

Let's Talk About Birds!

with THE STORY GARDEN CLUB

Presented by JoAnne Puckett
Bighorn Audubon



*Serving the Bighorn Mountains Region
Since 1970*

Bighorn Audubon works for the protection of birds and habitats in our region.

Bighorn Audubon members are united by a passion for wildlife and the outdoors. Our members recognize the unparalleled outdoor heritage that runs deep throughout Wyoming and are proud to work together to ensure a healthy natural world for future generations.

Our local chapter includes northeastern Wyoming: Big Horn, Campbell, Crook, Johnson, Sheridan, Weston, and Washakie Counties.

www.bighornaudubon.com

- **What makes a bird a bird**
- **Feathers**
- **Intelligence**
- **Social**
- **Vocalizations**
- **Senses**
- **Migration**
- **Identification**
- **Feeders**
- **Nests and Nestboxes**
- **Native plants**
- **Why Care?**
- **Tools, Resources, and Citizen Science**



Western Tanager JP



What makes a bird a bird.

All birds descended from small, meat-eating two-legged dinosaurs called theropods.

“Birds are dinosaurs, the only lineage to survive to the present day. They arose in the Jurassic period, between 200 million and 150 million years ago.” *Scientific American*

“Birds didn't just come from dinosaurs, they *are* dinosaurs,” remarks Dr. Donald Henderson, paleontologist and curator of dinosaurs. “living birds are nothing less than small, feathered, short-tailed theropod dinosaurs.”

Birds are the only known living dinosaurs. All birds descended from dinosaurs, but not all dinosaurs became birds.

Birds, fish, reptiles, and all mammals are vertebrates.

Birds are the only vertebrate with feathers.

Other notable attributes: lightweight hollow bones (easier to fly with), complex respiratory systems, all lay hard-shelled eggs, and have high metabolisms, especially hummingbirds (smaller birds use more energy).

Diverse in size.

Smallest bird: Bee Hummingbird (only found in Cuba) weighs less than a dime, and about 2” long.

Largest flying bird: Albatross (12’ wingspan)

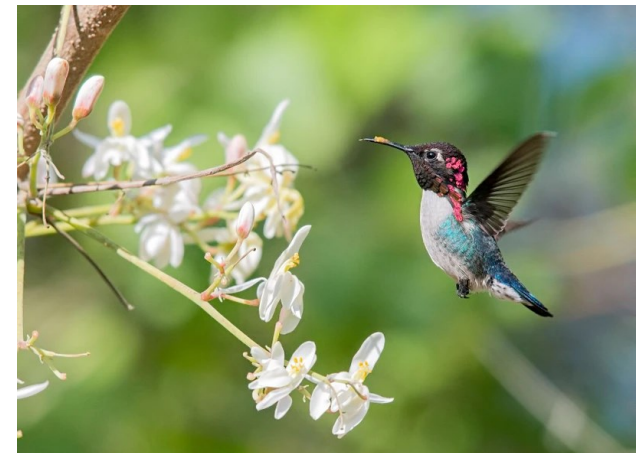
Largest bird non- flying: Ostrich (as tall as 9’)

Ancient Ostrich relatives found in Wyoming are believed to have roamed the American West ~50 million years ago.

<https://www.audubon.org/news/get-ancient-ostrich-relatives-used-strut-across-american-west>



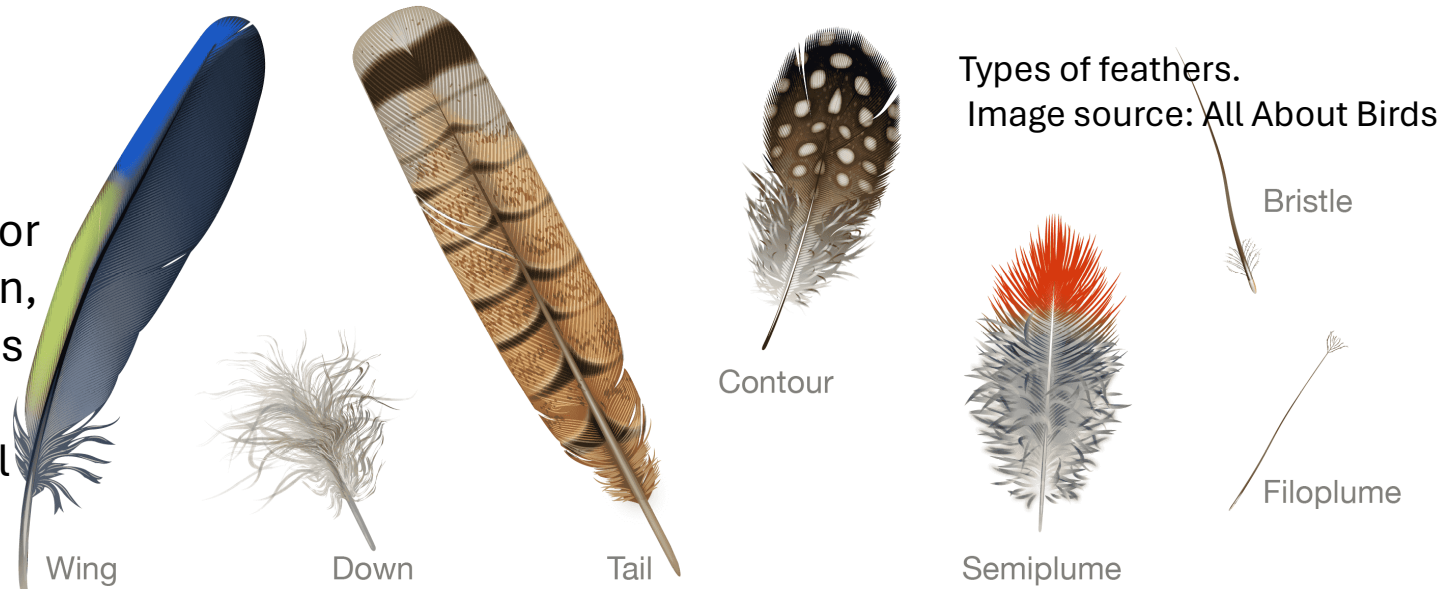
Images above Ostrich egg and below Bee Hummingbird from Audubon





