Appendix A

Some Neotropical Migrants Present in Illinois

(E) = endangered in Illinois ■ (T) = threatened in Illinois

Acadian flycatcher *Empidonax virescens*
American redstart *Setophaga ruticilla*
Baltimore oriole I*cterus galbula*
bank swallow *Riparia riparia*
barn swallow *Hirundo rustica*
bay-breasted warbler *Dendroica castanea*
black-and-white warbler *Mniotilta varia*
black-billed cuckoo (T) *Coccyzus erythropthalmus*
blue-gray gnatcatcher *Polioptila caerulea*
blue-winged warbler *Vermivora cyanoptera*
bobolink *Dolichonyx oryzivorus*
broad-winged hawk *Buteo platypterus*
cerulean warbler (T) *Dendroica cerulea*
chestnut-sided warbler *Dendroica pensylvanica*
chimney swift *Chaetura pelagica*
chipping sparrow *Spizella passerine*
cliff swallow *Petrochelidon pyrrhonota*
common nighthawk *Chordeiles minor*
common yellowthroat *Geothlypis trichas*
dickcissel *Spiza americana*
eastern kingbird *Tyrannus tyrannus*
eastern whip-poor-will *Caprimulgus vociferus*
eastern wood-pewee *Contopus virens*
grasshopper sparrow *Ammodramus savannarum*
gray catbird *Dumetella carolinensis*
great crested flycatcher *Myiarchus crinitus*
hooded warbler *Wilsonia citrina*
house wren *Troglodytes aedon*
indigo bunting *Passerina cyanea*
least flycatcher *Empidonax minimus*
Louisiana waterthrush *Parkesia motacilla*
northern parula *Parula americana*
northern rough-winged swallow *Stelgidopteryx serripennis*
orchard oriole *Icterus spurius*
osprey *Pandion haliaetus*
ovenbird *Seiurus aurocapilla*
peregrine falcon (T) *Falco peregrinus*
prairie warbler *Dendroica discolor*
prothonotary warbler *Protonotaria citrea*
purple martin *Progne subis*
red-eyed vireo *Vireo olivaceus*
rose-breasted grosbeak *Pheucticus ludovicianus*
ruby-throated hummingbird *Archilochus colubris*
scarlet tanager *Piranga olivacea*
upland sandpiper (E) *Bartramia longicauda*
veery *Catharus fuscescens*
warbling vireo *Vireo gilvus*
white-eyed vireo *Vireo griseus*
willow flycatcher *Empidonax traillii*
wood thrush *Hylocichla mustelina*
worm-eating warbler *Helmitheros vermivorum*
yellow warbler *Dendroica petechia*
yellow-billed cuckoo *Coccyzus americanus*
yellow-breasted chat *Icteria virens*
yellow-throated vireo *Vireo flavifrons*

Appendix B

YELLOW-BILLED CUCKOO

Scientific Name . . . . . .*Coccyzus americanus*

Spanish . . . . . .Cuclillo Piquiganaldo

Present in Illinois . . . . .early May to early October

Illinois Status . . . . . .common migrant and summer resident; a decline in population noted between 1909 and 1957 with decrease in orchards and destruction of hedgerows

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .woodland, woodland edge and orchards

Winter Range . . . . . .southern Central America to northern South America

Length . . . . . .12" (30 cm)

Weight . . . . . .1.8 oz. (50 g)

Color . . . . . .gray-brown with red tint to wing tips, white belly, white tips on tail feathers, underside of bill yellow; sexes alike

Song . . . . . .a series of "ka" notes followed by slower and longer notes at the end

Nest . . . . . .medium height to low in vegetation (three to 13 feet); roots and twigs with a lining of mosses and grasses

Eggs . . . . . .two to five light blue or green-blue eggs; nesting occurs from late May to late August; female provides most of the care

Broods/Year . . . . . .one

Food . . . . . .insects (mostly caterpillars; also beetles, fall webworms, cicadas) with some fruit (mulberries and others)

Habits . . . . . .often goes unnoticed because it is sluggish and tends to stay in dense vegetation

Interesting Facts . . . . . .sometimes will "rob" the nests of other birds, eating the eggs; is nicknamed "rain crow" as it is thought to forecast rain with its song

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

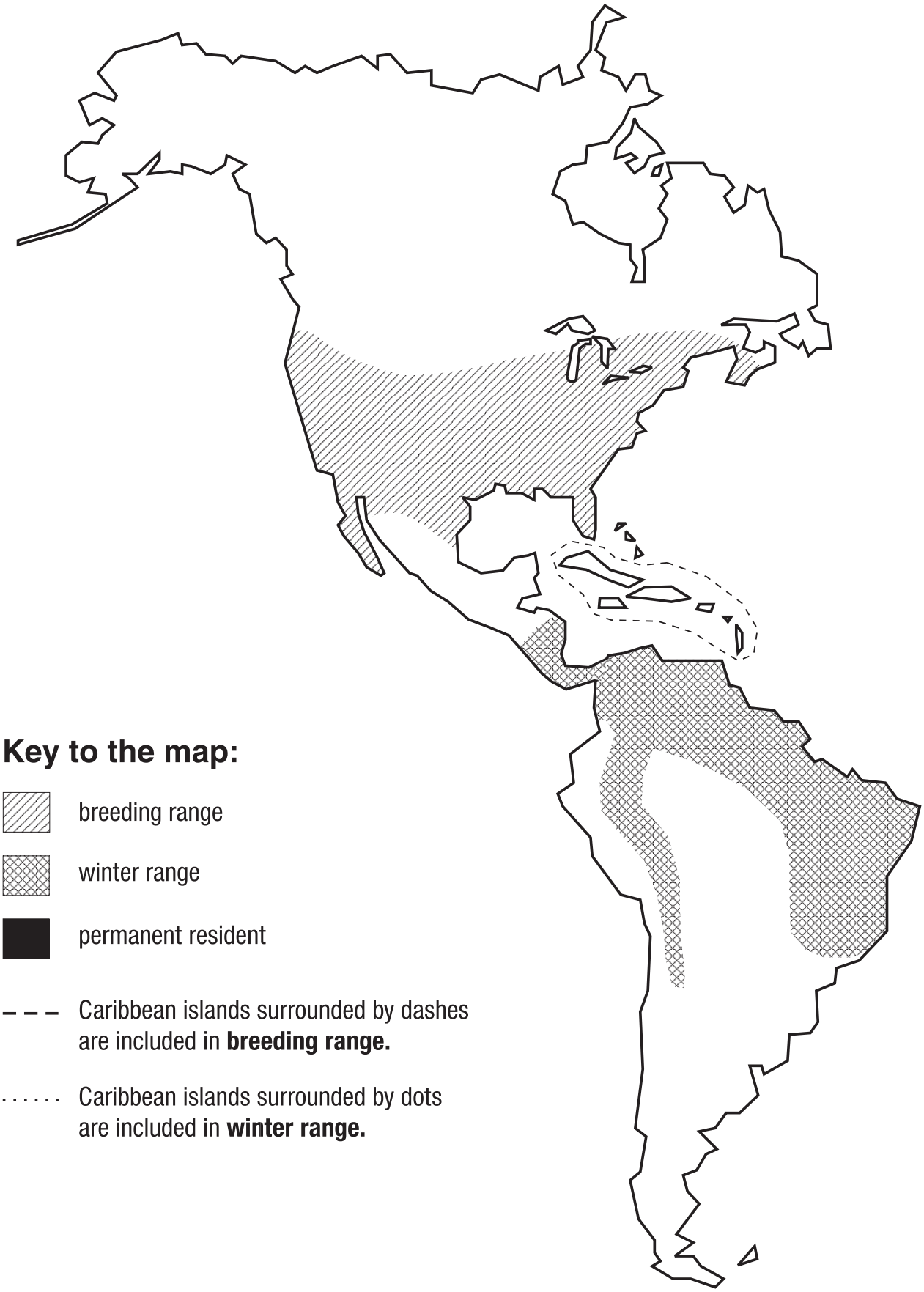
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

YELLOW-BILLED CUCKOO



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

. . . . . Caribbean islands surrounded by dots are included in **winter range.**

SCARLET TANAGER

Scientific Name . . . . . .*Piranga olivacea*

Spanish . . . . . .Tangara Escarlata

Present in Illinois . . . . .late April to early October

Illinois Status . . . . . .common migrant and uncommon summer resident

Illinois Range . . . . . .statewide; nesting more commonly in the northern two-thirds of the state

Illinois Habitat . . . . . .wooded areas, preferring bottomland woodlands but occurs in uplands also

Winter Range . . . . . .Columbia south to eastern Ecuador and Peru to northwestern Bolivia

Length . . . . . .7" (18 cm)

Weight . . . . . .1.0 oz. (28 g)

Color . . . . . .male: bright red with black wings and tail feathers; female: yellow belly, dusky green head and back and brown or black wings and tail

Song . . . . . .a raspy series of notes similar to those of an American robin; also has a distinctive chip note, "chip-burr"

Nest . . . . . .thinly woven nests are built on horizontal branches at high levels, usually in oak or hickory trees; made of twigs and small roots and lined with thin stems and grasses

Eggs . . . . . .three to five green-blue eggs marked with brown

Broods/Year . . . . . .one

Food . . . . . .insects (beetles, bugs, butterflies, moths, grasshoppers, locusts) with some fruit (mulberry *Morus* spp., blackberry *Rubus allegheniensis*)

Habits . . . . . .difficult to see as it stays high in the forest canopy

Interesting Facts . . . . . .may eat as many as 2,100 gypsy moth (*Lymantria dispar*) caterpillars in an hour

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

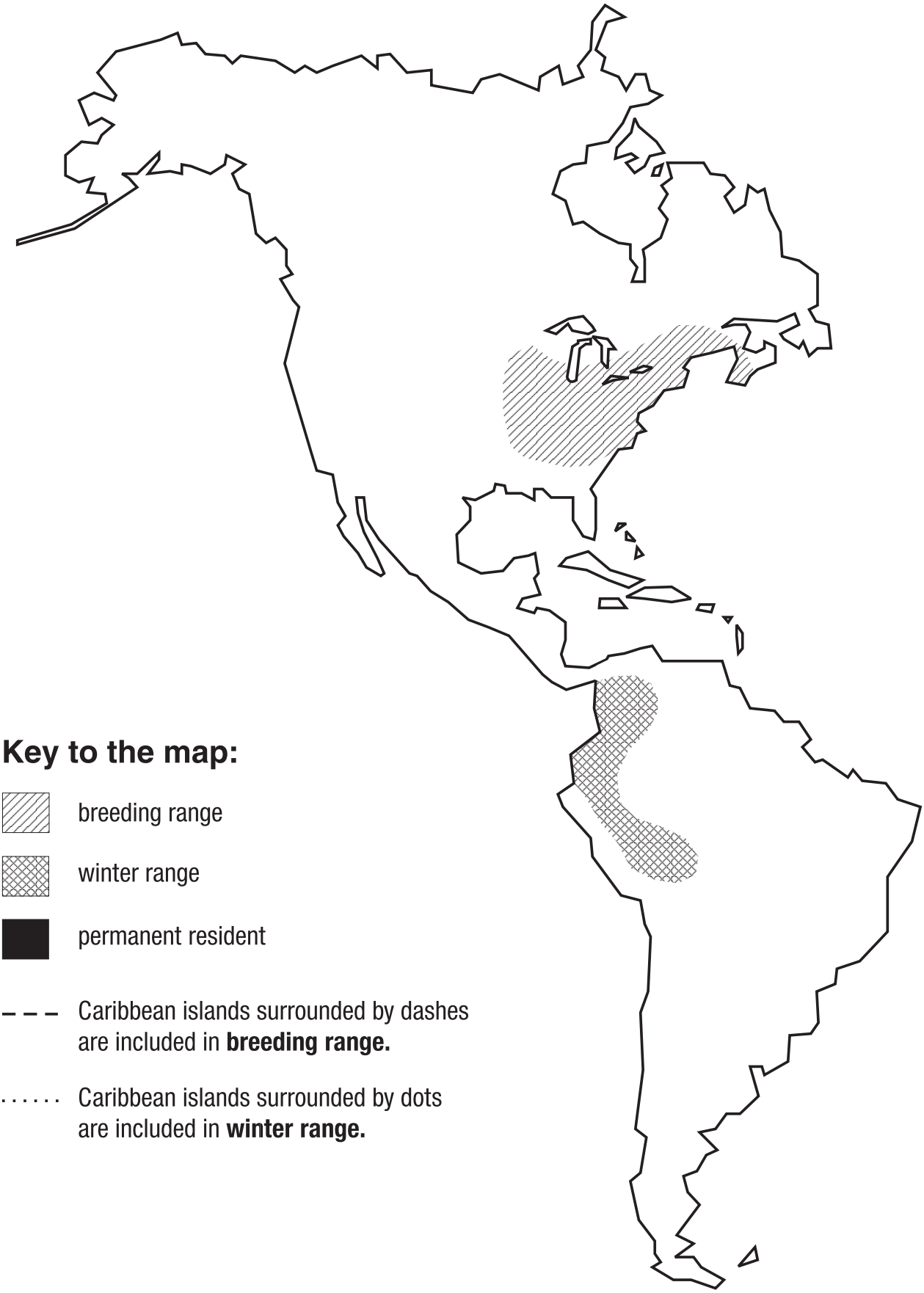
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois*. Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. The songbird connection.

SCARLET TANAGER



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

WOOD THRUSH

Scientific Name . . . . . .*Hylocichla mustelina*

Spanish . . . . . .Zorzal del Bosque

Present in Illinois . . . . .late April to late September

Illinois Status . . . . . .common migrant and summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .bottomland woodlands

Winter Range . . . . . .south Texas to northwestern Columbia

Length . . . . . .7.25" (18.5 cm)

Weight . . . . . .1.9 oz (48 g)

Color . . . . . .brown with rust-colored head, white belly with dark brown spots; sexes similar

Song . . . . . .flute-like “ee-o-lay” and a quick “pip-pip-pip-pip” call

Nest . . . . . .built in moist areas; made of weed stalks, grasses and leaves with a middle mud layer; lined with rootlets; in low- to medium-height trees

Eggs . . . . . .three to five blue eggs laid from May to early July

Broods/Year . . . . . .often two

Food . . . . . .insectivorous when feeding young; large amounts of fruit during migration

Habits . . . . . .calls from the woods at dawn and dusk; usually stays on or near the ground in heavily wooded bottomlands

Interesting Facts . . . . . .nests heavily parasitized by brown-headed cowbirds (*Molothrus ater*)

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

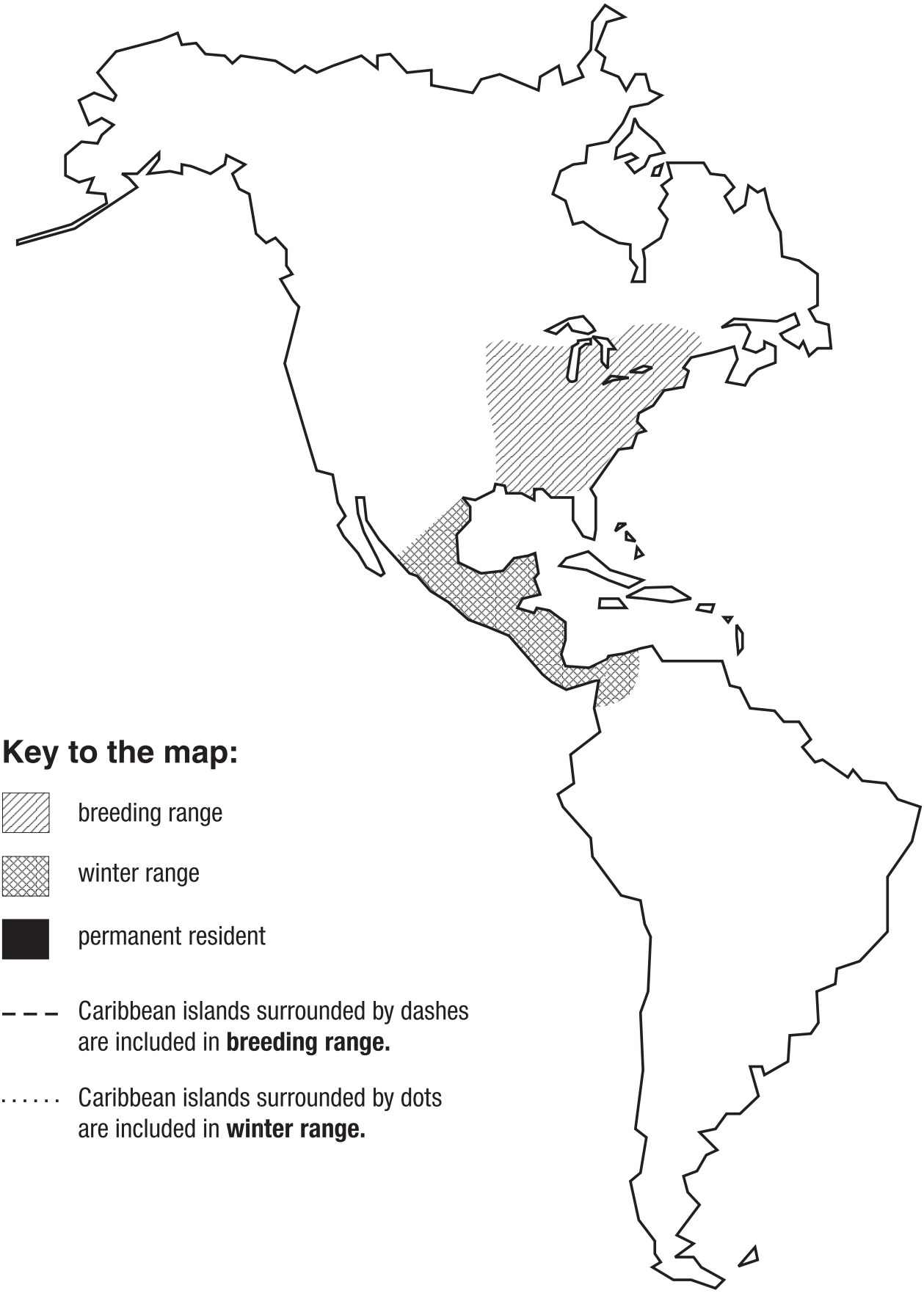
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

WOOD THRUSH



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

AMERICAN REDSTART

Scientific Name . . . . . .*Setophaga ruticilla*

Spanish . . . . . .Candelita Nortena

Present in Illinois . . . . .early May to early October

Illinois Status . . . . . .common migrant and locally common summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .bottomland woodlands

Winter Range . . . . . .Southern U.S. to South America

Length . . . . . .4.75" (12 cm)

Weight . . . . . .0.3 oz. (8.5 g)

Color . . . . . male: black with a white belly and red-orange wing and tail patches; female: olive-brown with yellow patches

Song . . . . . sweet, buzzy notes “zee, zee, zee, zee, zwee”

Nest . . . . . cup of roots and twigs decorated with lichens and feathers; 10 to 20' high in the fork of a small tree; uses willows extensively

Eggs . . . . . .three to five white eggs with red-brown markings

Broods/Year . . . . . .unknown

Food . . . . . .insects with occasional berries and seeds

Habits . . . . . .flits through the leaves catching insects

Interesting Facts . . . . . .bristles on face probably protect eyes from damage by squirming insects; often referred to as looking like a “black and orange butterfly;” nicknamed “redtail”

