



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

HOW TO USE BINOCULARS

VOLUNTEER DIRECTIONS

Need to Know

1. Your station, **How to Use Binoculars**, will teach students magnification, focus, and wearing binoculars. You will also briefly discuss some of the distinctive marks to look for when identifying a bird seen through the binoculars such as bill shape, coloring, field marks, silhouette, songs and calls, etc. Other forms of identification are introduced and reinforced at stations like the What is a Bird (station #1), How to Use Binoculars (station #2) and Building a Home (Station #5).
 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.**
- 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.

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-mid-August & return in mid-March.

BLACK-CAPPED VIREO (BCV)

HABITAT: Dense, shrubby, broad-leafed (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.

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



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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).

Place the laminated photos of the emphasis birds in different areas up high and down low in the station area or along the trail.

Put up the Birdwatching Etiquette Poster.

Materials List

Plastic bin containing:

Laminated photos of emphasis birds to hang around the station

8 binoculars for students

1 binocular for volunteer

Activity Station Guidebook

2 station signs

Birding Checklists A, B, C, D (4 of ea) 16 laminated sheets

Birding Checklist Answer Keys A, B, C, D

Tissues and small spray bottle to wipe clear checklists

Taking Flight!

The two basic tools of birdwatching are a field guide and a good pair of binoculars. Binoculars are helpful for hunting and wildlife watching too. They allow users to see larger, clearer images of wildlife so that the creature's shapes, colors, and markings can be recognized much more easily.



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Binocular Parts

Using one pair as a reference, show the parts of a binocular to the group.
Explain the purpose of each part.



Diopter Ring – moveable, allows custom focusing for each eye

Ocular Lenses – closest to one's eyes through which an image is viewed. Focus Ring – center dial one uses to focus the binocular (moves the lenses inside the binocular).

Objective Lenses – lens closest to the objects you are using.

Wearing Binoculars

Begin your program by discussing the importance of wearing the neck strap. Neck straps prevent users from dropping and damaging binoculars. Wearing binoculars correctly will also enhance the birdwatching experience by having them ready to bring to the eyes very easily.

While wearing eyeglasses, roll back the eyecups.

Magnification

Binoculars come in various magnifications. They are 8x, 8.5x, 9x and 10x magnifications; as the numbers go up the binoculars can make images sharper farther away. You would pick a pair of binoculars based on the habitat you will be doing most of your wildlife viewing in. For example, if you are viewing wildlife in your backyard garden, then the 8x magnification would work just fine. But if you are enjoying sea watching then the 10x magnification would work better for these greater distances.



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Focus

Have the students focus their binoculars by first, adjusting the distance between the eyepieces to the same distance between their eyes. This will give a complete, single picture. Pivoting the two halves closer together or further apart does this.

Secondly, use the central focus ring to focus both lenses on an object. As often one eye differs in focusing from the other it is now necessary to have additional correction.

If after they have completed these two steps and the image is not clear have them start again.

ACTIVITY

1. Place the enclosed laminated pictures of the emphasis birds throughout the station area in high and low locations.
2. Give each of the students or groups of students a handout containing the emphasis bird list, a wax pencil, and the mini field guide on a key ring.
3. Remind the students or groups to follow the birdwatching etiquette.
4. One by one each group should find the birds in the area, use the mini field guide on a key ring to help identify the bird. Put the # next to the bird name.
5. Have a teacher check the answers.

Quiz Your Guests

1. What are some ways to identify a bird? (size, shape, color, field markings, behavior, habitat, bill shape, posture, songs and calls)
2. What are two tools important to use to identify birds? (a field guide and binoculars. Bird songs and calls identification can be helpful in ID'ing birds too.)

Take Away

Binoculars are used for hunting and wildlife viewing among other things.