Fossilized skull of lithornithid, a relative of tinamous and ostriches, from the Green River Formation of Wyoming. Photo: Sterling Nesbitt

The function of feathers is mainly for flying and insulation, and also for species recognition, male attraction for visual and auditory displays, and for protection.



As light as feathers are, they commonly account for 15% of bodyweight, about twice as much as the skeleton. Numbers of feathers on individual birds range from a minimum of 940 on a Ruby-throated Hummingbird to more than 25,000 on a Tundra Swan (70% on head and neck). Sparrows, like Song Sparrows, have 1,500 – 2,600 feathers and more in winter.

Source: *Sibley's Birding Basics*

For feather identification <https://www.fws.gov/lab/featheratlas/index.php>

More about feathers: <https://academy.allaboutbirds.org/feathers-article/>

From USFWS: Feathers are beautiful and remarkable objects. If you find feathers in nature, please appreciate, study, photograph them, and leave them where you found them. Under federal law, it is illegal to take them home.

See Migratory Bird Treaty Act



Common Redpolls maintain body temperature of ~105 F, while arctic air around them dips to -40F or below.

Birds body temperatures are on average between 104F – 110F

Intelligence

Once being called a “bird brain” was considered an insult to intelligence.

Birds are highly intelligent with a wide range of abilities - crafting and use of tools, deception, play, parenting, communication, courtship, music, navigation, artistic, problem solving, reasoning, and survival. Use of probability, consequences and planning with complex cognitive powers and their spatial memories are also astounding.

They have super charged efficient brains, packed with neurons, many with large brains relative to their size.

The family Corvids (includes jays, crows, ravens, magpies, and nutcrackers) are the most intelligent birds studied. They also live longer with more socialization, passing on learned survival techniques.



Art by John James Audubon



Caching Food – examples of amazing spatial memory (ability to process and record information)

Birds like Black-Capped Chickadees, Pinyon Jays, and Clark's Nutcrackers place 1,000s of hidden food stores, and can recover them even after months and landscape changes of shifting soil, rock and snow.

Clark's Nutcracker (member of the Corvid family) will smooth the ground to remove signs of disturbances.

In one season alone a single Nutcrackers can cache over 98,000 seeds in 2,000 locations and can potentially remember locations for up to 9 months.

Sources: *The Bird Way* by Jennifer Ackerman and The Science of Birds Podcast

Photo: Clark's Nutcracker JP



New Zealand Kea and traffic cones
page 192 *The Bird Way* by Jennifer Ackerman
Image New Zealand Geographic



Male Palm Cockatoo breaks off a branch
with his powerful beak before trimming it to
use as a drumstick. The drumming is used
as mating calls and each male bird drums
its personal rhythm Image BirdNote.org

Social



Birds have very complex social behaviors and hierarchies.

And, yes, birds do play.

Arthur Cleveland Bent, a notable ornithologist, watched ravens sliding down a bank, a dozen at a time, croaking loudly with apparent laughter. Others were in the trees “aiding the sport with their cries of approval or taking turns” .

The Bird Way by Jennifer Ackerman; Photo of Mallard JP

Story of Mallard sliding down Little Goose Creek. Again and again.

Observations of birds playing catch, tug of war, king of the castle, and other forms of play are endless. Sometimes we can hear their laughter - if we listen carefully.

Vocalizations

Birds have sophisticated multiplex language communication . Science is just tapping into the complexities of bird songs and calls. Some beyond human hearing.

Both male and female sing – some species more so than others.



Brown Thrasher ~2,000 different songs

Some add to repertoire throughout life.

Others are “one-hit wonders” with just one song. (that we can hear!)

Different dialects with some, just like human accents, even county to county.

Even American Robins makes more that 20 different sounds, most of which are mysterious to us. The honk of a Canada Goose contains levels of intricacy.

Some are great mimics like Bluejays and Starlings, and will mimic predators like hawks, to cause other birds to drop their food and flee. Starlings and Mockingbirds will sound like car alarms, cell phones, barking dogs...

Northern Flicker will make sound like bees to deter squirrels.

Some wrens will make sound of snake to ward off intruders.

