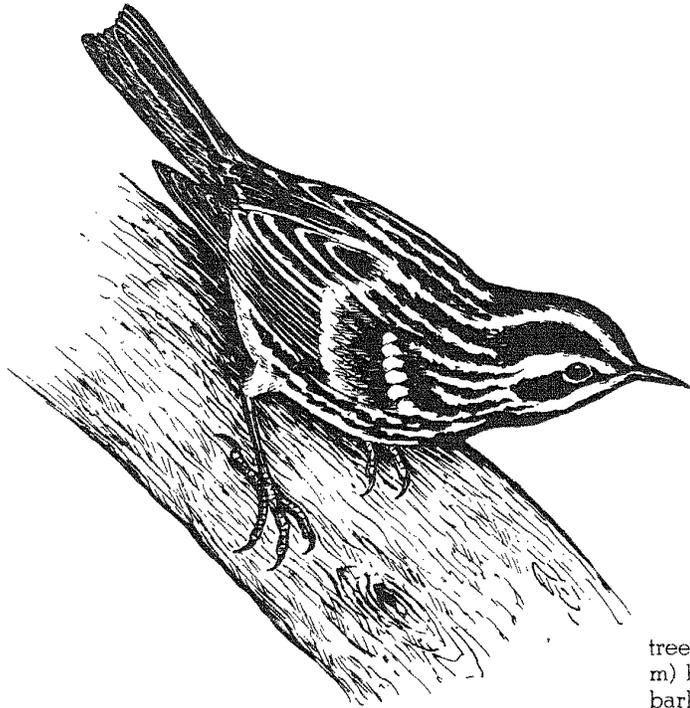
**COMMENTS:** Eats chiefly insects (Griscom 1957:1)

**KEY REFERENCES:** Bent 1953, Forbush 1929, G and Sprunt 1957, Linehan 1973.

## Black-and-white Warbler

(*Mniotilta varia*)

A.O.U. No. 636.0



### Range

Breeding



tree trunks and main branches, generally to 35 feet (10.7 m) high (MacArthur 1958). Techniques: creeping and bark-gleaning.

**RANGE:** Breeding: Southern Canada, s. to n. Mississippi, c. Alabama, c. Georgia, s. South Carolina, and se. North Carolina. Winter: From Baja, California, s. Texas, c. Florida, and the Bahamas, s. through Central America and the West Indies to n. South America.

**COMMENTS:** One of the earliest warblers to arrive on northern breeding grounds in spring.

**KEY REFERENCES:** Forbush 1929, Griscom and Sprunt 1957, Harrison 1975.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Mature or second-growth deciduous or mixed woodlands from near sea level to mountain peaks. Not abundant in northern coniferous forests.

**NESTING:** Egg dates: May 10 to June 30, New York (Bull 1974:463). Clutch size: 4 to 5, typically 5. Incubation period: 13 days. Nesting period: 11 to 12 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: A depression in the ground at the base of a tree, stump or over-turned roots, rock or in the shelter of a log, usually hidden from above.

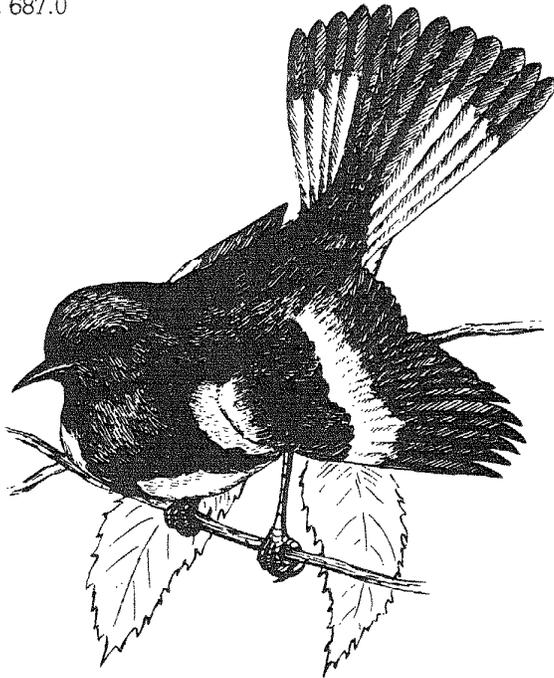
**SAMPLE DENSITIES:** Maryland—21 territorial males per 100 acres (40 ha) in dense second growth. 13 territorial males per 100 acres (40 ha) in open slash area. 11 territorial males per 100 acres (40 ha) in virgin hardwood forest (Stewart and Robbins 1958:270).

**FORAGING:** Major foods: Wood boring insects, click beetles, plant lice, small caterpillars, moths, spiders, egg masses, and pupae. Substrates: Bark crevices of

## American Redstart

(*Setophaga ruticilla*)

A.O.U. No. 687.0



### Range

Breeding



**RANGE:** Breeding: From limit of tree growth, s. to Oregon, Arkansas, North Carolina, and the mountains of Georgia. Winter: Mexico and the West Indies to Ecuador and British Guiana.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: In orchards, saplings bordering on pastures, second-growth deciduous woodlands (occasionally coniferous or mixed); in shade trees and shrubbery about dwellings, second-growth maples; also in willow and alder thickets bordering ponds and streams. Most abundant in extensive, sapling/pole stage deciduous woodlands (Bond 1957).

**NESTING:** Egg dates: May 22 to July 16, New York (Bull 1974:522). Clutch size: 3 to 5, typically 4. Incubation period: 12 to 14 days. Nestling period: 8 to 9 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 4 to 30 feet (1.2 to 9.1 m). Nest site: In upright crotch of a tree or on a horizontal limb, sapling, or shrub.

**TERRITORY SIZE:** Slightly less than 1 acre (0.4 ha) per pair (Griscom and Sprunt 1957:241); 1 acre (0.4 ha) or less per pair (Hickey, in Bent 1953); 0.8 acres (0.3 ha) per male (Ficken 1962); 6 territories on 1.4 acres (0.6 ha) (average 0.24 acres, 0.1 ha); 9 territories on 1.4 acres (0.6 ha) (average 0.16 acres, 0.1 ha) in orchard, second-growth woodland comprised of sugar maple, basswood,

hackberry, black cherry, and elm with younger trees and sumac as understory along western Lake Erie (Sturn 1945).

**SAMPLE DENSITIES:** 7 males were sighted 10 to 20 m (33 to 66 feet) apart in area 100 m<sup>2</sup> (120 square yard) (Baker 1944) in a thick stand of young sugar maples (saplings) with a scattering of large deciduous trees. 36 pairs per 40 ha (100 acres) Harbor Island, Maine, in white spruce (Morse 1976). 51 territorial males per 100 acres (40 ha) in well-drained floodplain forest in Maryland, and 91 territorial males per 100 acres (40 ha) in second-growth river swamp (Stewart and Robbins 1958:316).

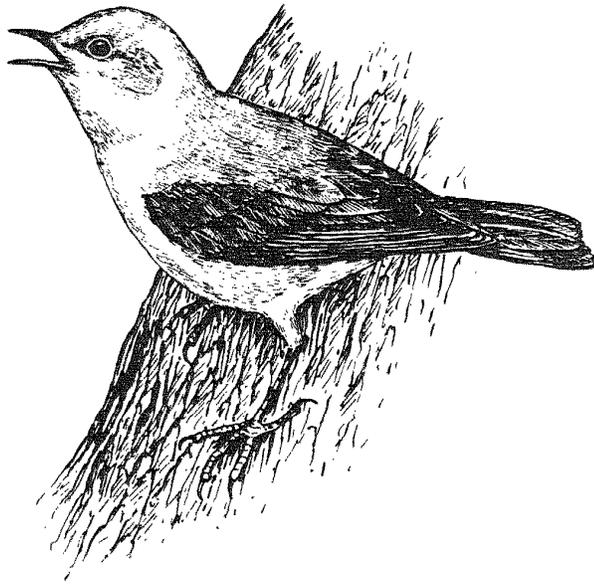
**FORAGING:** Major foods: Insects such as caterpillars, bugs, flies, moths, small grasshoppers, beetles, and wasps. Also takes spiders and small amounts of fruit. Substrates: Dead tree limbs, foliage, air. Generally feeds at heights between 5 and 50 feet (1.5 and 15.2 m) (MacArthur 1958). Techniques: Branch and twig gleaning, hawking.

**KEY REFERENCES:** Bent 1953, Forbush 1929, Griscom and Sprunt 1957.

## Prothonotary Warbler

(*Protonotaria citrea*)

A.O.U. No. 637.0



### Range

Breeding



**RANGE:** Breeding: Southeastern Minnesota and ne. Nebraska e. to s. Ontario, c. New York and c. New Jersey s. to Florida. Winter: Nicaragua to Colombia.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon to rare.

**HABITAT:** Breeding: Wooded swamps, borders of streams and shallow ponds and flooded bottomlands often heavily shaded with oak, maple, ash, and elm.

**SPECIAL HABITAT REQUIREMENTS:** Cavity for nesting; border between water and thick deciduous woods (Simpson 1969).

**NESTING:** Egg dates: May 17 to June 29, New York (Bull 1974:464). Clutch size: 3 to 8, typically 6. Incubation period: 12 to 14 days. Nesting period: 10 or 11 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 3 to 32 feet (1.0 to 9.8 m). Typically 5 to 10 feet (1.5 to 3.0 m). Nest site: Natural cavities, abandoned woodpecker holes or nest boxes. Almost always in well-shaded stumps or snags that are standing in water or less than 20 feet (6 m) from it (Simpson 1969). Male builds one or two dummy nests.

**TERRITORY SIZE:** Linear—240 to 300 m (792 to 990 feet) of woody vegetation at water's edge (Simpson 1969). An area 168 (552 feet) long by 61.0 m (201 feet) wide was occupied by one male (Tennessee) (Meyer and Nevius 1943). Habitats: grassy terraces (with several nesting boxes); river banks densely covered with small trees and bushes.

**SAMPLE DENSITIES:** 40 territorial males per 100 acres (40 ha) in second-growth river swamp in Maryland (Stewart and Robbins 1958:272). Maximum 27 pairs per 40 ha (100 acres) (Hardin and Evans 1977).

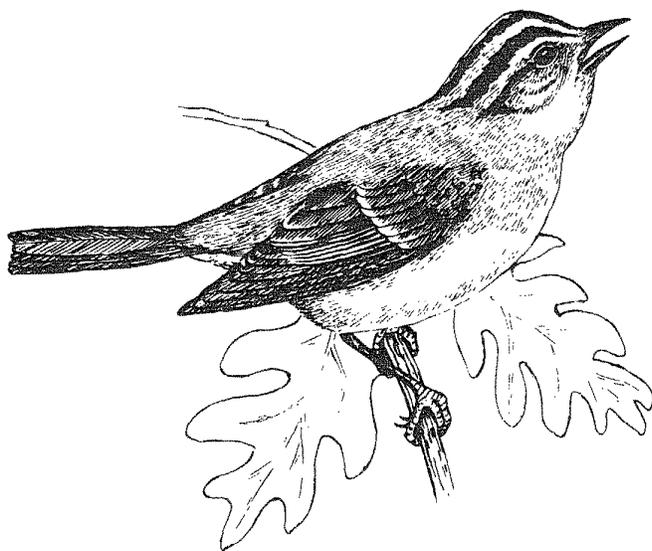
**FORAGING:** Major foods: Caterpillars, ants, flies, bees, locusts, aquatic insects, beetles, spiders, small snails. Substrates: Trunks and branches of trees. Techniques: Trunk and branch gleaning.

**COMMENTS:** Highly insectivorous (Bent 1953:25).

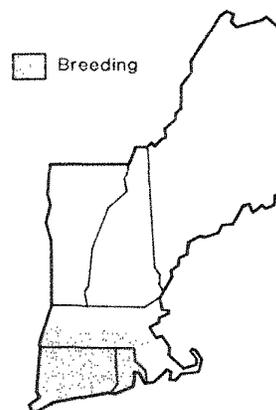
**KEY REFERENCES:** Griscom and Sprunt 1957; Simpson 1969, Walkinshaw 1938b, 1953.

**Worm-eating Warbler**  
(*Helmitheros vermivorus*)

A.O.U. No. 639.0



**Range**



**RANGE:** Breeding: From s. New England, w. New York, n. Indiana, and s. Iowa, s. to Virginia, n. Georgia, and s. Missouri. Winter: The Bahamas, the West Indies, and Central America. Rarely n. to Florida.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common (Lower Hudson Valley) to rare (north shore of Long Island) (Bull 1974:466).

**HABITAT:** Breeding: Deep, damp woods, wooded ravines or hillsides often near a running stream and a dense understory. Birds favor second-growth deciduous woods with young trees and a shrubby understory (Pough 1949:149).

**SPECIAL HABITAT REQUIREMENTS:** Dense undergrowth.

**NESTING:** Egg dates: May 24 to June 18, New York (Bull 1974:466). Clutch size: 3 to 6, typically 4 to 5. Incubation period: 13 days. Nestling period: 10 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: On ground often at base of tree, rock, or log. On hillsides or banks of ravines.

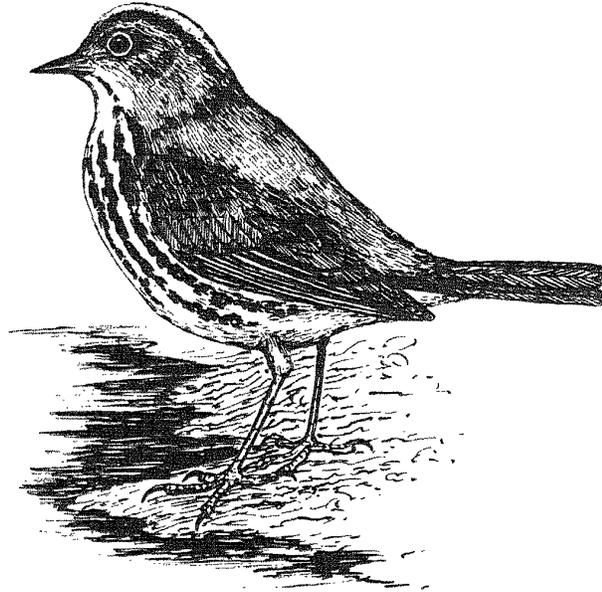
**FORAGING:** Major foods: Mainly insects, takes few worms. Substrates: Leaf litter of forest floor. Techniques: Ground gleaning.

**KEY REFERENCES:** Bent 1953, Forbush 1929.

## Ovenbird

(*Seiurus aurocapillus*)

A.O.U. No. 674.0



### Range

Breeding



**RANGE:** Breeding: Central Canada and the ne. United States, s. in the mountains to Georgia. Winter: Florida w. to Mexico, s. to Central America, the West Indies and n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Usually in closed-canopy, mature deciduous or mixed woods, but often among pines; open forests with little underbrush and an abundance of fallen leaves, logs, and rocks are preferred. Thinning may reduce ovenbird abundance until the canopy closes (Johnston 1970).

**NESTING:** Egg dates: May 17 to July 22, New York (Bull 1974:507). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 12 days. Nestling period: 8 to 10 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: On ground (sloped or level), in depression of dead leaves, sometimes at base of tree or log, invariably roofed over and concealed from above by vegetation.

**TERRITORY SIZE:** 0.5 to 4.5 acres (0.2 to 1.8 ha) per pair (Hann 1937); 21 territories averaged 1.6 acres (0.6 ha), range 0.25 to nearly 3 acres (0.1 to 1.2 ha) — habitat: hemlock-beech (Kendeigh 1945).

**SAMPLE DENSITIES:** Maryland — 40 territorial males per 100 acres (40 ha) in mixed oak forest. 26 territorial males per 100 acres (40 ha) in dense second growth. 24 territorial males per 100 acres (40 ha) in young second growth

(resulting from cutting). 17 territorial males per 100 acres (40 ha) in pine-oak forest (Stewart and Robbins 1958:302).

**FORAGING:** Major foods: Insects such as plant lice, caterpillars (hairy and hairless), other larvae, moths, butterflies, grasshoppers, and crickets. Also consumes small snails, slugs, myriapods, earthworms, and spiders. Substrates: Leaf litter and debris of forest floor. Technique: Ground gleaning.

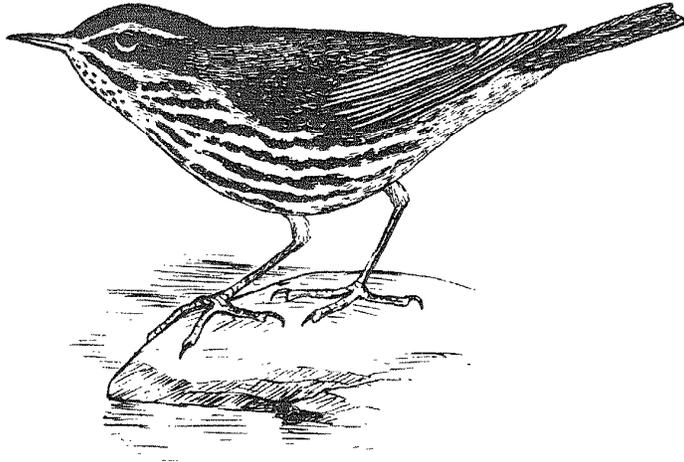
**COMMENTS:** Pairs may mate in successive years (Bent 1953:458).

**KEY REFERENCES:** Bent 1953, Forbush 1929, Hann 1937.

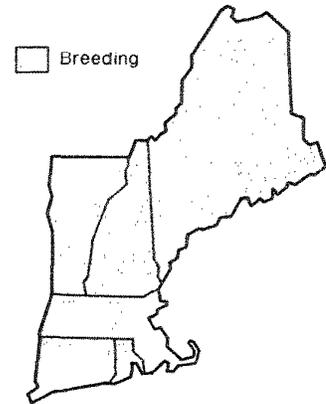
## Northern Waterthrush

(*Seiurus noveboracensis*)

A.O.U. No. 675.0



### Range



**RANGE:** Breeding: Southern Quebec, Labrador, and Newfoundland, s. to se. New York, West Virginia, and Pennsylvania (in Appalachians), s. New England. Winter: Mainly from Mexico and the West Indies s. to n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon to common (widespread).

**HABITAT:** Breeding: Favors wooded swamps and bogs, less frequently occurs along woodland brooks or streams and swampy wooded shores of ponds or lakes. Commonly breeds at moderately high elevations.

**SPECIAL HABITAT REQUIREMENTS:** Cool, shady, wet ground with open pools of shallow water (Pough 1949:181).

**NESTING:** Egg dates: May 10 to June 28, New York (Bull 1974:509). Clutch size: 4 to 5. Incubation period: 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: In cavity on the ground: among roots of fallen trees, at base of moss-covered stump, under mossy log, or in side of mossy brook bank.

**SAMPLE DENSITIES:** Maryland — 84 territorial males per 100 acres (40 ha) in open hemlock-spruce bog. 33 territorial males per 100 acres (40 ha) in scrub spruce bog (Stewart and Robbins 1958:303).

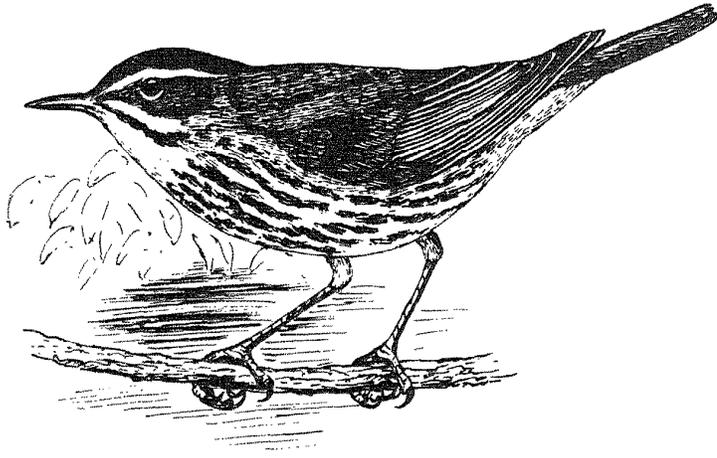
**FORAGING:** Major foods: Aquatic insects, beetle larvae, moths, mosquitoes, ants. Also takes small crustaceans, mollusks, and worms. Substrates: Crevices in rocks. Technique: Ground gleaning.

