



Balcones Canyon Lands National Wildlife Refuge
24518 FM 1431, Marble Falls TX 78654
(512) 339-9432 X 70, jennifer_brown@fws.gov
Cell: (830) 220-9254

WHAT IS A BIRD?

VOLUNTEER DIRECTIONS

Need to Know

1. Your station, **WHAT IS A BIRD?**, will teach students that birds are grouped into families because of the characteristics they share. Using field guides and identifying birds will become much simpler and is further reinforced at the Using a Field Guide (station #2) and How to Use Binoculars (station #3), they put it all together to identify birds using these similar concepts.
2. You **must include something about the Golden-cheeked warbler and Blackcapped vireo into this program (a section in this guide book has more on both birds)**. After all, these birds are the reason there is a refuge near Austin. Furthermore, all of the resource management and public use management plans on the refuge must consider how these birds will be affected by man induced impacts.
3. The section in these directions called “Organism and Environments” is a specific science TEK requirement. **Get to know the Organism and Environments TEKS and be ready to share this with the students.**
4. **A map** of the stations is in this guide book to help you direct your group to the next station. They go clock-wise in number order. Please be ready to direct your group to the next sequential station. **Sequence of Stations in Bridges to Birding**

1. **What is a Bird?**
2. Using a Field Guide
3. How to Use Binoculars
4. Songs and Calls
5. Building a Home (different shapes of nests)
6. Habitat
7. Migration

GOLDEN-CHEEKED WARBLER (GCW)

HABITAT: Old Forests with big trees; shady, dense forests in steep-sided canyons & slopes as well as drier, flat hill tops. Requires Ashe Juniper (“cedar”) bark to construct nest.

Spanish Oak, Live Oak, cedar foliage provides insects, caterpillars, spiders, beetles for food.



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TERRITORY: 5-20 acres to forage;
NEST TERRITORY: 3-6 acres/ nesting pair

Female constructs Cup nest in old cedar and Hardwood (oak, elm) trees at least 15' high. All nests require cedar bark. Bark is woven with spider webs. Nest is tucked in forked vertical limb & camouflaged. Warblers usually nest only once/season unless accident or predation. Male stays nearby singing & defending during incubation. 3-4 eggs are hatched in 12 days & fledge 8-9 days later. Parents care for them for 1 month.

They migrate to pine/oak habitat of southern Mexico & Central America in July-midAugust & return in mid-March.

BLACK-CAPPED VIREO (BCV)

HABITAT: Dense, shrubby, broad-leaved (shin oak, hackberry, sumac, agarita, persimmon, Texas Mountain Laurel) young forest. Patchy habitat with 30-60% cover interspersed with open grassland. Shrubby vegetation reaching from ground level to 6- 7' high.

TERRITORY: 1-16 acres NEST TERRITORY: 2-4 acres

Male & female select nest site between 3-'6' off ground (door knob height) in dense cover. Pendulous Cup Nest is made by female from grasses and spider webs and is suspended from its rim in the fork of a branch. Nest is completed in 2-3 days. They may nest more than once /year building a new nest each time.

Incubate 14-17 days and this work is shared by male & female (as well as fed by both). Fledge in 10-12 days.

They arrive in mid-March to mid-April and stay until mid Sept. They spend their winter in western Mexico.

ORGANISM AND ENVIRONMENTS

There are complex and important relationships that organisms have with their environment. There are systems and cycles within environments.



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Organisms live and survive in their ecosystem by interacting with the living and nonliving components.

Organisms undergo similar processes and have structures and behaviors that help them survive within their environments.

Example of an Interaction with the Environment

Golden-cheeked warblers require cedar bark to build their nests for successful nesting here in Texas in the spring. The removal of cedar trees for development and grazing has resulted in the Golden-cheeked warblers having less natural environment in which to build nests and the species chances of survival have been reduced. The refuge provides an area where the cedar trees are protected which in turn protects the Golden-cheeked warbler.

Getting Ready

Use the laminated activity station sign to identify your table (in the guide book).