Source: *The Bird Way* by Jennifer Ackerman

Vision

Of all animals, birds arguably have the best eyesight.

Large eyes relative to their body size, they see clearer, further, and process faster than humans and in greater detail.

They have Tetrachromatic vision meaning they see in blue, red, green and ultraviolet colors. They see feather colors unimaginable to us and a massive color spectrum our brains are simply incapable of processing.

“They’re experiencing another whole dimension of color..... It’s a complete reimagining of the color experience” Caswell Stoddard assistant professor of ecology and evolutionary biology.

Source: *The Bird Way* by Jennifer Ackerman



Short-eared Owl, Lake De Smet 2024 JP

Hearing

Most birds have an excellent hearing, with much wider range than humans.

Second most important sense after vision. Needed for communication, warnings, and for many species hunting prey.

Evidence suggests they hear infrasound to predict volcanos, and earthquakes, causing behavior changes to escape bad weather and other natural disasters.

Source: BirdSpot

Sense of Smell

Some birds, like vultures “aka bloodhound of the bird world” have an incredible sense of smell. As well as sea birds and other species.

Sense of smell can help birds to navigate, locate burrows and nests, courtship, avoiding predators, and seek food.

House Finches can detect predators by smell, studies say.

Source: *The Bird Way* by Jennifer Ackerman



Great Horned Owl JP

Great Horned Owls have ear tufts, not horns.



Migration

Birds migrate seeking food and nesting opportunities.

Types Of Migration:

Permanent residents do not migrate. They are able to find adequate supplies of food year-round.

Short-distance migrants make relatively small movements, as from higher to lower elevations.

Medium-distance migrants cover distances a few hundred miles.

Long-distance migrants typically move from breeding ranges in the United States and Canada to wintering grounds in Central and South America, or, like the Rough-legged Hawk and others, migrate from the arctic to our region in winter.

First-year birds often make their very first migration on their own, despite never having seen their wintering home before, and return the following spring to where they were born. Sourced: All About Birds, Cornell Lab of Ornithology;
Photos Rough-legged Hawk JP and Bobolink JP

Interesting Migration Facts Sourced from Audubon:

Whether it be in spring or fall, migration is a truly awe-inspiring phenomenon. In North America, most bird species migrate to some extent.

1. At least 4,000 species of bird are regular migrants, which is about 40 percent of the total number of birds in the world.
2. Birds can reach great heights as they migrate. Some at altitude over 6 miles.
3. The Arctic Tern has the longest migration of any bird in the world. Flying more than 49,700 miles in a year, and over its lifespan of more than 30 years, the flights can add up to the equivalent of three trips to the moon and back.
4. Northern Wheatear travels up to 9,000 miles each way giving it one of the largest ranges of any songbird. It is a tiny bird that weighs less than an ounce, on average.
5. The fastest bird is the Great Snipe: It flies around 4,200 miles at up 60mph. Birds usually utilize tailwinds to help them go faster, but the snipe's speeds don't seem to be a result of that.

6. The Bar-tailed Godwit can fly for nearly 7,000 miles without stopping, making it the bird with the longest recorded non-stop flight. During the eight-day journey, the bird doesn't stop for food or rest.

7. Migration can be extremely dangerous for birds, and many don't often make it back to their starting point. Sometimes natural occurrences like harsh weather play a role, but many times, human activities are the cause of birds' untimely demise. Approx. one billion birds die each year in the United States alone from window collisions.. And approximately seven million die from striking communication towers in North America annually.

8. To prepare for the extremely taxing effort of migration, birds enter a state called hyperphagia, where they bulk up on food in the preceding weeks to store fat, which they'll later use for energy on their long journeys. Some birds, like the Blackpoll Warbler, almost double their body weight before flying 2,300 miles non-stop for 86 hours.