**KEY REFERENCES:** Forbush 1929, Griscom and Sprunt 1957.

## Louisiana Waterthrush

(*Seiurus motacilla*)

A.O.U. No. 676.0



### Range



**RANGE:** Breeding: From c. Nebraska, e. to s. Ontario, Vermont, and New Hampshire, s. to e. Oklahoma, e. Texas, Louisiana, across to ne. North Carolina. Winter: From s. Sonora, Mexico, Cuba, Bahamas, and Bermuda, s. to Panama, Trinidad, Colombia, and Venezuela.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon.

**HABITAT:** Breeding: Bottomland forests where moss-covered logs and rank undergrowth give an almost tropical character to the surroundings; wooded valleys of rocky brooks or small streams; sometimes in woods. Favors wooded streams and brooks with swiftly flowing water. Avoids high elevations.

**SPECIAL HABITAT REQUIREMENTS:** Woodlands with flowing water, especially streams and brooks (Pough 1949: 182).

**NESTING:** Egg dates: April 25 to June 20, New York (Bull 1974:510). Clutch size: 4 to 7, typically 5. Incubation period: 12 to 14 days. Nestling period: 10 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 1 to 6 feet (0.3 to 1.8 m). Typically on ground. Nest site: In cavity in bank of stream or among upturned roots of a fallen tree.

**SAMPLE DENSITIES:** Maryland -- 16 territorial males per 100 acres (40 ha) in second-growth river swamp. 4 territorial males per 100 acres (40 ha) in well-drained floodplain forest (Stewart and Robbins 1958:304).

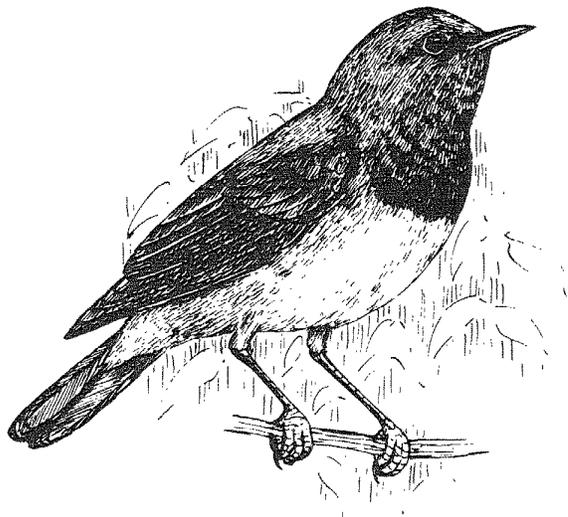
**FORAGING:** Major foods: Dragonfly and crane fly larvae, beetles, bugs, ants, caterpillars, scale insects, spiders, and mollusks. Substrates: Sandy margins of streams. Technique: Ground gleaning.

**KEY REFERENCES:** Bent 1953, Chapman 1907, Eaton 1958.

## Mourning Warbler

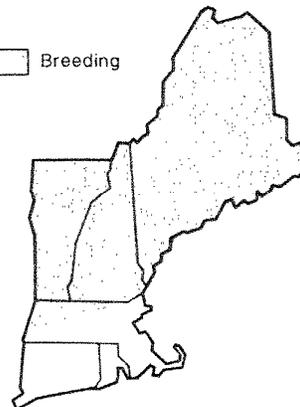
(*Oporornis philadelphia*)

A.O.U. No. 679.0



### Range

Breeding



**RANGE:** Breeding: Southeastern Canada s. to the Berkshires, Catskills, Poconos, and higher elevations of West Virginia and Virginia, n. Minnesota, Michigan. Winter: Central America and n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to uncommon breeder.

**HABITAT:** Breeding: Dense underbrush on the margin of a lowland swamp or bog; bushy hillsides, forest clearings grown up to brambles, shrubs and saplings.

**SPECIAL HABITAT REQUIREMENTS:** Extensive stands of dense saplings, shrubs (Pough 1949:185).

**NESTING:** Egg dates: May 28 to July 7, New York (Bull 1974:514). Clutch size: 3 to 5, typically 4. Incubation period: 12 days. Nestling period: 7 to 9 days, or more (H. Harrison, personal communication). Broods per year: 1. Age at sexual maturity: 1 year. Nest height: To 2 feet (0.6 m) (rarely). Typically on ground. Nest site: On ground in tangles of briars, weeds, or grasses.

**TERRITORY SIZE:** 10 territories ranged from 1.6 to 2.4 acres (0.6 to 1.0 ha), average 1.9 acres (0.8 ha) in Minnesota (Cox 1960).

**SAMPLE DENSITIES:** 10 territorial males per 100 acres (40 ha) in dense second growth in Maryland (Stewart and Robbins 1958:308).

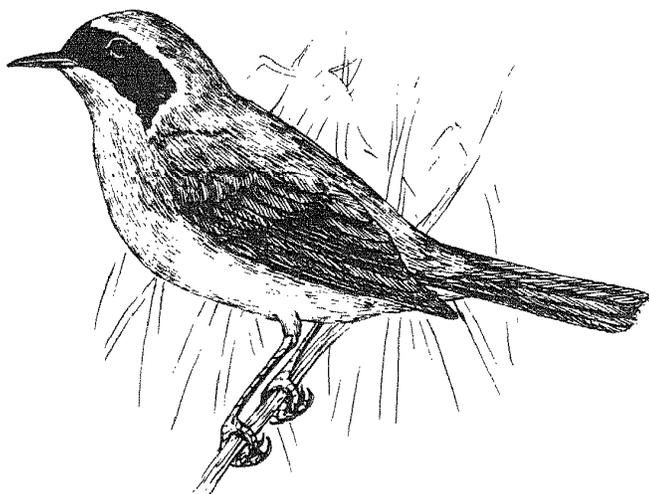
**FORAGING:** Major foods: Beetles, lepidopterans, spiders. Substrates: Thick underbrush. Techniques: Ground, shrub, stem gleaning.

**KEY REFERENCES:** Bent 1953, Cox 1960, Griscom and Sprunt 1957.

## Common Yellowthroat

(*Geothlypis trichas*)

A.O.U. No. 681.0



### Range

Breeding



**RANGE:** Breeding: Alaska and Canada s. to s. Mexico. Winter: Southern Maryland s. to Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Wet brushy meadows and pastures, open swampy thickets on the margins of damp woods and woodland streams or ponds; in cattail beds of fresh or salt water marshes and dense tangles near water. Occasionally in dry thickets or dense undergrowth in open woodland.

**NESTING:** Egg dates: May 15 to July 12, New York (Bull 1974:515). Clutch size: 3 to 6, typically 4. Incubation period: 11 to 13 days. Nestling period: 9 to 10 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: To 3 feet (0.9 m). Typically on ground. Nest site: Among weeds, sedges or shrubs, in grassy tussocks, sometimes among ferns, or higher in low shrubs or tangles of briars.

**TERRITORY SIZE:** 0.8 to 1.8 acres (0.3 to 0.7 ha) per pair in the Geddes Marsh area (Michigan) (Stewart 1953); 7 pairs in 5 or 6 acres (2.0 to 2.4 ha), averaging less than 1 acre (0.4 ha) per pair in shrubby field habitat in New York (Kendeigh 1945).

**SAMPLE DENSITIES:** 9.7 males per square mile (4 males/km<sup>2</sup>) (Stewart 1953). 69 males per 100 acres (40 ha) (Stewart 1953). 1 pair per 2 acres (0.8 ha) (Hofslund 1957). 111 territorial pairs per acres (40 ha) in hedgerow bordering brook in Maryland (Stewart and Robbins 1958:309).

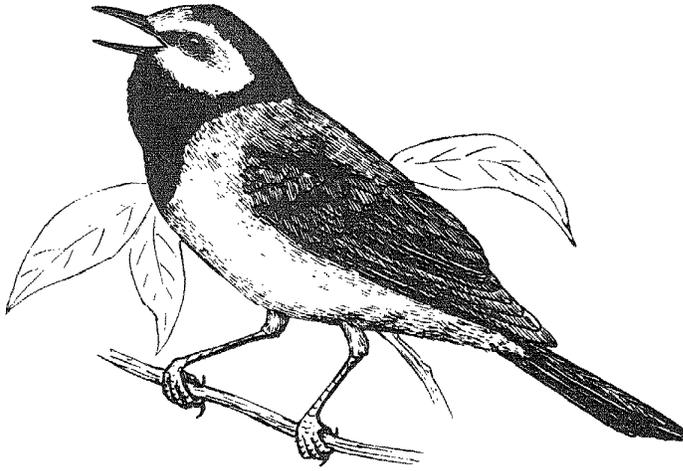
**FORAGING:** Major foods: Cankerworms, fall webworms, gypsy moths, caterpillars, grasshoppers, leafhoppers, plant lice, spiders. Substrates: Ground (in grasses); low shrubs. Techniques: Shrub and ground gleaning.

**KEY REFERENCES:** Forbush 1929, Stewart 1953.

## Hooded Warbler

(*Wilsonia citrina*)

A.O.U. No. 684.0



### Range

Breeding



**RANGE:** Breeding: Connecticut, c. New York, s. Michigan, n. Iowa, and se. Nebraska, s. to n. Florida and the Gulf Coast w. to Louisiana. Winter: Mexico to Panama.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to uncommon.

**HABITAT:** Breeding: Most often in brushy, swampy lowlands, less frequently at edges and interiors of well-watered mature deciduous woodlands with dense undergrowth or on rich, moist hillsides in thickets of laurel. Favors lowlands.

**SPECIAL HABITAT REQUIREMENTS:** Low, dense, woody vegetation (deciduous).

**NESTING:** Egg dates: May 25 to July 10, New York (Bull 1974:518). Clutch size: 3 to 5. Incubation period: 12 days. Nestling period: 8 days, probably more (H. Harrison, personal communication). Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 1 to 6 feet (0.3 to 1.8 m). Typically 2 to 3 feet (0.6 to 0.9 m). Nest site: Above ground in a bush, sapling, or herbaceous vegetation.

**SAMPLE DENSITIES:** Maryland — 32 territorial males per 100 acres (40 ha) in second-growth river swamp. 32 territorial males per 100 acres (40 ha) in young second growth. 17 territorial males per 100 acres (40 ha) in open slash area. 8 territorial males per 100 acres (40 ha) in upland oak forest (Stewart and Robbins 1958:313).

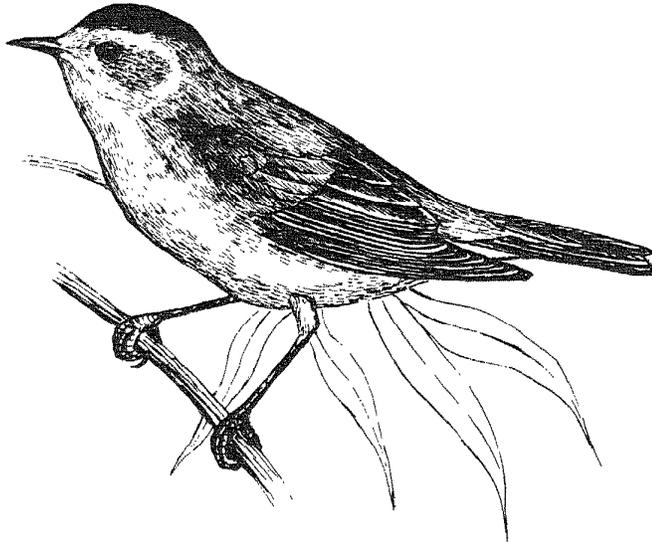
**FORAGING:** Major foods: Grasshoppers, locusts, caterpillars, plant lice, wasps, ants, moths, beetles, flies, bugs, caddis flies. Substrate: Air. Technique: Hawking.

**KEY REFERENCES:** Bent 1953, Forbush 1929.

## Wilson's Warbler

(*Wilsonia pusilla*)

A.O.U. No. 685.0



### Range

Breeding



**RANGE:** Breeding: Eastern Canada s. to c. Maine, n. New Hampshire, n. Vermont and n. Minnesota. Winter: Mexico s. to Panama.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon.

**HABITAT:** Breeding: Swampy, brushy land, such as tamarack bogs or swampy runs, willow and alder swales. Generally stays low, within 10 feet (3.0 m) of ground (Pough 1949:190).

**NESTING:** Egg dates: June 6 to June 21, New Brunswick (Bent 1953:639). Clutch size: 4 to 6, typically 5. Incubation period: 11 to 13 days. Nestling period: 10 to 11 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: On or sunken in the ground; usually among brushes, such as alders or smaller shrubs, or at base of sapling. May nest in loose colonies in favorable habitat.

**TERRITORY SIZE:** Mean 0.57 ha (1.4 acres), range 0.2 to 1.3 ha (0.5 to 3.2 acres); mean 0.48 ha (1.2 acres), range 0.3 to 1.0 ha (0.7 to 2.47 acres), in California (Stewart 1973).

**FORAGING:** Major foods: Flies, gnats, plant lice, small caterpillars, other larvae, small grasshoppers, spiders. Substrates: Twigs to 25 feet (7.6 m) above ground (MacArthur 1959). Techniques: Hopping and twig gleaning.

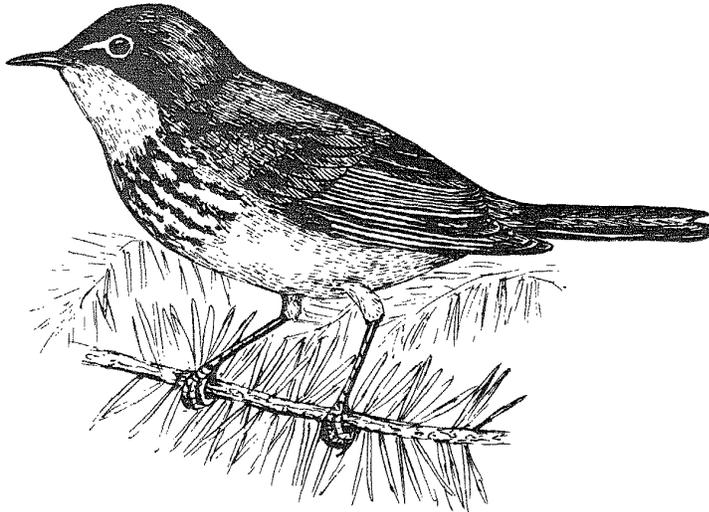
**COMMENTS:** Diet 93 percent insect (Beal 1907 in Bent 1953:630).

**KEY REFERENCES:** Bent 1953, Forbush 1929, Stewart 1973.

## Canada Warbler

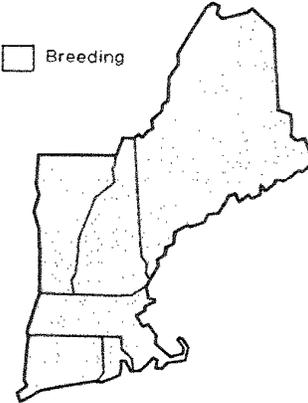
(*Wilsonia canadensis*)

A.O.U. No. 686.0



### Range

□ Breeding



**RANGE:** Breeding: Southern Canada to n. New Jersey and se. New York, s. in the mountains to Georgia. Rarely to s. New England coast. Winter: Central and South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine and elsewhere at higher elevations).

**HABITAT:** Breeding: Occupies a variety of habitats from lowlands to uplands, coniferous to deciduous. Favors shrubby undergrowth in cool, moist, mature woodlands, aspen and cherry "burns," streamside thickets, cedar bogs, weedy ravines and, less often, dry forest edge with young trees.

**NESTING:** Egg dates: May 31 to June 30, New York (Bull 1974:521). Clutch size: 3 to 5, typically 4. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: On or near the ground, atop mossy logs or stumps, cavities in banks or amid roots of windthrows, among fern stands. Nests are usually in the vicinity of a stream, pond, or other body of water.

**TERRITORY SIZE:** 1 male occupied a singing area of 0.6 acre (0.2 ha) until nesting began, at which time he expanded his movements to 2 acres (0.8 ha). Another male roamed 3 acres (1.2 ha) after nesting began (New York) (Kendeigh 1945). Habitat: hemlock-beech.

**SAMPLE DENSITIES:** Maryland — 45 territorial males per 100 acres (40 ha) in dense oak-maple second growth. 32

territorial males per 100 acres (40 ha) in young second-growth (after cutting). 21 territorial males per 100 acres (40 ha) in open hemlock-spruce bog (Stewart and Robbins 1958:315).

**FORAGING:** Major foods: Mosquitoes, flies, moths, beetles, small hairless caterpillars, spiders. Substrates: Air, leaf litter. Techniques: Hawking, ground gleaning.

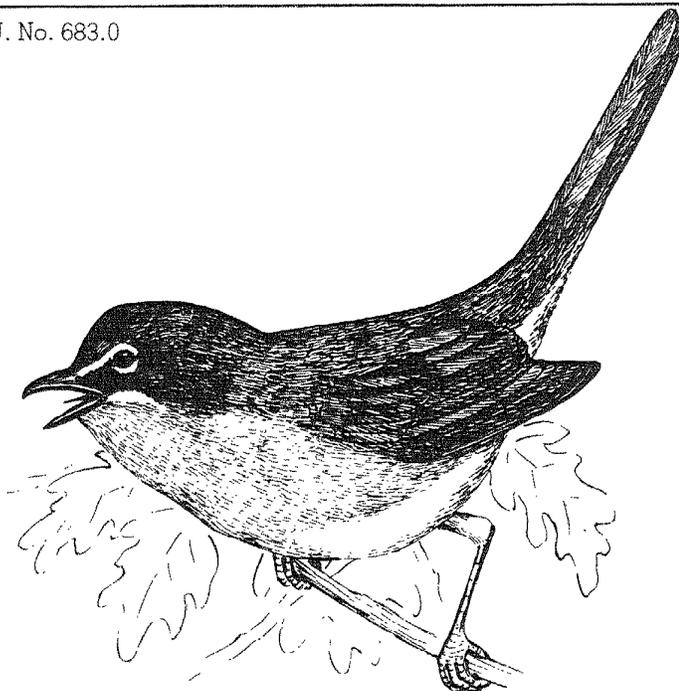
**COMMENTS:** Diet consists wholly of insects and spiders. The bird is an expert flycatcher.

**KEY REFERENCES:** Griscom and Sprunt 1957, Harrison 1975.

## Yellow-breasted Chat

(*Icteria virens*)

A.O.U. No. 683.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Southern British Columbia e. to s. Ontario, and Massachusetts, s. to se. Texas, the Gulf states and n. Florida. Winter: Mexico and Central America to Panama; irregularly in small numbers to coastal sections of se. Massachusetts.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Local breeder from central Massachusetts south.

**HABITAT:** Breeding: Brushy pastures, thickets or briar patches, usually near water. Clearings with young growth resulting from logging or burning. Avoids high elevations. Wintering: Dense thickets.

**SPECIAL HABITAT REQUIREMENTS:** Dense shrubs and vines with scattered young trees, often near water.

**NESTING:** Egg dates: May 25 to July 13, New York (Bull 1974:516). Clutch size: 3 to 5, typically 4. Incubation period: 11 days (H. Harrison, personal communication). Broods per year: 1. Age at sexual maturity: 1 year. Nest height: To 5 feet (1.5 m), typically 3 feet (0.9 m). Nest site: In a bush, small sapling or tangle of grapevines, catbrier, brambles, and so on, occasionally on the ground.

**TERRITORY SIZE:** 1.2 to 2.5 acres (0.5 to 1.0 ha) per pair, though individuals may roam well into a neighboring territory. Habitat: grown-over abandoned fields in northern Virginia (Dennis 1958).

