

Ornithology

Chris Pipes

Master of Science, Biology, UTPB, 2001

Master of Science, Wildlife Management, SRSU, 2010

Graduate of Tierra Grande Chapter, TMN, 2008

Manager, The Nature Conservancy's Davis Mountains Preserve, 2.5 years

Lecturer in Wildlife Management courses, SRSU, 5 years



Two male Northern Harriers squabble over a road-killed rabbit.

Photo by C. Pipes via game camera.

Ornithology

1. Goals from Unit 12 of the book:

- Diversity
- Migration
- Primary migratory flyways
- Coping with environmental changes
- Functions within ecosystems
- Conservation concerns
- Monitoring/managing

(Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

2. Field guides/identification

3. Brief tutorial on using binoculars

4. Look at birds

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: diversity

- Nearly 10,000 sp. worldwide
- ~ 639 documented for Texas
- Of neotropical migrants in NA, 333 of 338 documented for Texas
- Why so diverse?
 - Endothermy
 - Variability of bill sizes/shapes, legs, feet, wings, diets, behaviors, etc.

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: migration

- More than any other animal class, birds deal w/seasonal changes by migration.
(Remember that a lot of other kinds of animals do migrate.)
- Flight allows for very long distances.
 - Arctic Tern – Arctic to Antarctic and back every year.



World's Longest Migration Found--2X Longer Than Thought

World's Longest Migration Found--2 Times Longer Than Thought

BY MASON INMAN, FOR NATIONAL GEOGRAPHIC NEWS



PUBLISHED JANUARY 12, 2010

The tiny arctic tern makes the longest migration of any animal in the world, flying about two times farther than previously thought, a new study says.

Miniature new transmitters recently revealed that the 4-ounce (113-gram) bird follows zigzagging routes between Greenland and Antarctica each year. In the process, the arctic tern racks up about 44,000 frequent flier miles (71,000 kilometers)—edging out its archrival, the sooty shearwater, by roughly 4,000 miles (6,440 kilometers).

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: migration

- Texas (below lists are NOT complete)
 - Wintering habitat for migrants from north – e.g., loons, grebes, geese, ducks, shorebirds, gulls, sparrows.
 - Summer nesting/breeding habitat – e.g., flycatchers, swallows, warblers, orioles.
 - Some species do live in an area year-round – e.g., roadrunners, mockingbirds, doves, quail.
 - Some species are seen only in migration – e.g, many warblers, hummingbirds.

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: migratory flyways

- 4 major ones in NA, from east to west:
 - Atlantic
 - Mississippi
 - Central
 - Pacific

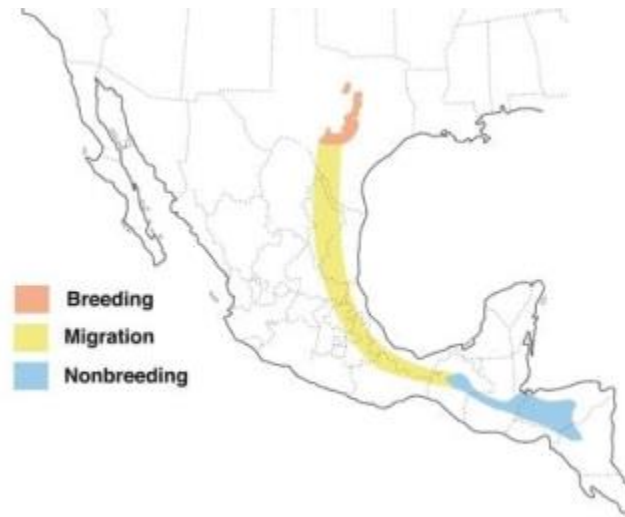


<https://www.fws.gov/refuge/arctic/birdmig.html>

- Texas is situated in the path of the Mississippi & Central, and occasionally birds from the Atlantic & Pacific may come through Texas, because of strange weather patterns, food distribution, etc.
- Of neotropical migrants in NA, 333 of 338 documented for Texas

Ornithology

- Texas
 - One bird is the only bird that nests/breeds only in Texas (and therefore really ought to be the state bird – my humble opinion).



male



female



Ornithology

- Texas
 - One bird is the only bird that nests/breeds only in Texas (and therefore really ought to be the state bird – my humble opinion).