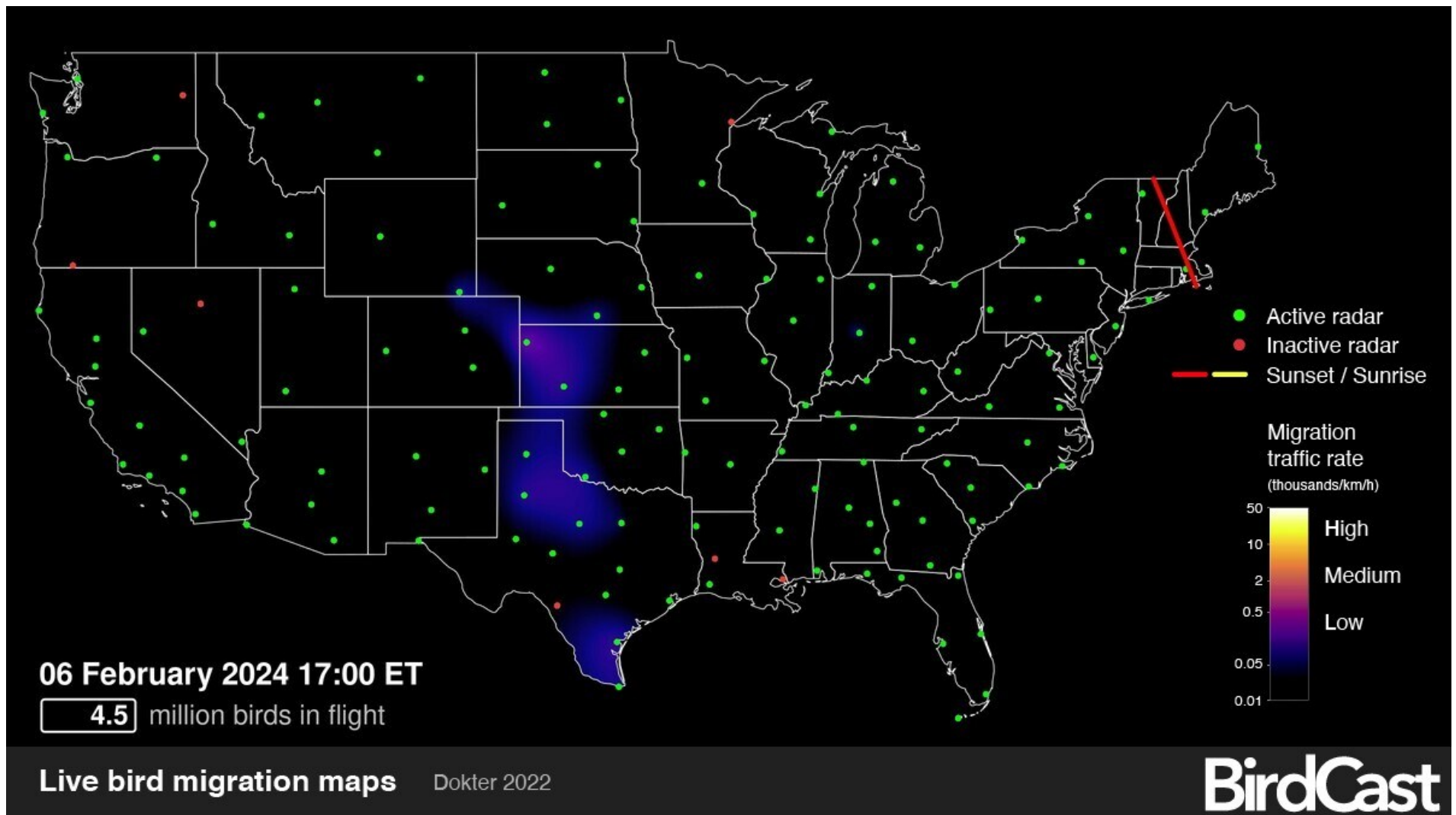
9. Birds that don't fly also migrate. Emus often travel for miles on foot to find food, and many populations of penguins migrate by swimming.

The secrets of birds' amazing navigational skills aren't fully understood. Birds combine several different senses when navigating, and can get compass information from the sun, the stars by sensing the earth's magnetic field, and from landmarks seen during the day.

Source: All About Birds; photo Sandhill Cranes JP



Birds face multiple threats during migration including weather, habitat loss, chemicals, collision due to lights, windows, tall buildings, communication towers, wind energy and other manmade structures.



Real-time analysis maps show intensities of actual nocturnal bird migration as detected by the US weather surveillance radar network between local sunset to sunrise. <https://birdcast.info/migration-tools/live-migration-maps/>