**SAMPLE DENSITIES:** Maryland — 36 territorial males per 100 acres (40 ha) in shrubby field with trees and stream. 28 territorial males per 100 acres (40 ha) in deciduous scrub (damp) with snags. 15 territorial males per 100 acres (40 ha) in dry deciduous scrub resulting from fire (Stewart and Robbins 1958:311).

**FORAGING:** Major foods: Beetles, bugs, ants, wasps, weevils, mayflies, various caterpillars including tent caterpillars and currant-worms, raspberries, whortleberries, wild strawberries, blackberries, wild grapes. Substrates: Brush and saplings. Techniques: Shrub stem and foliage gleaning.

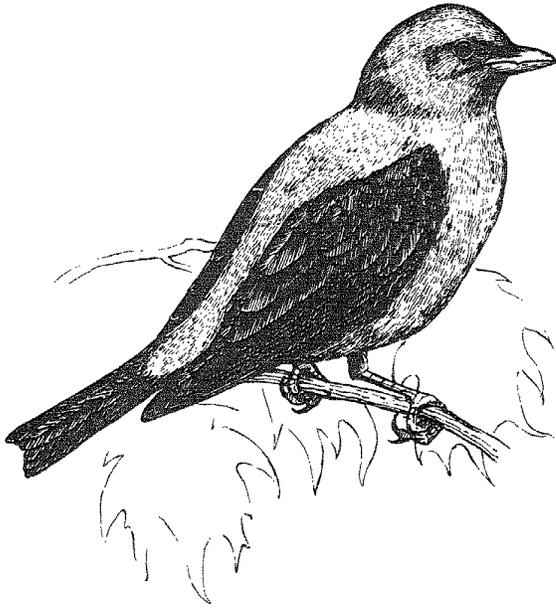
**COMMENTS:** Diet is largely insects (Howell 1932 in Bent 1953:591).

**KEY REFERENCES:** Bent 1953, Forbush 1929, Thompson and Nolan 1973.

## Scarlet Tanager

(*Piranga olivacea*)

A.O.U. No. 608.0



### Range

Breeding



**RANGE:** Breeding: Nova Scotia, w. through e. Maine to s. Saskatchewan, s. to the coast of Virginia and s. Kansas. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common and widespread.

**HABITAT:** Breeding: Mature deciduous and mixed woodlands, roadside shade trees. Often in pine-oak and oak-hickory woodlands. 68 percent of 28 nests in oak-hickory woods and tamarack swamp were in trees with a d.b.h. greater than or equal to 9 inches (23 cm) (Prescott 1965:21).

**SPECIAL HABITAT REQUIREMENTS:** Deciduous or mixed woodlands.

**NESTING:** Egg dates: May 20 to July 23, New York (Bull 1974:544). Clutch size: 3 to 5, typically 4. Incubation period: 13 to 14 days. Nestling period: About 15 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 8 to 75 feet (2.4 to 22.9 m). Typically 20 to 35 feet (6.1 to 10.7 m). Nest site: Usually placed well out from trunk on a horizontal branch in a leaf cluster or position where it is shaded from above and open to the ground below. It is usually placed where it can be approached by unobstructed flyways from adjacent trees (Prescott 1965:20).

**SAMPLE DENSITIES:** Maryland — 26 territorial males per 100 acres (40 ha) in virgin central hardwood deciduous forest. 15 territorial males per 100 acres (40 ha) in mature

hardwood forest. 14 territorial males per 100 acres (40 ha) in dense second-growth (oak-maple) forest (Stewart and Robbins 1958:331).

**FORAGING:** Major foods: Insects, fruits. Substrates: Leaves and twigs of outer tips of limbs, dead branches. Techniques: Twig and leaf gleaning, flight-gleaning. Preferred feeding habitat: Canopy of forest trees.

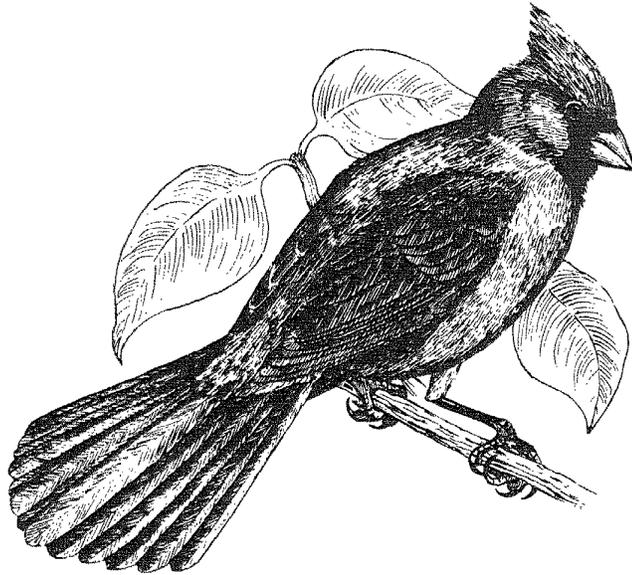
**COMMENTS:** Seven-eighths of the diet is animal, and one-eighth is vegetable (McAtee 1929 in Bent 1958:485).

**KEY REFERENCES:** Bent 1958, Prescott 1965.

## Northern Cardinal

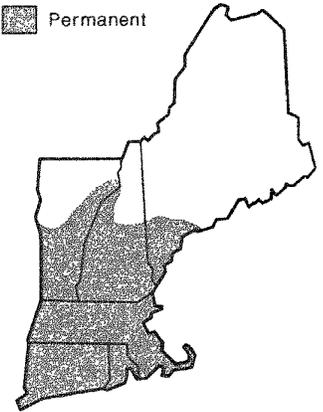
(*Cardinalis cardinalis*)

A.O.U. No. 593.0



### Range

 Permanent



**RANGE:** Breeding: Central New England, w. to South Dakota, s. to Florida and Texas. Winter: Same as above.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Connecticut, Rhode Island, Massachusetts) to uncommon (Maine).

**HABITAT:** Breeding: Forest edges, open woodlands (less common in deep forest unless thickets are present), groves, parks, suburban gardens, open swamps, residential areas, parks. Wintering: Same. Easily attracted to feeding stations with sunflower seeds.

**SPECIAL HABITAT REQUIREMENTS:** Heavy underbrush such as *Lonicera* spp. or *Cornus* spp.

**NESTING:** Egg dates: April 10 to September 9, New York (Bull 1974:548). Clutch size: 2 to 5, typically 3. Incubation period: 12 to 13 days. Nestling period: About 14 days. Broods per year: 2 or 3. Age at sexual maturity: 1 year. Nest height: 3 to 20 feet (0.9 to 6.1 m), typically less than 10 feet (3.0 m). Nest site: In dense shrubs, small deciduous or coniferous trees, tangles of vines, thickets, briars.

**HOME RANGE:** 0.51 to 2.32 ha (1.3 to 5.7 acres) (average 1.18 ha (2.9 acres)) in Tennessee, but 10.97 to 23.24 ha (27.1 to 57.4 acres) (average 18.81 ha (46.5 acres)) in Ontario (Dow 1969). 0.31 to 0.45 acres (0.1 to 0.2 ha) (average 0.37 acre (0.1 ha)) in swamp thicket in Illinois (Brewer 1955). Cardinals range no further than a few miles from their territory during their lifetime (Laskey 1944).

**SAMPLE DENSITIES:** 30 males per 100 acres (40 ha) in oak-hickory forests with clearings and hedgerows in Tennessee. 0.48 males per 100 acres (40 ha) in beech-maple woodlots in Ontario (Dow 1969). 23 territorial males per 100 acres (40 ha) in semi-open floodplain forest. 5 territorial males per 100 acres (40 ha) in field and edge (Stewart and Robbins 1958:333).

**FORAGING:** Major foods: Seeds and fruits, waste grains, insects. Substrate: Ground. Technique: Ground gleaning.

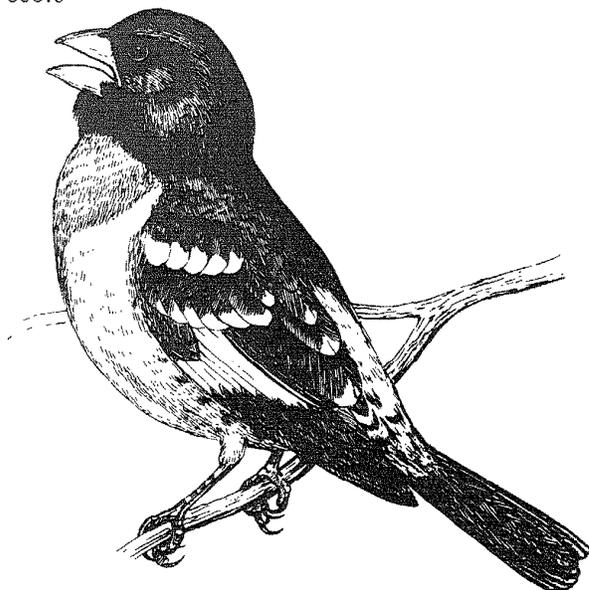
**COMMENTS:** Possibly life-long monogamy.

**KEY REFERENCES:** Bent 1968, Dow 1969, Laskey 1944.

## Rose-breasted Grosbeak

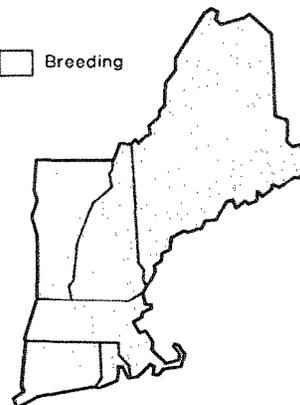
(*Pheucticus ludovicianus*)

A.O.U. No. 595.0



### Range

Breeding



RANGE: Breeding: Nova Scotia, w. to Manitoba, s. to c. New Jersey, Georgia (mountains) and the lower Midwest. Winter: Mexico to South America.

RELATIVE ABUNDANCE IN NEW ENGLAND: Common.

HABITAT: Breeding: Edges of moist deciduous second-growth woods, wooded borders of swamps and streams, thickets, suburban trees, old orchards.

SPECIAL HABITAT REQUIREMENTS: An edge. Ideal habitat is the interface of tall forest trees and fields with dense high shrubs and tangles (Pough 1949:217).

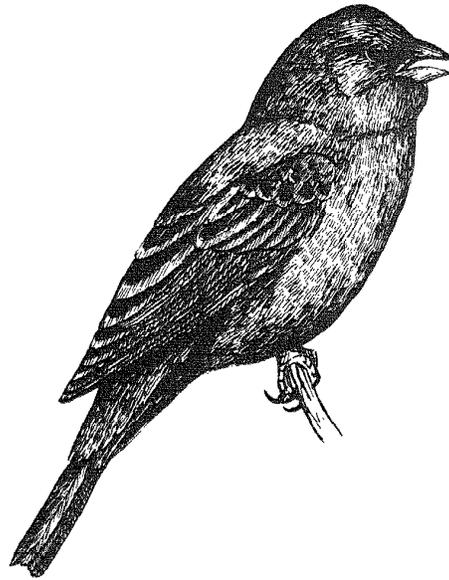
NESTING: Egg dates: May 6 to July 19, New York (Bull 1974:549). Clutch size: 3 to 6, typically 4. Incubation period: 12 to 14 days. Nestling period: 9 to 12 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 6 to 26 feet (1.8 to 7.9 m). Typically 10 to 12 feet (3.0 to 4.6 m). Nest site: Usually built in the fork of a deciduous tree. Less commonly placed in a deciduous or evergreen shrub.

FORAGING: Major foods: Insects and spiders (about 50 percent); the balance of diet is seeds, fruits. Substrates: Ground, tree canopy. Techniques: Ground, twig, leaf gleaning.

KEY REFERENCES: Bent 1968, Gabrielson 1915.

**Indigo Bunting**  
(*Passerina cyanea*)

A.O.U. No. 598.0



**Range**

□ Breeding



**RANGE:** Breeding: New Brunswick, w. to North Dakota, s. to Georgia and Texas. Winter: Mexico and Central America. (Casually n. along coast to Massachusetts.)

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Edges of woods, old burns, open brushy fields, roadside thickets, brushy ravines. Tends to be numerous along creeks and rivers. Avoids deep woods.

**SPECIAL HABITAT REQUIREMENTS:** Brushy vegetation, elevated perches.

**NESTING:** Egg dates: May 26 to August 3, New York (Bull 1974:551). Clutch size: 2 to 6, typically 3 or 4. Incubation period: 12 to 13 days. Nestling period: 10 to 13 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest Height: 2 to 12 feet (0.6 to 3.7 m), typically 3 feet (0.9 m). Nest site: In dense cover, usually in weeds or in fork of shrub, low tree, or in brambles.

**TERRITORY SIZE:** 2.7 acres (1.1 ha) in sapling, shrub and vine habitat in Kansas (Fitch 1958). Average 0.26 acre (0.1 ha) in swamp-thicket in Illinois (Brewer 1955).

**SAMPLE DENSITIES:** 5 nests per 7.08 acres (2.9 ha) in thickets (Beecher 1942). 9 to 18 pairs per mile (1.6 km) in forest edge (Johnston 1947). 13 pairs per 25 acres (10.1 ha) in apple orchard (Stewart and Robbins 1958:337).

**FORAGING:** Major foods: Insects, weed seeds. Substrates: Branches, leaf surfaces, bare soil. Techniques: Ground, twig gleaning. Preferred feeding habitat: Cornfields in late summer.

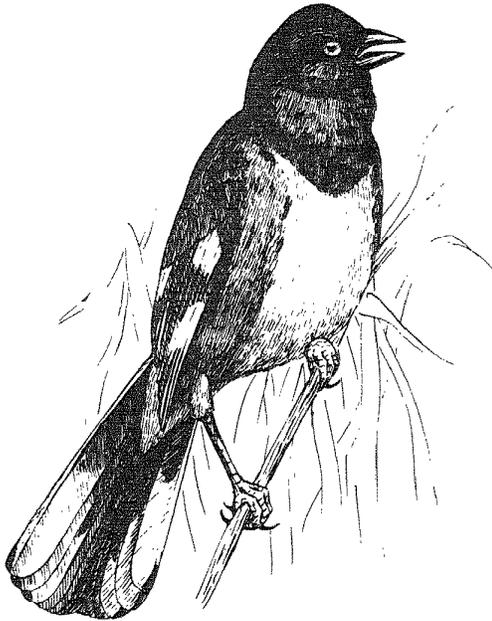
**COMMENTS:** Forest clearings created by logging and burning have been used extensively by the birds in the Northeast and have led to range expansion. The feeding habits are not well known. Summer diet is mainly insects and winter is mainly seed.

**KEY REFERENCES:** Allen 1933b, Bent 1968, Bradley 1948.

## Rufous-sided Towhee

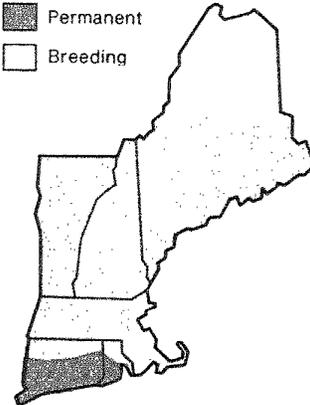
(*Pipilo erythrophthalmus*)

A.O.U. No. 587.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Central Maine, w. to se. Saskatchewan, s. to Florida, n. Louisiana and Oklahoma. Winter: Southern New England, w. to s. British Columbia, s. to Florida, Mexico, and s. California. Absent from mountains.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common in breeding season. Uncommon in winter (Connecticut coast).

**HABITAT:** Breeding: Woodland edges and dry open interiors and clearings, hedgerows, roadside thickets, brushy hillsides and pastures. Wintering: Similar to breeding habitat.

**SPECIAL HABITAT REQUIREMENTS:** Dense brushy cover (Pough 1949:239).

**NESTING:** Egg dates: May 15 to August 4, New York (Bull 1974:570). Clutch size: 3 to 6, typically 3 or 4. Incubation period: 12 to 13 days. Nestling period: 10 to 12 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: To 5 feet (1.5 m), typically on ground. Nest site: On or near ground in brushy cover or low in a shrub.

**SAMPLE DENSITIES:** 104 pairs per square mile (40 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 50 territorial males per 100 acres (40 ha) in dry deciduous scrub; 33 territorial males per 100 acres (40 ha) in open slash area; 32 territorial males per 100

acres (40 ha) in young second-growth (following cutting); 6 territorial males per 100 acres (40 ha) in young second-growth (following cutting); 6 territorial males per 100 acres (40 ha) in pine-oak forest (Stewart and Robbins 1958:348).

**FORAGING:** Major foods: Insects, seeds, fruits, mast. Substrate: Leaf litter of forest floor. Techniques: Scratching, gleaning, scattering leaves with beak.

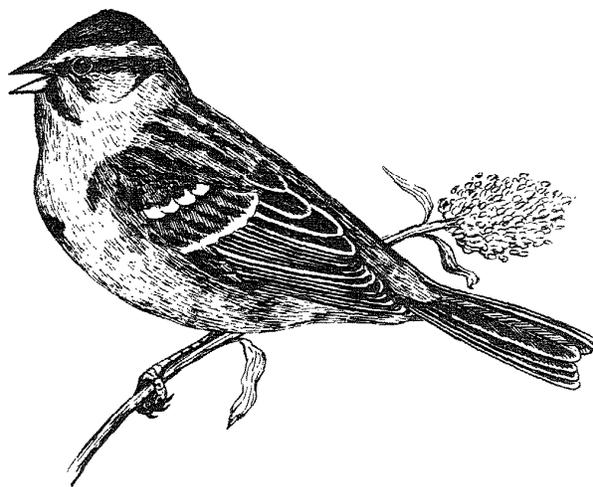
**COMMENTS:** McAtee (1926 in Bent 1968:570) found that 30 percent of the diet is animal matter and 70 percent vegetable matter.

**KEY REFERENCES:** Bent 1968, Davis 1960.

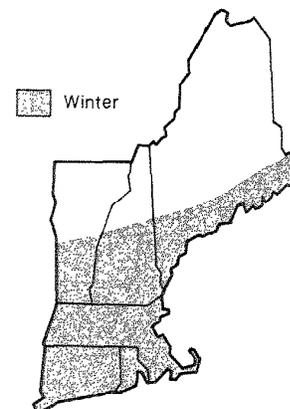
## American Tree Sparrow

(*Spizella arborea*)

A.O.U. No. 559.0



### Range



RANGE: Breeding: Quebec, w. to Alaska, s. to Newfoundland, n. Manitoba and n. British Columbia. Winter: Maritime Provinces, w. to s. British Columbia, s. to South Carolina, New Mexico and n. California.

RELATIVE ABUNDANCE IN NEW ENGLAND: Common.

HABITAT: Wintering: Open country, brushy edges of fields, weedy pastures, marshes, hedgerows, farmland.

FORAGING: Major foods: Winter—grass and weed seeds. Substrates: Leaf litter, grasses, and weeds. Techniques: Ground gleaning. Preferred feeding habitat: See wintering habitat.

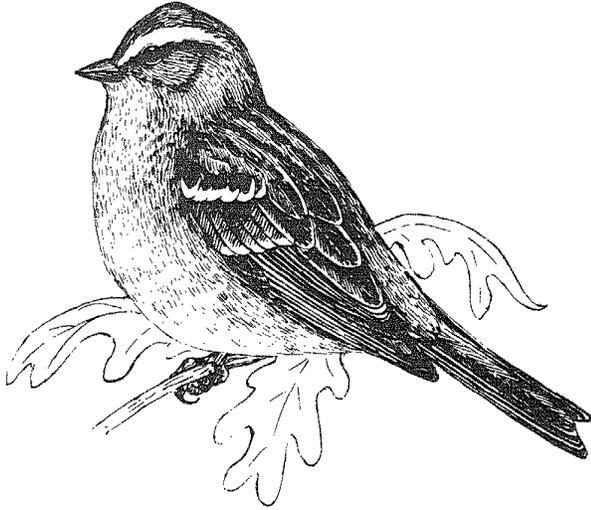
COMMENTS: Individuals may wander several miles from winter range in search of food (Sargent 1959).