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

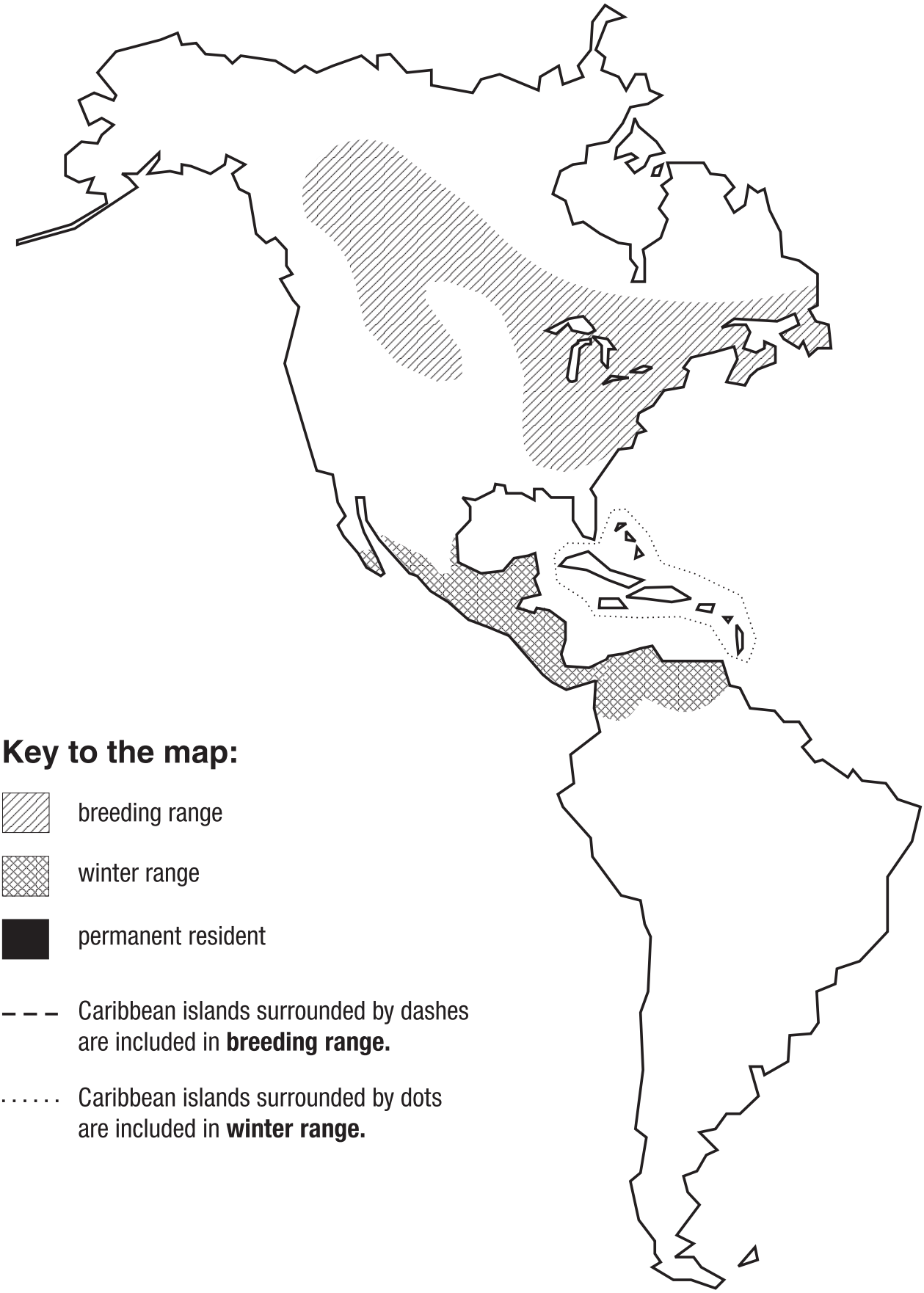
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

AMERICAN REDSTART



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

OVENBIRD

Scientific Name . . . . . .*Seiurus aurocapilla*

Spanish . . . . . .Chipe Suelero Coronado

Present in Illinois . . . . .late April to mid-October

Illinois Status . . . . . .abundant migrant, locally uncommon summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .woodlands

Winter Range . . . . . .south through Central America and the Caribbean to northern Venezuela

Length . . . . . .5.5-6.5" (13.75-16.25 cm)

Weight . . . . . .0.5-1.0 oz. (14.0-28.8 g)

Color . . . . . .olive-brown above, striped belly, light orange patch on the top of the head

Song . . . . . .“teacher, teacher, teacher”

Nest . . . . . .on the forest floor; an open nest of dried grasses, leaves and mosses, often with a moss lining; roofed with leaves and branches with small slit entrance

Eggs . . . . . .three to six; white with brown markings

Broods/Year . . . . . .occasionally two

Food . . . . . .insects

Habits . . . . . .looks and acts more like a thrush than a warbler; stays on or near the ground, walking through the leaf litter

Interesting Facts . . . . . .very sensitive to fragmentation of forested habitats; a frequent brown-headed cowbird (*Molothrus ater*) host; also called the “golden-crowned thrush”

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

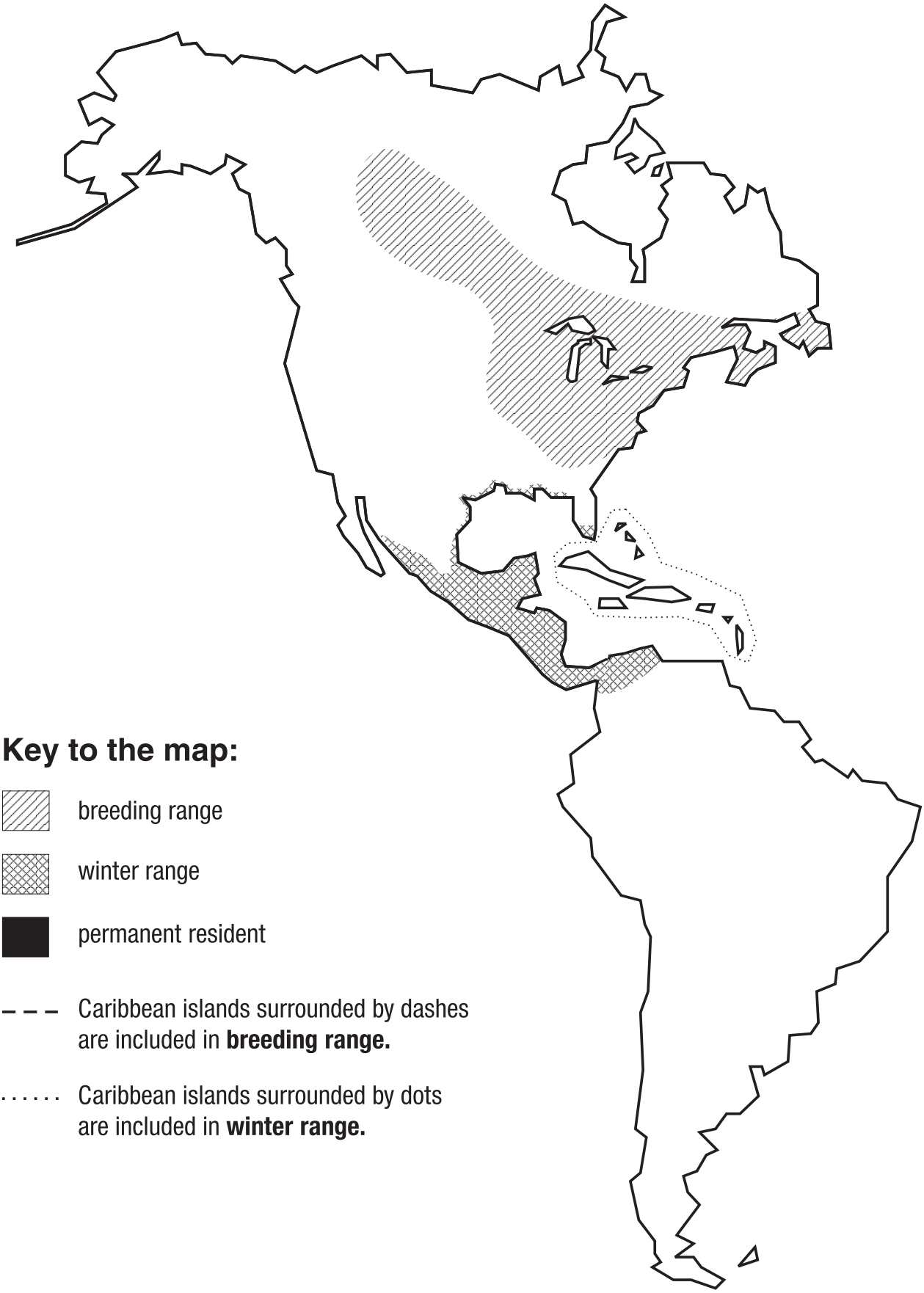
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

OVENBIRD



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

EASTERN WHIP-POOR-WILL

Scientific Name . . . . . .*Caprimulgus vociferus*

Spanish . . . . . .Chotacabras Griton o Ruidoso

Present in Illinois . . . . .mid-April to late-September

Illinois Status . . . . . .common migrant; common summer resident south; fairly common summer resident central and north

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .woodlands

Winter Range . . . . . .northern Mexico to western Panama

Length . . . . . .9" (23 cm)

Weight . . . . . .2.2 oz. (55 g)

Color . . . . . .brown-gray body with black markings and white throat

Song . . . . . .usually sings at night with 50 to 100 repetitions of “whip-poor-will” in each set

Nest . . . . . .no nest; eggs directly on ground

Eggs . . . . . .two white eggs with gray-brown dots

Broods/Year . . . . . .occasionally two

Food . . . . . .insects (moths)

Habits . . . . . .nocturnal bird that flies near the ground with its mouth open to catch moths and other flying insects; feeds over brushy pastures and along woodland edges

Interesting Facts . . . . . .record number of calls in a row is 1,088; reproductive cycle of the whip-poor-will is synchronized to the lunar cycle, resulting in the young being hatched when there are moonlit nights, permitting the adults to forage for insects to feed the young

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

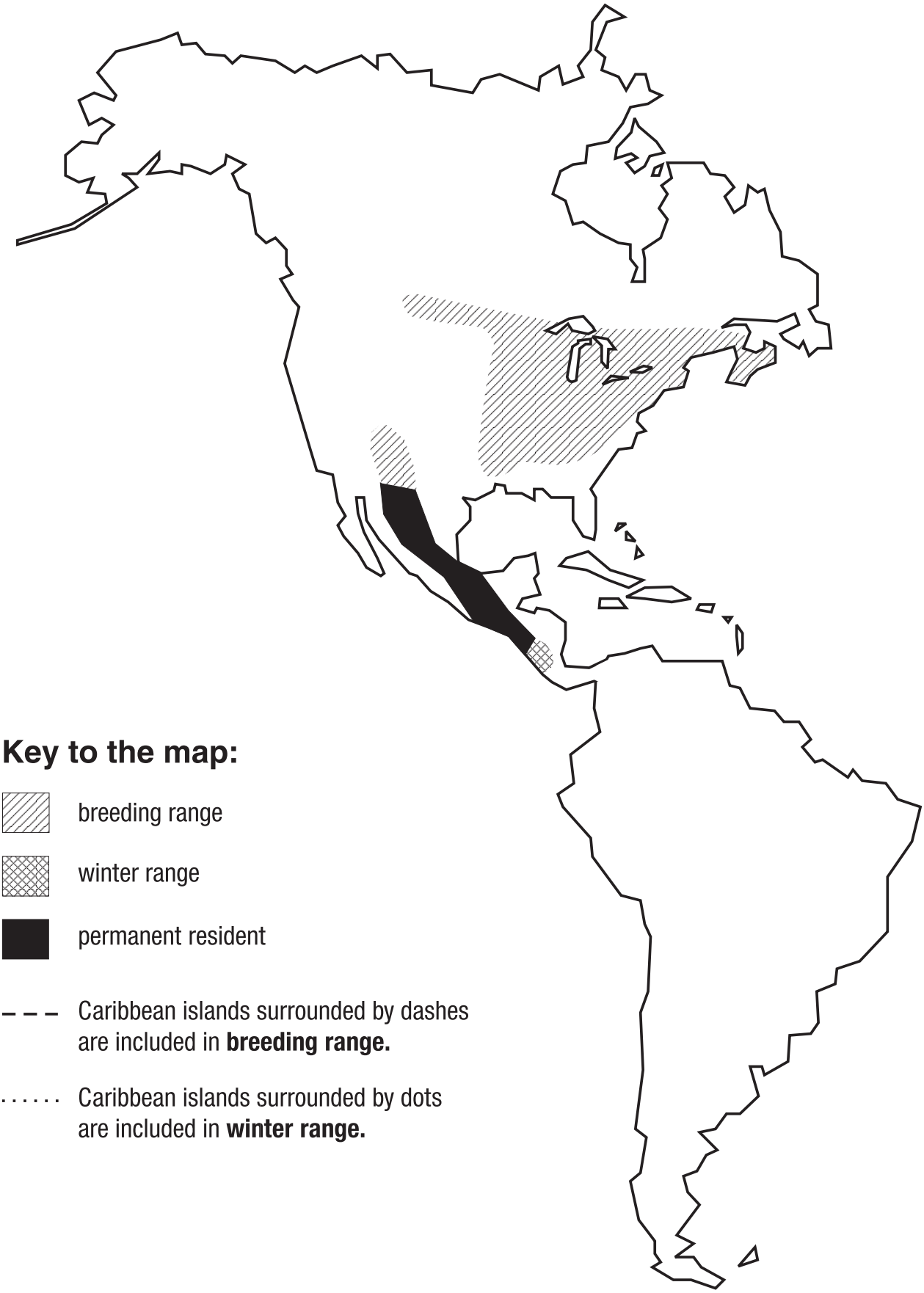
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

EASTERN WHIP-POOR-WILL



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

RUBY-THROATED HUMMINGBIRD

Scientific Name . . . . . .*Archilochus colubris*

Spanish . . . . . .Colibri Garganta de Rubi

Present in Illinois . . . . .late April to early October

Illinois Status . . . . . .common migrant and fairly common summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .frequents woodlands, woodland edge, weedy areas and gardens

Winter Range . . . . . .northwest Mexico and extreme south Texas to Costa Rica, occasionally western Panama

Length . . . . . .3.25" (8 cm)

Weight . . . . . .0.1 oz. (3 g)

Color . . . . . .iridescent green back and head with white belly; bright red throat on male

Song . . . . . .high squeaky notes

Nest . . . . . .1 to 1.25" cup of leaves held together with spider webs; decorated with lichens and mosses

Eggs . . . . . .two white

Broods/Year . . . . . .two or three

Food . . . . . .nectar, tree sap, small insects and spiders

Habits . . . . . .the male courtship display is a flight of wide arcs; both males and females are highly aggressive and fight for space and food

Interesting Facts . . . . . .smallest bird in North America; favors columbine (*Aquilegia canadensis*) and trumpet creeper vines (*Campsis radicans*) in the spring and summer and jewelweed (*Impatiens* spp.) plants in the fall

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

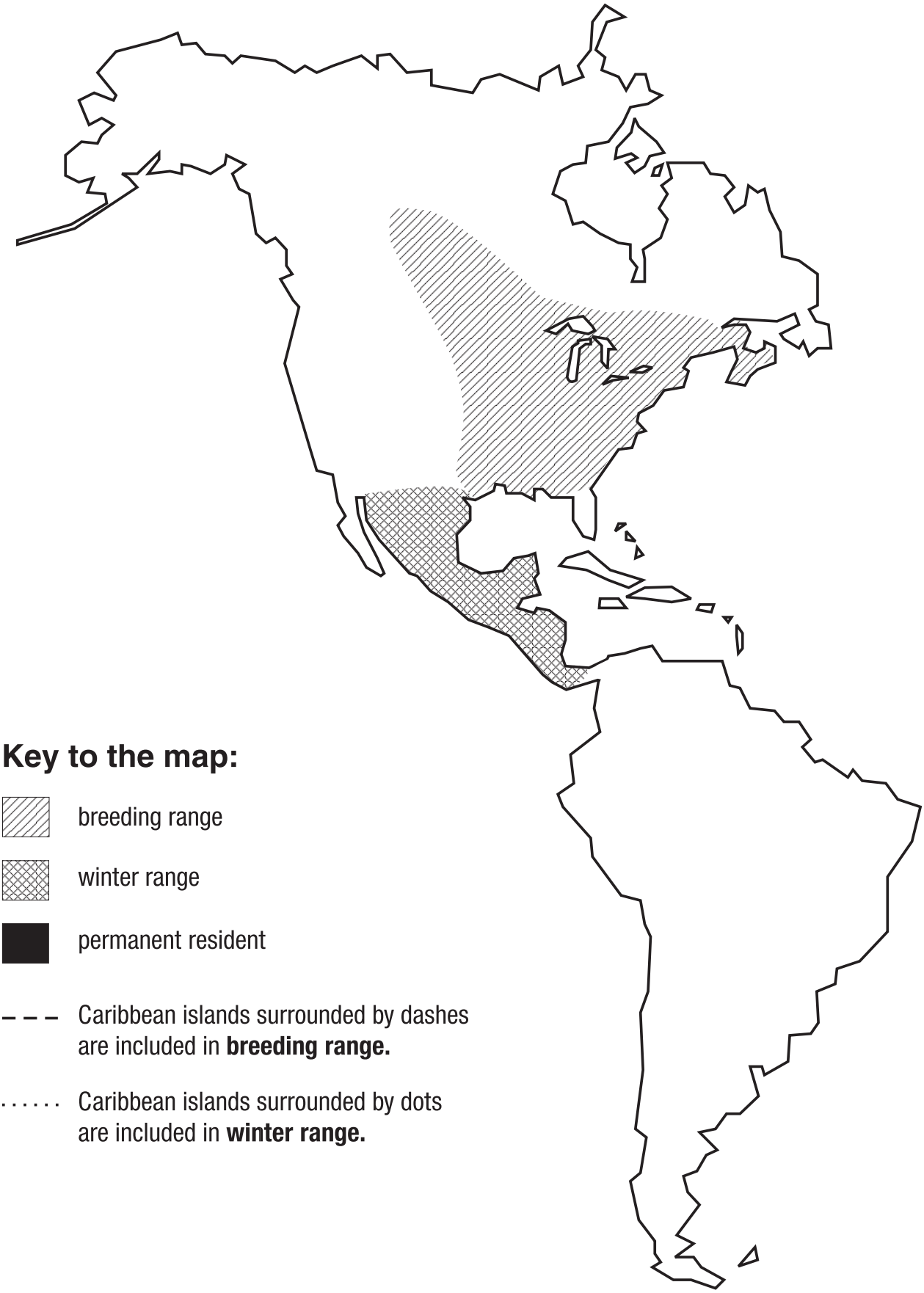
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

RUBY-THROATED HUMMINGBIRD



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

. . . . . Caribbean islands surrounded by dots are included in **winter range.**

BROAD-WINGED HAWK

Scientific Name . . . . . .*Buteo platypterus*

Spanish . . . . . .Gavilan Aludo

Present in Illinois . . . . .early April to mid-May

Illinois Status . . . . . .common migrant; uncommon summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .woodlands; usually follows rivers and bluff areas

Winter Range . . . . . .southern Mexico to South America

Length . . . . . .17" (43 cm)

Weight . . . . . .18 oz. (45 g)

Color . . . . . .dark brown with white belly marked with brown/red; large black-and-white bands on the tail

Song . . . . . .high-pitched "pweeeeee" trailing at the end

Nest . . . . . .dead leaves and twigs lined with lichens or oak bark chips; 15 to 50' high in crotch of tree; often near water and only in heavily wooded areas

Eggs . . . . . .two to three white eggs with brown-purple markings

Broods/Year . . . . . .one

Food . . . . . .meat-eater (small mammals, birds, reptiles, snakes, frogs, insects)

Habits . . . . . .perch on trees near a forest clearing and wait for prey to pass

Interesting Facts . . . . . .one of the most highly migratory hawks in Illinois; migrate in huge flocks, rising on warm thermal air currents (called a "kettle of hawks")

