



Balcones Canyonlands National Wildlife Refuge  
24518 FM 1431, Marble Falls TX 78654  
(512) 339-9432 X 70, jennifer\_brown@fws.gov  
cell: (830) 220-9254

## **BIRD HABITAT LOSS**

### **VOLUNTEER DIRECTIONS**

#### Need to Know

1. Your station, BIRD HABITAT LOSS (#6), will teach students the concept of *habitat fragmentation*, and how it can lead to *species extinction*. You will specifically discuss how the fragmentation (loss) of riparian habitat, in conjunction with other habitat loss, may have led to the placement of the Golden-cheeked Warbler (GCW) on the endangered species list and the subsequent establishment of the Balcones Canyonlands National Wildlife Refuge. Students will have been introduced to nest building behaviors of the GCW in station #5, Building a Home, and can lay some foundation for Migration, station #7, and the GCW's annual migration to Central America and back to its current 33 counties of Texas habitat.
2. You **must include something about the Golden-cheeked warbler and Black-capped 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.**
5. 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. Bird Habitat Loss**
7. Migration

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### **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.

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 a 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.

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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.

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  
Flip board  
Several hula-hoops

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## Taking Flight!

Introduce idea of habitats by asking what it means (“home” or “place where something lives” etc.)  
Discuss the different habitats:

Woodlands – low density forest forming open habitat with plenty of sunlight and limited shade

Forest – Large area dominated by trees with plenty of shade and limited sunlight.

Grasslands (prairie) – Area where vegetation is dominated by grasses

Coastal – Places where the land meets the sea

Desert – Barren area of landscape with very little precipitation. Living conditions are hostile for plant and animal life.

Wetlands – Land area that is saturated with water either permanently or seasonally.  
(marshes / swamps – what's the difference? Trees in water = swamp)

Aquatic (ponds / lakes) – Body of standing water

Riparian – area of growth along streams, rivers, and creeks (including the floodplain, where vegetation is strongly influenced by water).

Ask the students if they can see any of the habitat areas from where they're standing (at least grasslands and woodlands). Along the creek where they walk or cross on their hike would be riparian.

Discuss why it is important to protect habitat.

Provides for a diverse environment

Provides the four essential survival requirements

- Food
- Shelter
- Water
- Space

Discuss Golden-cheeked warble and black-capped vireo habitats

Discuss problems of disappearing habitat.

338 species of bird migrate; 333 migrate through Texas (all but 5)

Of all 914 bird species in US (migratory and nonmigratory), TX has documented 615 (2/3rds). Habitat for more than 900 species (80% SW vertebrates depend on for part of life cycle),

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but only 1% of land area in Western US. 80,000 riparian acres lost/year; 30% of endangered species depend on wetland/riparian habitat.

**Habitat Fragmentation / extinction** from TPWD & USFWS “Golden-cheeked Warbler” leaflet:

Typical nesting habitat for the GCW is found in tall, dense, mature stands of Ashe juniper (blueberry cedar) mixed with trees such as oaks, ash, and cedar elm. This type of woodland generally grows in steep-sided canyons, slopes and adjacent uplands. A mix of juniper and deciduous trees on the slopes, along drainage bottoms and in creeks and draws (i.e., riparian habitat) provide an ideal mix of vegetation for these birds (where) they are often seen foraging.

From the 1950s through the 1970s, 50% of the juniper and oak woodlands were clear-cut for cattle grazing pasture. Also, canyons were flooded to the making of many reservoirs, flooding the riparian habitat preferred by the GCW (juniper woodlands for nesting materials, juniper and oak woodlands for nesting, and riparian habitat for food).

The Golden-cheeked Warbler was placed on the Endangered Species List on May 4, 1990.

## **ACTIVITY**

Place all hula hoops on the ground. Put one student in each hula hoop. Then take one hula hoop one at a time. Discuss habitat loss as you take each away. For example take one hula hoop away and say this is because a new subdivision of homes is being built. The student will have to share a hula hoop aka habitat with another student. Other things that take away habitat are: new school being built, strip mall, soccer or baseball field, office buildings. Then once students are crowded into the last remaining hula hoops, discuss competition for resources in their habitat (food, water, shelter, space).

### POSSIBLE ALLEVIATING ACTIONS:

Ask what we can do individually to help (create a **“backyard habitat,”** put out birdbaths, feeders, brush piles, make a **“rain garden”**). Have the GCW walk down the flyway to an imagined second habitat.

## **Tips & Options**

We do NOT want to seem we are against progress (people need places to live, shop, visit the doctor, etc., and cattle need to graze). The message we want to convey is that if we do something to destroy habitat (because we must), are we not then required to help restore or preserve habitat in a way that will assist the endangered animal to recover?

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**Materials: hula-hoops**

### Quiz Your Guests

1. Where would you find different types of habitat at the Refuge?
2. How would you describe “habitat fragmentation”?

### Take Away

Give the teacher the web address for City of Austin's Grow Green fact sheets (rain garden construction): [www.growgreen.org](http://www.growgreen.org) and Georgetown, TX's “Rivery Park: A Guide to the Wet Pond” or the Golden-cheeked Warbler leaflet.