KEY REFERENCES: Bent 1968, Heydweiller 1935.

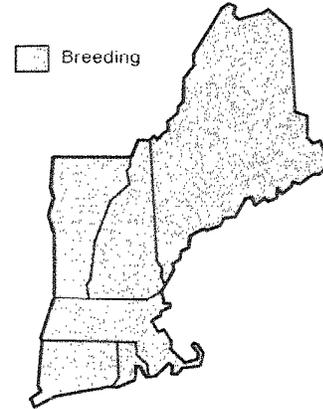
## Chipping Sparrow

(*Spizella passerina*)

A.O.U. No. 560.0



### Range



**RANGE:** Breeding: Nova Scotia, w. to the Yukon, s. to Georgia and Central America. Winter: Southern Maryland, w. to Texas and s. California, s.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Suburban residential areas, farms, orchards, open mixed woodlands, clearings in forests and woodland edges, borders of lakes and streams.

**NESTING:** Egg dates: May 2 to July 19, New York (Bull 1974:583). Clutch size: 2 to 5, typically 3 or 4. Incubation period: 11 to 14 days. Nestling period: 7 to 8 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest height: 1 to 25 feet (0.3 to 7.6 m). Typically 3 to 10 feet (0.9 to 3.0 m). Nest site: In a tree, shrub or vine; rarely on ground. Nest is often low in ornamental evergreen, typically well concealed.

**TERRITORY SIZE:** 1 to 1.5 acres (0.4 to 0.6 ha) in residential area in Michigan (Walkinshaw 1944). Two-thirds of an acre (0.3 ha) in Michigan (Sutton 1960). 7.6 acres (3.1 ha) in South Carolina (Odum and Kuenzler 1955).

**SAMPLE DENSITIES:** Maryland—90 territorial males per 100 acres (40 ha) in suburban residential area with orchard and lawn. 48 territorial males per 100 acres (40 ha) in unsprayed apple orchard. 18 territorial males per 100 acres (40 ha) in mixed agricultural habitats, including hedgerows and wood margins (Stewart and Robbins 1958:363).

**FORAGING:** Major foods: Insects, seeds. March through November diet: 38 percent animal, 62 percent vegetable (Judd 1900 in Bent 1968:1175). Substrates: Weeds, grasses. Technique: Ground gleaning. Preferred feeding habitat: Areas with abundant weeds.

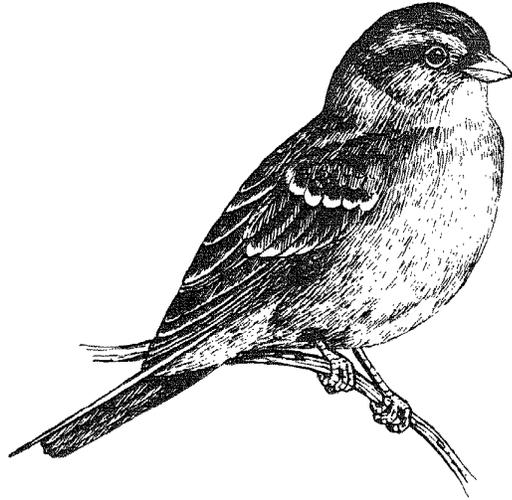
**COMMENTS:** Walkinshaw (1944) found that nest heights increased as breeding season progressed. Clearings in the forest caused by logging, fire, and so on, have increased Chipping Sparrow breeding habitat.

**KEY REFERENCES:** Bent 1968, Forbush 1929, Walkinshaw 1944.

## Field Sparrow

(*Spizella pusilla*)

A.O.U. No. 563.0



### Range

■ Permanent

□ Breeding



**RANGE:** Breeding: Nova Scotia, w. to Montana, s. to South Carolina, Alabama and Texas. Winter: Southern New England, w. to Missouri, s. to Florida and Texas.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Massachusetts) to uncommon (Maine).

**HABITAT:** Breeding: Old fields with scattered woody vegetation, also uses abandoned hayfields, briar thickets, and woodland edges.

**SPECIAL HABITAT REQUIREMENTS:** Open areas with low shrubs or trees.

**NESTING:** Egg dates: May 16 to August 17 (second brood), New York (Bull 1974:586). Clutch size: 2 to 5, typically 3 or 4. Incubation period: About 11 days. Nestling period: 7 to 10 days. Broods per year: 2 or 3. Age at sexual maturity: 1 year. Nest height: To 4 feet (1.2 m), typically on ground. Nest site: Early nests are usually on or near the ground in a tuft of grass. Later nests may be up to 4 feet high (1.2 m) in shrubs or trees.

**TERRITORY SIZE:** 0.31 to 1.62 ha (0.8 to 4 acres) in shrub-grassland habitat in Illinois (Best 1977). 0.75 to 2.0 acres (0.3 to 0.8 ha) (average 1.3 acres (0.5 ha)) on semi-wooded hillsides or idle prairie grass pasture in Iowa (Crooks and Hendrickson 1953). Less than 2 acres to 5 or 6 (0.8 to 2 or 2.4 ha) in various habitats (Bent 1968:1220).

**SAMPLE DENSITIES:** 8 pairs per 10 acres (4 ha) in fallow field in Michigan (Berger in Bent 1968). 1 pair per 3

acres (1.2 ha) in suitable habitat in Michigan (Walkinshaw 1939b). 80 males per 100 acres (40 ha) of unmowed apple orchard (Stewart and Robbins 1958:364).

**FORAGING:** Major foods: Insects (over 40 percent in summer), seeds of weeds and grasses. Substrate: Ground. Technique: Ground gleaning.

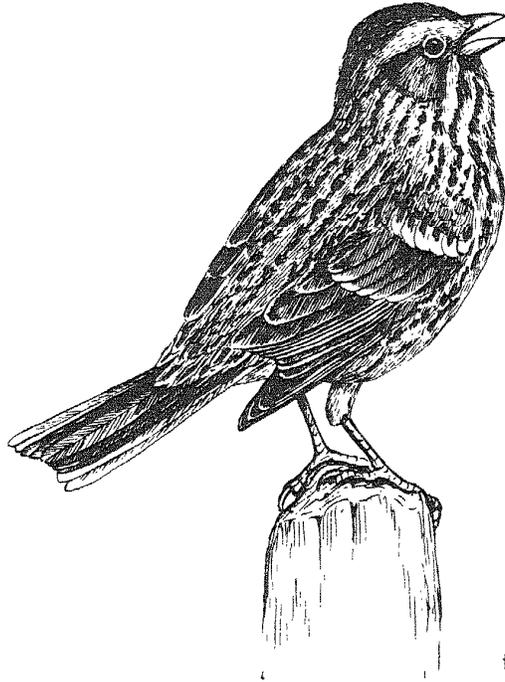
**COMMENTS:** The diet consists of about 41 percent animal matter and 59 percent vegetable matter (Judd 1901 in Bent 1968:1228).

**KEY REFERENCES:** Bent 1968, Best 1977, 1978, Crooks 1948.

## Vesper Sparrow

(*Poocetes gramineus*)

A.O.U. No. 540.0



### Range

-  Permanent
-  Breeding
-  Winter



**RANGE:** Breeding: Nova Scotia, w. to s. British Columbia, s. to North Carolina, Texas and c. California. Winter: Southern New England s. to Florida, The Gulf States and Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon (Maine).

**HABITAT:** Breeding: Short-grass meadows, pastures, hayfields, cultivated grain fields, dry open uplands, burned and cut-over areas in forests, country roadsides. Wiens (1969:41) found that birds favor sparsely vegetated uplands and may use areas with widely scattered shrubs.

**SPECIAL HABITAT REQUIREMENTS:** Open areas with short herbaceous vegetation, conspicuous singing perches.

**NESTING:** Egg dates: May 5 to August 16, New York (Bull 1974:581). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 12 to 13 days. Nestling period: 9 to 14 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest site: In or at base of grass tussock in depression in ground. Early nests may be completely exposed from above until concealed by surrounding growing vegetation.

**TERRITORY SIZE:** 1.2 to 1.8 acres (0.5 to 0.7 ha) per pair in uncultivated field in Michigan (Bent 1968:869). 1.5 to 2.7 acres (0.6 to 1.1 ha) (average 2.2 acres (0.9 ha)) for 5

territories in Wisconsin grasslands (Wiens 1969:35).

**HOME RANGE:** Home ranges are typically larger than those of other grassland sparrows (Bent 1968:869).

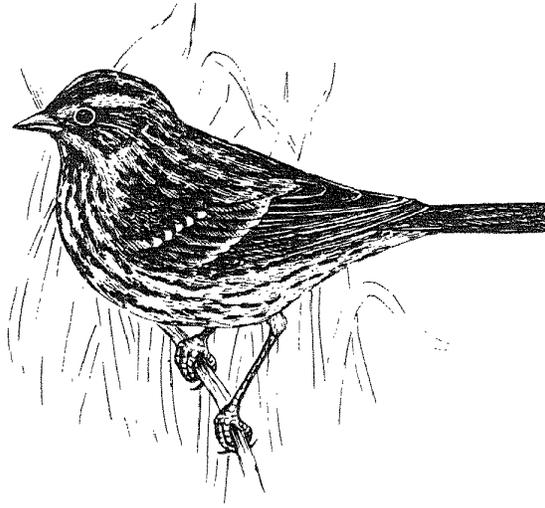
**SAMPLE DENSITIES:** 3 pairs per 10 acres (4 ha) in a fallow field bordered by woods in Michigan (Bent 1968:869). Range of 8 to 12 pairs annually in a 14-acre (5.7 ha) uncultivated field in Michigan (Bent 1968:869). 40 pairs per square mile (15 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 5 males per 80 acres (32.4 ha) in grassland in Wisconsin (Wiens 1969:53).

**FORAGING:** Major foods: Insects and other small invertebrates (33 percent), weed seeds (66 percent) (Bent 1968:875). Substrates: Grasses and weeds, sparsely vegetated ground. Technique: Ground gleaning.

**KEY REFERENCES:** Bent 1968, Bryant 1931, Wiens 1969.

**Savannah Sparrow**  
(*Passerculus sandwichensis*)

A.O.U. No. 542.0



**Range**

-  Permanent
-  Breeding



**RANGE:** Breeding: Northern Labrador, w. to n. Alaska, s. to New Jersey, n. New Mexico and s. California. Winter: Massachusetts (Cape Cod), w. to Colorado and s. Alaska, s. to Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to uncommon.

**HABITAT:** Breeding: Grassy swales, hayfields, meadows, salt marshes. Habitat varies greatly in vegetation, moisture, and so on, but nest location and construction are consistently similar. Birds may favor moist lowland habitat with dense ground vegetation (Wiens 1969:41).

**SPECIAL HABITAT REQUIREMENTS:** Grasses and other vegetation of moderate height—neither short nor tall.

**NESTING:** Egg dates: May 11 to July 16, New York (Bull 1974:572). Clutch size: 3 to 6, typically 4 to 5. Incubation period: 10 days (Welsh 1975). Nestling period: 8 to 11 days. Average 9.4 days (Welsh 1975). Broods per year: 2. Age at sexual maturity: 1 year. Nest site: In hollow on ground, typically hidden by a canopy of surrounding vegetation, often in grass tufts. Colonial nesting has been reported but is infrequent.

**TERRITORY SIZE:** 0.16 to 1.09 ha (0.4 to 2.7 acres), (average 1.4 acre (0.57 ha)) for 16 territories in grasslands (Wiens 1973). 0.4 to 4.3 acres (0.2 to 1.7 ha) (average 1.7 acres (0.7 ha)) for 91 territories in grasslands in Wisconsin (Wiens 1969:35). 99 territories ranged from 0.21 to 1.91 ha (0.5 to 4.7 acres) in Nova Scotia (Stobo and McLaren 1975:32).

**HOME RANGE:** 0.2 to 0.8 acre (0.8 to 0.32 ha) (average 0.4 acre (0.17 ha)) in dune habitat in Nova Scotia (Welsh 1975).

**SAMPLE DENSITIES:** 115.9 pairs per km<sup>2</sup> (301 pairs/square mile) in grassland in Wisconsin (Wiens 1973). 37 territorial males per 80 acres (32.4 ha) in grasslands in Wisconsin (Wiens 1969:53). 120 pairs per square mile (46 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 50 territorial males per 100 acres (40 ha) in lightly grazed pasture in Maryland (Stewart and Robbins 1958:351).

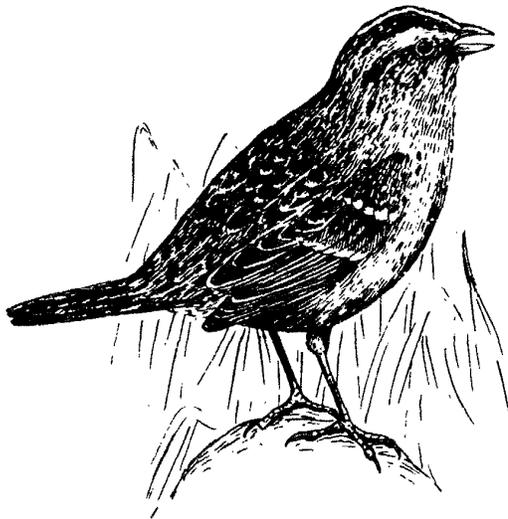
**FORAGING:** Major foods: Insects, especially beetles and grasshoppers, seeds of grasses and weeds. Substrates: Grasses and weeds. Technique: Herb gleaning.

**KEY REFERENCES:** Bent 1968, Dixon 1978, Stobo and McLaren 1975, Welsh 1975, Wiens 1969, 1973.

## Grasshopper Sparrow

(*Ammodramus savannarum*)

A.O.U. No. 546.0



### Range



**RANGE:** Breeding: Southern New Hampshire, w. to British Columbia, s. to Florida, West Indies, and Central America. Winter: North Carolina, w. to c. California, s. to Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon (Massachusetts) to rare and local (Vermont).

**HABITAT:** Breeding: Hayfields, weedy fallow fields, prairies. Avoids shrubby fields. Johnston and Odum (1956) reported that grasshopper sparrows were absent from fields with greater than 35 percent shrub cover. Birds favor uplands with ground vegetation of various densities (Wiens 1969:41).

**SPECIAL HABITAT REQUIREMENTS:** Continuous tall herbaceous cover. Conspicuous perches for singing.

**NESTING:** Egg dates: May 27 to August 6, New York (Bull 1974:580). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 12 to 13 days. Nestling period: 9 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest site: In a depression on the ground, usually well hidden by surrounding weeds and grasses. Prefers orchard grass, alfalfa, and clover. Birds are solitary or nest in small colonies.

**TERRITORY SIZE:** 6 territories averaged 3.4 acres (1.4 ha) in Iowa prairie (Kendeigh 1941 a). 0.32 to 1.34 ha (0.8 to 3.3 acres) (average 0.73 ha (1.8 acres)) for 16 territories in grasslands (Wiens 1973). 0.8 to 4.3 acres (0.3 to 1.7

ha) (average 2.1 acres (0.8 ha)) in grasslands in Wisconsin (Wiens 1969:35). 1.2 to 3.3 acres (0.5 to 1.3 ha) (average 2.0 acres (0.8 ha)) for 22 territories on a farm in West Virginia (Smith 1963).

**SAMPLE DENSITIES:** 92 pairs per km<sup>2</sup> (239 pairs/square mile) on grassland in Wisconsin (Wiens 1973). 30 territorial males per 80 acres (32.4 ha) in grasslands in Wisconsin (Wiens 1969:53). 60 pairs per square mile (23 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 77 territorial males per 100 acres (40 ha) in weedy fallow field in Maryland. 32 territorial males per 100 acres (40 ha) in weedy pasture in Maryland (Stewart and Robbins 1958:352).

**FORAGING:** Major foods: Insects, weed and grass seed. Substrates: Annual weeds and grasses, ground. Technique: Ground gleaning.

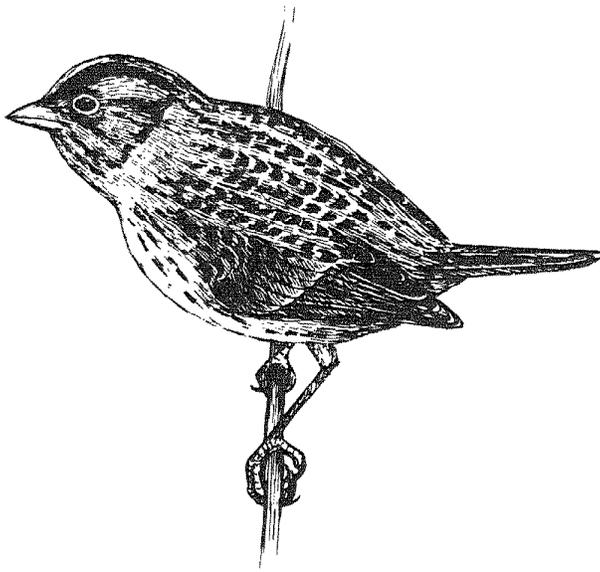
**COMMENTS:** Despite the availability of suitable habitat, grasshopper sparrow abundance fluctuates from year to year—reasons unknown. Judd (1901 in Bent 1968:735) found that the February to October diet contained 63 percent animal matter and 37 percent vegetable matter.

**KEY REFERENCES:** Bent 1968, Kendeigh 1941a, Smith 1963, Wiens 1969, 1973.

## Henslow's Sparrow

(*Ammodramus henslowii*)

A.O.U. No. 547.0



### Range

□ Breeding



**RANGE:** Breeding: Western New York, w. to South Dakota, s. to North Carolina and Texas. Winter: South Carolina, s. to Florida and w. along the Gulf Coast to Texas.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare, local.

**HABITAT:** Breeding: Neglected weedy fields—commonly of broomsedge—wet meadows, saltmarsh edges. Occasionally in dry and cultivated uplands. Wiens (1969:41) observed birds in areas with dense ground vegetation. May favor moist lowland habitat and may use areas with widely scattered shrubs.

**SPECIAL HABITAT REQUIREMENTS:** Dense herbaceous vegetation, moderate amounts of moisture, ground litter, singing perches (Robins 1971).

**NESTING:** Egg dates: May 17 to July 5, New York (Bull 1974:579). Clutch size: 3 to 5, typically 4. Incubation period: about 11 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest site: Solitary or loosely colonial. Nest is usually in a depression on the ground beside or atop a grass tussock and well hidden by the surrounding vegetation.

**TERRITORY SIZE:** 36 territories averaged 0.8 acres (0.3 ha) in hayfield in Michigan (Robins 1971). 8 territories averaged 1.5 acres (range 0.7 to 2.7 acres) (average 0.6 ha, range 0.3 to 1.1 ha) in grasslands in Wisconsin (Wiens 1969:35).

**SAMPLE DENSITIES:** 50 males per 100 acres (40 ha) of hayfield in Michigan (Robins 1971). 12 pairs per 10 acres (4

ha) of dense grass in Pennsylvania (Sutton 1928). 4 territorial males per 80 acres (32.4 ha) in grasslands in Wisconsin (Wiens 1969:53). 15 territorial males per 100 acres (40 ha) in abandoned broomsedge field in Maryland (Stewart and Robbins 1958: 353).

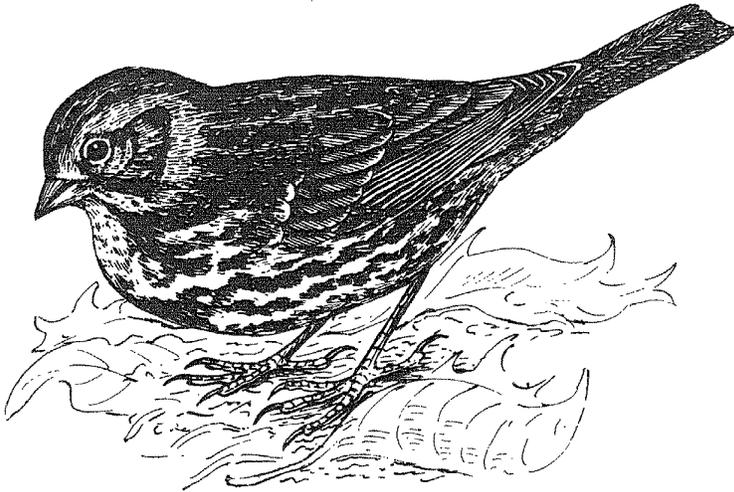
**FORAGING:** Major foods: Insects, seeds of grasses and weeds. Substrates: Ground litter, weed stalks. Technique: Ground gleaning.

