



**Native Landscapes
for Birds**

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Class Outline

- The state of birds in Texas
- The relationship between native plants and birds
- Bird-friendly landscapes with native plants
- Resources



American Robin

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Why Birds Matter

- Provide valuable ecosystem services
 - Seed dispersal
 - Biological control
 - Decomposers
 - Pollinators
- Bird population fluctuations reflect health of the environment
- Fun to watch!

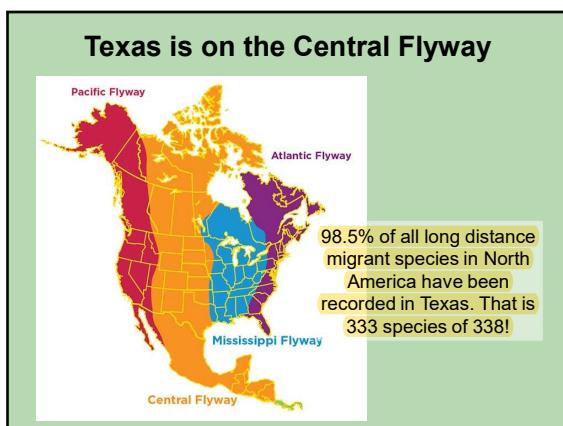


Nashville Warbler eating scale insect eggs

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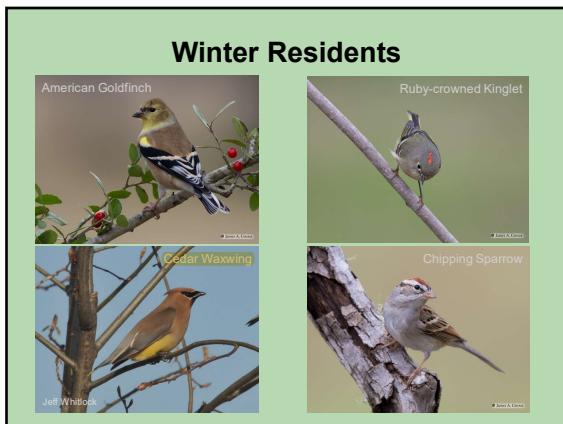
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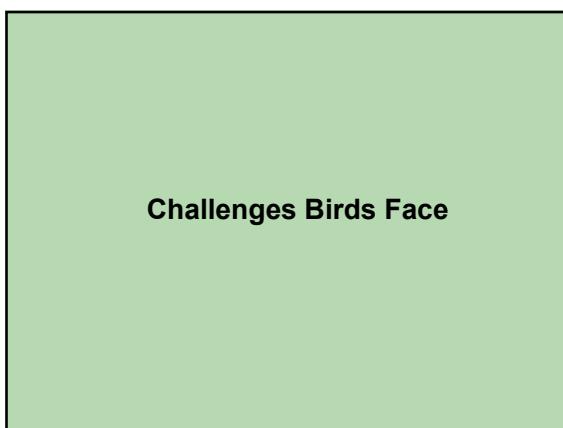
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Migration Challenge

The Gulf of Mexico crossing is the largest open-water migration of land-birds in the world

- Over 1 billion birds
- 20-30 hours non-stop





Orchard Oriole on TX coast after battling a north wind migrating over Gulf of Mexico

Larry Moore Wikimedia Commons

Aransas National Wildlife Refuge

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Inland Migration Challenge

High quality stopover habitat is critical to the survival of migratory birds



Commons Ford Prairie Austin
Jane Tillerart

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Habitat Loss



Loss and fragmentation of habitat:

- Limits food resources for birds to replenish fat reserves and energy during migration
- Increases risk of predation and nest parasitism
- Decreases places with the resources birds need to breed, migrate, and overwinter

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Domestic Cats

- # 1 human-related cause of death to birds in US
- Free roaming and feral cats kill 1.3 to 4 billion birds annually - keep cats indoors



Björn-Jean Nauyer

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Collisions with Glass

- Kill between 365 and 988 million birds annually
- Up to 44% are collisions with residential buildings



Angus Kirk Flickr Creative Commons

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Modify Glass if Collisions Occur

Make glass and building design safer for birds:

- Reduce reflectivity
- Increase visibility of glass



Jane Tillman

Tania Horwitz

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Pesticides

- Kill more than 72 million birds annually
- Eliminate invertebrates that birds depend upon

Save big on your backyard bird paradise.

\$5.92

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What Makes a Good Bird Habitat?

