

BIRDS, LIGHTS, AND WINDOWS

CARING FOR BIRDS IN YOUR COMMUNITY

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Coastal Conservation Coordinator



GEORGIA
AUDUBON

WHO IS GEORGIA AUDUBON?

- Part of NAS network
- Member supported, staffed non-profit organization
- Providing support and partnering with local chapters
- Building places where birds and people thrive



**GEORGIA
AUDUBON**

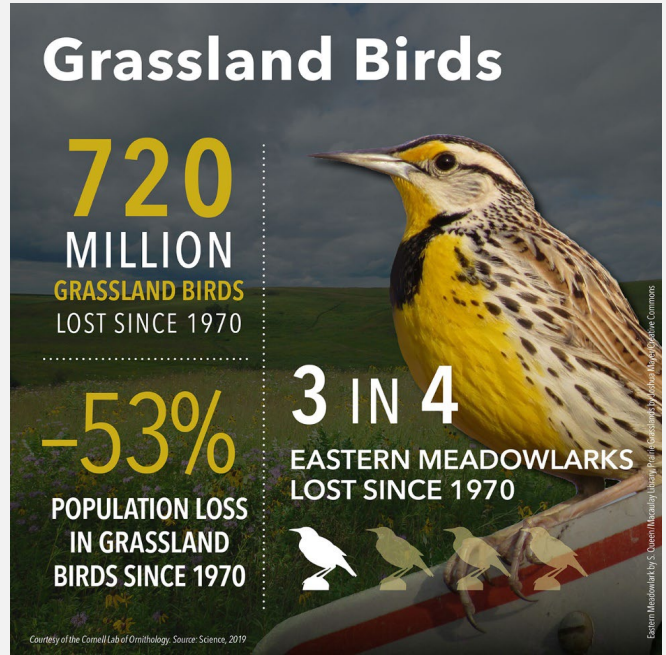
WHY DO BIRDS MATTER?

ECO SERVICES

- Seed dispersers
- Cleaning crews
- Pest management
- Food source
- Environmental indicators



BIRDS ARE RAPIDLY DECLINING



CAUSES OF BIRD DECLINE

Source	Mortality estimate
Wind turbines	573,000
Power lines	28,000,000





GEORGIA AUDUBON CONSERVATION PROGRAMS

- Habitat restoration
 - Jekyll Island Maritime Grass restoration
 - Wildlife Sanctuary certification program
- Community science and monitoring
 - Birds and building collisions
- Species specific initiatives
 - Nightjar surveys
- Education and advocacy
 - Lights Out Georgia



CERTIFIED

WILDLIFE SANCTUARY

A PLACE WHERE BIRDS AND PEOPLE THRIVE

www.georgiaaudubon.org

GEORGIA
AUDUBON

WILDLIFE SANCTUARY REQUIREMENTS

- Monocultured turf grass (non-native lawn) makes up less than half of the sanctuary area.
- Non-native, invasive species make up less than one quarter of the sanctuary area.
- Roughly half of the plants in the sanctuary area are native to Georgia.
- There is no maintenance or feeding of outdoor cats on the entire property**



BEST MANAGEMENT PRACTICES

- Avoid the use of pesticides that eradicate food sources for birds and wildlife (mosquito sprays & neonicotinoids).
- Instead, encourage biological controls of mosquitoes/pests with nest boxes, chimney swift towers, and bat boxes.
- Provide no support of feral cats or outdoor cats.
- Minimize unnecessary outdoor lighting.
 - Utilize down-shielded lamps and motion activated lighting.