**COMMENTS:** Hyde (1939) found that the April to October diet consisted of 82 percent animal matter and 18 percent vegetable matter.

**KEY REFERENCES:** Bent 1968, Hyde 1939, Robins 1971, Wiens 1969.

**Fox Sparrow**  
(*Passerella iliaca*)

A.O.U. No. 585.0



**Range**



**RANGE:** Breeding: Northern Quebec, w. to Alaska, s. to s. Quebec, Colorado and s. California. Winter: Coastal Massachusetts, s. to Florida, Pennsylvania, w. to British Columbia, s. to New Mexico and the Gulf States.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon.

**HABITAT:** Wintering: Dense woodland thickets, brushy edges where field meets forest.

**FORAGING:** Major foods: Insects, weed seeds, fruits. Substrates: Leaf litter. Techniques: Scratching, ground gleaning.

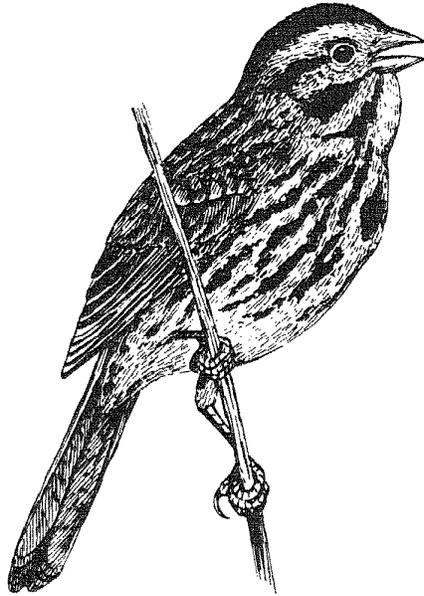
**COMMENTS:** Foods taken in all months of the year excluding June, July, and August consisted of 14 percent animal and 86 percent vegetable matter (Judd 1901 in Bent 1968:1404).

**KEY REFERENCE:** Bent 1968.

## Song Sparrow

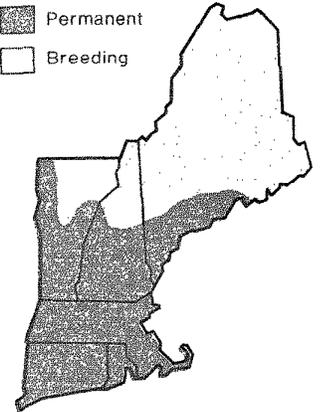
(*Melospiza melodia*)

A.O.U. No. 581.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Nova Scotia, w. to s. Alaska, w. to coast to North Carolina and mountains of n. Georgia. Also to Missouri and Mexico. Winter: New Brunswick, w. to Wisconsin and British Columbia, s. to Florida and the Gulf States.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant.

**HABITAT:** Breeding: Brushy fields, swamps, forest edges, roadsides, hedgerows, farms, suburbs, cities, shores of ponds and streams. Tolerates a wide range of habitat conditions. Wintering: Similar to breeding habitat.

**SPECIAL HABITAT REQUIREMENTS:** Songposts (elevated perches).

**NESTING:** Egg dates: April 17 to August 11, New York (Bull 1974:600). Clutch size: 3 to 6, typically 3 to 5. Incubation period: 12 to 13 days. Nestling period: 10 to 14 days. Broods per year: 2 or 3. Age at sexual maturity: 1 year. Nest height: To 12 feet (3.7 m), typically 0 to 4 feet (0 to 1.2 m). Nest site: Early nests are usually on ground and are typically well hidden in grasses or weeds or concealed under a bush or brush pile. Subsequent nests may be on ground or elevated in a shrub. May raise height of successive nests with the growth of herbaceous vegetation. *Rosa multiflora* and *Rubus* spp. are preferred nest site vegetation (DeGraaf et al. 1975).

**TERRITORY SIZE:** Ranges from 0.5 to 1.5 acres (0.2 to 0.6 ha) in favorable habitat (Nice 1937:74). From 167 to 822 m<sup>2</sup> (0.1 to 0.6 acres) on an island off British Columbia (Tompa 1962).

**HOME RANGE:** Resident birds in winter may range over an area 6 to 10 times as large as territory (Nice 1937:63).

**SAMPLE DENSITIES:** Maryland—21 territorial males per 19.2 acres (7.8 ha) in shrubby field. 3 territorial males per 9.5 acres (3.8 ha) in open hemlock-spruce bog. 4.5 territorial males per 20.5 acres (8.3 ha) in infrequently mowed apple orchard (Stewart and Robbins 1958).

**FORAGING:** Major foods: Insects, weed seeds, fruits. Substrates: Grasses, stems and twigs of bushes. Techniques: Ground, herb and twig gleaning.

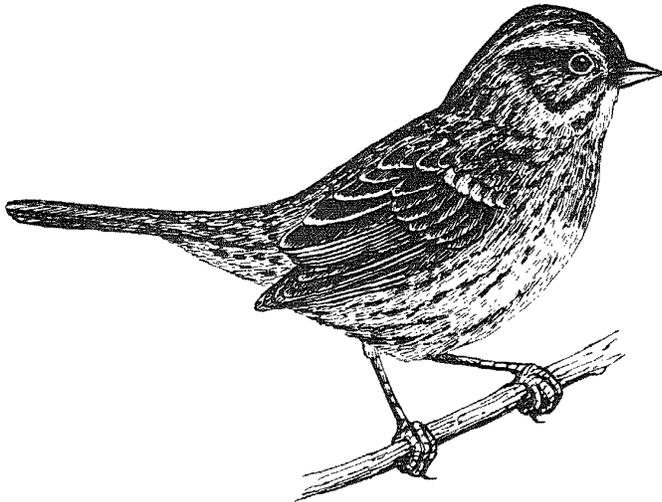
**COMMENTS:** Prefers wet lowland situations with low, irregular plant growth and abundant sunlight. Birds have been found nesting in small woodland openings only a few rods in diameter in New York (Eaton 1914).

**KEY REFERENCES:** Bent 1968, Nice 1937, 1943.

## Lincoln's Sparrow

(*Melospiza lincolni*)

A.O.U. No. 583.0



### Range

 Breeding



**RANGE:** Breeding: Quebec, w. to Alaska, s. to n. New England, n. Minnesota, New Mexico and s. California. Winter: Southwestern United States, s. to Central America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon.

**HABITAT:** Breeding: Thickets of alder and willow along bogs, lakes, and streams. Natural brushy openings and clearings created by fire or cutting, dry rocky hillsides with low shrub growth.

**SPECIAL HABITAT REQUIREMENTS:** Needs low brushy growth 4 to 8 feet (1.2 to 2.4 m) high with openings of grasses or sedges (Bent 1968).

**NESTING:** Egg dates: June 10 to June 28, New York (Bull 1974:599). Clutch size: 3 to 6, typically 4 or 5. Incubation period: About 13 days. Nestling period: About 14 to 16 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest site: Often on tussock of grass or sedge or in mosses and lichens. Usually well hidden by surrounding vegetation.

**TERRITORY SIZE:** About 1 acre (0.4 ha) in forest edge habitat in Ontario (Bent 1968:1440).

**FORAGING:** Major foods: Insects (more than 60 percent in summer); weed seeds, grain. Substrate: Leaf litter. Technique: Ground gleaning.

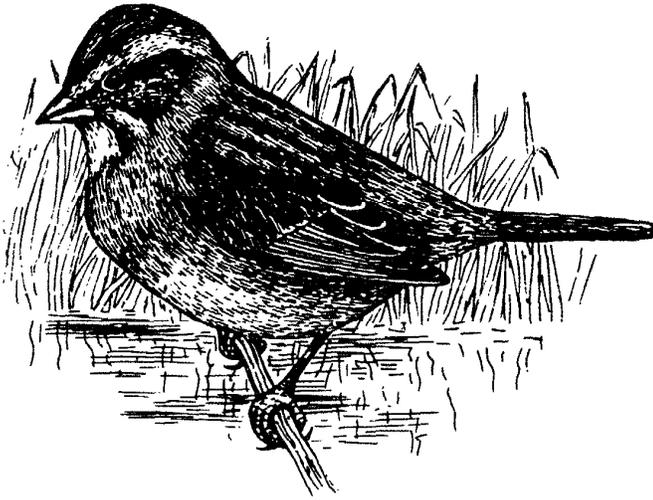
**COMMENTS:** 31 birds taken in Massachusetts and New York in February, April, May, September, and October had consumed 42 percent animal and 58 percent vegetable material (Judd 1901 in Bent 1968:1451).

**KEY REFERENCES:** Bent 1968, Brewster 1936.

## Swamp Sparrow

(*Melospiza georgiana*)

A.O.U. No. 584.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Newfoundland, w. to c. Canada, s. to New Jersey and Maryland, n. Illinois and Nebraska. Winter: Southern New England, s. to Florida, the Gulf States, and Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common to uncommon.

**HABITAT:** Breeding: Marshes, swamps, bogs, sloughs with bushes, rank grasses, sedges or reeds, low swampy shores of lakes and streambanks. Usually near fresh water. Avoids heavily wooded wetlands.

**NESTING:** Egg dates: May 15 to July 22, New York (Bull 1974:599). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 12 to 15 days. Nestling period: 9 to 13 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest site: Often directly above water, on bent down grasses among cattails, or in a low bush. Frequently builds over water 0.5 to 2 feet (0.2 to 0.6 m) deep or more. Sutton (1960) found that birds preferred to nest in mixed vegetation (cattail, spirea, sedge, dwarf birch, and tamarack saplings) rather than in pure cattails.

**SAMPLE DENSITIES:** 21 birds per 100 acres (40 ha) in open hemlock-spruce bog in Maryland (Robbins 1949 in Bent 1968).

**FORAGING:** Major foods: Insects (more than 80 percent in spring and early summer), weed seeds (90 percent in late summer and fall). Substrates: Shallow water, marsh vegetation. Techniques: Wading, gleaning.

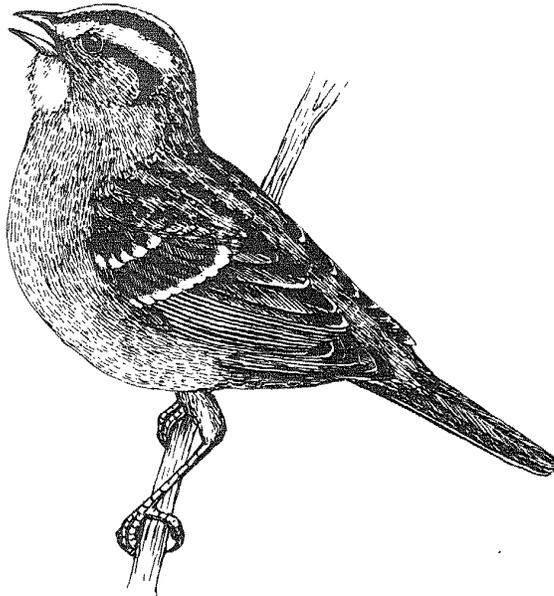
**COMMENTS:** Birds are highly insectivorous in spring and early summer (88 percent of diet), becoming almost entirely granivorous in late summer and fall (84 to 97 percent) (Martin et al. 1951).

**KEY REFERENCE:** Bent 1968.

## White-throated Sparrow

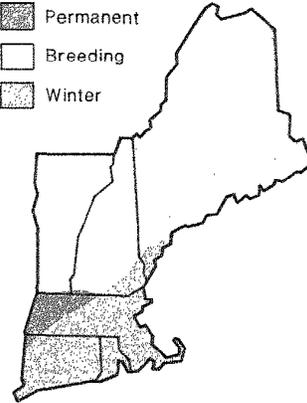
(*Zonotrichia albicollis*)

A.O.U. No. 558.0



### Range

-  Permanent
-  Breeding
-  Winter



**RANGE:** Breeding: Newfoundland, w. to n. Mackenzie, s. to n. New England, Massachusetts (Berkshires), New York (Catskills), Pennsylvania (Poconos), Wisconsin, and Alberta. Rarely to West Virginia. Winter: Central New England, s. to Florida, Pennsylvania, and Missouri, s. to the Gulf Coast and Mexico. Rarely to s. Canada.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (Connecticut).

**HABITAT:** Breeding: Edges of northern deciduous and coniferous forests, brushy clearings, open stunted tree growth of higher elevations, border of bogs, cut-over and open second-growth woodlands.

**NESTING:** Egg dates: May 30 to July 21, New York (Bull 1974:595). Clutch size: 3 to 5, typically 4. Incubation period: 11 to 14 days. Nestling period: 12 to 14 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: To 3 feet (0.9 m), typically on ground. Nest site: On or close to ground, in brush pile, under fallen limb, in grass hummock or mat of dead grasses or bracken fern. Typically located at edge of a clearing and well concealed by ground vegetation.

**TERRITORY SIZE:** 110 territories ranged in size from 0.5 to 2.7 acres (0.2 to 1.1 ha), (average 0.52 acres 0.3 ha) in Algonquin Provincial Park in Ontario (Martin 1960).

**SAMPLE DENSITIES:** Martin (1960) found densities varied from no birds in bog and hardwood forest to 56 territorial males per 100 acres (40 ha) in balsam fir and white spruce.

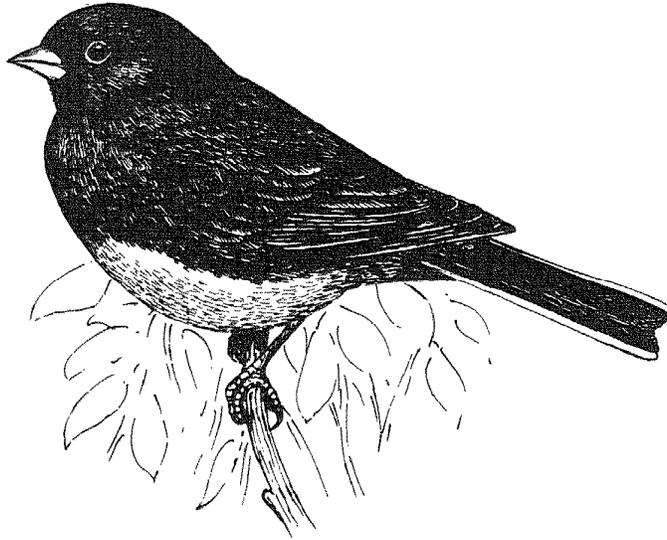
**FORAGING:** Major foods: Insects, seeds of grasses and weeds, wild fruits. Substrates: Weeds and grasses, leaf litter. Technique: Ground gleaning.

**COMMENTS:** Judd's (1901) analysis of the contents of 217 stomachs collected in all months except June revealed a diet of 19 percent animal and 81 percent vegetable matter (Bent 1968:1375).

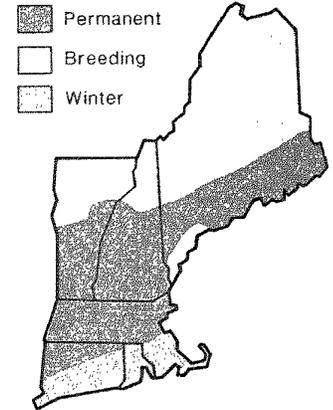
**KEY REFERENCES:** Bent 1968, Fischer and Gills 1946, Martin 1960.

Dark-eyed Junco  
(*Junco hyemalis*)

A.O.U. No. 567.0



Range



RANGE: Breeding: Quebec, w. to Alaska, s. to c. New England, Georgia (mountains), n. Minnesota and s. Yukon. In the West, s. to the mountains of sw. United States. Winter: Throughout most of the United States except the Florida peninsula and the extreme northern parts of breeding range.

RELATIVE ABUNDANCE IN NEW ENGLAND: Common to uncommon.

HABITAT: Breeding: Coniferous and mixed forests, forest edges, (Johnston 1970) borders of streams, woodland clearings, sides of logging roads. Wintering: Areas with conifers for night roosting. Fretwell (1968) found that Juncos preferred open weedy fields and used mature deciduous and coniferous woods infrequently. Hedgerows and brushy field borders.

NESTING: Egg dates: April 28 to August 15, New York (Bull 1974:588). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 12 to 13 days. Nestling period: 9 to 12 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest site: Often on ground under weeds and grasses, on slope, under fallen log or at base of tree or roadbank in cavity formed by roads. Occasionally nests low in shrub or tree.

HOME RANGE: 27, 33, and 17 ha (66.7, 81.5, 42 acres) for 2 flocks (one flock used 2 home ranges) (Gottfried and Franks 1975).

FORAGING: Major foods: Insects, wild fruits, weed seeds. Substrates: Grasses, leaf litter, weeds. Technique:

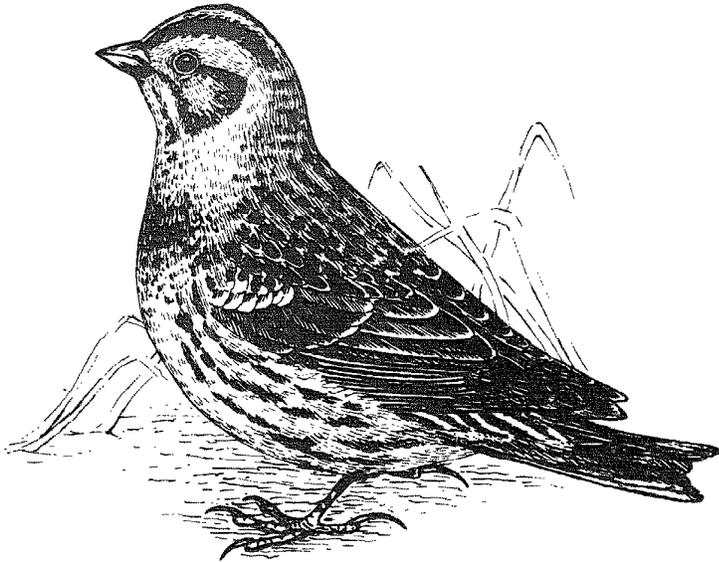
Ground gleaning. Preferred feeding habitat: Weed patches, hedgerows.

COMMENTS: Juncos feed on the ground in all seasons except when deep snow forces them to search in shrubs and forbs. Formerly Slate-colored Junco.

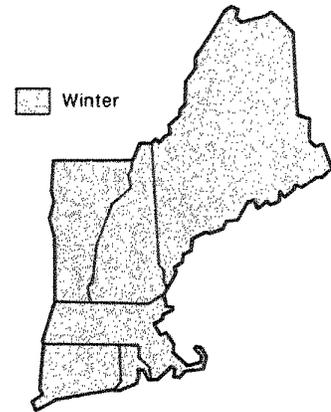
KEY REFERENCES: Bent 1968, Forbush 1929, Fretwell 1969.

Lapland Longspur  
(*Calcarius lapponicus*)

A.O.U. No. 536.0



Range



RANGE: Breeding: North of the tree line in Canada and Alaska. Winter: Winters s. to New Jersey, Colorado, and n. California.

RELATIVE ABUNDANCE IN NEW ENGLAND: Uncommon.

HABITAT: Wintering: Cultivated fields, open weedy meadows, beaches, sandy waste places with sparse vegetation.