Golden-cheeked Warbler



male



female



Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: coping with environmental changes

From the book -

- Bird populations are limited by four factors:
 - habitat (cover, space)
 - climate
 - food/water
 - disease/parasites

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: coping with environmental changes

- Habitat (food, water, cover, space)
 - Competition
 - Intraspecific (compete w/individuals of same species)
 - Interspecific (compete w/individuals of different species)
 - Dealing with competition
 - Resource partitioning (feed at different levels in same tree)
 - Territorial defense (often through song)
 - Dealing with predation
 - Mobbing (especially of raptors)
 - Alarm calls
 - Injury display (killdeer)
 - Flocking/colonial nesting
 - Cavity nesting



A habitat management side point about cavity nesting.....



<https://www.allaboutbirds.org/guide/Killdeer/id>

DEAD TREES/LIMBS/AGAVE STALKS, ETC. ARE IMPORTANT HABITAT AND SOME SHOULD BE LEFT ALONE !!

NA birds that excavate cavities:
woodpeckers
nuthatches



All in dead limbs, trees, agave stalks, etc.
except red-cockaded woodpecker (live
pine trees)



85 sp. of NA birds nest in cavities including:
woodpeckers, nuthatches, wood ducks,
mergansers, kestrels, owls, flycatchers, wrens,
bluebirds, etc.



Other animals that rely on cavities made by
woodpeckers include flying squirrels, raccoons,
opossums, some species of snakes, amphibians,
insects, etc.

Info from: <https://www.texas-wildlife.org/resources/webcasts/managing-for-songbirds-whats-it-good-for>. Photos from various websites.

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: coping with environmental changes

- Climate
 - Endothermy
 - Migration
 - Too, hot? Panting & heat loss via apteria (unfeathered surfaces)
 - Too cold? Thermal cover (vegetation, nest sites, burrows, etc.) & feather fluffing

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: coping with environmental changes

- Climate

- Endothermy
- Migration
- Too, hot? Panting & heat loss via apteria (unfeathered surfaces)
- Too cold? Thermal cover (vegetation, nest sites, burrows, etc.) & feather fluffing



A habitat management side point about thermal cover.....

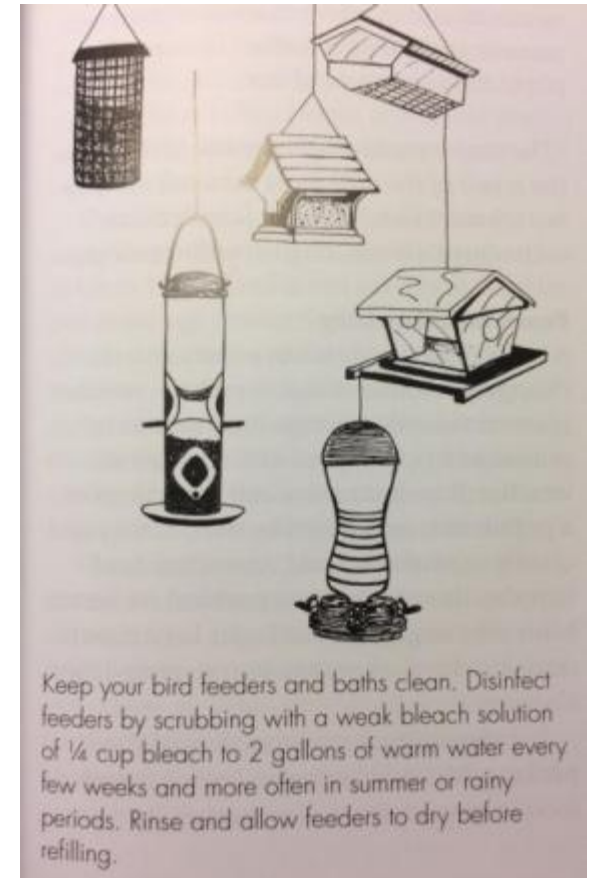
Plant (or keep) some evergreen trees/shrubs for use by birds as thermal cover during cold weather. Includes pine & juniper trees, and many kinds of shrubs such as coral honeysuckle, evergreen sumac, etc.