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

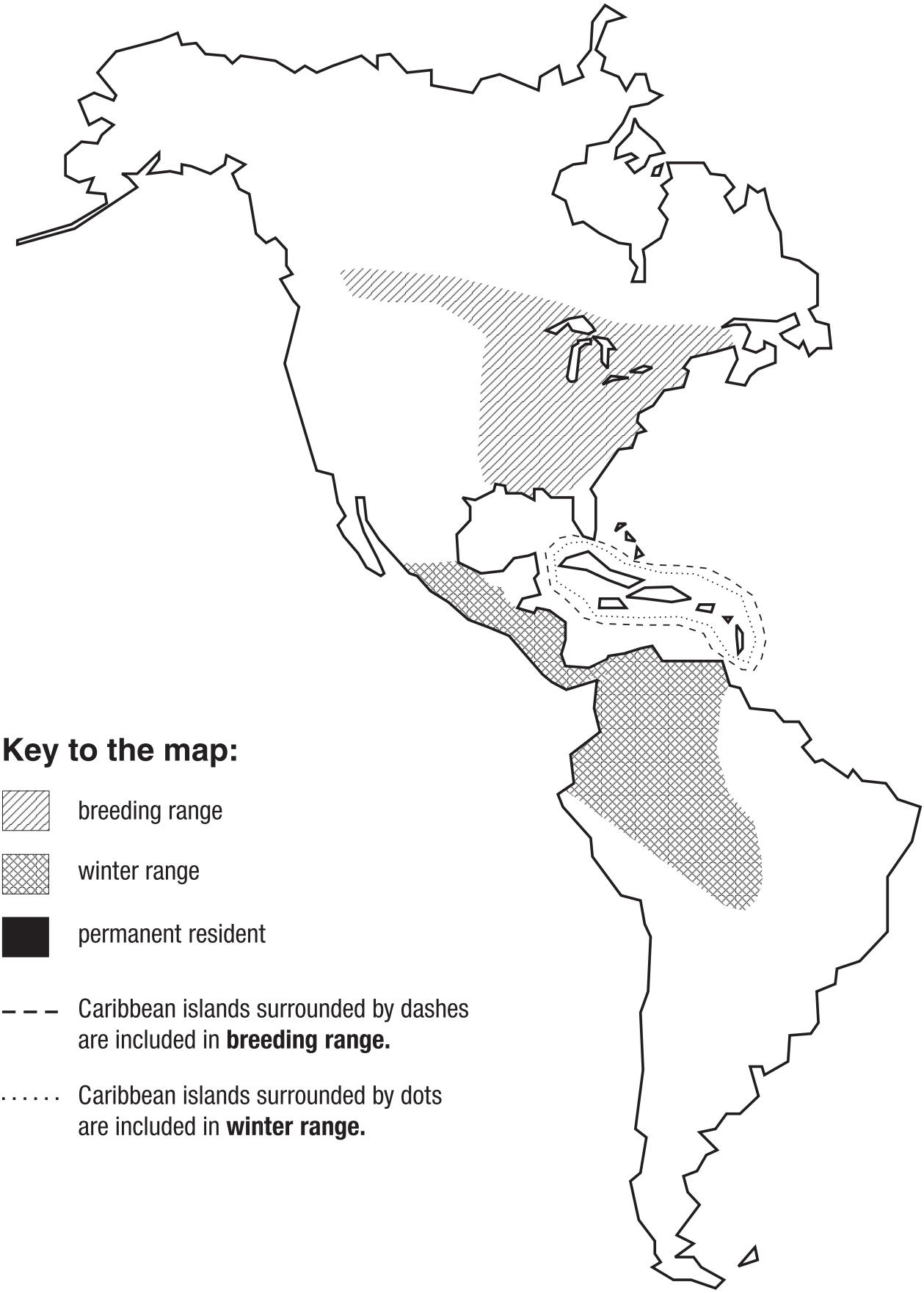
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

BROAD-WINGED HAWK



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

ROSE-BREASTED GROSBEAK

Scientific Name . . . . . .*Pheucticus ludovicianus*

Spanish . . . . . .Picogrueso Pechirrosado

Present in Illinois . . . . .common migrant and summer resident

Illinois Status . . . . . .late April to early October

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .woodlands, residential areas, parks

Winter Range . . . . . .central Mexico to Venezuela and Ecuador

Length . . . . . .8" (20 cm)

Weight . . . . . .1.6 oz. (45 g)

Color . . . . . .male: black and white with a red triangle on the breast; female: brown with brown-and-white striped belly

Song . . . . . .similar to that of the American robin (*Turdus migratorius*); call is a sharp “chink”

Nest . . . . . .a loose cup in the fork of a branch in a tree or shrub; 6 to 15' high

Eggs . . . . . .three to four green eggs marked with brown

Broods/Year . . . . . .one to two

Food . . . . . .insects (potato beetle *Leptinotarsa decemlineata*, tent caterpillar *Malacosoma disstria*, gypsy moth *Lymantria dispar*) and fruit

Habits . . . . . .feeds in trees and on the ground

Interesting Facts . . . . . .nests are often parasitized by brown-headed cowbirds; male and female build the nest together; male sometimes helps gather food for the young

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

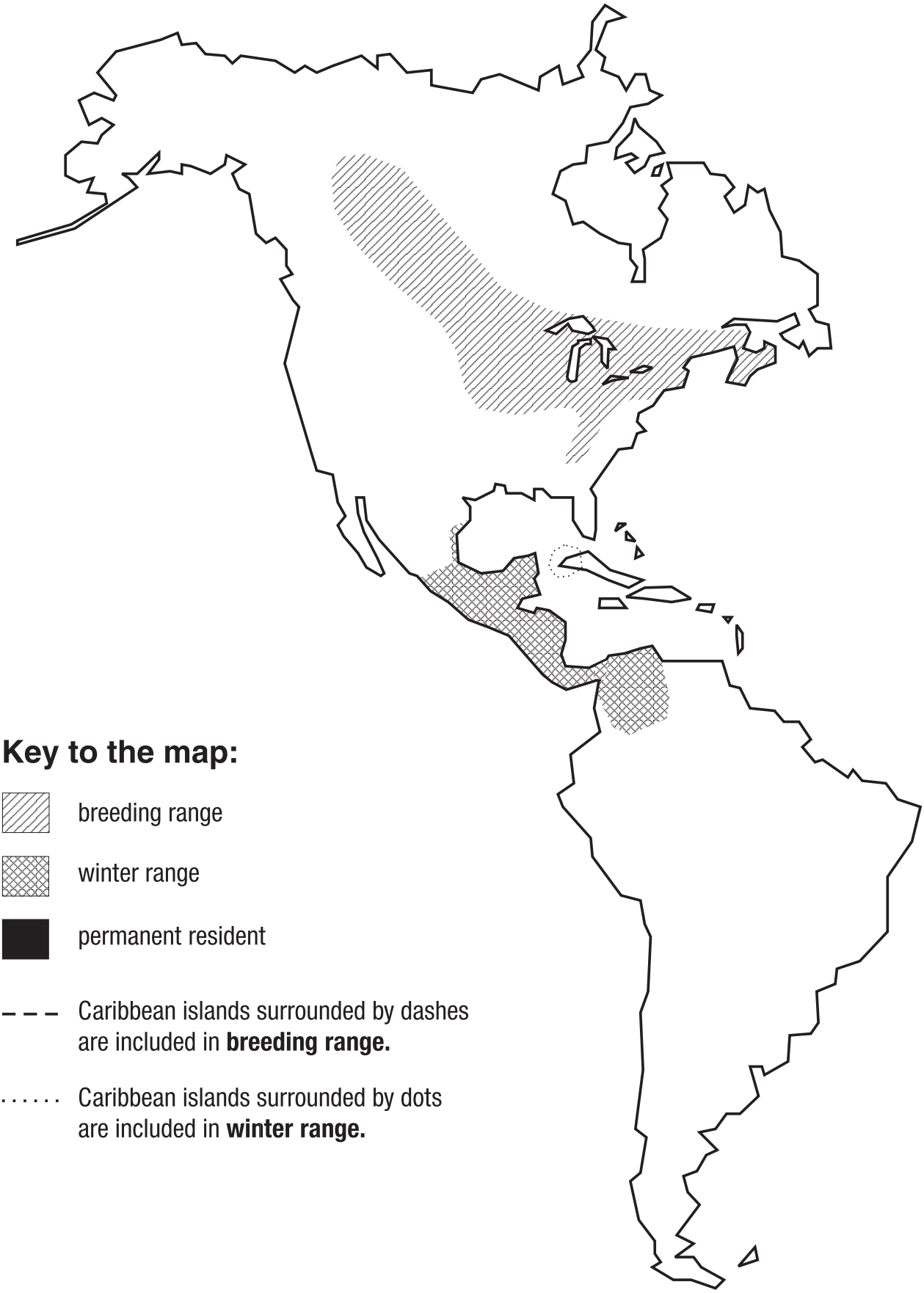
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

ROSE-BREASTED GROSBEAK



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

BOBOLINK

Scientific Name . . . . . .*Dolichonyx oryzivorus*

Spanish . . . . . .Chambergo

Present in Illinois . . . . .late April to early October

Illinois Status . . . . . .common migrant and summer resident north; fairly common migrant central and south; occasional summer resident central

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .fallow fields and marsh areas

Winter Range . . . . . .southern South America east of the Andes, from Brazil south to northern Argentina

Length . . . . . .6.5-8" (16.25-20 cm)

Weight . . . . . .1-1.25 oz. (28-35 g)

Color . . . . . .breeding male: solid black belly and is buff and white above; female: buff with dark stripes on head

Song . . . . . .a burbling song; flight note is a sharp “pink”

Nest . . . . . .a well concealed nest on the ground in dense forbs; uses a natural or scraped depression; made of coarse grasses and forbs and lined with finer grasses

Eggs . . . . . .three to seven buff-colored eggs with dark spots

Broods/Year . . . . . .one

Food . . . . . .insects and grass/forb seeds; fruit and nectar in the winter

Habits . . . . . .female runs from the nest before taking flight

Interesting Facts . . . . . .populations have decreased due to the early cutting of hayfields; uncommon brown-headed cowbird (*Molothrus ater*) host; nicknamed the “white-winged blackbird”

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

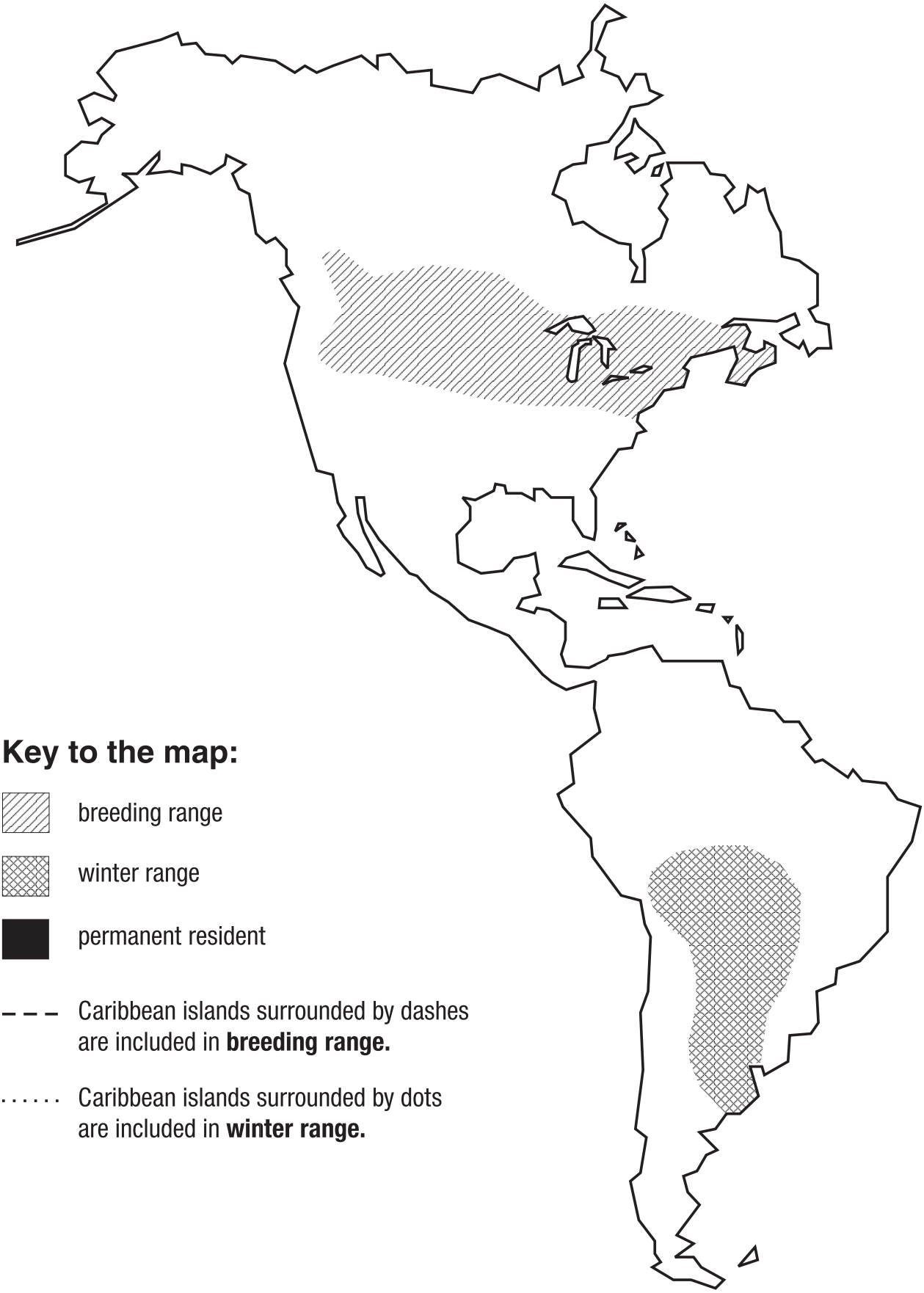
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

BOBOLINK



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

HOODED WARBLER

Scientific Name . . . . . .*Wilsonia citrina*

Spanish . . . . . .Reinita Encapuchada

Present in Illinois . . . . .mid-April to mid-August

Illinois Status . . . . . .uncommon migrant and summer resident

Illinois Range . . . . . .statewide; most often in southern third

Illinois Habitat . . . . . .shaded hillsides of bottomland forests

Winter Range . . . . . .Caribbean slopes and lowlands of eastern Mexico to Panama

Length . . . . . .5" (2.5 cm)

Weight . . . . . .0.4 oz. (10.5 g)

Color . . . . . .olive green with yellow belly; male has a black hood

Song . . . . . .a sharp “chink” note and “wee-tee, wee-tee, wee-TEE-o” song

Nest . . . . . .a cup built in a shrub near the ground; made of bark, plant fibers and dead leaves

Eggs . . . . . .three to five; cream-colored with red-brown markings

Broods/Year . . . . . .usually one

Food . . . . . .insects

Habits . . . . . .feeds by hovering and plucking insects from leaves

Interesting Facts . . . . . .fall migration goes almost undetected

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

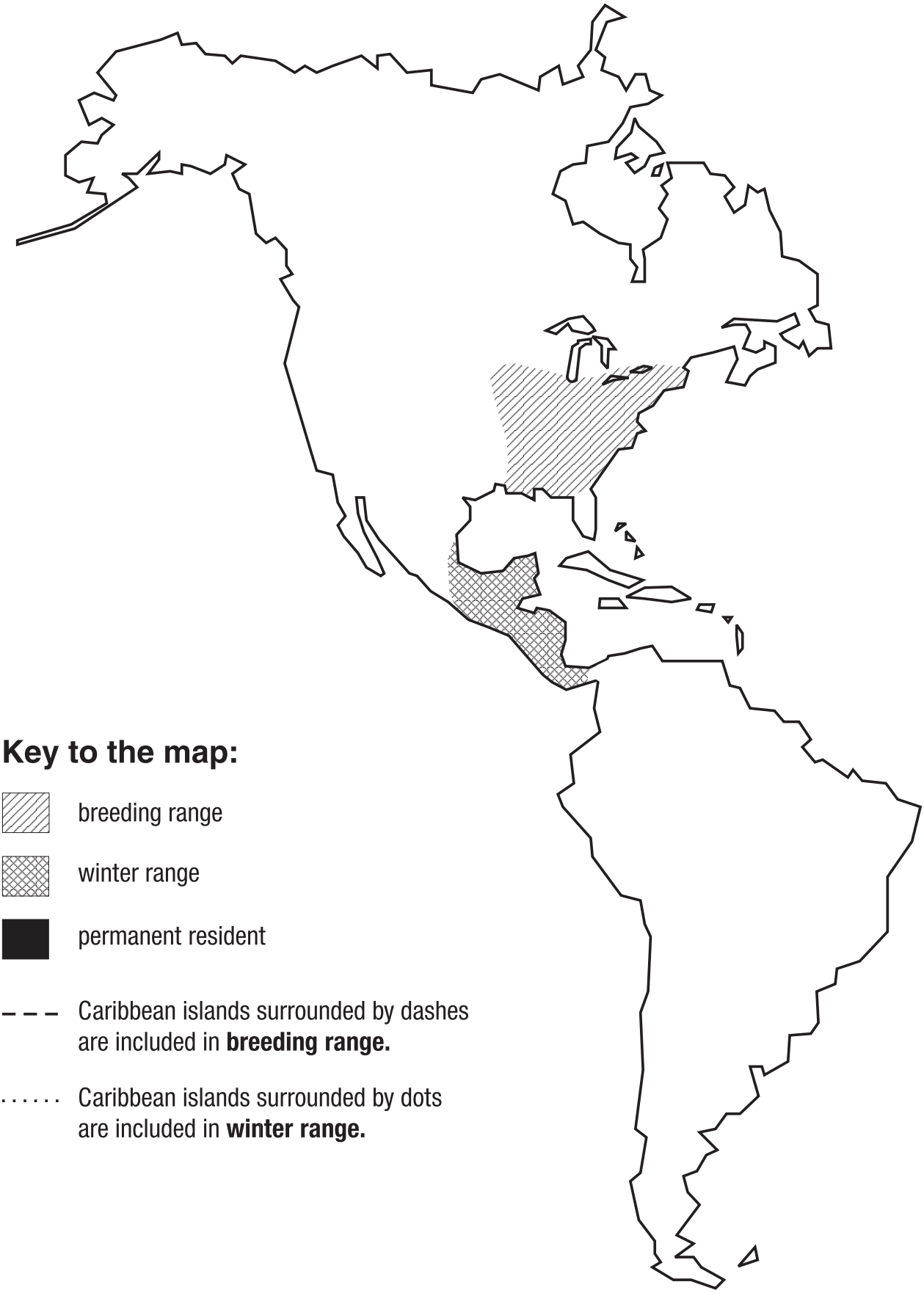
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

HOODED WARBLER



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

HOUSE WREN

Scientific Name . . . . . .*Troglodytes aedon*

Spanish . . . . . .unknown

Present in Illinois . . . . .mid-April to mid-October

Illinois Status . . . . . .common migrant and summer resident; rare winter resident in south

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .woodlands and residential areas

Winter Range . . . . . .south throughout Mexico

Length . . . . . .5" (13 cm)

Weight . . . . . .0.35-0.46 oz. (10-13 g)

Color . . . . . .gray-brown with faint eye stripe

Song . . . . . .rapid, bubbly trill

Nest . . . . . .in a tree cavity, woodpecker hole or nest box; made of sticks and lined with soft materials; 4 to 30' above the ground

Eggs . . . . . .five to eight pink-white eggs with faint dots

Broods/Year . . . . . .two to three

Food . . . . . .invertebrates (millipedes, spiders, snails)

Habits . . . . . .often destroys other bird's nests by piercing their eggs and removing the eggs and young

Interesting Facts . . . . . .nicknamed the "Jenny wren;" rare brown-headed cowbird (*Molothrus ater*) host

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

HOUSE WREN

Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

UPLAND SANDPIPER

Scientific Name . . . . . .*Bartramia longicauda*

Spanish . . . . . .Ganga (uno de los playeros)

Present in Illinois . . . . .mid-April to mid-September

Illinois Status . . . . . .uncommon migrant and summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .grasslands, pastures and hayfields

Winter Range . . . . . .south to central Argentina and Uruguay

Length . . . . . .12.5" (32 cm)