Tufted Titmouse

- Food
- Water
- Shelter
- Places to raise young
- Space

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Native Plants - Best Bird Habitat

Co-evolved with birds and other wildlife providing foundation for healthy, biodiverse ecosystem

Earl McGahee/Flickr Creative Commons

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Native Plants Host Invertebrates That Birds Eat

90% of the insects that eat plants can only eat the native plants with which they co-evolved



Monica Krance via iNaturalist

pismi iNaturalist
Gulf Fritillary Caterpillar

Carol Clark

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Native Plants Ensure Biodiversity for a Variety of Food Sources

Similarly landscaped yards with native ornamental plants support 29 times as much biodiversity as those using non-natives



Cathy Nordstrom



Randen Pederson Flickr Creative Commons

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Native Plants Synchronize Food Sources for Birds

- Native plants ensure food sources at the right times:
 - A healthy insect population during breeding; warm months
 - Buds, berries, seeds, and fruit when insects are not so numerous



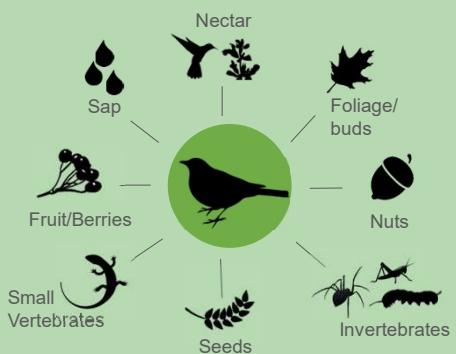
Early Abundance

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Food What do Birds Eat?

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Key Food Types



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Importance of Invertebrates to Bird Diet



Blue-headed Vireo

- Aphids, katydids, spiders, crickets, beetles, bugs, walking sticks, scale insects, millipedes, wasps, bees, ants



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**Invertebrates:
Larval (Lepidoptera) Host**



- 96% of terrestrial North American birds rely on caterpillars during breeding season
- Oak trees, willows, elms, black cherry benefit pollinators and birds

Carolina Wren 

Carolina Chickadee 

Ron Nichols flickr.com/kidsshouldseethis.com

Dave Morris Flickr Creative Commons

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**Invertebrates:
Larval (Lepidoptera) Host**





Mike Dunn

Carolina Chickadee

Tree/Shrub Species:	
Oak	534
Willow	456
Cherry	456
Cottonwood	368
Pine	203

Non-native Species:	
Nandina	0
Ligustrum	24

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Berries





Jeff Whitlock



Gil Eckrich

Northern Cardinal:
Ashe Juniper and Flameleaf Sumac

- Orioles, thrushes, grosbeaks, mockingbirds
- Summer, fall and winter berries
- Fuel for migration
- Agarita, elbowbush, sumacs, dogwoods, hollies, hackberries

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Nectar



Ruby-throated Hummingbird
Cardinal Flower

- 53 native species of birds consume nectar; hummers, orioles
- Insect-eating birds forage on nectar-feeding invertebrates
- Shape and bloom color –cardinal flower, crossvine, *Salvia* spp.

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Seeds



Jane Tillman
House Finch

- Sparrows, finches, doves
- Seed eaters need grit from crushed rock/gravel
- Wide variety of seeds: grasses, flowers
- Black-eyed Susan, coneflowers, native grasses, legumes

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Nuts



Tom Peller Creative Commons
Blue Jay

- Blue jays cache (store) nuts in the ground
- Woodpeckers and game birds, like turkey and ducks, eat nuts
- Pecans, oaks, walnuts

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Tree Sap

- Hummingbirds, warblers, kinglets, wrens
- Sap attracts birds and invertebrates
- Gum bumelia, oaks, cedar elm, hackberries, other hardwoods

Charles J. Sharp Wikimedia Commons



Yellow-bellied Sapsucker

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Foliage



Lesser Goldfinches on Plateau Goldeneye

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Small Vertebrates

- Predatory birds and some songbirds eat small vertebrates
- Amphibians, reptiles, fish, mammals, birds
- Inhabit canopy trees to groundcover; dead and downed wood

Gil Eckrich



Eastern Screech Owl mobbed by Blue-gray Gnatcatcher. Screech Owls eat small birds.