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: coping with environmental changes

- Disease/parasites (What can you do?)
 - Change water in bird baths regularly, daily if possible. (Mosquito control....)
 - Keep seed feeders & hummingbird feeders clean.
 - If seed gets wet, replace as soon as possible.
 - Use dry, stored seed.



Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

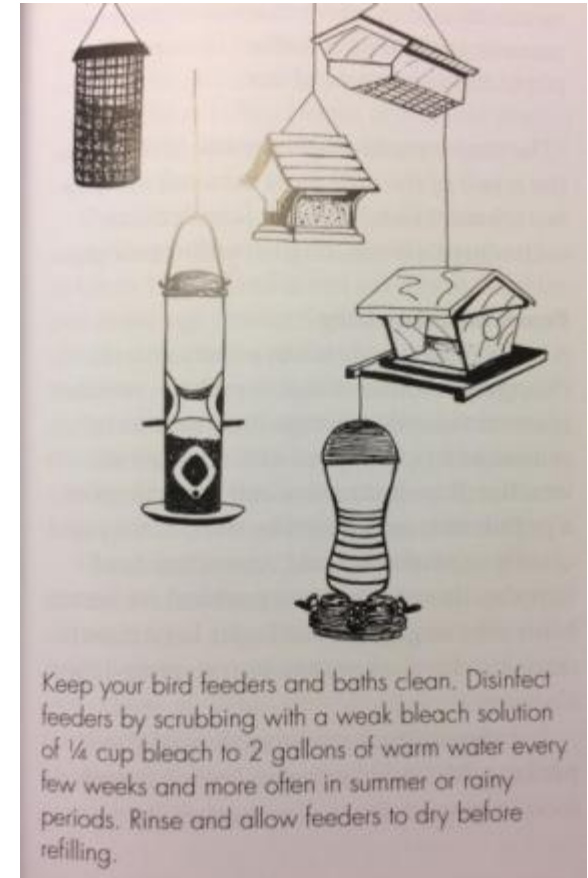
Unit Goal: coping with environmental changes

- Disease/parasites (What can you do?)
 - Change water in bird baths regularly, daily if possible.
 - Keep seed feeders & hummingbird feeders clean.
 - If seed gets wet, replace as soon as possible.
 - Use dry, stored seed.



A habitat management side point about bird feeders.....

To avoid window strikes, a major cause of bird mortality, hang feeders within 3' of, or farther than 30' from, any windows. (Do NOT hang 3 to 30' from windows.)



Keep your bird feeders and baths clean. Disinfect feeders by scrubbing with a weak bleach solution of ¼ cup bleach to 2 gallons of warm water every few weeks and more often in summer or rainy periods. Rinse and allow feeders to dry before refilling.

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: functions within ecosystems

- Predators

- On other birds/animals, removing sick, old, injured keeping populations in check
- On insects “ “ “ “
- Scavengers



Photo by C. Pipes via game camera.



http://www-tc.pbs.org/wnet/nature/files/2009/12/thumb_hummers_hunt.jpg

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: functions within ecosystems

- Predators

- On other birds/animals, removing sick, old, injured keeping populations in check
- On insects “ “ “ “
- Scavengers



Photo by C. Pipes via game camera.



http://www-tc.pbs.org/wnet/nature/files/2009/12/thumb_hummers_hunt.jpg



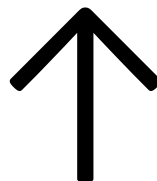
A habitat management side point about providing for birds.....



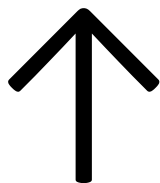
Hummingbird food:
60% insects
40% nectar

Growing young:
100% insects

BIRDS



INSECT BIOMASS



*** NATIVE PLANTS**

WATER

SO, the 2 most important things you can put in your yard to support birds (and for that matter other small animals, butterflies, etc.) are **NATIVE PLANTS & WATER**.