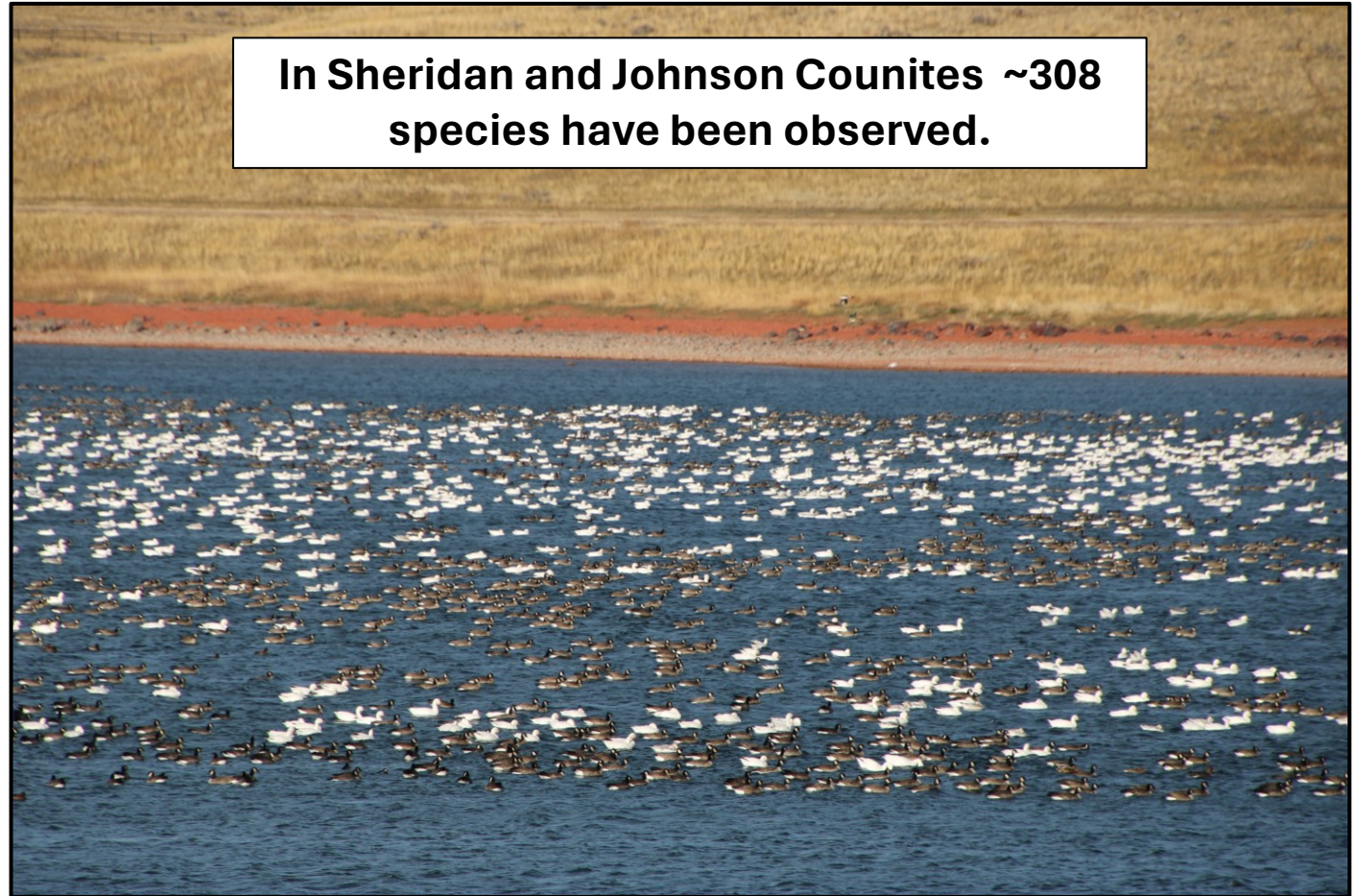
Approximately 11,017
bird species globally
(Clements Checklist 2023).

North America ~2,400

United States ~1,200

South America ~3,870

Wyoming ~358 species
have been observed



Source: Clements Checklist of Birds of the World and Birdfact.com; photo Snow Geese & other waterfowl at De Smet JP

Common Feeder Birds in Sheridan and Johnson Counties

Prepared by Bighorn Audubon

Downy Woodpecker



Photo courtesy of
Bighorn Audubon, JP

Black Capped Chickadee



Photo courtesy of
Bighorn Audubon, JP

House Wren (nearby feeder)



Photo by Andy Witchger,
Macauley Library

Left Downy Woodpecker Right Hairy Woodpecker



Photo by Pat Schiller,
Macauley Library

Mountain Chickadee



Photo by Michael Woodruff,
Macauley Library

Chipping Sparrow



Photo by Evan Lipson,
Macauley Library

Northern Flicker (nearby feeder)



Photo by Matt Davis,
Macauley Library

Red-breasted Nuthatch



Photo courtesy of
Bighorn Audubon, JP

White-crowned Sparrow



Photo courtesy of
Bighorn Audubon, JP

Blue Jay



Photo by Scott Martin,
Macauley Library

White-breasted Nuthatch



Photo courtesy of
Bighorn Audubon, JP

Song Sparrow



Photo by Jonathan Irons,
Macauley Library

Common Feeder Birds

Prepared courtesy of Bighorn Audubon
www.bighornaudubon.com

House Sparrow



Photo by Evan Lipton,
Macauley Library

House Finch



Photo by Martina Nordstrand
Macauley Library

American Goldfinch



Photo courtesy of
Bighorn Audubon, JP

Evening Grosbeak



Photo by Bellmare Celine,
Macauley Library

Cassin's Finch



Photo by Milton Vine,,
Macauley Library

Western Tanager



Photo by Simon Boivin,
Macauley Library

Pine Grosbeak – shown adult male;
females are yellow or burnt orange rump
and head



Photo by Christoph Maning,
Macauley Library

Common Redpoll



Photo courtesy of
Bighorn Audubon, JP

Black-headed Grosbeak



Photo courtesy of
Bighorn Audubon, JP

Gray-crowned Rosy-Finch



Photo courtesy of
Bighorn Audubon, JP

Pine Siskin



Photo courtesy of
Bighorn Audubon, JP

Lazuli Bunting



Photo courtesy of
Bighorn Audubon, JP

Common Feeder Birds

Prepared courtesy of *Bighorn Audubon*
www.bighornaudubon.com

Yellow-headed Blackbird



Photo courtesy of
Bighorn Audubon, JP

Red-winged Blackbird



Photo by Connor Charchuk
Macauley Library

Common Grackle



Photo by Jack & Holly Bartholmai,
Macauley Library

Western Meadowlark



Photo courtesy of
Bighorn Audubon, JP

Brown-headed Cowbird



Photo by Jack & Holly Bartholmai,
Macauley Library

European Starling



Photo by Matt Davis,
Macauley Library

Bullock's Oriole



Photo courtesy of
Bighorn Audubon, JP



For further bird
identification:

Brewer's Blackbird



Photo by Jonathan Eckerson
Macauley Library

Common Birds of the Brinton Museum and the Bighorn Mountains Foothills

By Jacqueline L. Canterbury & Paul A. Johnsgard

National Audubon Society Pocket Guide Familiar Birds of North America West

Peterson Field Guide: Western Bird, By Roger Tory Peterson

Sibley Guide to Birds, By David Sibley

Birds of North-Central Wyoming and The Bighorn National Forest, By Helen Downing

Helpful phone applications: Merlin Bird ID and Audubon Birds of North America

PLEASE SEE ACCOMPANYING FEEDER CHECKLIST and FEEDER CARE INFO

Four Keys to Identifying Birds



Size and shape
The combination of size and shape is one of the most powerful tools to identification.