Materials List

Laminated Activity Signs (2)

Table (1)

Station Guide Book

Laminated pictures of Emphasis Birds

Families and Species Game (17 bags, Velcro strips, and instruction sheet)

Flip board presentation

Hollow bird bone

Kaufman Field Guide

Pocket Book of Birds Water

Turtle Skull

Taking Flight!

CHARACTERISTICS of a BIRD

1. Feathers – Unique to birds. Adapted for:
 - a. Flying
 - b. Protecting skin & Insulation
2. Color Pattern essential in both display and camouflage
3. Forelimbs (arms/wings) are modified (adapted) almost entirely to flight.



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4. Body shape is streamlined to reduce resistance to air during flight or water in diving.
5. Tail is short with long tail feathers that acts as a rudder (change direction) & brakes (slow down) while flying; balance while perching, stiff support on vertical surfaces (woodpeckers).
6. Beak (bill) - is a mouth that projects from head. Birds have no teeth, but a gizzard in their stomach to pulverize hard food (like seeds) with intentionally ingested grit & gravel. A beak also serves to obtain probe crevices and for food, stab & seize food, preen feathers, build nest, chisel wood (woodpeckers) & defense. Bills are made out of bony interior covered with Keratin (protein) which is highly resistant to wear.

Different birds have different beaks/bills according to what they eat:

1. Wading birds with long, probing bills- fish & invertebrates that live under water/in sand
2. Hawks, owls, eagles w/ sharp-edged bills with serrated edges (like steak knife) to tear flesh.
3. Warblers, vireo thin, sharply pointed bills to probe into crevices and capture insects.
4. Thick, conical shaped bill of cardinal, finch to cut & crush seeds
5. Shape of a crow's & jay's bill is in between thin & thick for a wider variety of foods, so the bill is "mid-sized".

Also some birds diet changes seasonally (songbirds-Warblers & Vireos eat insects during breeding season and change over to seeds & berries in the winter) so beaks must be able to deal with these different kinds of food.

1. Duck filter water to strain food

FEET are greatly extended toe bones used for walking, running, clinging, climbing, killing & carrying prey, holding food, preening, cradling eggs, aerial courtship, swimming, steering underwater, & absorb impact of water landing.

Webbed Feet: useful for swimming & walking on loose surfaces (sand, mud). Osprey have Spiked Scales on bottoms of feet- enable grabbing slippery fish. Great Blue Heron has serrated talons for preening

Greater number of neck vertebrae (13-25 vs mammal/human with 7 neck bones) allowing them to reach objects including other parts of their own body with their bills so they can preen themselves and remove parasites. (Owls can't rotate their head 360 degrees).



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EYES are the dominant sense organ- best among all other vertebrates. Can see 2 or 3 times more sharply than people. Some raptors can see a mouse 1 mile away!

#1 FAMILIES AND SPECIES ACTIVITY

Once birdwatchers understand that birds are grouped into families because of the characteristics they share, using field guides and identifying birds will become much simpler. Here is a simple activity to introduce taxonomy.

1. From the 17 baggies sorted by bird families, find the ONE picture marked as the “Game Bird.” That bird goes into the game circle.
2. Distribute one baggie per student. Each student is to find her “family game bird” on the board and place the other family members beneath it (see Game Key for answers).
3. Once completed, you can review a variety of families and identify species.

Tips & Options

--For older students and/or more advanced birders, you can make a special set of bird pictures that will include some harder matches. For example, there is only one North American creeper, so a Brown Creeper will have no match. Many students may not know that bluebirds are thrushes. Pine Grosbeaks, because of their name, are not often recognized as finches, and Greater Roadrunners certainly don't look like cuckoos!

Materials

– 17 baggies of bird pictures representing different families – one family Game Bird and at least 2-5 per family per baggie. – Velcro strips for holding pictures in place.

Quiz Your Guests

1. What is the ONE feature unique to birds? (FEATHERS)



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2. Do all birds sing? (No. A basic division they will learn about in Bird Songs and Calls station.)

Take Away

Did you know that birds can see 2 to 3 times better than humans?