*

See website: [Native Plant Society of Texas](#)

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: functions within ecosystems

- Predators
- Prey – usually in early stages as eggs, nestlings, etc. but sometimes as adults
- Seed dispersal – in feces or unused buried/cached
- Pollinators – especially hummingbirds & orioles, both of which rely on nectar

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: conservation concerns

- Habitat loss/alteration
 - Urbanization/fragmentation – some birds require large tracts and/or connected tracts
 - Brush encroachment – juniper (cedar) here & hill country; mesquite on the high plains; McCartney rose in South Texas. Loss of grassland bird habitat (quail).
 - Specialists – e.g., Golden-cheeked warbler nests only in the hill country in areas with Ashe juniper and several specific species of oak and builds nests only with strips of Ashe juniper bark



Golden-cheeked Warbler Nest Monitoring



Photo by Amanda Aurora

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: monitoring/managing

- Scientific techniques include point counts, transects, etc. (see book for details).
- Citizen science (where you come in)
 - Audubon Society Christmas Bird Count
(<https://www.audubon.org/conservation/science/christmas-bird-count>)
 - USGS Breeding Bird Survey
(<https://www.pwrc.usgs.gov/bbs/>)
 - Cornell University Great Backyard Bird Count
(<http://gbbc.birdcount.org/>)
 - eBird, especially for reporting rare occurrences & a great way to keep your records
(<https://ebird.org/home>)

Unit 12 Ornithology

(Unless otherwise noted, all info from: Randel & Silvy. 2015. Texas Master Naturalist. Haggery & Mueth, Eds. Texas A&M Univ. Press, College Station, Tx. pp. 387-405)

Unit Goal: monitoring/managing

The Big Bend Sentinel, August 30, 2018, page 11

Borderlands Research Institute receives bird research grant

FAR WEST TEXAS - The Texas Ornithological Society has awarded a \$6,000 grant to the Borderlands Research Institute (BRI) to purchase radio transmitters for a grassland bird research project already underway in the Marfa grasslands. The project is a collaborative effort between BRI, the Texas Parks and Wildlife Department, the Dixon Water Foundation, and the Bird Conservancy of the Rockies.

"We're pleased to support this project and the work the Borderlands Research Institute is doing to learn more about these grassland birds," said Texas Ornithological Society President Shelia Hargis. "This research aligns perfectly with our mission of promoting the discovery, knowledge, observation, and conservation of birds in Texas."

Since 1966, grassland bird populations that winter in the Chihuahuan Desert have declined by 70 to 80 percent. In 2016, BRI student researchers began trying to determine why by studying Baird's and grasshopper sparrows in the Marfa grasslands.

The \$6,000 grant will advance the study by funding a purchase of 33 radio transmitters weighing less than 0.03 ounces each. Transmitters will be attached to netted birds which will then be released and tracked. The research process will yield information on the bird's mortality, habitat use, and preferences.

"We appreciate the Texas Ornithological Society's support of this project," said Dr. Louis Harveson, the Dan Allen Hughes,



(Borderlands Research Institute photo)

Baird's sparrow populations have declined between 70 and 80 percent since 1966, and BRI student researchers are working to find out why.

Jr., BRI Endowed Director and professor of Wildlife Management at Sul Ross State University.

"They not only provide funds for needed research equipment, their members are also actively involved as volunteers in the field."

For more than a decade, BRI has encouraged effective land stewardship of the Chihuahuan Desert.

Housed at Sul Ross State University, BRI builds on a long-lasting partnership with private landowners, the University's Range and Wildlife Program, and cooperating state, federal, and non-governmental organizations. Through research, education, and outreach, BRI is helping to conserve the last frontier of Texas and the Southwest.

THE BRI UTILIZED MANY VOLUNTEERS FOR THIS PROJECT!!
LOOK FOR THESE OPPORTUNITIES!!