Weight . . . . . .5-8 oz. (143-218 g)

Color . . . . . .long, yellow legs; long, thin neck; mottled above and below; white- streaked belly

Song . . . . . .long, mournful rolling whistle

Nest . . . . . .in a depression with grasses arching over the scrape; lined with dry grasses

Eggs . . . . . .four; buff with brown speckles

Broods/Year . . . . . .unknown

Food . . . . . .insects, seeds, invertebrates

Habits . . . . . .seldom nests near water; will not fly directly to the nest

Interesting Facts . . . . . .rare brown-headed cowbird (*Molothrus ater*) host; populations are declining; nicknamed the "grass plover" or "prairie pigeon;" one of Illinois' endangered bird species

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

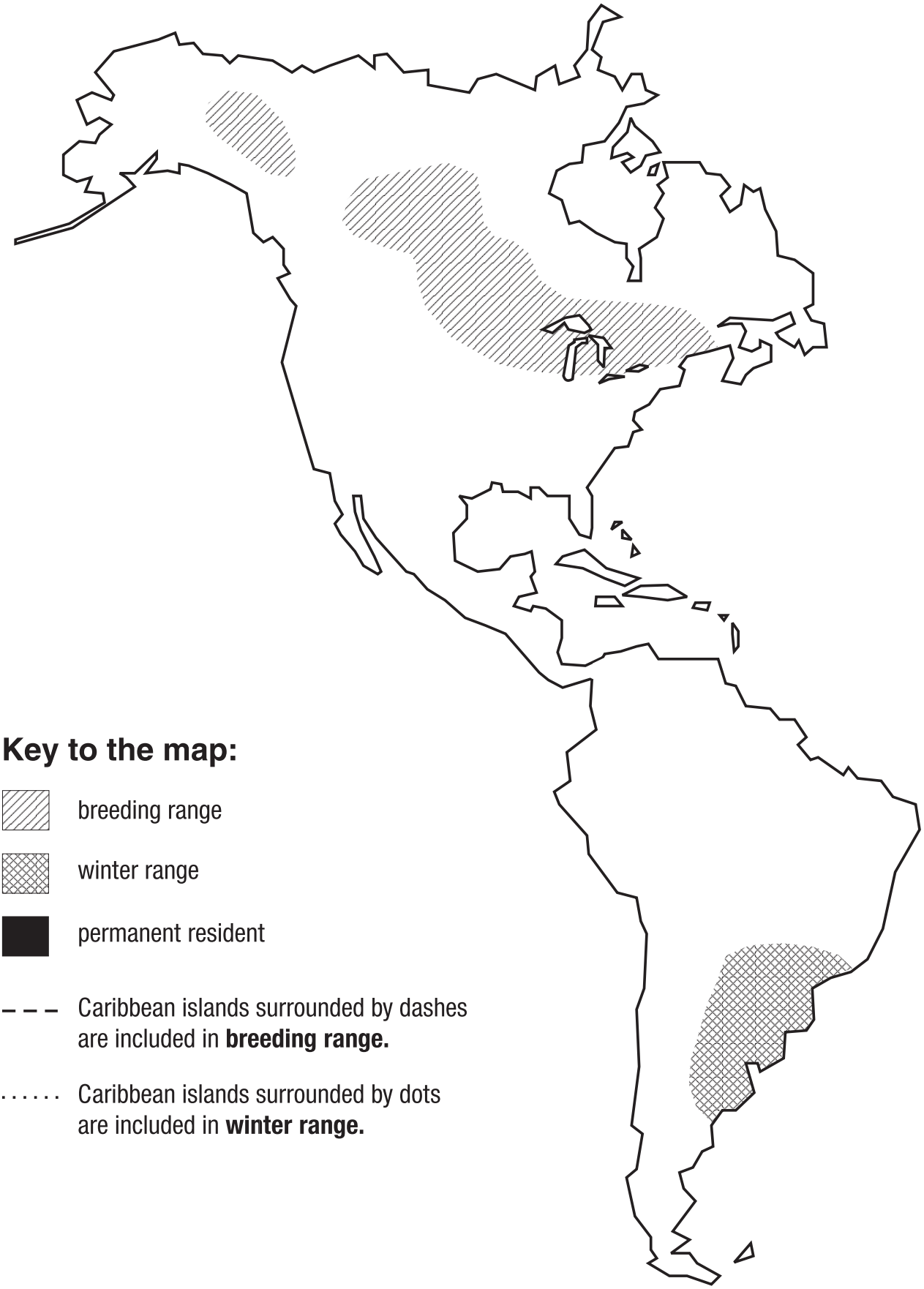
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

UPLAND SANDPIPER



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

INDIGO BUNTING

Scientific Name . . . . . .*Passerina cyanea*

Spanish . . . . . .Gorrion Azul

Present in Illinois . . . . .late April to mid-October

Illinois Status . . . . . .abundant migrant and summer resident; very rare winter resident in south and central part of state

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .roadsides and forest edges

Winter Range . . . . . .south Florida and central Mexico, south to Panama, Greater Antilles and Bahamas

Length . . . . . .5.25-5.75" (13.13-14.38 cm)

Weight . . . . . .0.4-0.7 g (11.2-21.4 g)

Color . . . . . .male: bright black-blue; female: brown with paler belly

Song . . . . . .notes usually in pairs: “sweet-sweet,” “chew-chew”

Nest . . . . . .eight inches to 7.5' high in berry, rose (*Rosa* spp.) and greenbrier (*Smilax* spp.) bushes or tall weeds and tangles of vines; made of well-woven dry grasses, dead leaves, bark strips, snake skin with lining of rootlets, fine grasses, feathers, hair

Eggs . . . . . .three to four; pale blue-white

Broods/Year . . . . . .two

Food . . . . . .grains and berries

Habits . . . . . .frequent brown-headed cowbird (*Molothrus ater*) host; will occasionally bury cowbird eggs by building a new floor in the nest

Interesting Facts . . . . . .populations have increased since 1900 with the abandonment of pastures and increased timber loss

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

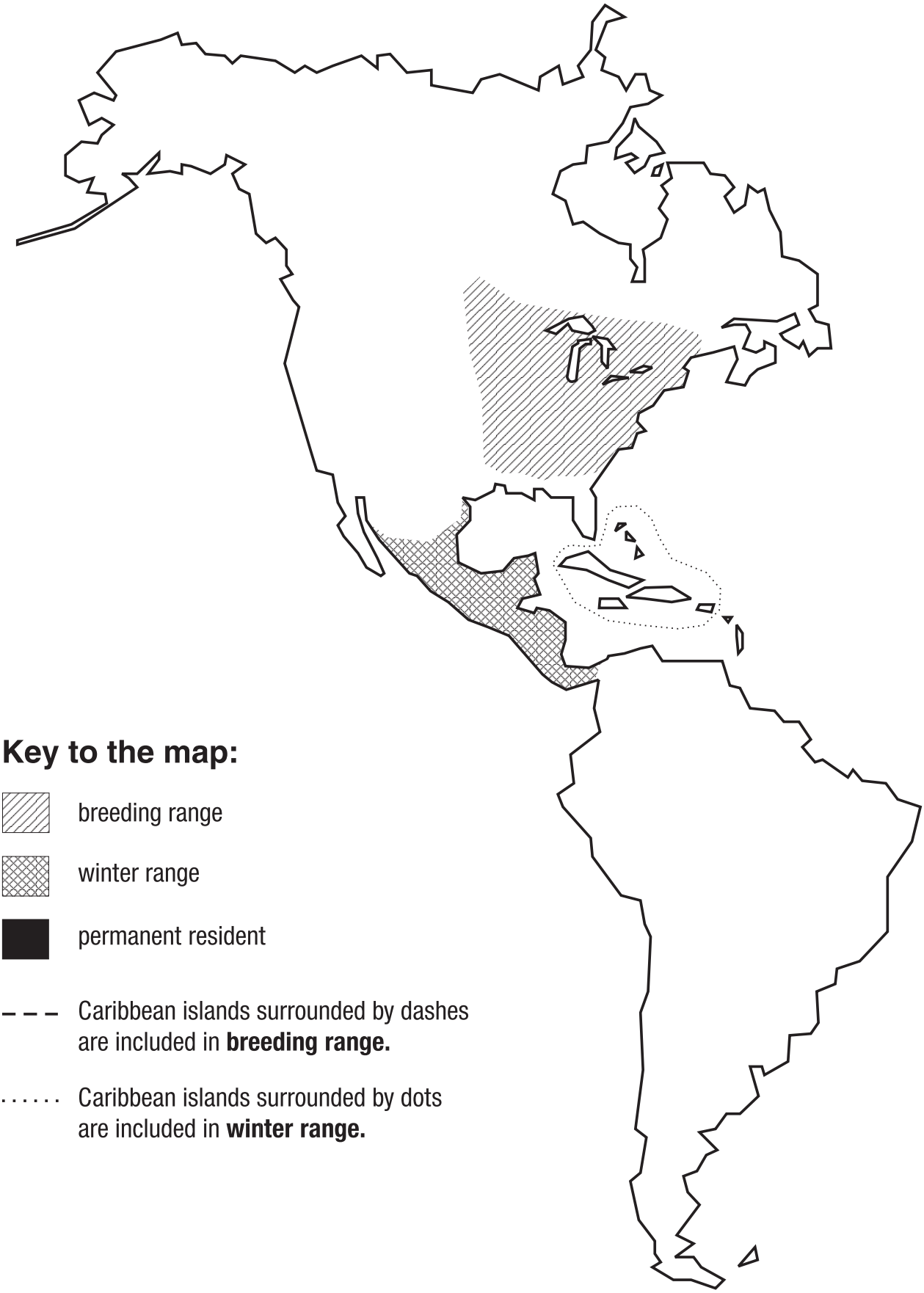
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

INDIGO BUNTING



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

GRAY CATBIRD

Scientific Name . . . . . .*Dumetella carolinensis*

Spanish . . . . . .unknown

Present in Illinois . . . . .late April to late October

Illinois Status . . . . . .common migrant and summer resident; rare winter resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .forest edges, brushy areas, residential areas

Winter Range . . . . . .south to central Panama, Bermuda, Greater Antilles

Length . . . . . .9.25" (24 cm)

Weight . . . . . .0.75-1.5 oz. (21-42 g)

Color . . . . . .slate gray with black cap

Song . . . . . .a mimic that sings phrases only once; mews like a cat

Nest . . . . . .in dense thicket; a bulky cup of grasses, forbs, twigs, leaves with a lining of fine materials; two to 10' high in tree

Eggs . . . . . .three to five; blue-green

Broods/Year . . . . . .two

Food . . . . . .insects and fruit

Habits . . . . . .uncommon brown-headed cowbird (*Molothrus ater*) host; will eject cowbird eggs from its nest

Interesting Facts . . . . . .nicknamed the "Carolina mockingbird;" like other mimics, includes songs and calls of other birds in its song; northern mockingbird (*Mimus polyglottos*) repeats phrases three times, brown thrasher (*Toxostoma rufum*) twice and catbird once

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

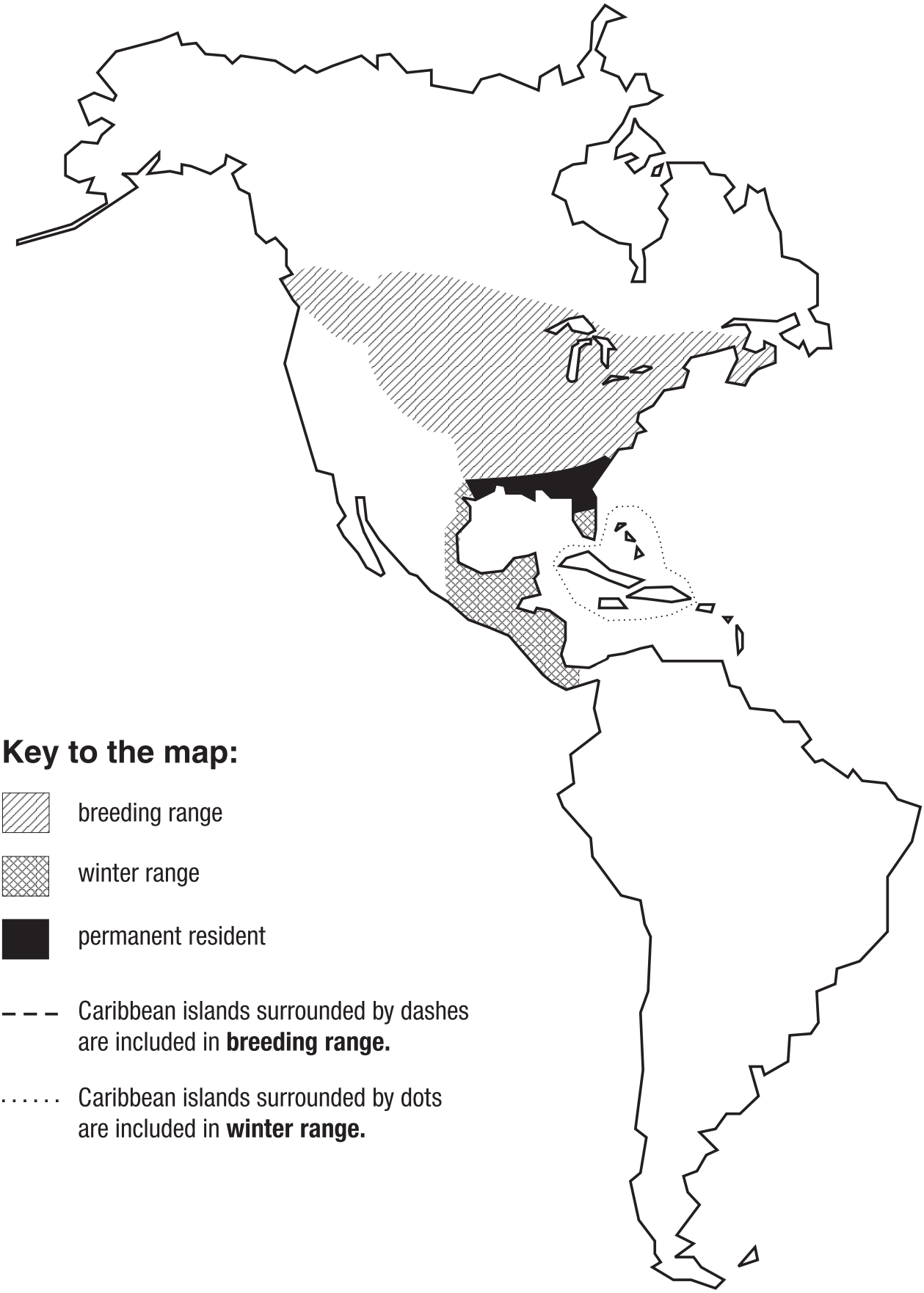
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

GRAY CATBIRD



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

DICKCISSEL

Scientific Name . . . . . .*Spiza americana*

Spanish . . . . . .Sabanero Americano

Present in Illinois . . . . .late April to late August

Illinois Status . . . . . .abundant migrant and summer resident in central and south; fairly common migrant and summer resident north

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .open areas, especially clover fields and roadside bushes

Winter Range . . . . . .southwest Mexico to northern South America

Length . . . . . .6-7" (15-17.5 cm)

Weight . . . . . .0.8-1.0 oz. (23-29 g)

Color . . . . . .male: yellow breast and black bib; female: no bib and has streaking on sides

Song . . . . . .repeats “Dick-ciss-ciss-ciss” or “chup-chup-klip-klip-klip”

Nest . . . . . .on or near the ground (1" to 1')

Eggs . . . . . .three to six; pale blue

Broods/Year . . . . . .one; second possible if move to new area

Food . . . . . .grains, grass and forb seeds, insects

Habits . . . . . .often seen perching on telephone wires and fences; frequently a brown-headed cowbird (*Molothrus ater*) host

Interesting Facts . . . . . .nests often damaged by mowing machines; nicknamed the “little meadowlark”

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

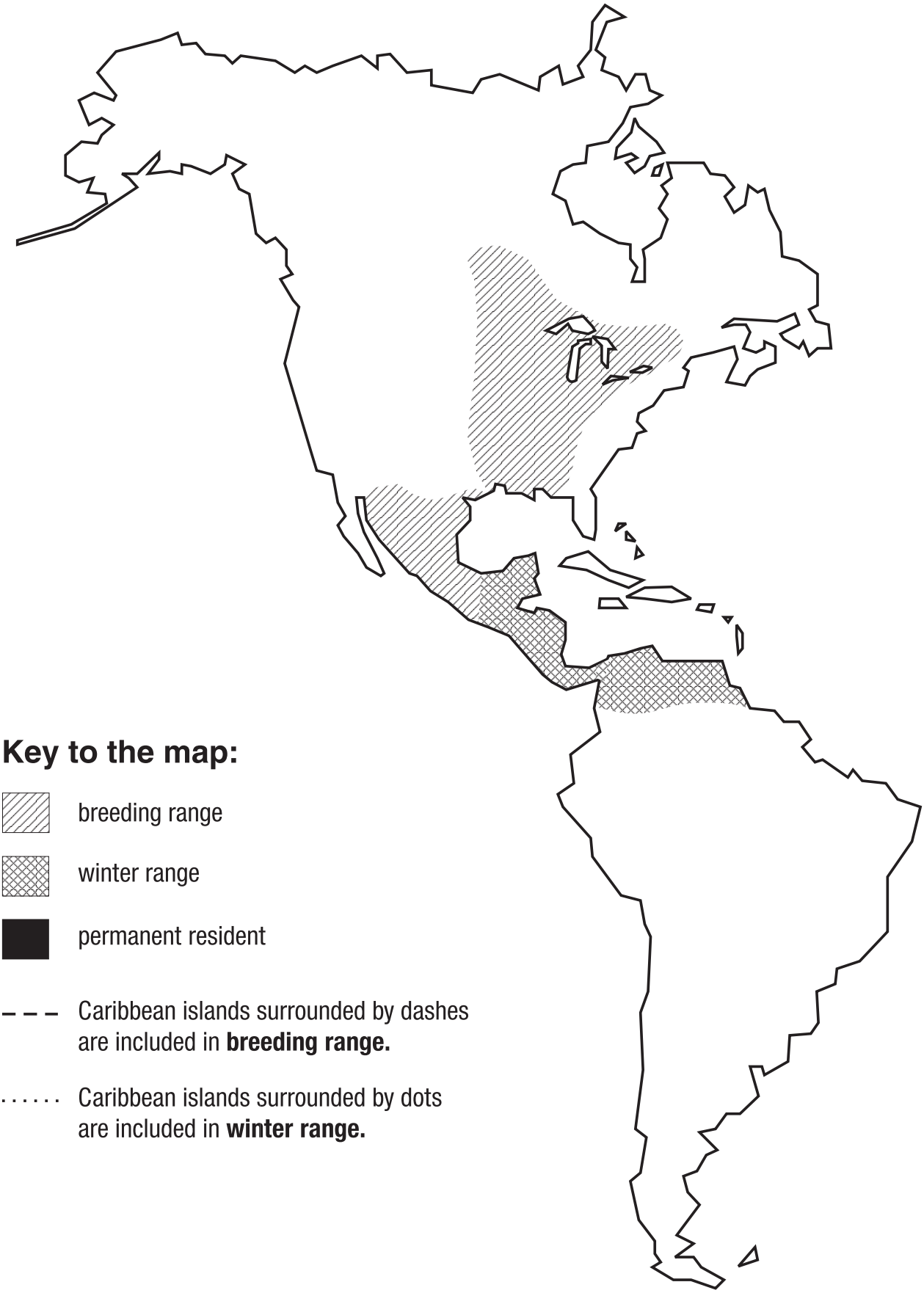
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

DICKCISSEL



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

PEREGRINE FALCON

Scientific Name . . . . . .*Falco peregrinus*

Spanish . . . . . .Falcon Peregrino

Present in Illinois . . . . .early April to early November

Illinois Status . . . . . .nests in large urban areas; occasional migrant

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .along large rivers and lakes