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Food Sources Year-round



Benny Mazur Flickr Creative Commons



DSPN Slopes of Park Creative Commons

- Select an array of plants that provide food sources throughout the year
- Some plants provide different types of food at different times of year

Oak (*Quercus* sp.)
Larval host and later as acorn producer

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Feeders – Use Prudently



Jane Tillman
Female Red-bellied Woodpecker

- **Not necessary** – but fun for bird viewing
- Best results:
 - affix to window, or
 - place within 3 ft of windows, or 30 ft away
- Place 10 ft away from shrubs

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15 Minute Break

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Water

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Bird Baths

- Shallow water
- Sloping, not steep, sides
- Non-slippery surface
- Perch nearby
- Keep clean
- Moving water attracts birds



Gray Catbird

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Retention Ponds

Water for wildlife and clean water for people



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Rain Gardens

Slow it down, spread it out, soak it in (USEPA)



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Shelter and Places to Raise Young

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Unfriendly Landscape: No Shelter



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Shelter

- Nesting, roosting, safety from predators
- Resist limbing up or thinning out woody plants



Barbara Keir
Northern Mockingbird
Nest in Yaupon Holly



Jane Tillman
Broad-winged Hawk
in Live Oak



Carol USA Eastern Meadowlark
Commons
Eastern Meadowlark
Grass Nest

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Winter Shelter



Stephen Little Flickr Creative Commons

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Brush Pile Shelter

- Can be neat and/or an architectural element
- Provides:
 - Hiding place from bird-eating hawks
 - Site for pupating and nesting insects



Jane Tillman

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Dead and Downed Wood Shelter

Shelter, cavity nests, foraging substrate

Screech Owl

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Nest Building Materials

Green Heron with Stick



Golden-cheeked Warbler
Uses Mature Ashe Juniper Bark

American Robin Gathering
MX Feather Grass

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Nest Boxes

- Design:
 - No perch on box
 - Open to clean
 - Drainage holes
 - Ventilation holes
 - Walls $\frac{3}{4}$ " untreated wood
 - Baffle
- Accessible to:
 - Monitor
 - Clean
- Orient and place depending on species

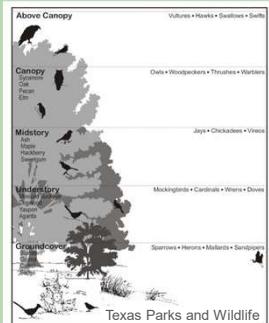


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Space: Landscape Considerations

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Structural Diversity and Niches



Canopy – owls, robins warblers, tanagers

Mid-story – jays, chickadees, titmice

Understory – cardinals, wrens, mockingbirds, doves

Ground level – sparrows, cardinals, doves, wrens

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Structural Diversity



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Create a Thicket



55

Landscaped Thicket



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Structural Diversity Varies

Pollinator gardens may lack woody mid-story and canopy, and still attract birds



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Consider Nearby Habitat

- Use your landscaping to increase connectivity between habitat areas
- Ecological context matters



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Consider Site Specific Conditions

Sun/shade, moisture, soils, space



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Design Considerations



- Composition
- Texture
- Color
- Pattern
- Arrangement
- Proportion

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Design Considerations

Borders can keep native landscapes looking neat and organized



Jane Tilman

Mills Pond at Wells Branch, Austin

Jane Tilman

Lady Bird Johnson Wildflower Center, Austin

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Design Considerations



Cathy Nordstrom

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Design Considerations



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Landscape Conversion



Carol Feldman

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Maintenance Best Practices



Pine Siskin
Jennifer Jewett USFWS Flickr Creative Commons

- Minimize chemical use
- Reduce lawn/allow part to "grow wild"
- Allow plants to go to seed
- Prune trees/shrubs late winter
- Leave leaf litter as mulch
- Create brush piles; leave downed woody material
- Clean water elements; feeders frequently

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We Can Make a Difference



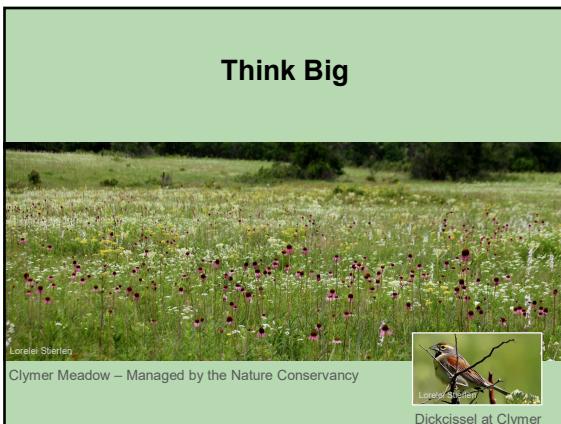
Indigo Bunting
John Flannery

62%

66



67



68



69