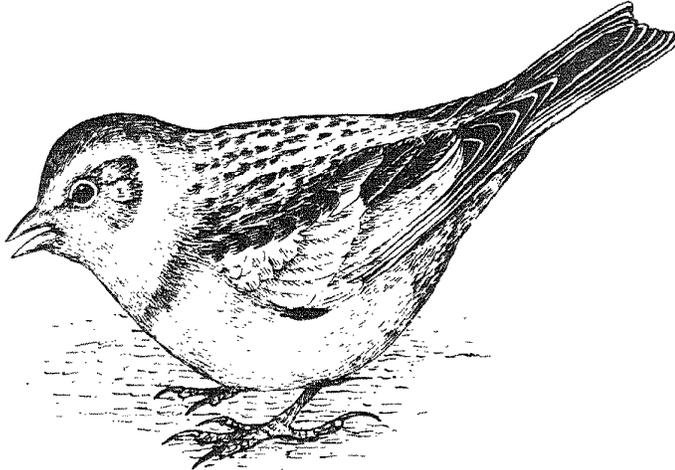
FORAGING: Major foods: Seeds of weeds and grasses. Substrates: Short grasses, bare earth. Techniques: Ground gleaning. Preferred feeding habitat: Stubble fields, coastal sandy areas where vegetation is sparse.

KEY REFERENCE: Bent 1968.

**Snow Bunting**  
(*Plectrophenax nivalis*)

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A.O.U. No. 534.0



Range



**RANGE:** Breeding: Arctic regions of North America, s. to n. Quebec, c. Alaska. Winter: Central Quebec, w. to s. Alaska, s. to Virginia (coast), Pennsylvania, and Oregon.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common to uncommon.

**HABITAT:** Wintering: Lake shores, salt marshes, open beaches, cultivated fields and windswept grasslands.

**FORAGING:** Major foods: Seeds of grasses, weeds, trees, especially alders and birches. Substrates: Surface of snow, tips of weeds and grasses. Technique: Ground gleaning. Preferred feeding habitat: Fields, farmyards, manure piles, ponds, beaches, frozen marshes, and meadows.

**KEY REFERENCES:** Bent 1968, Forbush 1929.

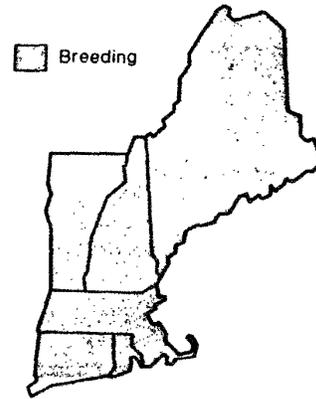
## Bobolink

(*Dolichonyx oryzivorus*)

A.O.U. No. 494.0



### Range



**RANGE:** Breeding: Nova Scotia w. to British Columbia, s. to Pennsylvania and the coast of s. New Jersey (rarely), Indiana, Colorado, and nc. California. Winter: South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common to uncommon.

**HABITAT:** Breeding: Hayfields, meadows, marshes, fallow fields. May prefer moist lowlands to uplands.

**SPECIAL HABITAT REQUIREMENTS:** Large expanses of grassland or forb cover.

**NESTING:** Egg dates: May 18 to June 20, New York (Bull 1974:523). Clutch size: 4 to 7, typically 5 or 6. Incubation period: 13 days. Nestling period: 10 to 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: In dense vegetation, often hay, alfalfa, clover, or weeds usually in a slight hollow in ground. Occasionally nests are constructed above ground in weed stalks.

**TERRITORY SIZE:** 22 territories ranged from 2.7 to 12.1 acres (1.1 to 4.9 ha) (average 6.3 acres (2.6 ha)) in grasslands in Wisconsin (Wiens 1969:35).

**SAMPLE DENSITIES:** 9 territorial males per 80 acres (32.4 ha) in grasslands in Wisconsin (Wiens 1969:53). 100 pairs per square mile (39 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972).

**FORAGING:** Major foods: Insects, weed and grass seeds; in New England, the summer diet consists of 70 to 90 per-

cent insects that are replaced almost entirely by grain (90 percent) in September (Forbush 1929 V. 2:404). Substrates: Grasses, weeds. Techniques: Ground and herb gleaning. Preferred feeding habitat: Cultivated grain fields.

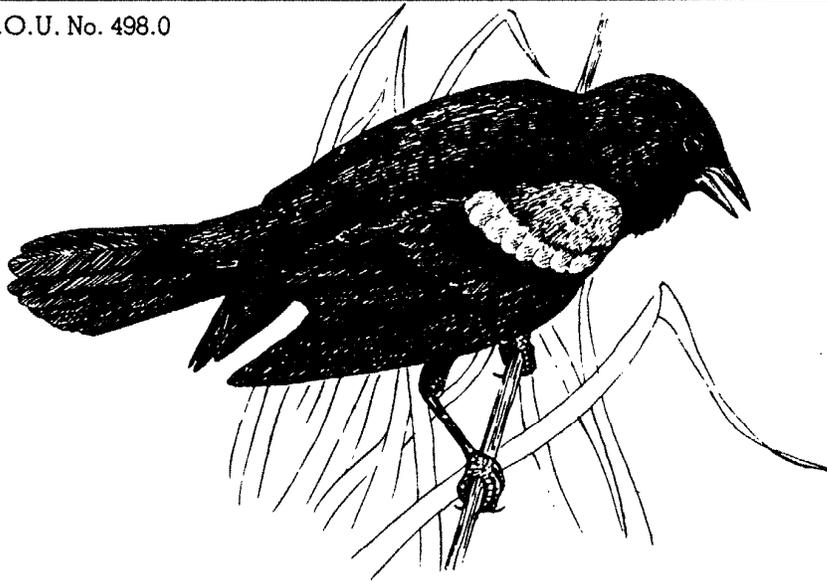
**COMMENTS:** Changes in haying practices (earlier cuttings) and the loss of agricultural land to development have contributed to the Bobolink's decline in the Northeast. Wiens (1969:41) found that Bobolinks in Wisconsin favored large open fields with dense ground vegetation.

**KEY REFERENCES:** Bent 1958, Forbush 1929, Wiens 1969.

## Red-winged Blackbird

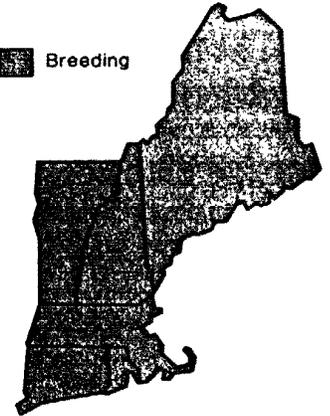
(*Agelaius phoeniceus*)

A.O.U. No. 498.0



### Range

■ Breeding



**RANGE:** Breeding: Nova Scotia w. to Alaska, s. to Florida and Mexico. Winter: New Jersey, e. Pennsylvania, Ohio, w. to British Columbia, s. to South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant.

**HABITAT:** Breeding: Marshes, swamps, wet meadows, ponds, dry fields. Prefers wetlands with extensive growth of cattails, bulrushes, sedges, and reeds.

**SPECIAL HABITAT REQUIREMENTS:** Sites for night roosting close to food supply (Bird and Smith 1964).

**NESTING:** Egg dates: April 26 to July 9, New York (Bull 1974:526). Clutch size: 3 to 5, typically 3 or 4. Incubation period: 10 to 12 days. Nestling period: 10 to 11 days. Broods per year: 2 or 3. Age at sexual maturity: 1 or 2 years. Females — 1 year, males — probably 2 years (Harrison 1975:214). Nest height: 3 inches to 14 feet (7.6 cm to 4.3 m). Typically less than 6 feet (1.8 m). Nest site: In almost any kind of low herbaceous vegetation, shrub, or low tree. Usually near or above water but may be placed in dry sites.

**TERRITORY SIZE:** Average sizes ranged from 200 to 600 m<sup>2</sup> (0.05 to 0.15 acres) in bulrush with a little cattail in Washington (Holm 1973). Average size of 21 territories in cattail clumps surrounded by grassland was 2,512 square feet (233 m<sup>2</sup>). Average size of 22 territories in main area of cattail marsh including central and peripheral territories was 10,653 square feet (990 m<sup>2</sup>) (Orians 1961). 51 marsh territories averaged 0.17 acre (0.07 ha) (range 0.06 to 1.12 acres (0.02 to 0.5 ha)), upland territo-

ries averaged 0.54 acre (0.2 ha) (range 0.33 to 0.99 acres (0.07 to 0.4 ha)) (Case and Hewitt 1963).

**SAMPLE DENSITIES:** 16 pairs per 100 acres (40 ha) in marsh, 11 pairs per 100 acres (40 ha) in uplands (Case and Hewitt 1963). 164 pairs per square mile (63 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 73 territorial males per 100 acres (40 ha) in cattail marsh, 36 territorial males per 100 acres (40 ha) in shrubby field with stream-bordered trees (Stewart and Robbins 1958:322).

**FORAGING:** Major foods: Insects, weed seeds, grain. Substrates: Short grasses, freshly plowed earth. Technique: Ground gleaning. Preferred feeding habitat: Feeds up to 1 mile (1.6 km) from nest site in croplands, orchards, hayfields, and so on.

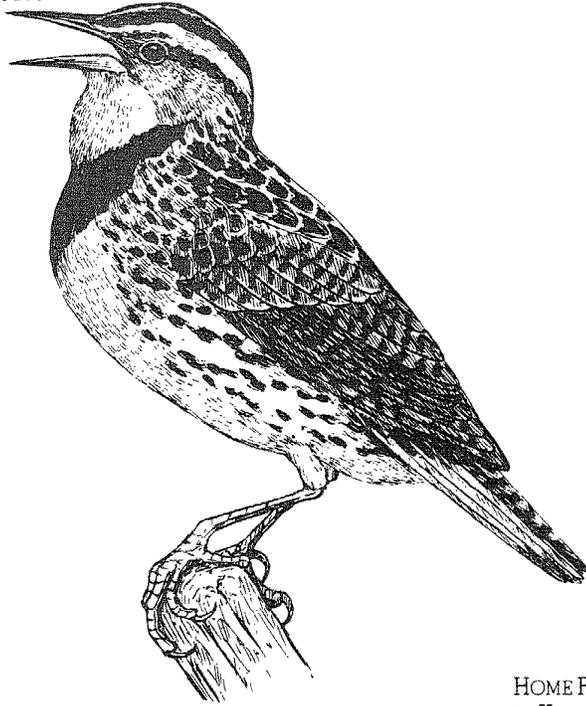
**COMMENTS:** The fall diet consists almost entirely of weed seeds.

**KEY REFERENCES:** Bent 1958, Case and Hewitt 1963, Orians 1961.

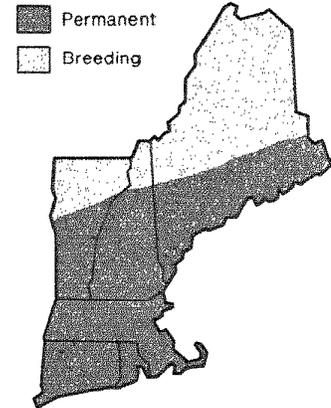
## Eastern Meadowlark

(*Sturnella magna*)

A.O.U. No. 501.0



### Range



**RANGE:** Breeding: New Brunswick, w. to c. Ontario, s. to Florida and n. Mexico. Winter: Central New England and New York, s.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon.

**HABITAT:** Breeding: Open farmlands, especially pastures, hayfields and grassy meadows. They may use areas with widely scattered shrubs and may favor moist lowlands.

**SPECIAL HABITAT REQUIREMENTS:** Grasslands, elevated singing perches.

**NESTING:** Egg dates: May 9 to August 4, New York (Bull 1974:524). Clutch size: 2 to 6, typically 3 to 5. Incubation period: 13 to 15 days. Nestling period: 10 to 12 days. Broods per year: 2. Age at sexual maturity: 1 year. Nest site: On ground in a natural depression or one scraped by female, sometimes partially or entirely roofed by nest materials and adjacent vegetation. Prefers to nest in cover 10 to 20 inches (25 to 50 cm) high.

**TERRITORY SIZE:** 3 to 15 acres (1.2 to 6.1 ha) in moist lowlands in Wisconsin (Lanyon 1957). 18 territories ranged from 4.3 to 7.9 acres (1.7 to 3.2 ha) (average 5.8 acres (2.3 ha)) in grasslands in Wisconsin (Wiens 1969:35).

**HOME RANGE:** 2.8 acres (1.1 ha) in a field of brome grass in Kansas (Fitch 1958).

**SAMPLE DENSITIES:** 20.9 nests per 100 acres (40 ha) in pasture, 12.6 nests per 100 acres (40 ha) in hayfield in Illinois. Ungrazed pasture had more nests than grazed pasture (Roseberry and Klimstra 1970). 12 territorial males per 80 acres (32.4 ha) in grasslands in Wisconsin (Wiens 1969:53).

**FORAGING:** Major foods: Insects, especially beetles and grasshoppers, weed seeds, grass seeds, waste grain seed. Substrates: Grasses and weeds. Techniques: Grass and ground gleaning.

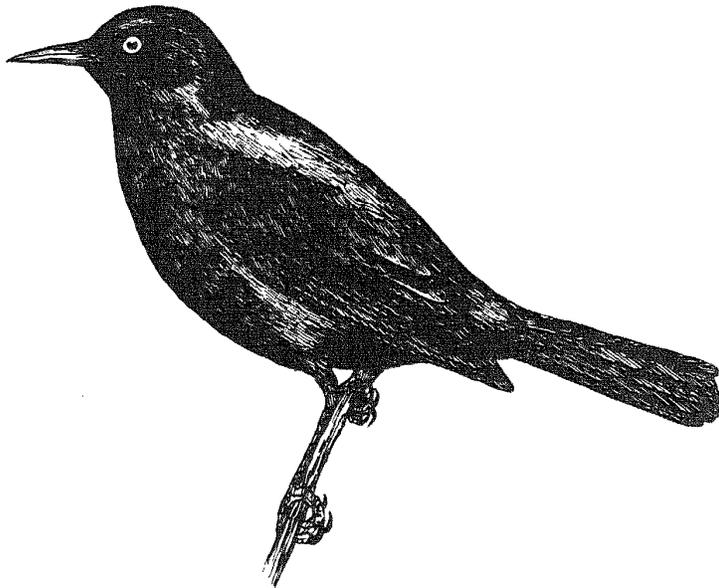
**COMMENTS:** Winter food consists almost entirely of weed and grass seeds and waste grains. Wiens (1969:41) found that meadowlarks in Wisconsin favored large open fields.

**KEY REFERENCES:** Bent 1958, Lanyon 1957, Roseberry and Klimstra 1970.

## Rusty Blackbird

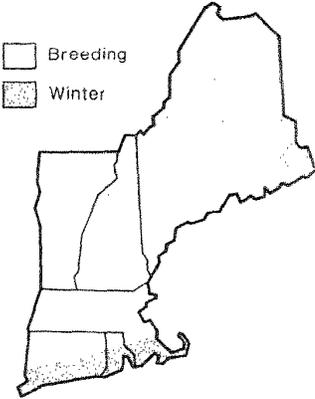
(*Euphagus carolinus*)

A.O.U. No. 509.0



### Range

-  Breeding
-  Winter



**RANGE:** Breeding: Northern Quebec and s. Canadian Provinces, w. to Alaska, s. to n. New England and the Adirondack Mountains of New York. Winter: Southern New England, s. to Florida, Ohio River Valley, w. to Colorado, s. to Texas.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (northern Maine) to uncommon (northern Vermont) during breeding season. Rare and local (Connecticut, se. Massachusetts) in winter; more common southward.

**HABITAT:** Breeding: Wooded swamps, tree-bordered marshes, beaver ponds, muskegs, boreal bogs and stream borders with alder and willow thickets, wooded islands in lakes. Rarely seen in fields with other blackbirds. Wintering: Wooded swamps.

**NESTING:** Egg dates: May 7 to June 15, New York (Bull 1974:533). Clutch size: 4 to 5, typically 4 or 5. Incubation period: 14 days. Nestling period: About 13 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 2 to 20 feet (0.6 to 6.1 m), typically less than 10 feet (3.0 m). Nest site: Solitary nester. Nest is often in dense foliage of young conifers, especially balsam and spruce. Also builds in deciduous shrubs in marshes such as sweet gale and buttonbush.

**TERRITORY SIZE:** Breeding territories are sometimes large. Nests may be 0.5 mile (0.8 km) or more apart (Harrison 1975:217).

**FORAGING:** Major foods: Insects, seeds of weeds, grains, wild fruits from the remainder. Technique: Ground-gleaning. Preferred feeding habitat: Open areas, grassy edges of northern ponds and streams.

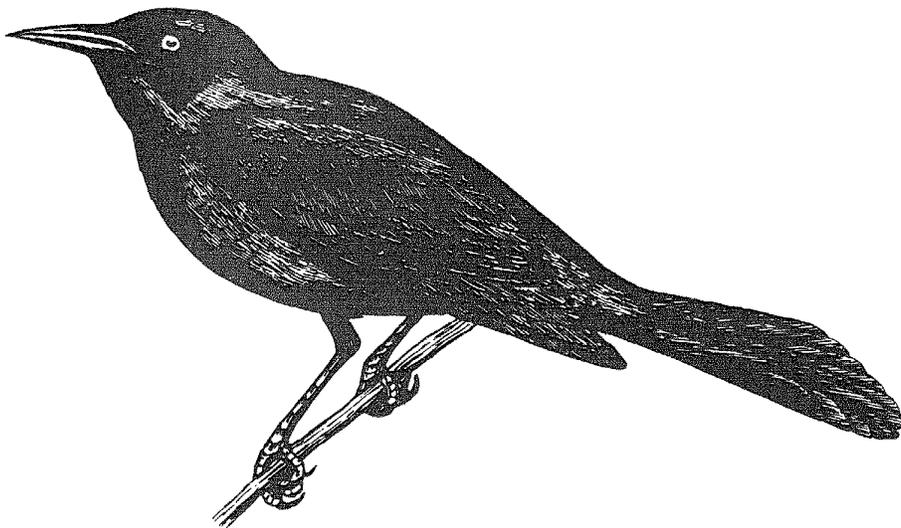
**COMMENTS:** The stomach contents of 132 birds taken in all months of the year except June and July contained 53 percent animal and 47 percent vegetable matter (Beal in Bent 1958:288).

**KEY REFERENCES:** Bent 1958, Kennard 1920.

## Common Grackle

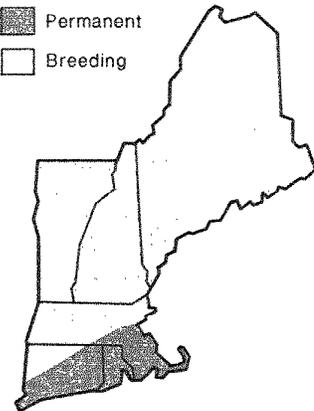
(*Quiscalus quiscula*)

A.O.U. No. 511.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Newfoundland, w. to the s. Canadian Rockies, s. to Florida, the Gulf Coast and Texas. Winter: Coastal sections of s. New England s. Ohio River Valley and Kansas, s.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant in breeding season. Uncommon in winter.

**HABITAT:** Breeding: Farmlands, suburbs, marshes, swamps, meadows at low elevations. Uncommon in mountains. Wintering: Agricultural areas with or without open water and with some bare ground.

**NESTING:** Egg dates: April 12 to June 4, New York (Bull 1974:536). Clutch size: 3 to 6, typically 5. Incubation period: 11 to 12 days. Nestling period: About 18 to 20 days. Broods per year: Probably 1. Nest height: 1 to 60 feet (0.3 to 18.3 m). Typically 10 to 20 feet (3.0 to 6.1 m). Nest site: Solitary or colonial nesters. Usually nests in small colonies of 20 to 30 pairs. Prefers conifers but uses deciduous trees and shrubs. Less frequently nests in cavities, rock ledges, or cattails.

**TERRITORY SIZE:** Both male and female defend a small area surrounding nest (Ficken 1963).

**HOME RANGE:** Grackles range a mile or more from the nest site.

**SAMPLE DENSITIES:** 92 pairs per square mile (35 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972).

**FORAGING:** Major foods: Ground-dwelling insects, fruits, mast, waste grains, small quantities of fish, crustaceans, amphibians, nesting birds and eggs. Substrates: Mud, cultivated earth, short grasses. Techniques: Ground gleaning, probing. Preferred feeding habitat: Open fields, shores of ponds, lawns.