Winter Range . . . . . .south through Central America and West Indies to Tierra del Fuego

Length . . . . . .15-20" (37.5-50 cm)

Weight . . . . . .20-40 oz. (560-1,120 g)

Color . . . . . .long, pointed wings and long, narrow tail; adults are slaty-backed, barred on the belly; young birds are browner, heavily streaked below; heavy "mustache" visable when perching

Song . . . . . .repeats "we'chew" or a rapid rasping "cack, cack, cack"

Nest . . . . . .in trees 50-200' high; also roof tops and cliffs

Eggs . . . . . .three to four; white

Broods/Year . . . . . .one

Food . . . . . .waterfowl, pigeons and shorebirds

Habits . . . . . .female is larger than the male and will attack prey first and eat first when they hunt together; pairs roost together and hunt cooperatively

Interesting Facts . . . . . .nicknamed the "duck hawk"

Sources of Information

American Ornithologists' Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

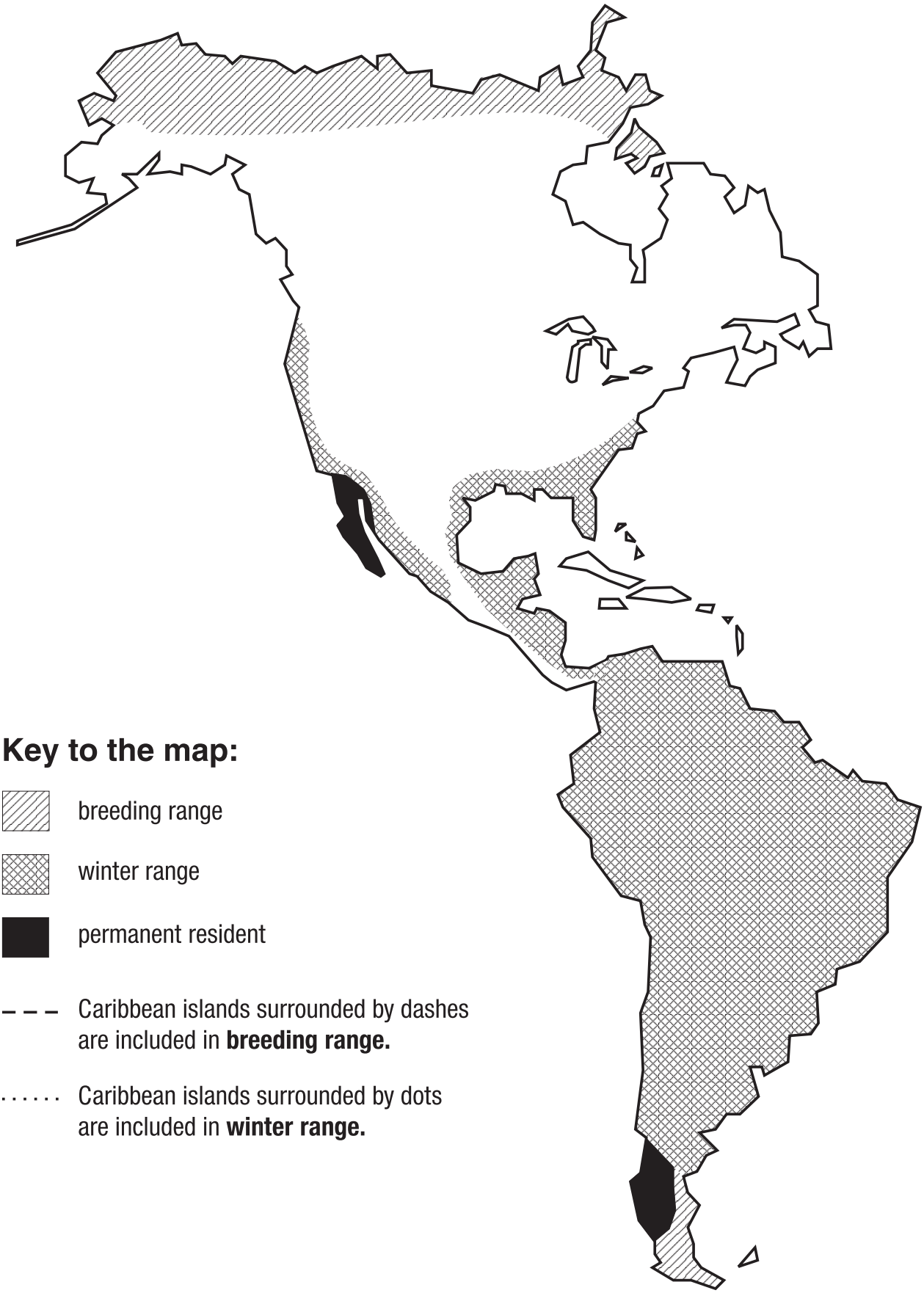
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

PEREGRINE FALCON



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

BALTIMORE ORIOLE

Scientific Name . . . . . .*Icterus galbula*

Spanish . . . . . .Calandria del Norte

Present in Illinois . . . . .mid-April to mid-September

Illinois Status . . . . . .common migrant and summer resident, very rare winter resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .woodlands and trees along watercourses, ponds and lakes

Winter Range . . . . . .from Central Mexico south to northeastern South America, Greater Antilles

Length . . . . . .8.5 ” (22 cm)

Weight . . . . . .0.8-1.5 oz. (22.3-41.5 g)

Color . . . . . .male: orange-yellow with black head; female: olive-gray

Song . . . . . .a series of rich, piping whistled notes

Nest . . . . . .woven, pendant nest placed high and overhanging an opening

Eggs . . . . . .pale gray to blue-white with darker markings

Broods/Year . . . . . .one

Food . . . . . .insects, fruits, nectar; some spiders and buds

Habits . . . . . .uncommon brown-headed cowbird (*Molothrus ater*) host; may eject cowbird eggs from nest

Interesting Facts . . . . . .nicknamed the “hand-nest bird;” nests most commonly seen in winter; takes four to 15 days to build the nest

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

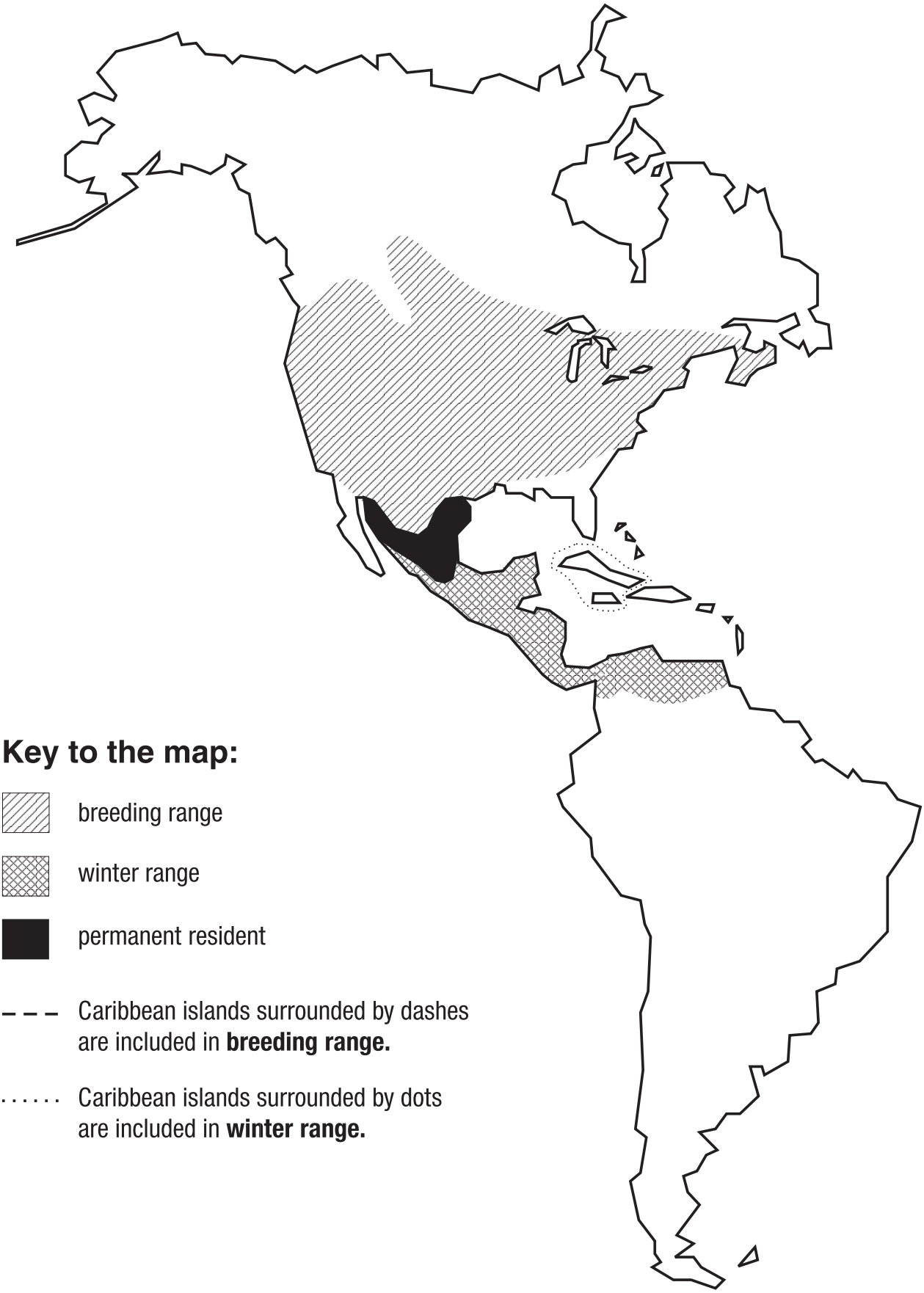
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

BALTIMORE ORIOLE



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

BAY-BREASTED WARBLER

Scientific Name . . . . . .*Dendroica castanea*

Spanish . . . . . .Reinita Castana

Present in Illinois . . . . .early May to mid-October

Illinois Status . . . . . .fairly common spring migrant, common fall migrant

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .open woodlands and groves of trees

Winter Range . . . . . .central Panama, south to northern South America

Length . . . . . .5-6" (12.5-15 cm)

Weight . . . . . .0.37-0.53 oz. (10.7-15.1 g)

Color . . . . . .male: chestnut throat, upper breast and sides and a large spot of pale buff on the side of the neck; female: paler; fall birds totally different

Song . . . . . .high song, “teesi, teesi, teesi”

Nest . . . . . .four to 40' in trees; loose or compact cup of grasses with rootlets and hair lining

Eggs . . . . . .four to five; white to off-white with brown markings

Broods/Year . . . . . .unknown

Food . . . . . .primarily insects; some fruit

Habits . . . . . .rare brown-headed cowbird (*Molothrus ater*) host

Interesting Facts . . . . . .number of eggs laid is often correlated with the abundance of spruce budworms (*Choristoneura* spp.)

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

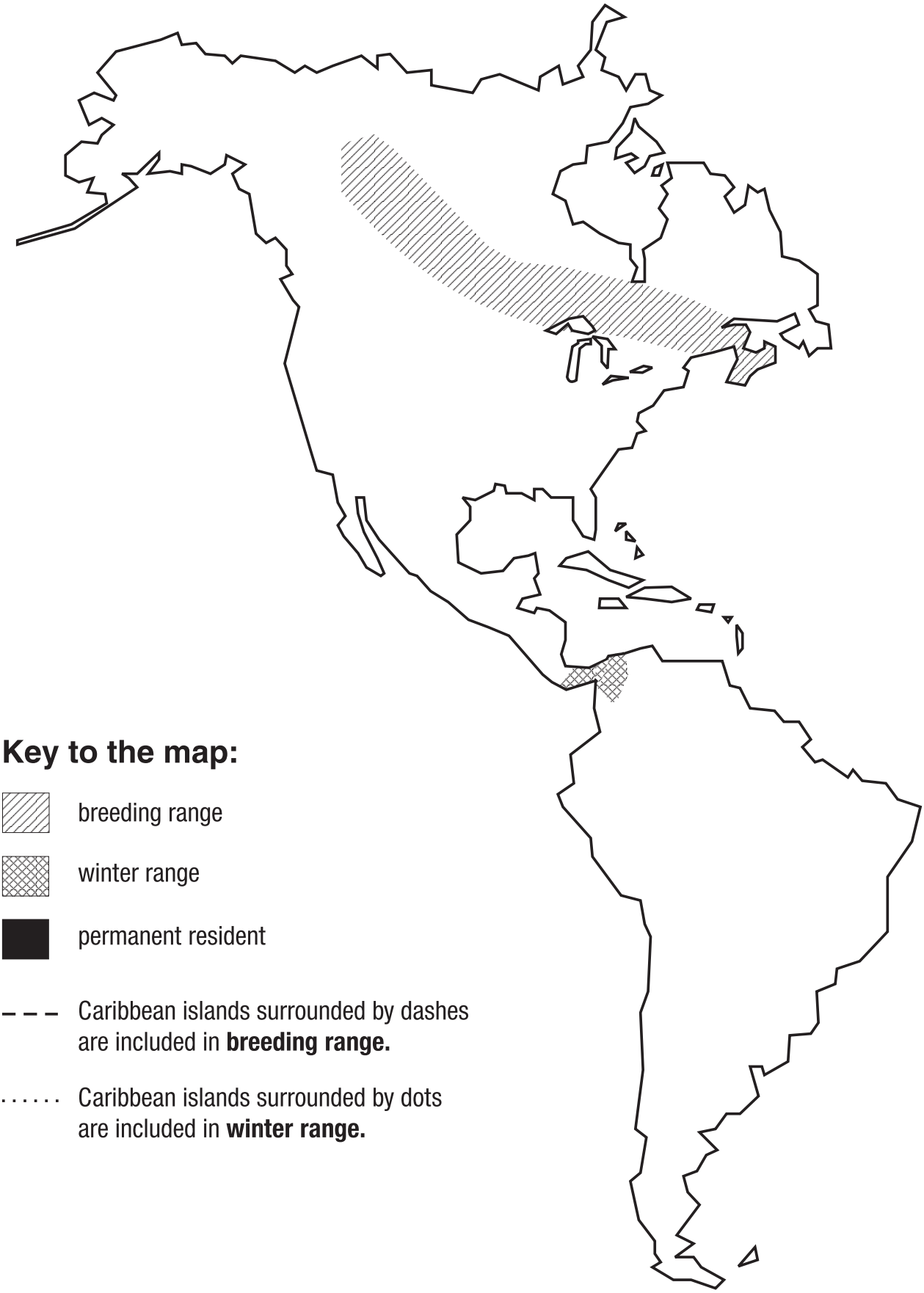
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

BAY-BREASTED WARBLER



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

CERULEAN WARBLER

Scientific Name . . . . . .*Dendroica cerulea*

Spanish . . . . . .unknown

Present in Illinois . . . . .late April to early September

Illinois Status . . . . . .common migrant and summer resident in south; uncommon migrant and local summer resident central and north

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .mature deciduous trees near rivers

Winter Range . . . . . .Venezuela and Columbia south to eastern Peru and northern Bolivia

Length . . . . . .4-5" (10-12.5 cm)

Weight . . . . . .3.2 oz. (89.6 g)

Color . . . . . .male: blue above with white belly, narrow black ring crosses upper breast; female: blue-gray and olive-green above and white below with two white wing-bars and white line over the eye

Song . . . . . .wheezy and rapid buzzy notes “zray, zray, zray, zray, zreee”

Nest . . . . . .15-80' high in deciduous trees; cup nest on horizontal branch far from trunk; made of bark, weed stalks, lichens, moss with moss lining

Eggs . . . . . .three to five; gray with brown spots

Broods/Year . . . . . .one

Food . . . . . .insects

Habits . . . . . .difficult to see the bird after the trees leaf out; sometimes seen when it ventures to the ground to drink, bathe or gather spider silk and other nesting materials; uncommon brown-headed cowbird (*Molothrus ater*) host

Interesting Facts . . . . . .very sensitive to fragmentation of breeding habitat

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

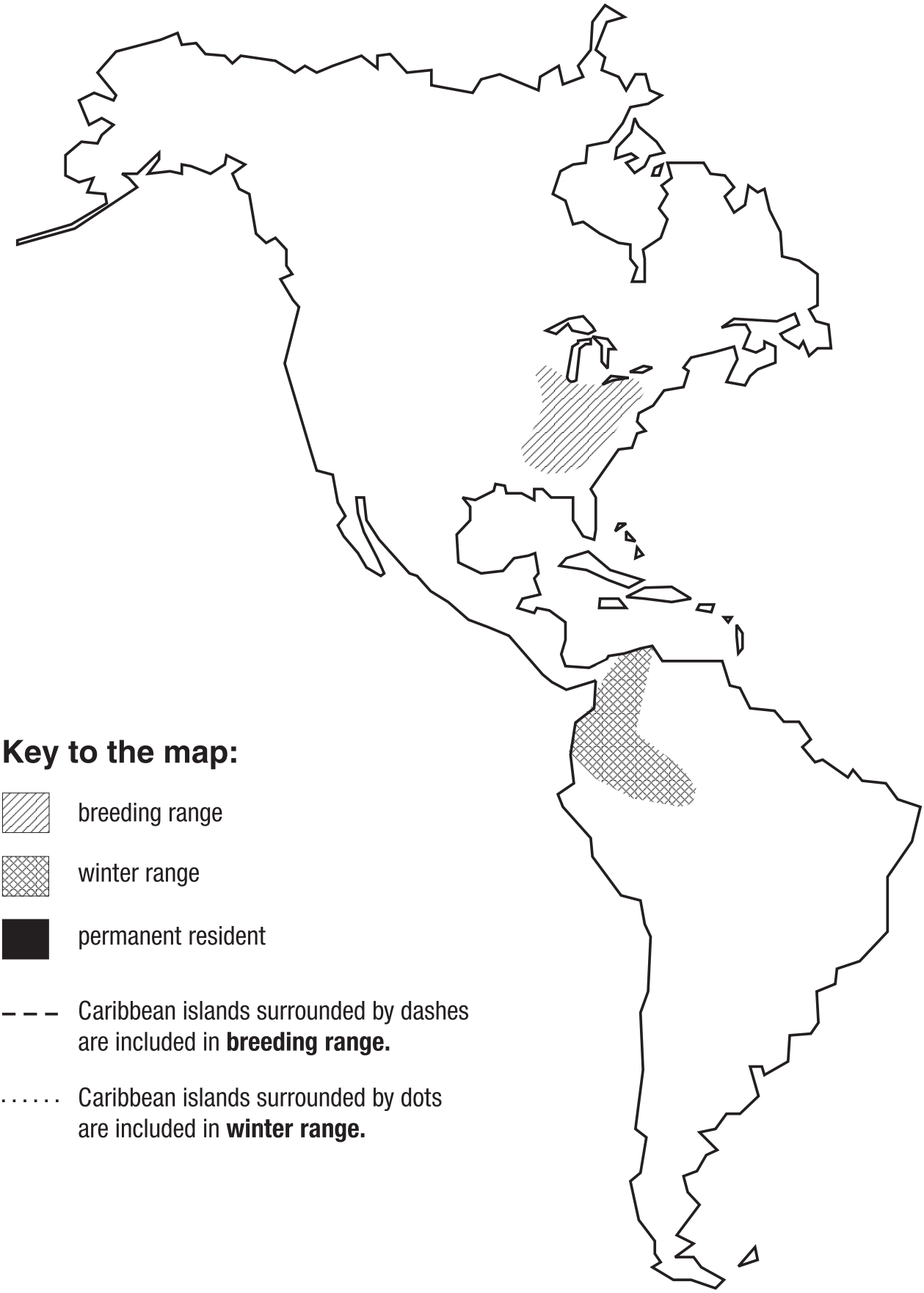
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

CERULEAN WARBLER



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

CHIMNEY SWIFT

Scientific Name . . . . . .*Chaetura pelagica*

Spanish . . . . . .Vencejo de Chimenea

Present in Illinois . . . . .mid-April to early October

Illinois Status . . . . . .common migrant and summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .originally woodlands; now mainly cities and towns; swamps with hollow trees