Though you may be drawn to birds because of their wonderful colors or fascinating behaviors, when it comes to making identifications, size and shape are the first pieces of information you should take note of. The Evening Grosbeak (left, above) and American Goldfinch (left, below) are both bold in yellow, black, and white. But the grosbeak is far larger than the goldfinch, and its beak much stouter.

Bird identification can be tricky when you're starting out.

To identify an unfamiliar bird, focus first on these four keys to identification. They will help you to narrow down the possibilities. Field marks are very important, after you've placed your bird in the right group. Practice taking in size and shape, overall color pattern, behavior, and habitat, and you'll soon become proficient.



Habitat
A habitat is a bird's home, and many birds are choosy.

Narrow down your list by keeping in mind where you saw the Great Crested Flycatcher (right) and Western Kingbird (left) are both medium-sized flycatchers with yellow bellies, and can both be found in a narrow strip in the center of the continent. But the Great Crested Flycatcher is found within or at the edges of forests and woods, usually hunting within the upper tree branches. The kingbird hunts from fences, wires, and snags in open country.



Behavior
Behavior can sometimes lead you to an ID in the blink of an eye.

The Black Phoebe (left) and many Downy Woodpeckers (below) are slate-gray except for the white belly. But the phoebe feeds on the ground, often in flocks, and its posture is horizontal. The woodpecker, in contrast, usually perches or rests, often wags its tail, and flutters out to grab flying insects.



Color Pattern
Observe the overall pattern of light and dark, and the main colors and patterns.

Both the Chipping Sparrow (right, below) and American Tree Sparrow (right, above) have eye stripes and rusty caps. But the Chipping Sparrow has a more distinct rusty stripe to the black eye stripe, bordered with white above. The American Tree Sparrow's face has a softer, more subdued look because the brown eye stripe is bordered above and below with gray. The American Tree Sparrow's dark "eye line" often can clarify your identification.



inside birding Take your birding to the next level by watching the Inside Birding video series.
www.AllAboutBirds.org

Practice!

Take in size, shape, overall color pattern, behavior, and habitat.

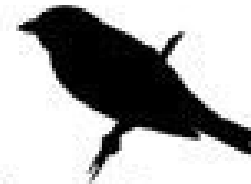
- **Size and shape**
- **Habitat**
- **Color Pattern**
- **Behavior**
- **Sound**

Great tools are available like the Merlin App.

Keep your bird book handy.

Take photos or sketch the bird.

More in resource section.



House Sparrow



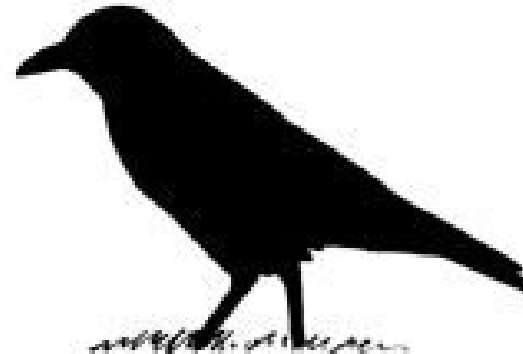
American Goldfinch



American Robin



Evening Grosbeak



American Crow

BLACK-CAPPED CHICKADEE

Size & Shape: Tiny bird with large head, plump body, narrow tail, and short bill

Color Pattern: Shiny black cap and throat against white cheeks. Buffy sides; wings and back soft gray

Behavior: Busy, acrobatic, and often in feeding flocks of several species

Habitat: Forests, woodlots, backyards, and shrubby areas; in the West, associated with deciduous trees



Photo by [Kevin Bolton](#) via [Birdshare](#).

MERLIN APP

Explore Lists of Birds Near You

Merlin is powered by [eBird](#), allowing you to build custom lists of the birds you're likely to spot wherever you are.

Identify Bird Songs and Calls

Sound ID listens to the birds around you and shows real-time suggestions for who's singing. Compare your recording to the songs and calls in Merlin to confirm what you heard. Sound ID works completely offline, so you can identify birds you hear no matter where you are.

Identify Birds in a Photo

Snap a photo of a bird, or pull one in from your camera roll, and **Photo ID** will offer a short list of possible matches. Photo ID works completely offline, so you can identify birds in the photos you take no matter where you are.



Ethics of using bird sound – please be aware that playing bird sounds might confuse birds around you. Be mindful when playing sounds outside.

Bird Feeding Pros and Cons

Source The Science of Birds, Ivan Phillipsen

Bird feeding has steadily grown in U.S.