Ornithology

Summary: Bird Habitat Management Tips

- If safe, leave some dead snags, limbs, agave stalks etc. for cavity nesters.
- Keep/plant some evergreen trees/shrubs for thermal cover.
- Keep feeders clean and seed dry.
- Hang feeders closer than 3' to, or farther than 30' from windows to avoid strikes.
- Two most important things for birds (& all pollinators & other small animals):
water & **native** plants.

Ornithology

Field Guides – lots of options, books & apps.

- Books – sometimes easier to flip through, especially for beginning birders.
- Apps – can listen to songs/calls.

Identification

- Size, shape, color – best way to learn this is to get out and bird
- Behavior – e.g., some similar looking flycatchers, some wag the tail constantly & some do not. In field guides, usually pointed out in the literature.
- Location/season/habitat
- Song/call – some birds look extremely similar, behave the same way, and live in the same habitat at the same time; song/call is the best way to distinguish these

Ornithology

Identification

- Size, shape, color – best way to learn this is to get out and bird



Ornithology

Identification

- Size, shape, color – best way to learn this is to get out and bird

Northern Cardinal, male



Summer Tanager, male



Ornithology

Identification

- Behavior – e.g., some similar looking flycatchers, some wag the tail constantly & some do not. In field guides, usually pointed out in the literature.
- Location/season



Ornithology

Identification

- Behavior – e.g., some similar looking flycatchers, some wag the tail constantly & some do not. In field guides, usually pointed out in the literature.
- Location/season

Eastern Phoebe,
constant tail-wagging



Western wood-pewee,
no tail wagging





Identification

- Location/season

<https://www.allaboutbirds.org/>

Seen in the Trans-Pecos
in summer



National Geographic,
Field Guides to the Birds of North America



<https://www.allaboutbirds.org/>

Seen in the Trans-Pecos
in summer

National Geographic,
Field Guides to the Birds of North America

Identification

- Location/season





<https://www.allaboutbirds.org/>

Seen in the Trans-Pecos
in summer

National Geographic,
Field Guides to the Birds of North America

Identification

- Location/season

SHRIKES Family Laniidae

These masked hunters scan the countryside from lookout perches and then swoop down on insects, rodents, snakes, and small birds. Known as "butcher-birds," they mostly impale their prey on thorns. Recent research indicates that this is to mark territory and attract mates. SPECIES: 30 WORLD; 3 N.A.

Brown Shrike *Lanius cristatus* L 7½" (19 cm)

Adult male has distinct white border above black mask extending across forehead; warm brown upperparts, often brighter on rump and uppertail coverts; warm buff wash along sides and flanks. Lacks white wing patches. **Adult female** similar, but mask less solid, has some barring below on sides and flanks. **Juveniles** are barred on sides and flanks; show distinct dark subterminal edges above; dark brown mask has short whitish border above and behind eye. Much juvenal plumage is retained into fall, some even into winter. Common all ages and plumages to much larger, longer-billed Northern Shrike. All records likely nominate *cristatus*. Old World Red-backed Shrike (*L. collurio*) and Isabelline Shrike (*L. isabellinus*) considered close relatives of Brown Shrike.

RANGE: Asian species; casual in AK, where there are spring and fall records from western Aleutians, St. Lawrence Island, and Anchorage. Four fall and winter records from CA; late fall record from NY.

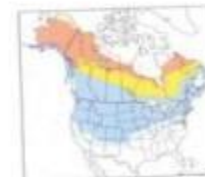


Loggerhead Shrike *Lanius ludovicianus* L 9" (23 cm)

Slightly smaller and darker than Northern Shrike. Head and back bluish gray; underparts white or very faintly barred. Broad black mask extends above eye and thinly across top of bill. All-dark bill, shorter than Northern Shrike, with smaller hook. Rump varies from gray to whitish. **Juvenile** is paler and barred overall, with brownish gray upperparts; acquires **adult** plumage by first fall. Seen in flight, wings and tail are darker and white wing patches smaller than Northern Mockingbird (page 404).

VOICE: Song is a medley of low warbles and harsh, squawky notes; calls include a harsh shack-shack.