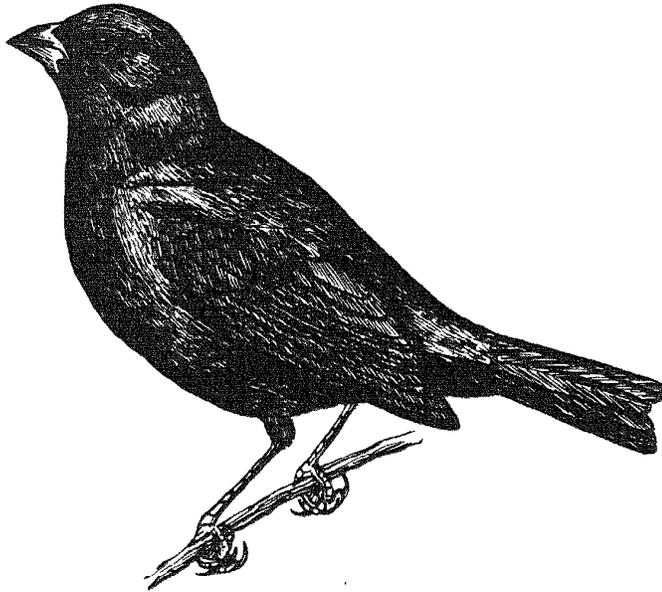
**COMMENTS:** Birds are highly gregarious in all seasons. Ornamental evergreens are commonly used for nesting. Maxwell and others (1976) found 24 percent of 2,601 nests located in redcedar. Records of Grackles using cavities and birdhouses indicates an ability to utilize marginal habitats.

**KEY REFERENCES:** Bent 1958, Maxwell and Putnam 1972, Peterson and Young 1950.

## Brown-headed Cowbird

(*Molothrus ater*)

A.O.U. No. 495.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Nova Scotia, w. to British Columbia, s. to Virginia, Louisiana and Mexico. Winter: Coastal sections of Massachusetts, s. to c. Florida. Ohio River Valley, w. to n. California, s. to Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Open coniferous and deciduous woodlands, forest edges, agricultural land, suburban areas. Wintering: Agricultural lands, feeding stations.

**NESTING:** Egg dates: April 23 to July 31, New York (Bull 1974:539). Clutch size: 1 to 6, typically 3 (usually lays only one egg per nest). Broods per year: 3 or 4. Age at sexual maturity: 1 year. Nest height: To 80 feet (24.3 m). Nest site: Parasitic — builds no nest. Lays eggs in nests of other birds (214 species of which 121 have raised young cowbirds successfully). Song Sparrows and Yellow Warblers are most common hosts (Harrison 1975).

**TERRITORY SIZE:** Apparently does not defend an area but has a fixed breeding area in which female lays eggs (Friedmann 1929).

**HOME RANGE:** About 20 to 30 acres (8.1 to 12.1 ha) in floodplain habitat (open weedy fields with scattered trees) in Ohio (Nice 1937:154).

**SAMPLE DENSITIES:** 152 pairs per square mile (59 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972).

**FORAGING:** Major foods: Seeds of weeds, grasses, grains, insects. Substrates: Short grasses, soft earth, weeds. Technique: Ground gleaning. Preferred feeding habitat: Grain fields, pastures where they often feed among cattle.

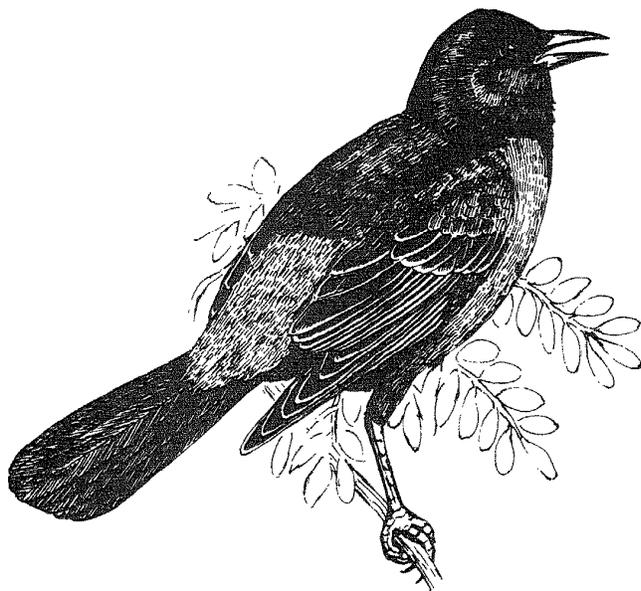
**COMMENTS:** The female lays an average of 10 to 12 eggs during the breeding season (range 1 to 15) (Payne 1965). Birds are often seen feeding in mixed flocks with Redwings or Common Grackles. Both sexes may flock in all seasons.

**KEY REFERENCES:** Friedmann 1929, Nice 1937, Payne 1965.

## Orchard Oriole

(*Icterus spurius*)

A.O.U. No. 506.0



### Range

Breeding



**RANGE:** Breeding: Eastern Massachusetts, w. to North Dakota, s. to the Gulf States. Winter: Mexico and n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon to rare.

**HABITAT:** Breeding: Orchards, woodland margins and open woodlands (avoids dense forest), shade trees along country roads and in suburbs. Prefers open, cultivated lands near human dwellings. Favors low elevations.

**NESTING:** Egg dates: May 18 to June 22, New York (Bull 1974:530). Clutch size: 3 to 7, typically 4 or 5. Incubation period: 12 to 14 days. Nestling period: 11 to 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 4 to 70 feet (1.2 to 21.3 m). Typically 10 to 20 feet (3.0 to 6.1 m). Nest site: Nest is suspended between two horizontally forked branches of a tree or shrub and is well concealed by dense foliage.

**SAMPLE DENSITIES:** Maryland — 29 territorial males per 100 acres (40 ha) in farmyards. 15 territorial males per 100 acres (40 ha) in suburban residential area. 10 territorial males per 100 acres (40 ha) in shrubby field with stream-bordered trees (Stewart and Robbins 1958:323).

**FORAGING:** Major foods: Insects represent more than 90 percent of diet, wild fruits form the remainder. Substrate: Leaf surfaces. Technique: Leaf gleaning.

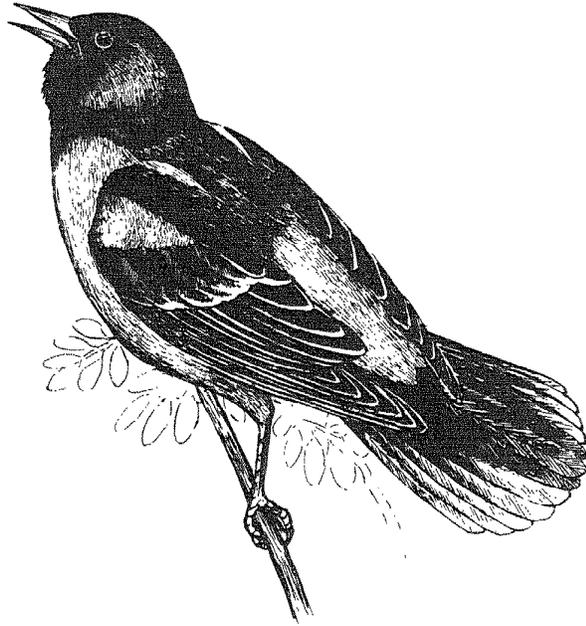
**COMMENTS:** Migrates south early (July-August). Stomachs of 11 birds taken in May and June in Maryland contained 91 percent animal and 9 percent vegetable material (Judd 1902 in Bent 1958:200).

**KEY REFERENCES:** Bent 1958, Dennis 1948.

## Northern Oriole

(*Icterus galbula*)

A.O.U. No. 507.0



### Range

Breeding



**RANGE:** Breeding: Nova Scotia, w. to British Columbia, s. to Georgia, Mexico and s. California. Winter: Mexico to n. South America.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Suburban shade trees of lawns and roadsides, groves, orchards, parks, deciduous woodland edges and along streams and lakes. Wintering: Locally at feeding stations where fruits and suet are provided.

**SPECIAL HABITAT REQUIREMENTS:** Tall deciduous trees, prefers elms.

**NESTING:** Egg dates: May 15 to June 13, New York (Bull 1974:530). Clutch size: 4 to 6, typically 4 or 5. Incubation period: 12 to 14 days. Nestling period: 11 to 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 6 to 60 feet (1.8 to 18.3 m). Typically 25 to 30 feet (7.6 to 9.1 m). Nest site: Usually high in a deciduous tree, often elm maple, willow, or apple. Nest is deeply pendant and is usually attached by its rim to tip of drooping branch. Nests in maples — shallow basket placed toward top-center of crown.

**SAMPLE DENSITIES:** 20 pairs per square mile (8 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 10 territorial males per 100 acres (40 ha) in shrubby field with stream-bordered trees in Maryland (Stewart and Robbins 1958:324).

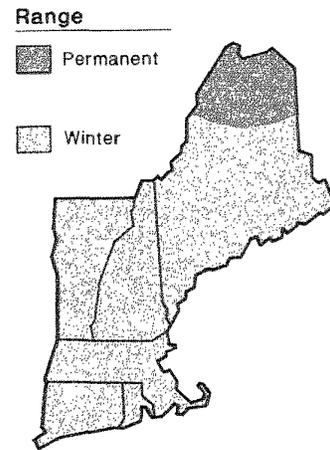
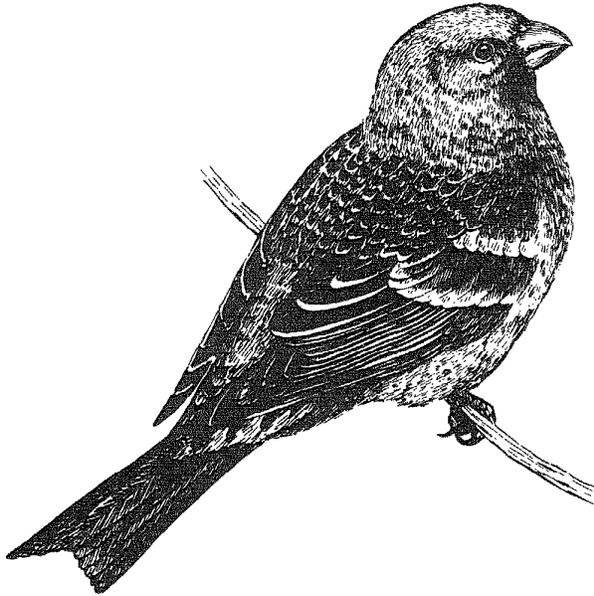
**FORAGING:** Major foods: Insects, fruit. Substrates: Leaf and twig surfaces. Techniques: Foliage and twig glean-ing.

**COMMENTS:** The diet is mainly animal material (83 percent) and is supplemented by lesser amounts of vegetable material (17 percent), mostly fruits (Forbush 1913:226). Formerly Baltimore Oriole.

**KEY REFERENCES:** Bent 1958, Forbush 1929.

**Pine Grosbeak**  
(*Pinicola enucleator*)

A.O.U. No. 515.0



**RANGE:** Breeding: Boreal forests of Canada, s. to Nova Scotia, n. New England, Manitoba, and the Rocky Mountains. Winter: Wanders s. irregularly to Maryland, Indiana, and Nebraska.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon and irregular.

**HABITAT:** Breeding: Northern spruce-fir forests, typically at high elevations, usually at edge of open area in forest or along forest border. Wintering: May remain in breeding areas or move south to open cedar-strewn hillsides, residential areas with feeders, orchards, street trees.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous forests.

**NESTING:** Clutch size: 2 to 5, typically 4. Incubation period: 13 to 14 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest site: Low in coniferous tree (often spruce) or shrub.

**FORAGING:** Major foods: Buds, seeds, some insects in spring and summer. Substrates: Ground, branches. Techniques: Ground gleaning, budding.

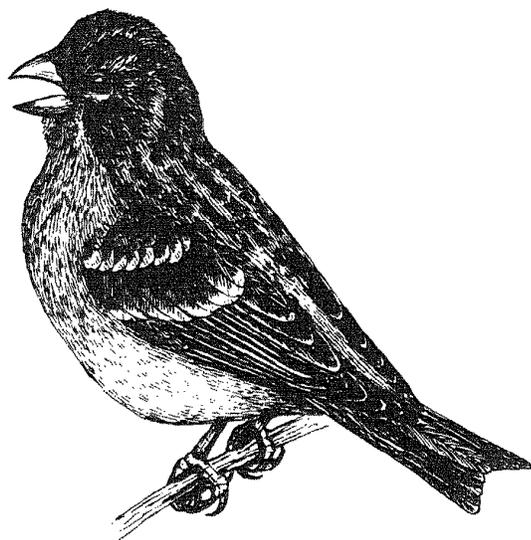
**COMMENTS:** Winter diet: 99.1 percent vegetable, 0.9 percent animal (365 stomachs). Summer diet: 84 percent vegetable, 16 percent animal (29 stomachs) (Gabrielson 1924 in Bent 1968:330).

**KEY REFERENCES:** Bent 1968, Harrison 1975.

## Purple Finch

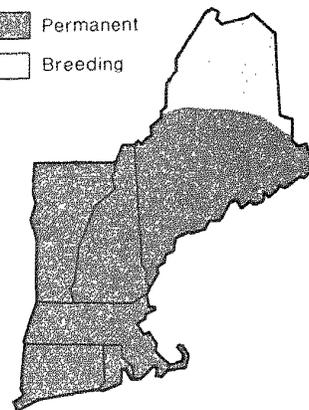
(*Carpodacus purpureus*)

A.O.U. No. 517.0



### Range

-  Permanent
-  Breeding



**RANGE:** Breeding: Newfoundland, w. to British Columbia, s. to the mountains of Maryland, Illinois, and the mountains of California. Winter: Northern New England, w. to Wisconsin, s. to Georgia and Texas, British Columbia, s. to s. California and Arizona.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (s. Connecticut).

**HABITAT:** Breeding: Edges of coniferous forests, evergreen plantations, ornamental conifers in residential areas, parks, open mixed woodlands. Wintering: Largely deciduous woodlands. Common at feeding stations.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous trees.

**NESTING:** Egg dates: May 13 to July 16, New York (Bull 1974:556). Clutch size: 3 to 6, typically 4 or 5. Incubation period: 13 days. Broods per year: 1 or 2. Nest height: 5 to 60 feet (1.5 to 18.3 m). Nest site: Typically on horizontal branch of a conifer (commonly spruce), often near top of tree.

**FORAGING:** Major foods: Over 70 percent vegetable matter, especially seeds of conifers, weeds and grasses, buds, fruits. Also takes insects, spiders, and other small invertebrates. Substrates: Branches. Technique: Branch gleaning.

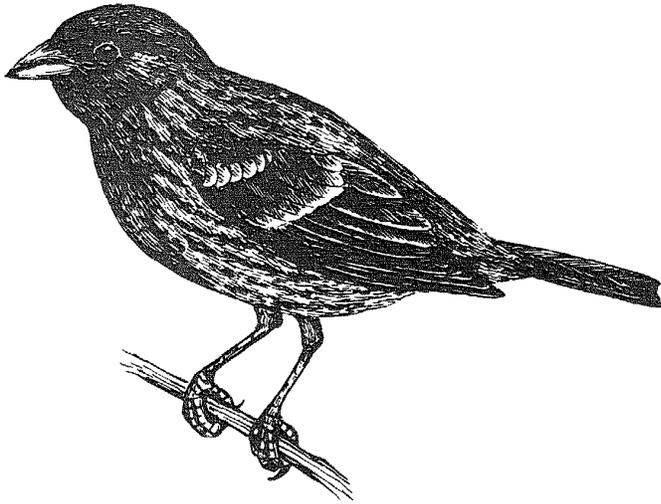
**COMMENTS:** Ornamental conifers and Christmas tree plantations have influenced the southward range expansion of this species (Harrison 1975:230).

**KEY REFERENCES:** Bent 1968, Pough 1949.

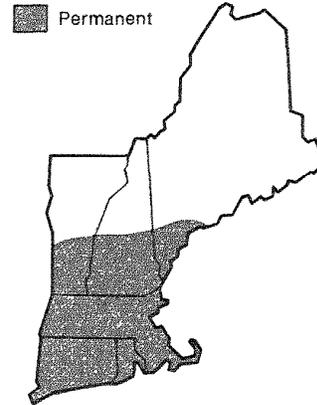
## House Finch

(*Carpodacus mexicanus*)

A.O.U. No. 519.0



### Range



**RANGE:** Breeding: Introduced to New York City and spread to c. New England, Pennsylvania, New Jersey, Maryland, and Delaware. The western (native) range extends from British Columbia to s. Mexico. Winter: Same as breeding range.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (spreading rapidly northward throughout New England).

**HABITAT:** Breeding: Rural, suburban and urban yards, city parks, farms, open woods. Wintering: Same as breeding habitat.

**SPECIAL HABITAT REQUIREMENTS:** Birds may require open ground with low seed-producing plants and fruits and berries during part of year (Elliott and Arbib 1953).

**NESTING:** Egg dates: April 11 to July 20, New York (Bull 1974:560). Clutch size: 2 to 6, typically 4 or 5. Incubation period: 12 to 16 days. Nestling period: Average 15 days, range 11 to 19 days (Evensen 1957). Broods per year: 2 or more. Age at sexual maturity: 1 year. Nest height: 3 to 20 feet (0.9 to 6.1 m). Nest site: Uses a variety of sites including buildings, ledges, tree cavities, bird houses, vines (especially ivy) on buildings. In the Eastern United States, birds seem to be associated with conifers, especially cultivated varieties such as arbor-vitae and hedges (Elliott and Arbib 1953).

**FORAGING:** Major foods: Weed seeds, wild and cultivated fruit, insects. Substrates: Weeds and grasses. Technique: Ground gleaning.

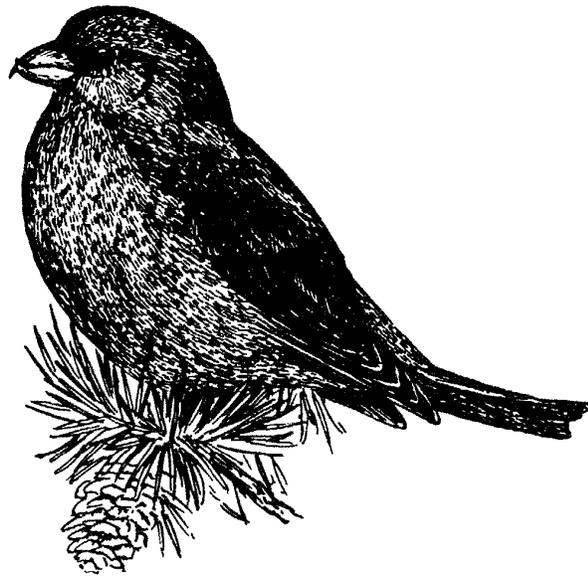
**COMMENTS:** The House Finch was introduced to the Northeast in the 1940's (New York City area) from California by illegal pet trade. Its range has expanded to include much of the Northeast. About 97 percent of diet of 1,206 stomachs was vegetable matter (Beal 1907 in Bent 1968:306).

**KEY REFERENCES:** Bent 1968, Elliott and Arbib 1953, Evenden 1957, Harrison 1975.

## Red Crossbill

(*Loxia curvirostra*)

A.O.U. No. 521.0



### Range

■ Permanent

■ Winter



**RANGE:** Breeding: Newfoundland, w. to Alaska, s. to n. New England, n. Georgia (mountains), Minnesota and the western mountains s. to Central America. Winter: South to the Gulf Coast (irregularly).

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Locally common (Maine — coastal islands) to rare (inland).

**HABITAT:** Breeding: Coniferous forests from wooded marine islands to mountain tops. Wintering: Coniferous woods.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous trees.