Over 50 million people feed wild birds in U.S. – over 1 million tons of birdseed is produced every year.

Most common feeder birds in U.S. are Blue Jays, Black-capped Chickadees and Mourning Doves.

Pros:

Helping birds survive.

Supplemental feeding = significantly healthier birds.

Improves reproductive output. Lay eggs earlier, more often, fledglings likely to survive.

Health benefits of winter feeding carries over to the spring.

Some ranges have expanded because of our feeding. Including Anna's hummingbird.

Of course, it beneficial to us – building a deeper connection, and more motivation to help them.

Cons: (with some pros mixed in!)

Feeding populations of feeder birds are growing – with some species that is good, others not so.

Concerned about dependency are reasonable, but not much research. Birds do forage for their natural foods

Predator threats – CATS – Coopers and Sharp-shinned hawks.

Window collisions

Concerns during migration they might stick around longer – but this has been mostly debunked, and supplemental feeding helps them on their journeys. Migratory behavior is hard wired, but some evidence evolutionary changes like some longer bills.

Feeders spread diseases to birds – keep feeders clean. Follow good practices. (see next page)

How to be good steward

Feed good bird food – not cheap stuff.

Bread is a no no.

Clean feeders and water regularly –
at least once every two weeks.

If you see sick birds – take down the feeder,
clean thoroughly and leave down for a week or so.

If there are neighborhood cats, put the feeder
high out of reach.

Place feeders away from windows, and/or place
stickers on windows..

During extreme weather is when birds need feeding the most.

Fill your yard with native plants – insects are major part of biodiversity.

Avoid herbicides and pesticides.



Attract Birds With Birdbaths

“Once you’ve got feeders set up, perhaps the best way to make your backyard more attractive to birds is to just add water. Birds need a dependable supply of fresh, clean water for drinking and bathing. Putting a birdbath in your yard may attract birds that don’t eat seeds and wouldn’t otherwise come to your

feeders”. All About Birds. Photo Allen’s Hummingbird by Bob Gunderson

<https://www.allaboutbirds.org/news/attract-birds-with-birdbaths/>



Birds&Blooms

How to attract backyard birds.

A few examples include:

- Thistle for Goldfinches
- Mealworms Mountain Bluebirds
- Suet for Downy and Hairy Woodpeckers, nuthatches, nutcrackers, etc. and includes how to make suet.
- Tips for keeping out squirrels
- Attracting Hummingbirds
- Please keep cats away from feeders!



<https://www.birdsandblooms.com/birding/birding-basics/15-common-backyard-birds/>

Photo American Goldfinch JP



Types of feeders and feeding information available at Project Feeder Watch

- Feeder Types – understanding one size does not fit all
- Food types
- Safe Feeding Environment
- Deterring Unwelcome Birds
- Feeder Placement
- Landscaping for Birds
- Winter Bird Feeding
- Attracting Hummingbirds
- Identifying Feeder Birds

<https://feederwatch.org/learn/feeding-birds/>

Nests



“More than 700 bird species breed in North America, and the variations in their behaviors are fascinating and complex. Different species find mates, build nests, lay eggs, and raise their young in incredibly different ways. This overview is a generalization of the avian nesting cycle.”

For more information on nesting cycles of individual birds, visit *A Guide to Common Nesting Birds*;
<https://nestwatch.org/learn/focal-species/>

<https://nestwatch.org/learn/general-bird-nest-info/nesting-cycle/>



Tree Swallow Nest JP

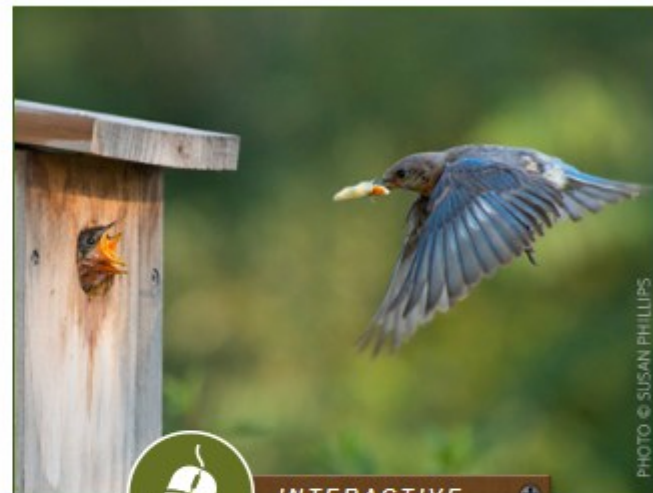
Learn About Nest Boxes and Nest Structures



INFOGRAPHIC

Features of a Good Birdhouse

Whether you're buying or building, this infographic will take you on a tour of a state of the art birdhouse.



INTERACTIVE

Right Bird, Right House

Want to help birds but not sure which ones you can attract? Use this interactive tool to find out which birds are likely to nest in your region and habitat, and download the appropriate nest box plans.

<https://nestwatch.org/learn/all-about-birdhouses/>

Bighorn Forest Nest Boxes

Bighorn Audubon, with the help of a great team of volunteers, maintains and monitors hundreds of Mountain Bluebird and Tree Swallow nest boxes in the Bighorn National Forest.