RANGE: Hunts in open or brushy areas; dives from low perch, then rises swiftly to next lookout. Still fairly common over parts of range; rare to very rare and declining in the eastern Midwest; has disappeared from Northeast, where now a casual visitor. The endangered subspecies *merriami* (E) is endemic to San Clemente Island off southern CA. Rare visitor to Pacific Northwest.



Northern Shrike *Lanius excubitor* L 10" (25 cm)

Larger than Loggerhead Shrike, with paler head and back, legs barred underparts; rump whitish. Mask is narrower than Loggerhead; does not extend above eye; feathering above bill is white. Bill longer with a more distinct hook. Often bobs its tail. **Juvenile** is barred above and more heavily barred below than adult. **Immature** is gray; retains barring on underparts until first spring.

VOICE: Song and calls are similar to Loggerhead.

RANGE: Uncommon; often perches high in tall trees. Southern range limit and numbers on wintering grounds vary unpredictably from year to year.

Ornithology

Identification

- Habitat



Ornithology

Identification

- Habitat

Northern Cardinal, female,
wooded habitat



Pyrrhuloxia, male,
desert scrub



Ornithology

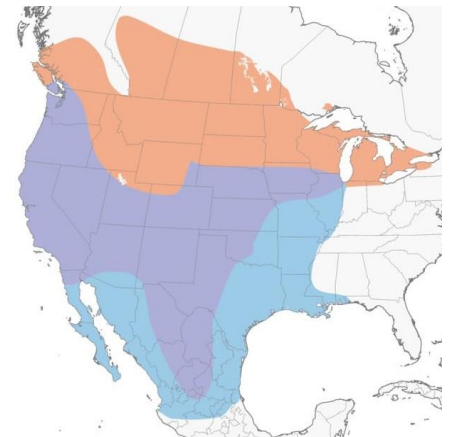
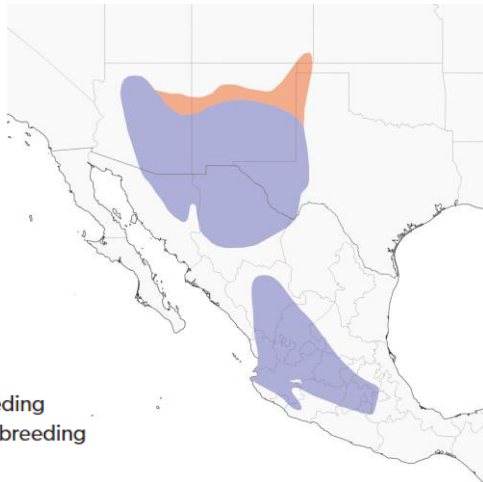
Identification

- Song/call

Eastern Meadowlark



Western Meadowlark



Ornithology



Ornithology

Eared Grebe



Males & females look the same as each other, but change plumage for breeding.

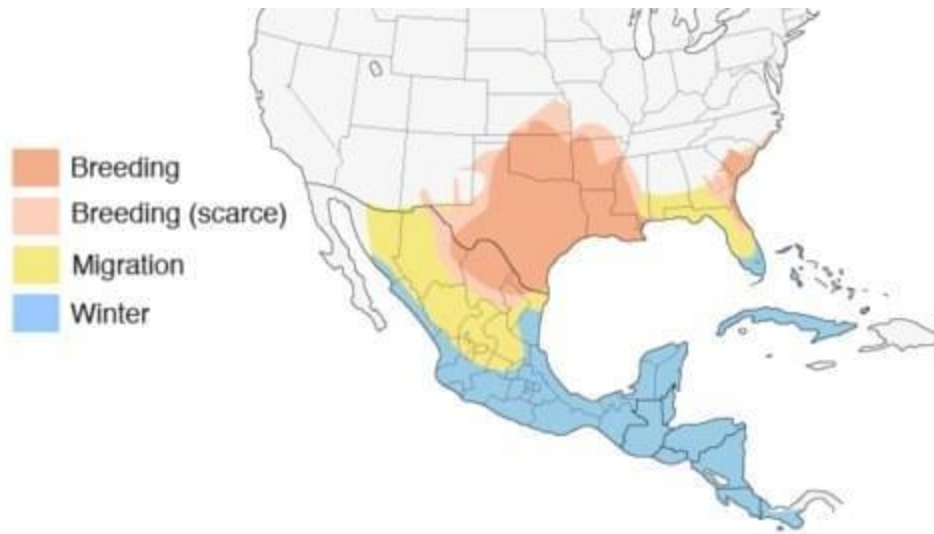
Breeding (summer)