Winter Range . . . . . .western Peru, upper Amazon Basin of eastern Peru, northern Chile and northwestern Brazil

Length . . . . . .5.5" (14 cm)

Weight . . . . . .0.6-1.0 oz. (17-30 g)

Color . . . . . .dark brown with paler throat

Song . . . . . .piercing “chips” or “ticks”

Nest . . . . . .half saucer of twigs glued with saliva; formerly in tree holes, now in chimneys

Eggs . . . . . .four or five; white

Broods/Year . . . . . .one

Food . . . . . .flying insects

Habits . . . . . .builds nest in 18-30 days; grabs small dry twigs for nests and breaks them off while in flight; young leave the nest when three weeks old and use sharp, strong claws to cling and crawl on vertical walls

Interesting Facts . . . . . .seldom seen except while in flight; feed, drink and gather nesting materials all during flight; often called a “flying cigar” due to its body shape

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

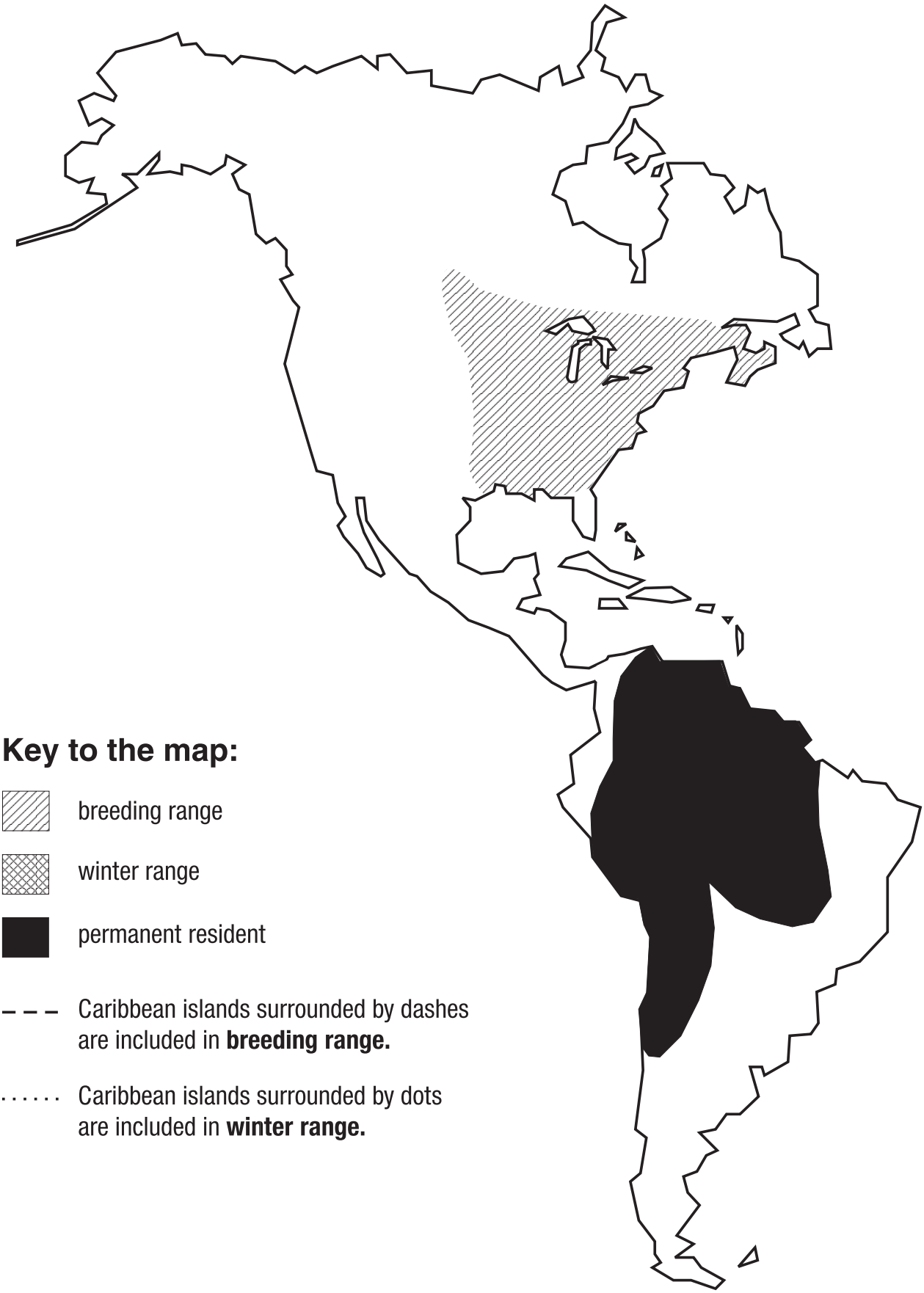
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

CHIMNEY SWIFT



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

PURPLE MARTIN

Scientific Name . . . . . .*Progne subis*

Spanish . . . . . .Golondrina Purpura

Present in Illinois . . . . .late March to mid-September

Illinois Status . . . . . .common migrant and summer resident

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .particularly numerous in residential areas; forage over open areas, including golf courses, cemeteries, lawns

Winter Range . . . . . .South America east of the Andes from Venezuela south to northern Bolivia and southeast Brazil

Length . . . . . .8.5" (22 cm)

Weight . . . . . .1.9 oz. (53 g)

Color . . . . . .male: glossy blue-black; female: dusky black

Song . . . . . .a series of rich gurgling notes; a low “chew” note

Nest . . . . . .in hollow tree, woodpecker hole, eave of building, nest box; grasses, leaves, stalks, feathers and mud; usually near water

Eggs . . . . . .three to five; dull white

Broods/Year . . . . . .one to three

Food . . . . . .flying insects

Habits . . . . . .house sparrows (*Passer domesticus*) and European starlings (*Sturnus vulgaris*) can cause a problem by competing for nest sites; removal of dead trees decreased the availability of nest sites

Interesting Facts . . . . . .largest North American swallow

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

PURPLE MARTIN

Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

GRASSHOPPER SPARROW

Scientific Name . . . . . .*Ammodramus savannarum*

Spanish . . . . . .Gorron Chicharra de Puerto Rico

Present in Illinois . . . . .mid-April to early October

Illinois Status . . . . . .common migrant and summer resident; rare winter resident in central and south

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .grasslands, pastures and fallow fields

Winter Range . . . . . .south to northern South America, greater Antilles

Length . . . . . .5" (13 cm)

Weight . . . . . .0.6 oz. (16.8 g)

Color . . . . . .dark brown head with stripe, chestnut- and black-striped back, buff belly

Song . . . . . .grasshopper-like and buzzing

Nest . . . . . .in a slight depression on the ground, the rim flush with the ground; hidden by overhanging grasses and forbs; dried grasses with a lining of finer materials

Eggs . . . . . .four to five; creamy white with spots

Broods/Year . . . . . .two

Food . . . . . .invertebrates, grasses and forb seeds

Habits . . . . . .uncommon brown-headed cowbird (*Molothrus ater*) host

Interesting Facts . . . . . .nests often destroyed by mowing machines; nicknamed the “cricket sparrow”

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

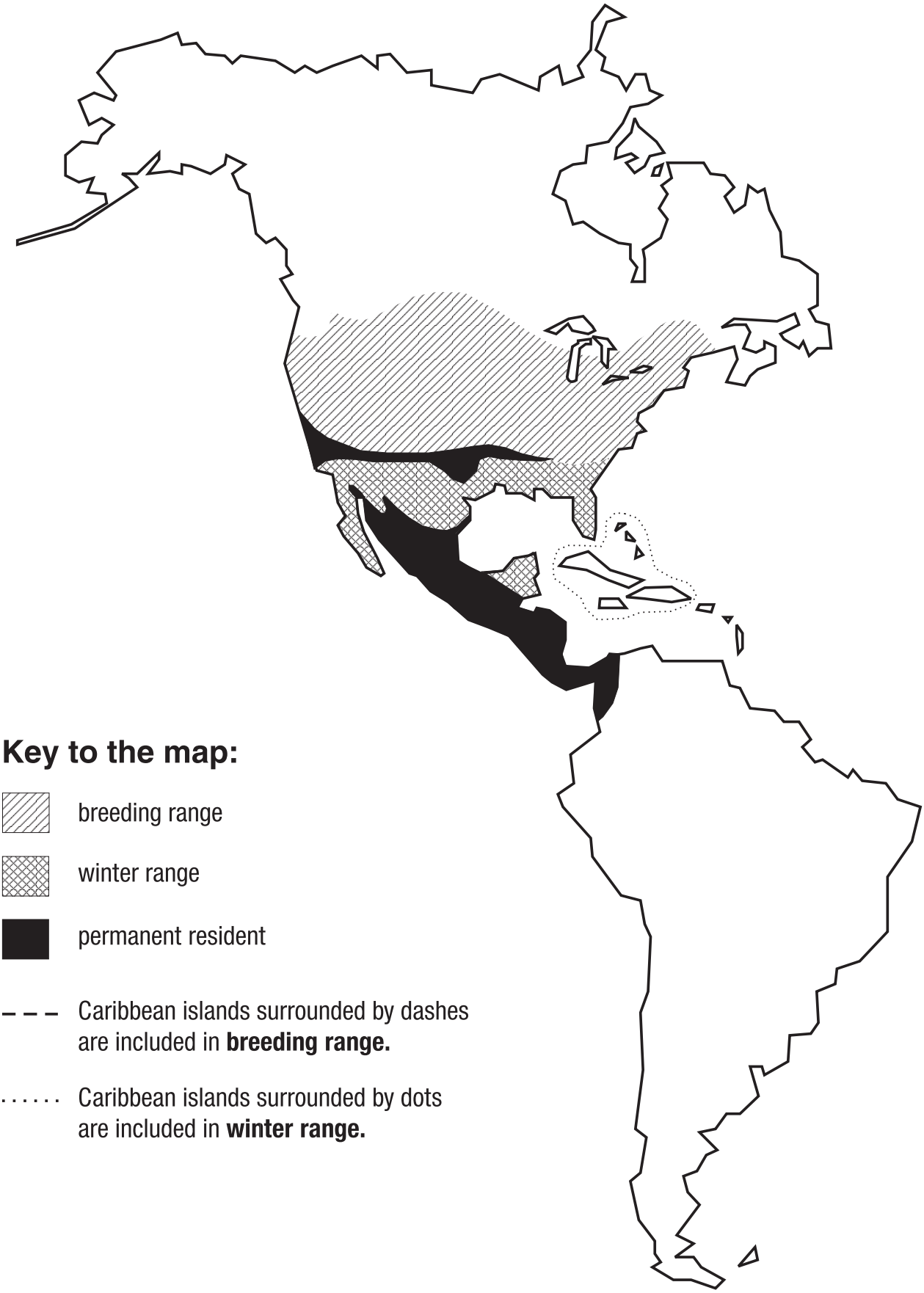
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

GRASSHOPPER SPARROW



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

····· Caribbean islands surrounded by dots are included in **winter range.**

OSPREY

Scientific Name . . . . . .*Pandion haliaetus*

Spanish . . . . . .Aguila de Mar o Anuila Pescadora

Present in Illinois . . . . .early April to late October

Illinois Status . . . . . .uncommon migrant

Illinois Range . . . . . .statewide

Illinois Habitat . . . . . .along rivers and lakes

Winter Range . . . . . .south to Chile and northern Argentina

Length . . . . . .21-24" (52.5-60 cm)

Weight . . . . . .42.7-66.5 oz. (1,220-1,900 g)

Color . . . . . .black above and clear white below, head largely white wih a broad black patch through cheeks

Song . . . . . .a series of short, sharp, cheeping whistles: “cheep, cheep” or “chewk, chewk”

Nest . . . . . .tops of dead or living trees in standing water; often reused year after year

Eggs . . . . . .two to four; white with brown markings

Broods/Year . . . . . .one

Food . . . . . .fishes (primarily live)

Habits . . . . . .female fed by mate from the time they form their pair bonds until she has laid all the eggs; male will sometimes incubate eggs; flies with a decided kink or crook to its wings; hovers on beating wings then plunges feet first to catch fishes

Interesting Facts . . . . . .populations crashed from the 1950s through 1970s from exposure to DDT, shooting and disturbance of the nesting grounds; conservation programs and use of nesting platforms have helped bring populations back; called the “fish hawk”

Sources of Information

American Ornithologists’ Union. 2010. *Check-list of North American birds*. http://www.aou.org/checklist/north/index.php

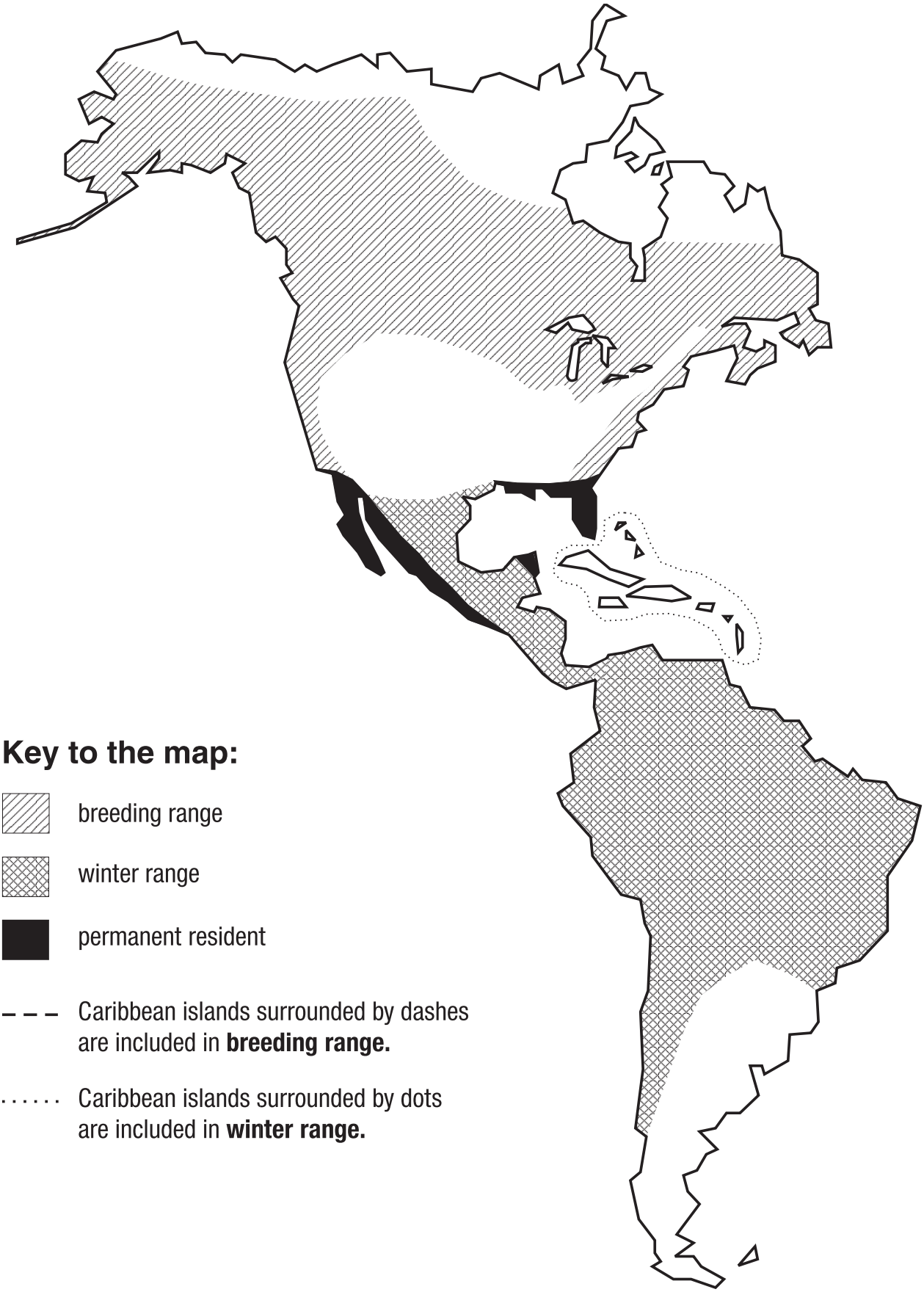
Bohlen, H. David. 1978. *An annotated check-list of the birds of Illinois*. Illinois State Museum, Popular Science Series, Volume IX. Springfield, Illinois. 156 pp.

Bohlen, H. David. 1989. *The birds of Illinois.* Indiana University Press, Bloomington, Indiana. 240 pp.

Erlich, Paul R., Dobkin, David S. and Darryl Wheye. 1988. *The birder’s handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York, New York. 720 pp.

New Jersey Conservation Foundation. 1994. *The songbird connection*.

OSPREY



Key to the map:

breeding range

winter range

permanent resident

– – – Caribbean islands surrounded by dashes are included in **breeding range.**

. . . . . Caribbean islands surrounded by dots are included in **winter range.**

Appendix C

Ecology And Conservation: The Decline Of Songbirds

*by Dr. Bridget J. Stutchbury**

I. Introduction

About 50-75 percent of the birds that breed in the eastern forests of North America are long-distance migrants, meaning that they spend the winters in Central or South America. Although we think of them as being North American birds, many spend more time in the tropics (6-8 months) than they do up here (4 months). Recently, scientists have found alarming evidence that many of North America's migratory songbirds have experienced a serious decline in population size.

The Neotropical migratory bird system has been referred to as a "river of birds" that flows annually from North to South America, and then back again. Migratory birds pass through a series of different environments along their annual route from breeding to wintering grounds, which are often separated by distances of 3,000-5,000 km. Individual birds can travel over 8,000 km in a single year, and for small songbirds, this adds up to well over 25,000 km in a lifetime. They are vulnerable to environmental perturbations in any one of these locations along their journey. In the past several hundred years, human-caused habitat destruction has radically changed the landscape in which these birds travel and breed.

The songbird decline is an excellent example of the difficulties encountered in conservation biology, and the role that ecology can play in teasing apart a complex biological system.

1) The physical scale of the problem is huge: it potentially encompasses all of the New World. Migratory birds require suitable habitats on the breeding grounds in Canada and the U.S., on the wintering grounds in Central and South America, and all along their migratory routes.
2) There are a large number of possible causes, all acting simultaneously. Determining which is the most important requires extensive research.
3) The ecological impact is huge. It has been estimated that 3-5 billion birds migrate annually between North America and the Neotropics. These birds play a critical role in the ecosystem as consumers and as prey. How do we even begin to estimate how changes in such a large community will affect our forests and other animals?
4) A large number of different species is involved, and each is affected to different degrees by environmental perturbations.
5) This is an international problem. Many different countries "host" migratory birds during the various stages of their life cycle; these countries differ dramatically in their conservation ethic, economic status, population growth, and political stability.

The migratory songbird decline problem can be broken down into two key questions: 1) How widespread and severe is the population decline of songbirds? and 2) What are the main causes of the decline?

II. Migratory songbirds: **evidence for the decline**

a) Case histories

Start with some examples of species that have declined markedly in parts of their range over the past few decades.

These data are based on sampling the same breeding population intermittently over a period of 40 years, in a forest habitat that has not been seriously disturbed over this time (Terborgh 1989). Four species show a decline in population size ranging from 65-100 percent. Why are these species declining? First let's look at the general characteristics of these species. These birds have a number of important similarities: all are Neotropical migrant songbirds, and all breed in forest habitats. But there are differences in where they overwinter, where they nest in the forest, and their food resources.

1) Acadian flycatcher: breeds in northeastern U.S.; as name suggests they eat mostly flying insects during breeding season; overwinters Central America; probably territorial during winter; also eats fruit in winter.
2) red-eyed vireo: breeds over much of North America; gleans insects off leaf surfaces; nests in tree branches 2-5 m off the ground; overwinters Mexico to South America.