Many of these boxes have been in place for decades and have brought much joy to residents and visitors. Thousands of young have been fledged from these boxes over the years helping to maintain healthy populations of the two species. With the help of dedicated volunteers our goal is to provide, maintain, and monitor the nest boxes to ensure continued success of these species in our area.

For more info:

<https://www.bighornaudubon.com/bighorn-forest-nestboxes>

Photos Mountain Bluebird JP



Why Native Plants?

First answer is a question: Why Not?

“Gardening is the way we believe in tomorrow”

Doug Tallamy

Bird brains know the benefits of native plants:

Best for birds, humans and the environment

Reduces maintenance

Requires less water

Requires fewer or no chemicals,

Helps control flooding

Naturally beautiful

Great resources available on-line and in print.

Including Audubon Rockies Habitat Heroes and Doug

Tallamy’s *Nature’s Best Hope*

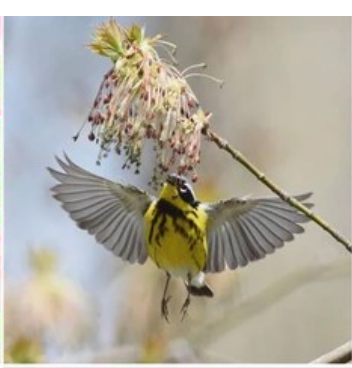
To see Doug’s 4-minute video on benefits of Native

Plants: https://youtu.be/xLn5UCM_tv8

Your garden is your outdoor sanctuary. With some careful plant choices, it can be a haven for native birds as well. Landscaped with native species, your yard, patio, or balcony becomes a vital recharge station for birds passing through and a sanctuary for nesting and overwintering birds.

Each patch of restored native habitat is just that—a patch in the frayed fabric of the ecosystem in which it lies. By landscaping with native plants, we can turn a patchwork of green spaces into a quilt of restored habitat.

Audubon Rockies



Why care about birds?

1. Bird are fascinating – the more we learn the more fascinating they are.
2. Birds are critical to our ecosystem. As pollinators and seed dispersers birds are invaluable to plants and propagation. They are regulators of pest and diseases by eating insects and rodents. Some are scavengers cleaning carcasses.
3. Recycle nutrients back into the earth
4. Birds are the harbingers of the environment's condition.
5. Most of us have a deep connection to birds, many since childhood. Watching or listening to birds reduces stress, improves mood and overall mental health. Walking in nature has the added benefit of improving physical and mental health. Multiple scientific studies confirm the health benefits, but it's clear to most of us that birds do make us happy!
6. Inspiration for art, music, literature and help fill the gap between humans and the natural world.
7. Learning about birds by observing, reading, and listening help keep cognitive skills sharper.

In the last 500 years, ~ 180 bird species have become extinct.
~ 1200 species are in danger of extinction in coming decades.
Since 1970 well over 3 billion birds have been lost.

Everyone can do their part, large or small, to help birds.
For the Birds!

JoAnne

bighornaudubon@gmail.com

bighornaudubon.com

PO Box 535, Sheridan

Suggested Resources:

Phone Apps: Merlin and Audubon

On-line resources:

Audubon Rockies - Habitat Heroes and other info <https://rockies.audubon.org/>

Bighorn Audubon <https://www.bighornaudubon.com/>

Birds & Bloom Identify Birds <https://www.birdsandblooms.com/birding/birding-basics/identify-birds/>

Cornell Lab of Ornithology: All About Birds <https://www.allaboutbirds.org/news/>

Nests and Nest Boxes : <https://nestwatch.org/learn/all-about-birdhouses/>

Bird Cast Live Migration <https://birdcast.info/migration-tools/live-migration-maps/>

Birds of the World (paid subscription) <https://birdsoftheworld.org/bow/home>

USFWS Feather ID: <https://www.fws.gov/lab/featheratlas/index.php>

Checklists: Bighorn Audubon Region

<https://www.bighornaudubon.com/bighorn-forest-checklist>

Books too many to list here, short list include:

Nature's Best Hope by Douglas Tallamy

The Bird Way by Jennifer Ackerman

and great local books:

Wyoming Birds for Kids by Pamela Moore

Birds of North-Central Wyoming Helen Downing, Editor

Birds and Birding in Wyoming's Bighorn Mountains Region by Jackie Canterbury,
Paul Johnsgard and Helen Downing

Citizen Science:

eBird <https://ebird.org/home>

Feeder Watch <https://www.allaboutbirds.org/news/attract-birds-with-birdbaths/>

Christmas Bird Count <https://www.bighornaudubon.com/christmas-bird-count>

Great Backyard Bird Count <https://www.birdcount.org/>

Spring Count <https://www.bighornaudubon.com/spring-count>

Podcasts:

The Science of Birds and BirdNote

Great Backyard Bird Count

27th Annual • Feb 16-19, 2024



Count birds in your backyard, local park, or wherever you spot a bird, and submit your observations online.

[birdcount.org](https://www.birdcount.org)

Peregrine Falcon/*Falco peregrinus*.
Photo: Marky Mutchler/Macaulay Library