Nonbreeding (winter)



Ornithology



Ornithology

Painted Bunting



Males & females look different from each other, but don't change plumage for breeding.

Male (year-round)



Female (year-round)/immature



Ornithology



Ornithology

Lark Bunting



Adult male, breeding (summer)



Adult female (year-round)



Males & females look different from each other and males change plumage for breeding.

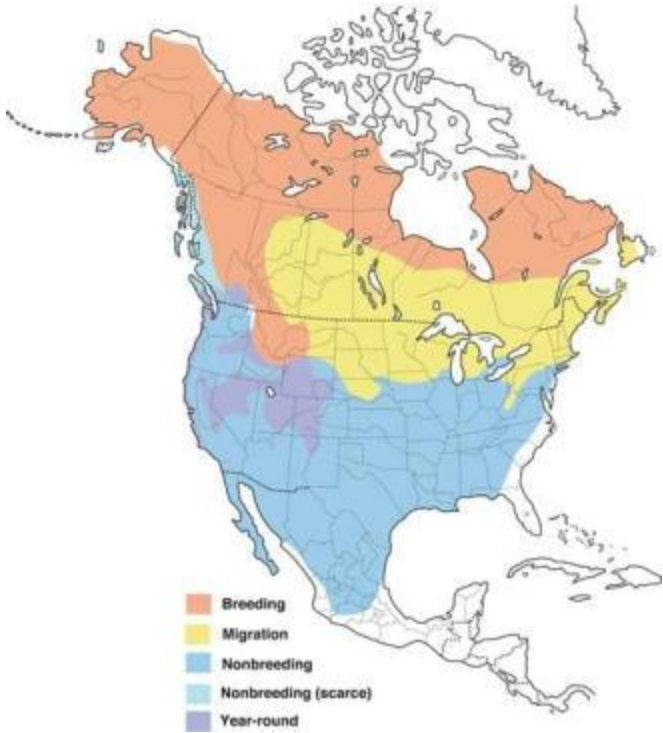
Adult male, nonbreeding (winter)



This image only: <http://animalia-life.club/birds/lark-bunting.html>

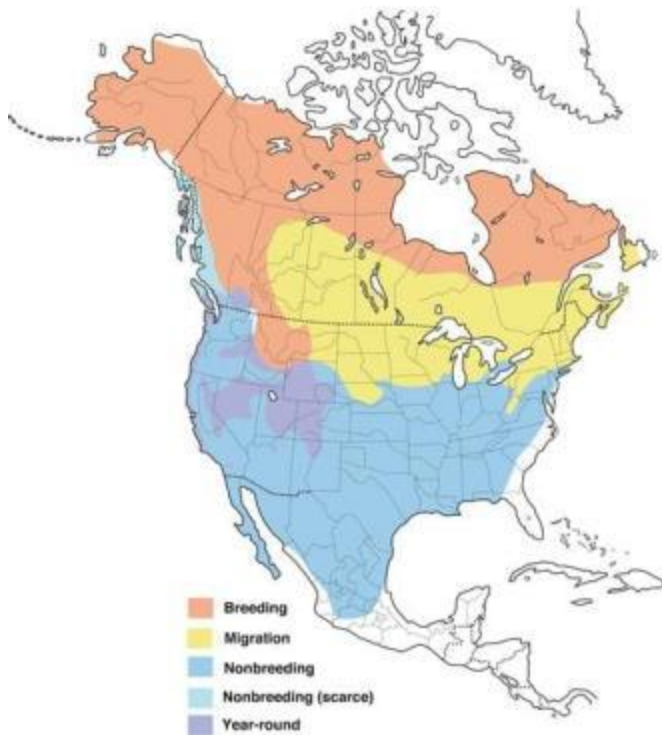
https://www.allaboutbirds.org/guide/Lark_Bunting/id