3) wood thrush: breeds in northeastern U.S.; feeds on insects and other invertebrates on the ground; nests 1-2 m high in shrubs and trees; overwinters Mexico to South America; territorial in winter.

4) ovenbird: a warbler that breeds in Canada and eastern U.S.; feeds and nests on the ground; overwinters Mexico and Central America.

These species represent a typical cross-section of songbirds (Order Passeriformes), and are in four different Families (flycatchers, vireos, thrushes, and warblers). There is nothing unusual about their breeding or wintering habits that could account for the dramatic decline in numbers.

Are these four examples merely part of natural fluctuations in population size in a single location, or do they represent the tip of the iceberg; that is, a widespread and severe decline for all migratory songbirds?

b) Population monitoring

Is the decline for real? How many species are involved? How rapidly are different populations declining? To get the answers to these questions we need to be able to count birds: not as easy as you might think.

It is very difficult to systematically census animal populations that are highly mobile, widespread, and have intercontinental home ranges. Many different methods have been used to census bird populations; each of which has a number of shortcomings. Nevertheless, consistent patterns emerge from the data.

Two main census methods have been used to look at population trends: (1) Breeding Bird Survey, (2) Migration Counts.

Breeding Bird Survey: Volunteers intensively survey all birds seen and heard during 3 minute stops, every 0.5 mile along roadsides. Each route consists of 50 stops, and is covered during the 2-3 hour period after dawn, sometime during the peak of the breeding season. Over 2,000 routes (i.e. 50,000 miles) are covered across Canada and the U.S. each year. This massive survey has been taking place since the mid-1960's, leading to a very valuable data set on long term population numbers.

Shortcomings: restricted to roadsides, so some habitats (i.e. wetlands) are poorly sampled. Areas in northern Canada have few roads, so are not adequately sampled.

Results: Many Neotropical migrants show a population decline in the period 1978-1987; before this time populations were stable or increasing (Robbins et al. 1989, Sauer and Droege 1992). Declines were noted most often for migrant birds nesting in eastern forest habitats.

Migration counts: These provide an independent count of breeding bird populations. During spring and fall, birds are surveyed through observation and capture as they migrate through the area. Long Point Bird Observatory, on the shores of Lake Erie in Ontario, has been censusing migrating bird populations since 1961. There have been some changes in the habitat at the count areas, so long term changes in numbers of particular species could be partly due to local habitat changes. However, estimates of population changes from these migration counts at Long Point are closely correlated with estimates from the Ontario Breeding Bird Survey (Hussell et al. 1992), indicating that these surveys reflect real changes in population size.

We can see that the wood thrush and ovenbird show significant declines in both survey methods. However, even though red-eyed vireos declined significantly from earlier studies (which was based on a single location), there is no evidence for a widespread decline from either BBS or migration count data.

These large scale surveys are essential for monitoring long term trends in populations, and determining whether observed changes are taking place over the entire range of a species, or just on a local scale.

c) Population trends of migratory vs. nonmigratory birds

The annual surveys of bird populations tell us that many songbird species are declining in numbers over large parts of their range. What is causing this decline? The source of the problem could lie at the breeding grounds, migratory stopping points en route, and/or the Neotropics where they spend the winter.

One way to find out where the problem lies is to compare the decline of migratory and nonmigratory birds. If a major cause of the decline lies in habitat destruction of the tropics, then only migratory species should show strong population declines.

In fact, it is the Neotropical migrants that are most likely to be declining. Of 20 Neotropical migrant songbirds with significant population trends, 85 percent were in decline (Robbins et al. 1989). In contrast, only 31 percent of temperate migrants and nonmigrants were declining significantly.

More detailed analyses of Breeding Bird Survey data have found that population trends can differ greatly between habitats and geographic regions, making it difficult to test hypotheses about which species are expected to be declining (see Hagan and Johnston 1992). Nevertheless, migrants that breed in eastern forests are

consistently found to be the group with most serious declines, although other species are also in trouble (Askins et al. 1990). Habitats are changing drastically throughout the entire range of migratory birds, so it is quite likely that a number of different factors are reducing their survival and reproductive success. We must look to both the breeding grounds and the tropics in a search for the cause of the decline.

III. Causes for the decline: **temperate zone**

a) Forest fragmentation and habitat loss

The forest habitat of eastern North America has changed dramatically since the 1600s. Two major effects: (1) less area covered by forest, and (2) fragmentation of the remaining forest into smaller pieces.

It has been well established that the composition of bird communities varies with forest area (e.g. Robbins 1980, Askins et al. 1987). Many songbirds are common only in large tracts of forest, and are rare or absent in small woodlots. These are "area-sensitive" species, who avoid tiny patches of habitat. The red-eyed vireo and wood thrush are only rarely found in small woodlots, but are common in larger forests.

Small patches of forest may contain sufficient food and nesting sites for a particular species, but due to its small area, it is not good quality breeding habitat. However, even for the birds that do select smaller forest fragments for nesting, they face the threat of reduced reproductive success. Although a forest may contain a large number of breeding migrants, these individuals may actually be producing very few, if any, offspring that survive to become adults. Two important factors associated with forest fragmentation are predation and cowbird parasitism.

b) Predation

In an experiment to quantify how predation rates vary with forest area, artificial bird nests containing quail eggs were placed in standard locations in different sized forests (Wilcove 1985). The predation rate ranged from 25-90 percent in small woodlots, but was only 2 percent in the largest forest. Why are predation rates higher in forest fragments? Some predators of bird nests can maintain higher population densities in the vicinity of human settlements (raccoons, skunks), where forest fragments are small. Important nest predators on birds may also prefer edge habitat (e.g. raccoons, blue jays), which is more extensive in fragmented forests.

c) Cowbird parasitism

Brown-headed cowbirds are a major threat to songbirds. Cowbirds are "brood parasites:" they lay their eggs only in other species' nests, and leave those host species to incubate the egg and feed the offspring. So, host songbirds that are "parasitized" expend much effort in raising cowbird offspring.

Female cowbirds often eject one of the host's eggs, so the host loses one of its own eggs right away. Furthermore, cowbird nestlings are often bigger than the host nestlings, and therefore get much of the food that the parents bring to the nest. In general, individuals that have been parasitized produce fewer offspring of their own than individuals that escaped parasitism by cowbirds.

How could this account for the recent decline in songbirds? Although cowbirds are native to North America, their natural range was restricted to the prairies. Cowbirds expanded their range eastwards as the forest was cut and fragmented, and began parasitizing the new host species that they encountered. The number of cowbirds in eastern North America has increased tremendously in the past century.

Cowbirds are much more common at the edge than the center of large forest tracts (Brittingham and Temple 1983), so forest-interior songbirds were also ecologically protected from cowbird parasitism. However, in small forest fragments most of the forest is near an edge and therefore accessible to cowbirds. Forest-interior songbirds have only had cowbirds as a nest threat in the past 150 years or so. They have no effective behavioral defenses against cowbirds, such as ejecting the cowbird eggs from the nest.

In Illinois where very little forest remains, predation rates in forest fragments averaged 80 percent, and about 75 percent of nests were parasitized by brown-headed cowbirds (Robinson 1992). Neotropical migrants averaged 3.3 cowbird eggs per nest! Wood thrush were heavily hit by cowbirds: on average, nests contained 4.4 cowbird eggs but only 1.2 wood thrush eggs. These populations in small forest fragments are maintained only by immigration of birds from other parts of the range where reproductive success is higher.

But, what happens when small forest fragments are the only remaining habitat for a species, and there is no other population that can produce surplus offspring? This has happened to the Kirtland's warbler, a migrant songbird that is an endangered species. There are only about 200 breeding pairs left, in several forest fragments in Michigan (Walkinshaw 1983). Early studies found very high rates of brood parasitism, and a corresponding low reproductive success. A massive effort to remove adult cowbirds from the breeding areas resulted in lower parasitism, and a greater production of offspring. The Kirtland's warbler can only survive with

intensive management of cowbird populations on the breeding grounds.

IV. Causes for the decline: **the Neotropics**

a) Forest fragmentation and habitat loss

Forest loss on the wintering grounds of migratory birds is widespread, and occurring at dramatic rates. About 1-4 percent of the forest is cut down annually, and converted to pastures and farms. Some countries like Costa Rica and Cuba have already cut down over 80 percent of their original forest.

Much of this destruction has taken place only in the past few decades, exactly the period when decline of migratory songbirds has been detected. There are several reasons why forest loss could be a greater problem for birds on their wintering grounds, compared with the breeding grounds:

1) The density of birds (number of birds living on a given forest plot) is much higher on the wintering grounds. The breeding grounds in North America cover over 40 million square km, but the main wintering grounds cover only 6 million square km. Migrants must funnel into a relatively small area, and compete with residents for space and food. In many different habitats in the northern part of the wintering range (Mexico), migrants make up about 50 percent of all the birds in the area.
2) Many species have relatively restricted winter ranges, so are extremely vulnerable to forest loss in those areas. The Bachman's warbler, on the verge of extinction, was thought to winter only in Cuba, where very little forest now remains.

Relatively little is known about the winter ecology and behavior of most of our migratory songbirds. However, the notion that individuals are free to wander around in search of the remaining suitable habitat is not correct. Many species are strongly territorial in the winter season, and return faithfully to the same winter territory year after year (Greenberg 1986). Furthermore, habitat selection in many songbirds is innate. While some species are generalists, and can opportunistically exploit new foods and habitats in pastures and fields, other species are specialists and avoid novel environments (Greenberg 1983). In some species, males and females even prefer different kinds of habitat (Morton 1990).

Assessing the impact of tropical deforestation on migrants is hampered by our lack of knowledge. The research effort on wintering songbirds is a tiny fraction of the amount of research conducted on breeding forest birds in Canada and the U.S. How dependent are certain species on particular winter habitats? How does winter survival vary in different kinds of disturbed habitat? How do the territorial systems of wintering migrants affect the survival and success of yearling birds? What impact do pesticides and parasites have on migrant birds while they are in the tropics? Decisions on how to manage the remaining forests, and which habitats are most critical, will depend on obtaining the answers to these kinds of questions.

V. Conclusions

Migratory songbirds are declining. Forest fragmentation in North America has lead to reduced suitable breeding habitat, higher predation rates, and high rates of brood parasitism by brown-headed cowbirds. On top of this, the same individual birds often face degraded habitats when they arrive on their wintering grounds in the tropics. For migratory birds, the candle is burning at both ends.

Deforestation in the tropics is not just a problem for the relatively "exotic" birds and other animals that live in rain forests. Literally billions of our own birds are at stake, along with their effects on our own forest ecosystems here in the temperate zone.

What can be done to stabilize migratory bird populations? Two main approaches are essential. (1) Continue scientific research to monitor population levels, learn more about the winter ecology of our migrants, and determine the most severe causes of the decline for different species. (2) Preserve tropical habitats that migrants depend on. Here, conservation groups (like

Appendix D

Research Article Summaries

Nest Predation in Forest Tracts and the Decline of Migratory Songbirds

David Wilcove conducted studies to test the hypothesis that nest predation can be an important cause of the decline of migratory songbird populations in small woodlots. He placed artificial bird nests with fresh quail eggs in 11 woodlots of different sizes in Maryland and Tennessee. He then visited each nest after seven days. Nests were considered preyed upon if one or more eggs were lost. On the ground near some of the nests, he placed cardboard squares. These provided a place to collect tracks from the animals that were preying on the nests. His results showed that the least amount of predation occurred on nests placed in large forest tracts (those over 250 ha) and the most occurred on nests in suburban forest fragments (those under 15 ha). He concludes that there are several possible reasons for higher predation rates in forest fragments. First, predators such as blue jays, gray squirrels, raccoons and cats are commonly associated with human development and therefore are near to nests in the small, suburban woodlots. Also, small woodlots do not usually have larger predators, such as bobcats and large hawks, that prey on the animals that prey on these songbirds. Finally, the small woodlots have a relatively large percentage of edge, and this edge supports predacious species, such as crows and grackles.

Wilcove, David S. 1985. Nest Predation in Forest Tracts and the Decline of Migratory Songbirds. *Ecology* 66(4):1211-1214.

Population Dynamics of Breeding Neotropical Migrants in a Fragmented Illinois Landscape

During the years 1985—1989, Scott Robinson conducted a study to determine nest success of Neotropical migratory birds in small forest fragments in Illinois. He believed that the songbirds might not be able to breed successfully in the small, wooded areas. To test this hypothesis, he conducted bird censuses throughout three forest fragments, each under 70 hectares in size. The primary censusing method he used was spot-mapping, where he walked through the forests during the morning hours (6:00 a.m. to 10:00 a.m.), stopped at predetermined points, and marked birds seen or heard on a map. He censussed each of the three forests this way at least three times each year, during the breeding season. He also located nests in these forests and returned to them frequently to see how many songbird eggs had been laid, how many cowbird eggs had been placed in the nests and how many of the young hatched and survived. While looking closely at these bird populations, he was able to determine which male songbirds did not find mates. His findings indicated that most of the Neotropical bird populations declined over the five years. Of the open-cup shaped nests he located, 80 percent failed due to predation, and 75 percent of all nests were parasitized by the brown-headed cowbird. There was an average of 3.3 cowbirds eggs in each parasitized nest. A high percentage of several forest birds appeared to remain unmated through the breeding season. Because populations of these songbirds cannot increase in these forests due to the frequency of predation and parasitism, Robinson concludes that these small forest fragments might be population "traps" for these birds. They are traps because the offspring of songbirds that breed in larger forests might come to these smaller fragments to breed, yet not be successful due to parasitism and predation.

Robinson, Scott K. 1992. Population Dynamics of Breeding Neotropical Migrants in a Fragmented Illinois Landscape. In John M. Hagan III and David W. Johnston (eds.) *Ecology and Conservation of Neotropical Migrant Landbirds.* Symposium proceedings from Manomet Bird Observatory, 6-9 December 1989. pp. 408-418.

Are Declines in North American Insectivorous Songbirds Due to Causes on the Breeding Range?

An enormous amount of bird census data has been collected since 1966 by the North American Breeding Bird Survey (BBS). The BBS is a roadside count of birds conducted during the breeding season by volunteers. Volunteers are assigned a 24.5 mile route on which they stop every half mile to record birds seen and heard in a three minute period. The data collected are submitted to the U.S. Fish and Wildlife Service, where they are entered into a computer database.

The researchers in this study analyzed the data collected from the BBS over the years to determine bird population trends. They found that some Neotropical migrato-

ry bird populations had decreased, and these declines may be attributed primarily to predation on the breeding grounds. The researchers are careful to note that just because they found a connection between bird population declines and predation, this does not prove that predation causes the declines. Yet the findings do strongly support this hypothesis and the researchers recommend that more attention is devoted to the breeding habitats in order to avoid further decreases.

Bohning-Gaese, Katrin, Mark L. Taper and James H. Brown. 1993. Are Declines in North American Insectivorous Songbirds Due to Causes on the Breeding Range? *Conservation Biology* 7(1):76-86.

Estimating the Viability of Ovenbird and Kentucky Warbler Populations in Forest Fragments

Gibbs and Faaborg make the point that researchers must be careful when drawing conclusions about bird population success based solely on singing bird counts. In this research, they studied two bird populations, ovenbirds and Kentucky warblers, in both forest fragments (under 150 ha) and large forest tracts (over 500 ha) in 1988. During the breeding season, they surveyed these forest areas by listening for singing birds for three hours each morning at daybreak. After locating each singing male, they followed it continuously for 90 minutes and carefully observed for evidence of successful pairing with a female. Seeing the male interact with a female, carrying nesting material or feeding young were considered evidence of successful pairing.

Approximately three-fourths of male ovenbirds were unpaired on forest fragments, while only one-fourth of male ovenbirds were unpaired in larger forest tracts. For Kentucky warblers, no difference in proportions of paired males was found between the large and small tracts. The forest fragments examined in this study appeared to support less successful populations of ovenbirds during 1988 than the large forest tracts. One important finding of this study is that bird censuses that use only singing males to count the number of birds present may not adequately represent the nesting success for all bird species equally. In this study, counting singing ovenbird males was not an accurate way to determine whether or not the birds were successfully breeding. To determine whether the small forest fragments were actually supporting breeding bird populations, the researchers needed to study whether or not the males were paired.

Gibbs, James P. and John Faaborg. 1990. Estimating the Viability of Ovenbird and Kentucky Warbler Populations in Forest Fragments.

Appendix E

Forest Resources of Illinois

FROM: *The Changing Illinois Environment: Critical Trends Technical Report of the Critical Trends Assessment Project. Volume 3: Ecological Resources*, Illinois Department of Natural Resources and the Nature of Illinois Foundation; and *Forest Resources of Illinois 2002*, Illinois Forestry Development Council and the Department of Natural Resources and Environmental Science, University of Illinois, Urbana-Champaign.

Forest Fast Facts

SUMMARY

- total forest area is now increasing in Illinois
- timber volume increased 40 percent between 1962 and 1985
- oak-hickory forests are declining and not being regenerated – maples are replacing them
- most Illinois forests are associated with streams
- more than 75 percent of the wildlife habitat in Illinois is found in the forests

FOREST AREA

- in 1820, 13.8 million acres of forest
- 4.3 million acres of the 1820 area was left in 1998 and all except 11,600 acres are considered secondary
- Illinois ranks 49th in the percentage of its land remaining in its original vegetation type
- lowest estimate of forest area in the state was 3.02 million acres by Telford in 1924
- other estimates include the following: 4.0 million acres in 1948; 4.04 million acres in 1962; 4.26 million acres in 1985
- forest area increased 10 percent from 1962-85 because of reduced cattle production and conversion of hayland and pastures to secondary forests
- from 1962-85 only the south-central region lost forest area; specific counties in this region which lost forest area are Bond, Clark, Clinton, Fayette, Franklin, Gallatin, Hamilton, Jasper, Lawrence, Marion, Montgomery, Perry, Richland, Shelby, St. Clair, Lawrence and Wayne
- counties in other regions losing more than 5,000 acres from 1962-85 were Alexander, Massac, Greene and Lake

OWNERSHIP PATTERNS OF ILLINOIS FORESTS

- 90 percent of the commercial forests is in private ownership while the remaining 10 percent is publicly owned
- Illinois has approximately 169,073 private forest landowners, each owning an average of 21.5 acres

FOREST PLANT DIVERSITY

- more than 250 tree species recorded (native and introduced)
- the most common tree type in commercial forests was the slippery elm; white oaks, red oaks, hickories, hard maples and soft maples were also very abundant; maples are showing the greatest gains
- total volume of growing stock in 1985 was 4.8 billion cubic feet, 40 percent greater than the 3.4 billion cubic feet reported for 1962; 5.94 billion cubic feet were reported in 1998
- sawtimber species accounting for the greatest percentages harvested were oaks, soft maple, cottonwood and aspen, ashes, hickory and hard maple
- Illinois ranks fifth in the nation in demand for wood but 32nd in the production of wood
- nearly 2 million cords of wood a year of firewood are harvested in Illinois, accounting for almost 43 percent of the trees harvested (75 percent of the firewood is taken from dead trees)
- biomass and annual harvest have increased during the past 23 years while annual growth has decreased – mortality has increased mainly due to insects and pathogens

TRENDS IN FOREST BIRDS

- Neotropical migrants formerly accounted for more than 70 percent of the breeding birds in Illinois; now

they account for less than 50 percent; based on two studies in east-central Illinois (by Kendeigh and updated in 1992 by Brawn), small woodlots may harbor only 25 percent Neotropical migrants

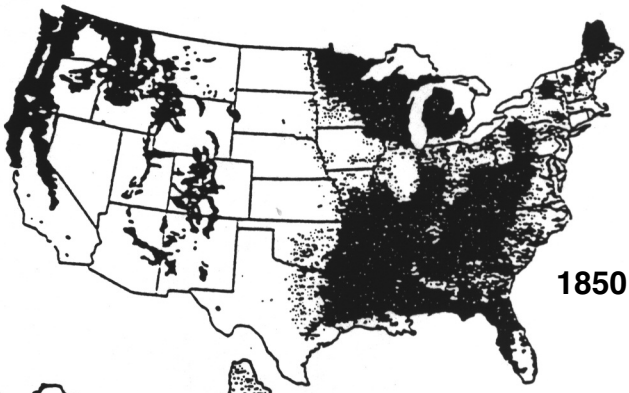
- few, if any, species were lost in the 20th century, but if trends continue one-third to one-half the typical forest species may be lost to extinction

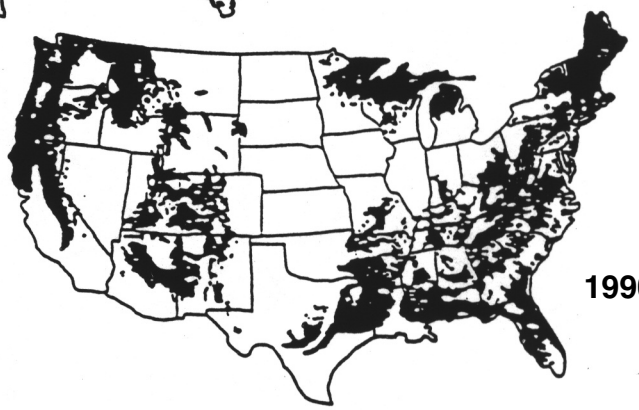
FOREST STRESSORS

- pollution—ozone, nitrogen dioxide, sulfur dioxide in particular
- deforestation— long-term effect of past clear-cutting
- fragmentation—10,121 forested parcels of 40 or more acres in Illinois in 1980---about 44 percent of the parcels were of 100 acres or less

Appendix F

United States Forest Cover from 1620 to 1990





Because each dot represents 25,000 acres, smaller areas of forest cover are not represented.