**NESTING:** Egg dates: March 30 to April 30, New York (Bull 1974:566). Clutch size: 3 to 5, typically 4. Incubation period: 12 to 14 days. Nestling period: 15 to 17 days. Broods per year: 1. Age at sexual maturity: 1 year. Nest height: 5 to 80 feet (1.5 to 24.4 m). Typically 10 to 40 feet (3.0 to 12.2 m). Nest site: On horizontal branch of conifer, usually hidden in a tuft of needles, well out from trunk.

**TERRITORY SIZE:** Defends a small area around the nest (Lawrence 1949).

**FORAGING:** Major foods: Seeds of conifers, hardwoods, and annual weeds; buds, wild fruits. Substrates: Tips of branches of trees, ground, bunches of conifer needles. Techniques: Branch, twig, cone, and foliage gleaning.

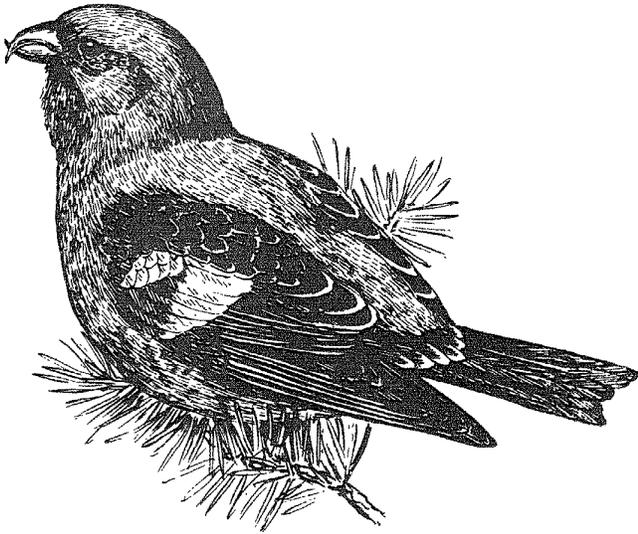
**COMMENTS:** Crossbills are attracted to highways in winter by road salt. Breeding periods are irregular with nesting reported in all months of the year; may be governed by food supply.

**KEY REFERENCES:** Bent 1968, Griscom 1937, Lawrence 1949.

## White-winged Crossbill

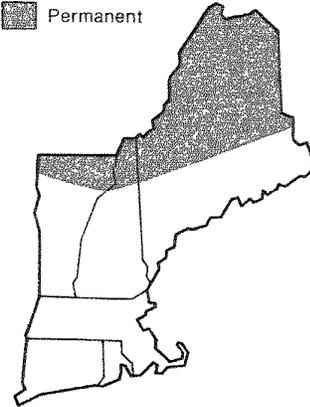
(*Loxia leucoptera*)

A.O.U. No. 522.0



### Range

Permanent



**RANGE:** Breeding: Coniferous forests of Canada, s. to n. New England, Minnesota, and British Columbia. Winter: Irregularly s. to North Carolina, Illinois, and n. Oregon.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon.

**HABITAT:** Breeding: Coniferous forests. Wintering: Coniferous forests.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous forests.

**NESTING:** Clutch size: 2 to 5. Nest site: Horizontal limb of spruce. Nest heights vary considerably with some reported in low spruce shrubs and others at tops of 70-foot (21-m) trees. Reportedly nests in pines and other conifers, though less frequently.

**FORAGING:** Major foods: Seeds of conifers, hardwood trees especially birch and alder; weed seeds, fruits, small amounts of insects. Substrates: Branches of evergreens, clumps of needles. Techniques: Extracting seeds from conifer cones.

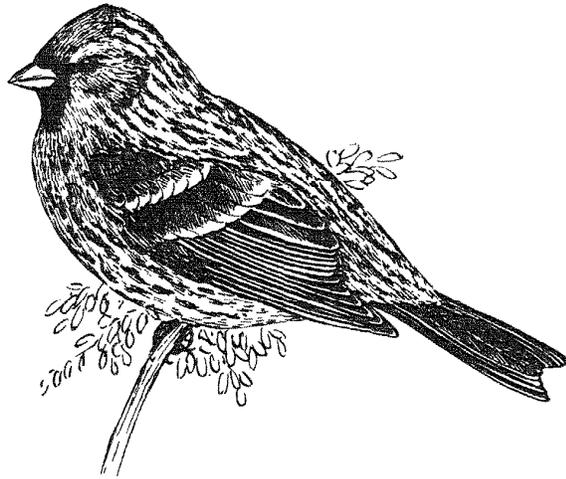
**COMMENTS:** Breeding is erratic with nesting reported from January to December. Breeding habits are little known.

**KEY REFERENCE:** Bent 1968.

## Common Redpoll

(*Carduelis flammea*)

A.O.U. No. 528.0



### Range



RANGE: Breeding: Southern Newfoundland, w. to n. British Columbia. Winter: Wanders s. to North Carolina, Colorado and n. California.

RELATIVE ABUNDANCE IN NEW ENGLAND: Uncommon and irregular.

HABITAT: Wintering: Near alders and birches, the seeds of which are an important winter staple. Snow-covered weedy fields.

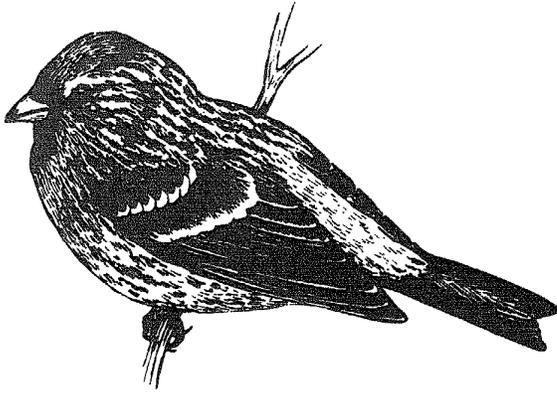
FORAGING: Major foods: Seeds of weeds, grasses, conifers, birches, and alders. Substrate: Ground. Techniques: Ground gleaning, opening seed heads.

KEY REFERENCE: Bent 1968.

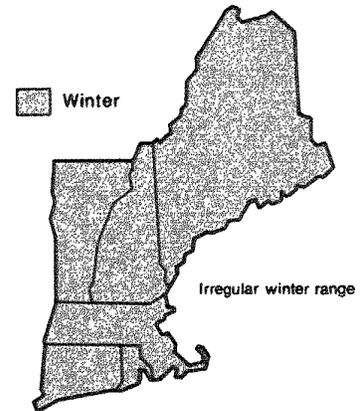
**Hairy Redpoll**  
(*Carduelis hornemanni*)

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A.O.U. No. 527.0



**Range**



**RANGE:** Breeding: Northern Alaska to n. Quebec. Winter: Irregularly s. to n. border states.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Rare.

**HABITAT:** Old fields, pastures, and birch or alder swamps.

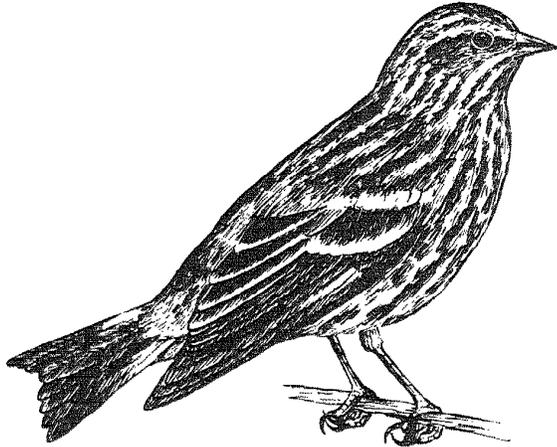
**FORAGING:** Major foods: Seeds of birches, alders and common grasses. Substrates: Ground. Techniques: Ground gleaning, opening seed heads.

**KEY REFERENCE:** Forbush 1929.

## Pine Siskin

(*Carduelis pinus*)

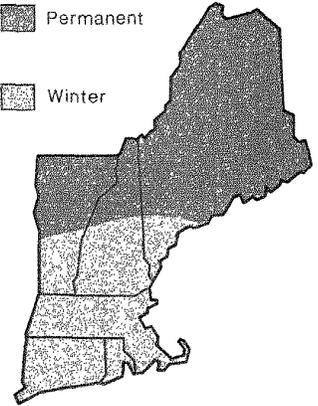
A.O.U. No. 533.0



### Range

Permanent

Winter



**RANGE:** Breeding: Quebec, west to Alaska, south to n. New England, North Carolina (mountains). Occurs rarely and erratically in n. Pennsylvania, s. New York and s. New England. Winter: Breeding range south to Florida, the Gulf States and Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Uncommon in breeding season. Abundant to rare (very irregular) in winter.

**HABITAT:** Breeding: Coniferous forests, natural conifer stands or evergreen plantations, alder thickets, weed patches adjacent to forests.

**SPECIAL HABITAT REQUIREMENTS:** Conifers.

**NESTING:** Egg dates: April 25 to May 25, New York (Bull 1974:564). Clutch size: 2 to 6, typically 3 or 4. Incubation period: 13 days. Nestling period: About 15 days. Age at sexual maturity: 1 year. Nest height: 6 to 35 feet (1.8 to 10.7 m). Typically 20 feet (6.1 m). Nest site: Usually nests in loose colonies. Nest is usually on a horizontal branch of a conifer and well out from the trunk. Nests exclusively in conifers.

**TERRITORY SIZE:** Small area 3 to 6 feet (0.9 to 1.8 m) in diameter surrounding nest (Weaver and West 1943).

**FORAGING:** Major foods: Summer — Insects, buds, seeds, tender leaves. Winter — Seeds of annual weeds, conifers, birches, and alders. Substrates: Ground, cone-bearing branches, especially in tops of trees. Techniques: Ground gleaning, opening seed heads.

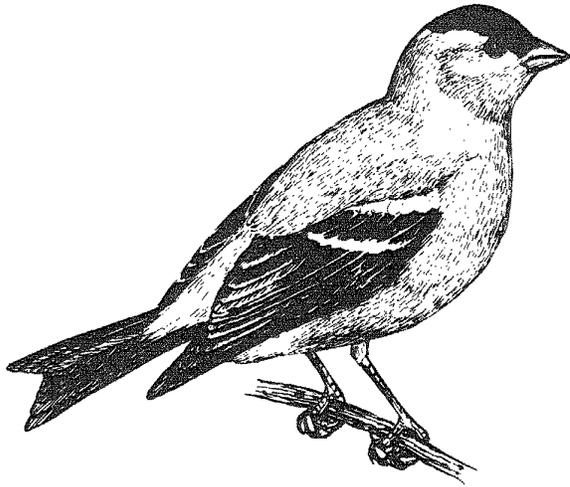
**COMMENTS:** Siskins usually breed at elevations of 3,000 feet (914 m) or more in New York, Vermont, and New Hampshire; lower in Maine. Birds feed in flocks in all seasons of the year. Numbers seem to fluctuate with cone crops.

**KEY REFERENCES:** Bent 1968, Rodgers 1937, Weaver and West 1943.

## American Goldfinch

(*Carduelis tristis*)

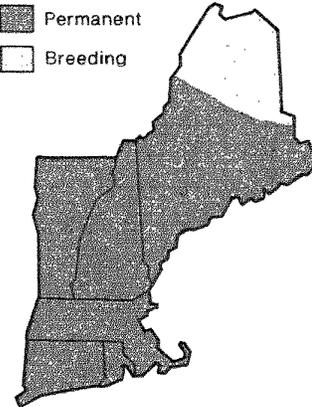
A.O.U. No. 529.0



### Range

■ Permanent

□ Breeding



**RANGE:** Breeding: Newfoundland, w. to British Columbia, s. to Georgia, Colorado, and s. California. Winter: Central Maine, s. to Florida, the Gulf States and Mexico.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common.

**HABITAT:** Breeding: Open weedy fields, pastures with scattered trees near villages and farms, forest edges, open swamps. Wintering: Woodlands.

**SPECIAL HABITAT REQUIREMENTS:** Open weedy fields, scattered woody growth for nesting.

**NESTING:** Egg dates: July 3 to September 16, New York (Bull 1974:563). Clutch size: 4 to 6, typically 5. Incubation period: 12 to 14 days. Nestling period: 11 to 15 days. Broods per year: 1 or 2. Age at sexual maturity: 1 year. Nest height: 1 to 90 feet (0.3 to 27.4 m). Typically 4 to 40 feet (1.2 to 12.2 m). Nest site: Usually in a fork formed by 3 or 4 upright branches or on a horizontal limb of a tree.

**TERRITORY SIZE:** Goldfinches do not always show strong territorial behavior (Nickell 1951). Average territory size of 38 pairs was an area 95 feet (20 m) in diameter in a dry marsh in Wisconsin (Stokes 1950).

**SAMPLE DENSITIES:** 38 pairs per 6.4 acres (2.6 ha) of dry marsh in Wisconsin (Stokes 1950). 40 pairs per square mile (15 pairs per km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972). 21 territorial males per 100 acres (40 ha) in shrubby field with stream-bordered trees in Maryland (Stewart and Robbins 1958:345).

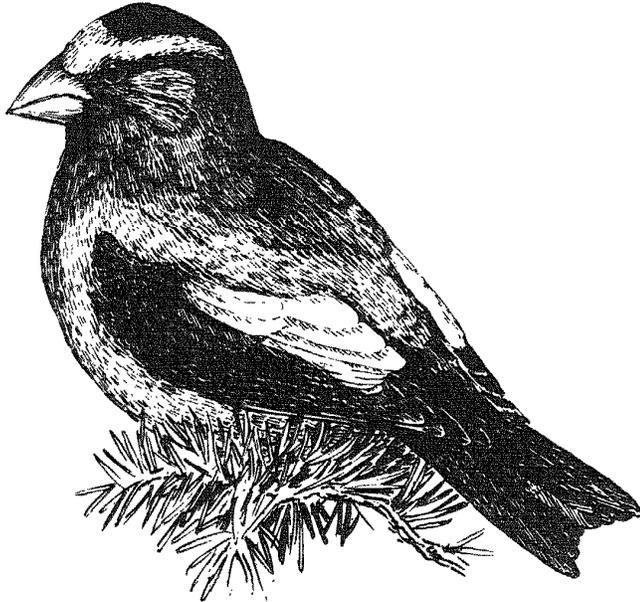
**FORAGING:** Major foods: Insects, buds, succulent vegetation (in summer); seeds of weeds, birches, alders, conifers (in winter). Substrates: Tips of weed stalks, fruit-bearing branches of trees and shrubs. Techniques: Ground, shrub and leaf gleaning, breaking open seed heads. Preferred feeding habitat: Feeding areas may be a mile or more from nest site (Drum 1939).

**COMMENTS:** Late nesting coincides with seed production of thistles. The Canada thistle and dandelion are important for food and nesting material (Nickell 1951).

**KEY REFERENCES:** Bent 1968, Nickell 1951, Stokes 1950, Walkinshaw 1938a, 1939a.

## Evening Grosbeak (*Coccothraustes vespertinus*)

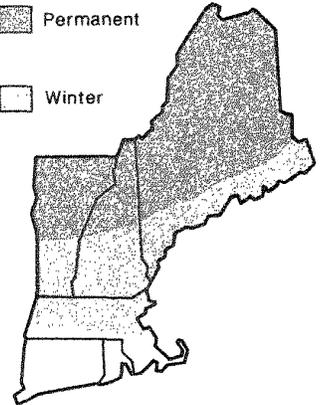
A.O.U. No. 514.0



### Range

 Permanent

 Winter



**RANGE:** Breeding: Nova Scotia, w. to British Columbia, s. to n. New England, Minnesota, Mexico (mountains), and California. Winter: Breeding range s. to South Carolina, Texas, and California.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Common (Maine) to uncommon (Berkshire Hills) in breeding season. Irregularly common in winter.

**HABITAT:** Breeding: Coniferous forests. Wintering: Coniferous and deciduous woodlands.

**SPECIAL HABITAT REQUIREMENTS:** Coniferous forests.

**NESTING:** Egg dates: May 19 to June 4, New York (Bull 1974:553). Clutch size: 2 to 5, typically 3 or 4. Broods per year: Possibly 2 (Bull 1974:553). Nest height: 20 to 60 feet (6.1 to 18.3 m). Nest site: Usually in a conifer, occasionally in a deciduous tree.

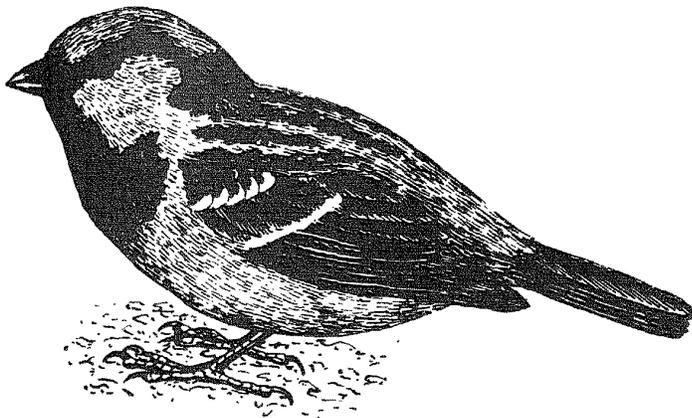
**FORAGING:** Major foods: Buds, fruits, seeds, insects. Substrates: Branches of trees. Techniques: Branch gleaning, budding.

**COMMENTS:** Evening Grosbeaks feed extensively on spruce budworm during outbreaks in the northern forests. In winter they often invade feeding stations in large flocks to feed on sunflower seeds. Breeding habits are little known.

**KEY REFERENCES:** Belknap 1973, Bent 1968, Parks and Parks 1963.

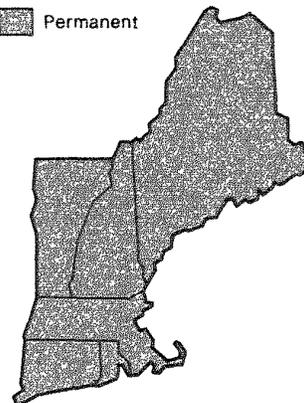
House Sparrow  
(*Passer domesticus*)

A.O.U. No. 688.2



Range

Permanent



**RANGE:** Breeding: Throughout inhabited portions of United States n. to c. Canada. Winter: Same.

**RELATIVE ABUNDANCE IN NEW ENGLAND:** Abundant.

**HABITAT:** Breeding: Villages, farms, cities, parks. Avoids heavily forested areas. Wintering: Same as breeding habitat.

**NESTING:** Egg dates: March 23 to July 16, New York (Bull 1974:542). Clutch size: 3 to 7, typically 5. Incubation period: 12 to 13 days. Nestling period: 13 to 18 days. Broods per year: 2 or 3. Age at sexual maturity: 1 year. Nest height: 10 to 50 feet (3.0 to 15.2 m). Nest site: Cavities, crevices in buildings, trees, billboards, bird houses, cupolas, rafters, dense ivy on buildings.

**TERRITORY SIZE:** Defense is limited to the nest site.

**SAMPLE DENSITIES:** C. A. North (1972) had 3.4 breeding pairs per acre (0.4 ha) on his 160-acre (64.8-ha) study area. 80 pairs per square mile (30 pairs/km<sup>2</sup>) in favorable habitat in North Dakota (Stewart and Kantrud 1972).

**FORAGING:** Major foods: Insects, vegetables, fruits and seeds (summer), weed seeds and waste grains (winter), garbage. Substrates: Sparsely vegetated or bare earth, pavement. Techniques: Hopping and gleaning food from ground. Preferred feeding habitat: City parks, residential areas, waste grain fields.

**COMMENTS:** Birds are gregarious when feeding and roosting. The House Sparrow competes successfully for nesting cavities and often usurps them from more desirable species of birds. A pair that has bred usually keeps the same nest site for life. Exceptions occur where sites are plentiful.

**KEY REFERENCES:** North 1972, Summers-Smith 1958, Weaver 1942.

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