Ornithology



Ornithology

White-crowned Sparrow



Adult males/females (year-round)



Ornithology

From Chihuahuan Desert Institute newsletter, February 2019:

Portions of the following article and inspiration for the article came from "*How to Identify a Bird in 5 Steps*" by Jaymi Heimbuch, January 13, 2019, shared in *Mother Nature News*. Jaymi Heimbuch (@jaymiheimbuch) focuses on wildlife conservation and animal news from her home base in San Francisco.

How to Identify a Bird in Five Steps



If you've ever wished you were better at identifying a bird, or if you find yourself thinking that sometimes they all seem to look like little brown birds, the following tips for correct identification will be of immense help. Listed below are five steps to accurately identify birds. Be sure to follow the steps in the order they're listed below.

1. Size

The first and easiest place to start is size. Compare the bird's size to a species you're familiar with. Is the bird smaller than a sparrow, about the size of a pigeon, bigger than a goose?



If you're still unsure about the bird's size, look for an object near the bird you can use for comparison. For instance, if the bird is near something like a rock, a sign or a flower, you can measure that object and get a general idea of the size of the bird.

Black crested titmouse, Photo by Andy Morgan

2. Overall Shape

Look at the overall shape of the bird.

The overall shape of the bird will help to narrow down which section to look through in your field guide.

Next, look at the

details of the bird's shape. Is the tail long or short compared to the body? Are the legs long or short, slender or sturdy? Is the bill bulbous like a cardinal, thin like a hummingbird, hooked like a hawk or flat like a duck?



Photo by Carol Diquilio.

3. General behavior

Notice everything you can about what the bird is doing because these subtle details will help determine the general category of bird and help to distinguish between



species that look very similar, but act differently. Some of the questions about general behavior to ask include:

1. Is the bird in a flock or solitary?
2. Is it staying close to brushy cover or is it out in the open?
3. If it is in a tree, is it staying high in the canopy or lower in the branches?
4. If it is eating, can you tell if it is eating seeds, insects, nectar, plants or something else? Is it feeding on the ground or in water?

Female Phainopepla, Photo by Andy Morgan

4. Habitat and range

Next, you can rapidly rule out possible species by noting the habitat type and considering the range of the species.

What kind of place is this bird in? Is it a grassy plain, a marsh, a conifer forest or an oak woodland? A desert-adapted roadrunner is unlikely to be hanging out on a beach, just as a great blue heron is unlikely to be found on a mountain top.

Burrowing Owl, Photo by Andy Morgan



5. Color and field marks

Color comes last because many bird species have differently colored plumage based on sex, age, season and other factors. The very same male bird might look completely different in April when he has his colorful breeding plumage versus November when he's wearing his winter plumage.

Did you know bald eagles don't get their signature black body and white head until they're around seven years old? It can be easy to mistake a juvenile bald eagle in its mottled brown plumage for a somewhat similarly colored golden eagle — yet size, wing shape, and habitat helps distinguish them.



Some bird species can look incredibly similar to one another. There's a reason why birders use the term LBJ, which stands for little brown job, to describe so many little brown sparrow species! Only the most subtle differences in markings — such as a pale gray versus a white marking near the eye — might distinguish two species from one another. That's why noticing other identifying characteristics first is critical, and noting color details will assist in finalizing a positive ID on a bird.

With the five checklist items above, you'll know where to begin to look in a field guide and how to pick out your species among similar species.

However, if you need additional clues, you can include:

1. Listening to its song or other vocalizations;
2. Watching its flight pattern — how it flaps its wings and maneuvers in flight; and
3. Watching its flight silhouette — its overall shape in flight.

These extra clues can feel difficult to learn at first but become much easier with experience — and can be your best tool for distant birds.

Says Phoebe, Photo by Andy Morgan