Appendix G

Activities by Concept

Scientific Inquiry Concept

1) Scientific inquiry, including posing problems, solving problems and persuasion, can be used for the study, management and conservation of bird populations and forest ecosystems.

   ACTIVITIES: Buddy Banding, Designing Researchers

Forest Ecology Concepts

1) Forests are complex ecosystems.

   ACTIVITIES: Defining a Forest, Intelligent Tinkering

2) People and some birds depend on forests for their needs.

   ACTIVITIES: The Balancing Act, Territory Tango, Town Meeting

Bird Ecology Concepts

1) Birds are intrinsically valuable.

   ACTIVITIES: Interview a Bird, If There Were No Birds, Avian Olympics

2) Birds are part of forest ecosystems.

   ACTIVITIES: Interview a Bird, The Balancing Act, Intelligent Tinkering

3) Bird populations are affected by human impact on their habitat.

   ACTIVITIES: Interview a Bird, Territory Tango, Cowbird Capers, Migration Migraines

4) Some birds migrate to meet their habitat needs.

   ACTIVITIES: Interview a Bird, A Round Trip Ticket, The Balancing Act, Avian Olympics, Migration Migraines, Migrateering

Interconnectedness Concepts

1) People in Central America and North America have similar needs.

   ACTIVITIES: Cultural Exchange

2) Migratory birds depend on habitat in Central America, the Midwest and along flyways.

   ACTIVITIES: Interview a Bird, A Round Trip Ticket, Avian Olympics, Migration Migraines

3) Human actions that impact the forest environment have a global effect.

   ACTIVITIES: Tell the World, Migration Migraines

Management Option Concepts

1) People alter and manage forests to accommodate their wants and needs.

   ACTIVITIES: Town Meeting

2) Each forest management option may limit other forest uses.

   ACTIVITIES: Territory Tango, Town Meeting

3) Human use and management of forests affect bird populations.

   ACTIVITIES: Interview a Bird, Cowbird Capers, Territory Tango, Habitat Squeeze

Conservation Concept

1) People can act to help conserve Neotropical migratory forest birds and their homes.

   ACTIVITIES: Cultural Exchange, Tell the World, Town Meeting

Appendix H

Activities by Subject

English Language Arts

Balancing Act, The
Cultural Exchange
Defining a Forest
Designing Researchers
Habitat Squeeze
If There Were No Birds...
Interview a Bird
Tell the World
Town Meeting

Mathematics

Avian Olympics
Buddy Banding
Migration Migraines
Round Trip Ticket, A

Science

Avian Olympics
Balancing Act, The
Cowbird Capers
Intelligent Tinkering
Interview a Bird
Migration Migraines
Territory Tango
Town Meeting

Physical Development and Health

Migrateering

Foreign Languages

Round Trip Ticket, A

Appendix I

Action Projects

Following are some practical ideas to get your students involved in action projects to help conserve Neotropical migratory bird populations.

1. Participate in International Migratory Bird Day (the second Saturday in May) to educate others on the issue.
2. Write to state and national elected representatives to voice your concern over the plight of migratory birds.
3. Contact local environmental organizations or chapters of national organizations, such as the Audubon Society or Society for Ornithology to find out what they are doing about this issue. Or contact Partners in Flight, a federal interagency program working towards Neotropical migratory bird conservation (http://www.partnersinflight.org).
4. Contact local representatives and parks personnel to learn about local land-use issues. Find out how you can learn about important local hearings, to provide public input on land-use decisions. To get the names of your representatives, call the city or town clerk's office.
5. Conduct a school or district-wide “Avian Olympics Day” to educate others in your school about birds.
6. Take field trips to learn bird identification and to contribute observations about bird populations to bird censuses or the Christmas Bird Count. Contact your local Illinois Department of Natural Resources office for information on bird censuses.
7. Continue writing letters to your cultural exchange class and educate people in Latin America about this issue.
8. Plant native trees in appropriate places to encourage bird habitat.
9. Take steps to reduce, reuse and recycle paper in your class or school. Start a paper recycling system in your class or school.
10. Plant a butterfly garden to provide habitat that supports insects that birds feed on.
11. Volunteer at a bird-banding station.
12. Raise money to buy an acre of rain forest or to make a donation toward acquisition of local land.
13. Educate neighbors about the dangers feral cats pose for birds.
14. Leave snags and fallen trees in woodlots to provide habitat for cavity-nesting birds.

Appendix J

Resources

The following organizations and items can provide you with more information and educational materials regarding biodiversity, forests, birds and other topics related to One Bird—Two Habitats.

Chicago Wilderness

Education and Communication Team
Chicago
312-580-2137
http://www.chicagowilderness.org

Chicago Wilderness is a regional nature reserve of globally significant rare natural communities in an area encompassing southeastern Wisconsin, the six-county Chicago region and northwestern Indiana. Chicago Wilderness is also a partnership of public and private organizations whose goals are to protect, restore and manage these lands. The Education and Communication Team of Chicago Wilderness works to increase and diversify public participation in and the understanding of the region's biodiversity by developing collaborative education programs, events and professional development opportunities. They disseminate existing and newly developed educational materials/programs/information through training and appropriate channels. Educators may access many biodiversity teaching tools through Chicago Wilderness.

Illinois Department of Natural Resources

Division of Education
One Natural Resources Way
Springfield, IL 62702-1271
217-524-4126
http://www.dnr.illinois.gov/education
dnr.teachkids@illinois.gov

The Illinois Department of Natural Resources' Division of Education is responsible for the development, training and dissemination of educational programs and events, including Illinois ENTICE (Environment and Nature Training Institute for Conservation Education). The Division of Education develops and distributes a variety of environmental education materials. For monthly updates on new materials and scheduled workshops, visit http://www.dnr.illinois.gov/education.

U.S. Fish and Wildlife Service

Shorebird Sister Schools Program
National Conservation Training Center
698 Conservation Way
Shepherdstown, WV 25443
304-876-7479
http://www.fws.gov/sssp/

Arctic nesting shorebirds migrate each year, from their wintering grounds in Latin America, Hawaii, Japan and Australia to their nesting grounds in Alaska, Russia and the Canadian Arctic. Students are connected along the flyways by sharing their observations of shorebirds, habitat and their own cultures with other students. Students are linked to conservation by opportunities to ask biologists questions, follow research projects and collect data.

Appendix K

Bibliography

DECLINING NEOTROPICAL MIGRANT POPULATIONS – Popular Literature

Fitzpatrick, John W. 1991. Northern Birds at Home in the Tropics. *Natural History* 91:40-7.

Greenwood, J. D. 1990. What the Little Birds Tell Us. *Nature* 343:22-3.

Grimshaw, Roger P. 1982. The Importance of Tropical Wintering Areas to Prairie Bird Populations. *Blue Jay* 40(2):120-4.

Hutto, Richard L. 1988. Is Tropical Deforestation Responsible for the Reported Declines in Neotropical Migrant Populations? *American Birds* 42(3):375-9.

Mayfield, Harold. 1977. Brown-headed Cowbird: Agent of Extermination? *American Birds* 31(2):107-13.

Morton, E. S. and R. Greenberg. 1989. The Outlook for Migratory Songbirds: "Future Shock" For Birders. *American Birds* 43:178-83.

Myers, J.P., R. I. G. Morrison, Paolo Z. Antas, Brian A. Harrington, Thomas E. Lovejoy, Michael Sallaberry, Stanley E. Senner, and Arturo Tarak. 1987. Conservation Strategy for Migratory Species. *American Scientis*t 75(Jan-Feb):19-26.

Terborgh, John. 1989. *Where Have All the Birds Gone?* Princeton, New Jersey: Princeton University Press. 207 pp.

Wilcove, David S., and R. F. Whitcomb. 1983. Gone With the Trees. *Natural History* 92:82-91.

Wille, Chris. 1990. Mystery of the Missing Migrants. *Audubon* 92(3):80-5.

MIGRATION

Ackerman, Jennifer. 1992. Tracking a River of Birds. *Nature Conservancy* Mar-Apr:23-7.

Fisher, Allan C., Jr. 1979. Mysteries of Bird Migration. *National Geographic* 156(2):154-93.

Lincoln, Frederick C. 1935. (Revised 1979 by Steven R. Peterson). *Migration of Birds*. U.S. Department of the Interior, Fish & Wildlife Service. Circular 16. 119 pp.

BIRD-WATCHING

Craven, Scott R. 1991. Birding and Children. *The Passenger Pigeon* 53(3):255-9.

TROPICAL FORESTS

Cubberly, Pamela S. 1988. *Vanishing Rain Forests*. Washington, D.C.: World Wildlife Fund. 28 pp.

Head, Suzanne, and Robert Heinzman, eds. 1990. *Lessons of the Rainforest*. San Francisco: Sierra Club Books. 275 pp.

Global Tomorrow Coalition. 1990. Tropical Forests. pp. 116-33 in *The Global Ecology Handbook*. Boston, Massachusetts: Beacon Press.

COOPERATIVE LEARNING

Johnson, D. W., et al. 1991. *Cooperation in the Classroom*. Interaction Book Company. Edina, Minnesota.

Johnson, D. W., et al. 1990. *Circles of Learning*. Interaction Book Company. Edina, Minnesota.

DECLINING STATUS OF NEOTROPICAL MIGRANTS – Scientific Literature

Alerstam, Thomas. 1990. *Bird Migration.* New York: Cambridge University Press. 420 pp.

Ambuel, Bruce and Stanley A. Temple. 1982. Songbird Populations in Southern Wisconsin Forests: 1954 and 1979. *Journal of Field Ornithology* 53(2):149-58.

Ambuel, Bruce and Stanley A. Temple. 1983. Area-Dependent Changes in the Bird Communities and Vegetation of Southern Wisconsin rests. *Ecology* 64(5):1057-68.

Andrén, Henrik and Per Angelstam. 1988. Elevated Predation Rates as an Edge Effect in Habitat Islands: Experimental Evidence. *Ecology* 69(2):544-7.

Askins, Robert A., James F. Lynch, and Russell Greenberg. 1990. Population Declines in Migratory Birds in Eastern North America. *Current Ornithology* 7:1-57.

Askins, Robert A., M. J. Philbrick, and D. S. Sugeno. 1987. Relationship Between the Regional Abundance of Forest and the Composition of Forest Bird Communities. *Biological Conservation* 39:129-152.

Brittingham, Margaret Clark, and Stanley A. Temple. 1983. Have Cowbirds Caused Forest Songbirds to Decline? *BioScience* 33(1)31-5.

Cox, George W. 1985. The Evolution of Avian Migration Systems Between Temperate and Tropical Regions of the New World. *American Naturalist* 126(4):451-74.

Finch, Deborah M. 1991. Population Ecology, Habitat Requirements, and Conservation of Neotropical Migratory Birds. USDA, U.S. Forest Service. General Technical Report RM-205.

Graber, R. R., and J. W. Graber. 1963. A Comparative Study of Bird Populations in Illinois: 1906-1909 and 1956-1958. *Bulletin of the Illinois Natural History Survey* 28:383-528.

Hagan, John M., and David W. Johnston (eds). 1992. *Ecology and Conservation of Neotropical Migrant Landbirds*. Washington, D.C.: Smithsonian Institution Press.

Howe, Robert W. and G. Jones. 1977. Avian Utilization of Small Woodlots in Dane County, Wisconsin. *Passenger Pigeon* 39:313-9.

Hutto, Richard L. 1989. The Effect of Habitat Alteration on Migratory Land Birds in a West Mexican Tropical Deciduous Forest: A Conservation Perspective. *Conservation Biology* 3(2):138-48.

Loiselle, Bette A. 1987. Migrant Abundance in a Costa Rican Lowland Forest Canopy. Journal of Tropical *Ecology* (3):163-8.

Lovejoy, Thomas E. 1983. Tropical Deforestation and North American Migrant Birds. *Bird Conservation* 1:126-8.

Southern, W. E., and L. K. Southern. 1980. A Summary of the Incidence of Cowbird Parasitism in Northern Michigan from 1911-1978. *Jack Pine Warbler* 58:77-84.

Stewart, P. A. 1987. Decline in Numbers of Wood Warblers in Spring and Autumn Migrations Through Ohio. *North American Bird Bander* 12:58-60.

Thompson, Frank R., William D. Dijak, Thomas G. Kulowiec, and David A. Hamilton. 1992. Breeding Bird Populations in Missouri Ozark Forests With and Without Clearcutting. *Journal of Wildlife Management* 56(1):23-30.

White, Robin P. 1990. Where Do Wisconsin's Neotropical Migrants Spend the Winter? *Passenger Pigeon* 52(2):127-37.

Wilcove, David S. 1985. Nest Predation in Forest Tracts and the Decline of Migratory Songbirds. *Ecology* 66(4):1211-4.

Appendix L

Glossary

ABIOTIC The nonliving components of the environment, such as oxygen and soil.

ADAPTATION The evolutionary process by which a species adjusts to its environment, for example: 1) flight adaptations include hollow or partially hollow bones, feathers, body shape and wings; 2) migration to North America to find better nesting territory and return to warmer climates when northern winters make food scarce; and 3) songbirds developing behaviors (building a new nest bottom over a brown-headed cowbird egg or throwing cowbird eggs from their nests) in response to pressures from other bird species to increase the reproductive success of the songbirds.

AVIAN A term that refers to or relates to birds.

BIOLOGICAL DIVERSITY (BIODIVERSITY) The variety of life; the spectrum of life forms and the ecological processes that support and sustain them. This unit describes three levels of biodiversity: species diversity; genetic diversity; and ecosystem diversity.

BIRD BANDING A research technique in which a small, aluminum band is attached to a bird's leg. If the bird is captured again or found dead, and the band number is reported to the responsible federal agency, the bander and other researchers can learn about avian traits such as movements and longevity.

BREEDING HABITAT The local environment where an animal carries out reproductive activities. For example, the ovenbird's breeding habitat is the forest floor.

BROMELIAD A tropical plant in the pineapple family that often grows on the trunks and branches of trees in the rain forest. Bromeliads have adapted to life off the ground by collecting raindrops in funnels at the base of their spiny leaves.

BROOD PARASITISM Behavior characterized by birds laying their eggs in the nests of other birds (the host species). The parasite's young are raised by the host species.

CANOPY The upper layer of the forest formed by the leaves and branches of trees.

CARRYING CAPACITY The population that a given area, such as a forest, will support without undergoing deterioration.

COMMUNITY An assemblage of species living together in a particular area, at a particular time, in a prescribed habitat.

COMPOSITION The makeup of an ecological unit in terms of the organisms or groups of organisms present in an area.

CONSENSUS A decision reached by mutual acceptance of persons involved.

CONSERVATION The use of resources in a way which assures their continuing availability for future generations; the wise use of natural resources.

COWBIRD A parasitic bird that lays its eggs in other songbirds' nests.

DATA Units of information that are collected for a specific purpose.

DRY SEASON A season in the tropics characterized by low rainfall and the loss of leaves on deciduous trees.

ECOSYSTEM An interacting system of the biotic community and its abiotic environment. Ecosystems are characterized by nutrient cycling and energy flow between trophic levels (producers, consumers and decomposers).

EDGE EFFECT The ecological impacts resulting from the meeting of two distinctly different habitats.

EMERGENT LAYER A layer of the forest consisting of trees that protrude above the canopy layer.

ENVIRONMENT Conditions in an area influenced by the climate, soil, topography and biotic components.

FAT LOADING Process by which a bird builds up fat reserves prior to migration.

FLYWAY Flight routes established by migratory birds between their wintering grounds and their breeding grounds.

FOREST INTERIOR SPECIES Those species whose optimum habitat is deep in the forest, where conditions are not influenced by edge effects.

FOREST TYPE Tree species which commonly grow together because of their similar environmental requirements and tolerances.

FRAGMENTATION The division of large, continuous tracts of habitat into smaller areas.

GENE POOL The various genes present in a population.

GENETIC DIVERSITY The variety of genetic material carried by different populations.

HABITAT The place where an organism lives and its surrounding environment, including the biotic and abiotic components. A habitat provides the organism with food, water, shelter and space in a suitable arrangement.

INDIGO BUNTING A Neotropical migratory bird that uses forest edge habitat for its breeding ground.

INTERCONNECTED The state of being connected one to the other.

MAGNETIC FIELD A region subject to the influence of magnetism.

MIGRATION Movement of a species from one place to another, often following a change of seasons.

MIGRATORY RESTLESSNESS A change in behavior, described as "frantic," that demonstrates the desire to migrate. The behavior has been observed in experimental settings by confined birds during the time the birds should be migrating.

NEOTROPICS The area of the Americas situated between the Tropics of Cancer and Capricorn.

NEOTROPICAL MIGRATORY BIRD A bird which moves seasonally between temperate regions of the Americas, where it spends its breeding time, and tropical areas, where it spends the months when winter occurs in the north.

NUTRIENT CYCLING The flow of nutrients through the ecosystem.

ORIENTEERING The process of finding direction by using a compass.

OVENBIRD A Neotropical migratory forest bird that breeds in northern North America and spends winters in the tropics. Its name probably comes from the oven-shaped nest it builds on the forest floor.

POPULATION The number of members of a particular species in a given area.

PRESERVATION The maintenance of a natural ecosystem or environment undisturbed by the influence or activities of humans.

RENEWABLE RESOURCE These living resources can renew themselves naturally or through sound management practices, so as to not deplete their supply in the long run.

SITE The place where something is located.

STRUCTURE The pattern or physical arrangement of an area, such as a forest.

SUSTAINABILITY The process of managing ecosystems to meet the needs of present human populations without interruption, weakening or loss of the resource base for future generations.

SUSTAINABLE USE Use of natural resources in a manner that does not eliminate or degrade them or otherwise diminish their usefulness for future generations.

TEMPERATE The region of the earth that lies between the tropical and polar regions.

TERRITORY The concept of "ownership" of, or dominance over a unit of habitat; an area used by an animal for breeding and/or feeding, and which it defends against others.

TROPICAL The area of the world that lies between the Tropics of Cancer and Capricorn.

UNDERSTORY The plant layer growing under the canopy of a forest that includes small trees, shrubs and herbs.

WET SEASON A season in the tropics characterized by abundant rainfall.

WINTER HABITAT The local environment where an animal spends the winter. For example, the ovenbird's winter habitat includes the forests of the Neotropics.