PROUD PARTICIPANT



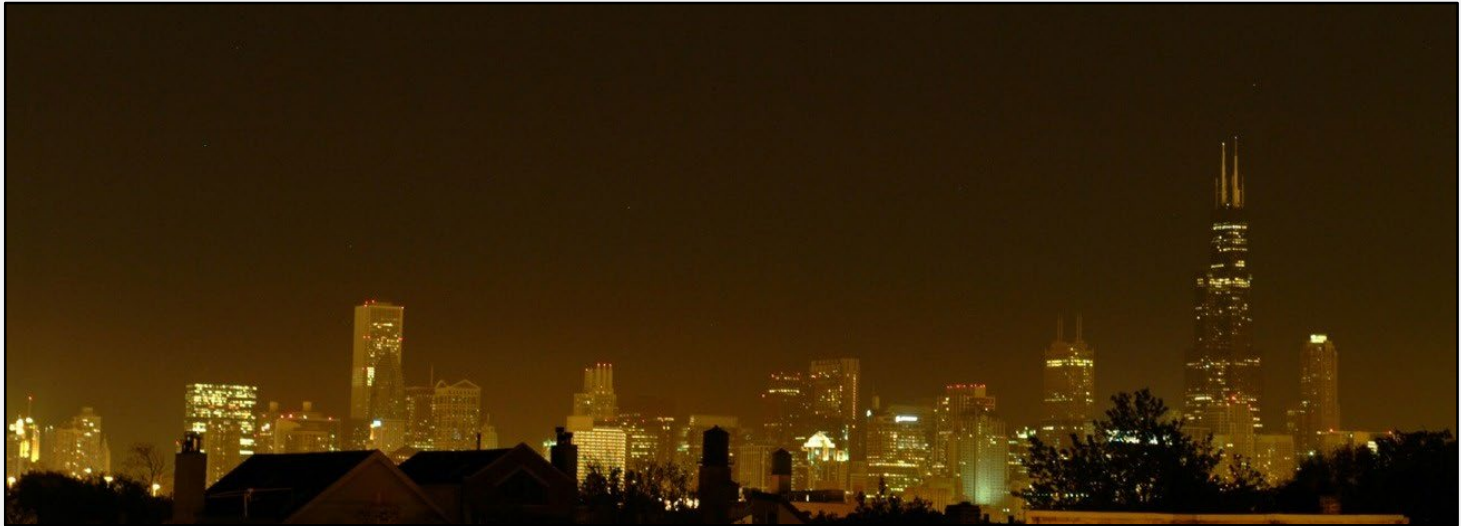
**LIGHTS OUT
GEORGIA**

MAR 15 - MAY 31  **AUG 15 - NOV 15**

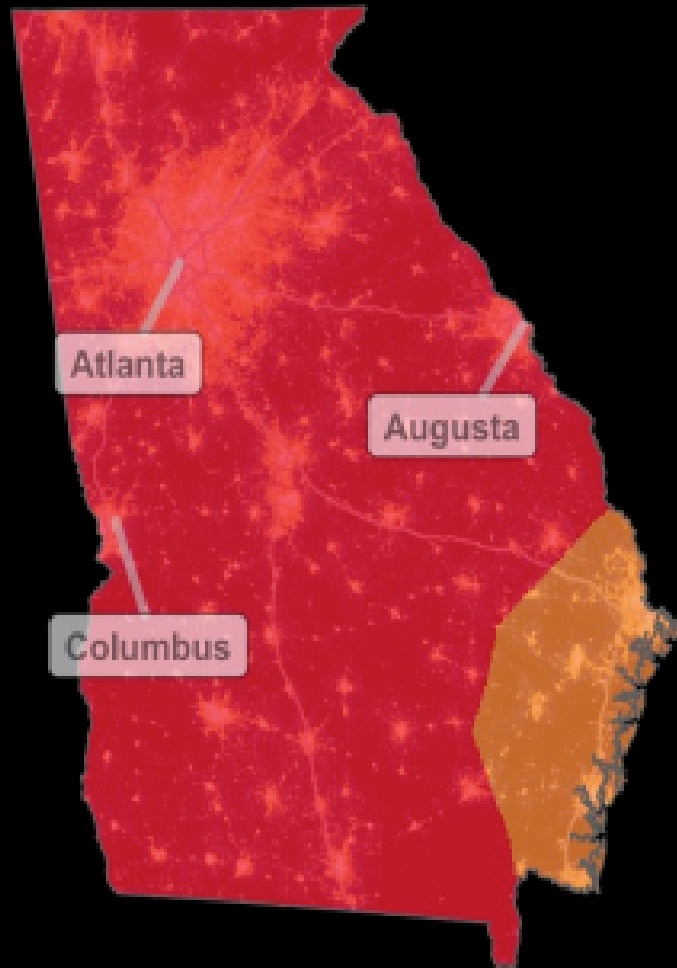
LIGHTS ON



LIGHTS OFF



Night of April 28, 2022



Birds forecast over city area

85.9 K Augusta

48.7 K Columbus

35.3 K Atlanta

13 M birds flying over Georgia

Lights out alert level



None Low Med High

LIGHTS DON'T JUST RESULT IN WINDOW COLLISIONS

- Disruption of the circadian rhythm (daily cycle)
 - Singing later at night and earlier in the morning
- Seasonal effects
 - Entering reproductive state earlier
 - But not necessarily nesting earlier





REDUCE LIGHTING AT HOME

- Take the Lights Out pledge
- Smart lighting
 - Down shielded lights
 - Use motion sensors or timers
 - Turn them off

A FEW TIPS ON LIGHTING

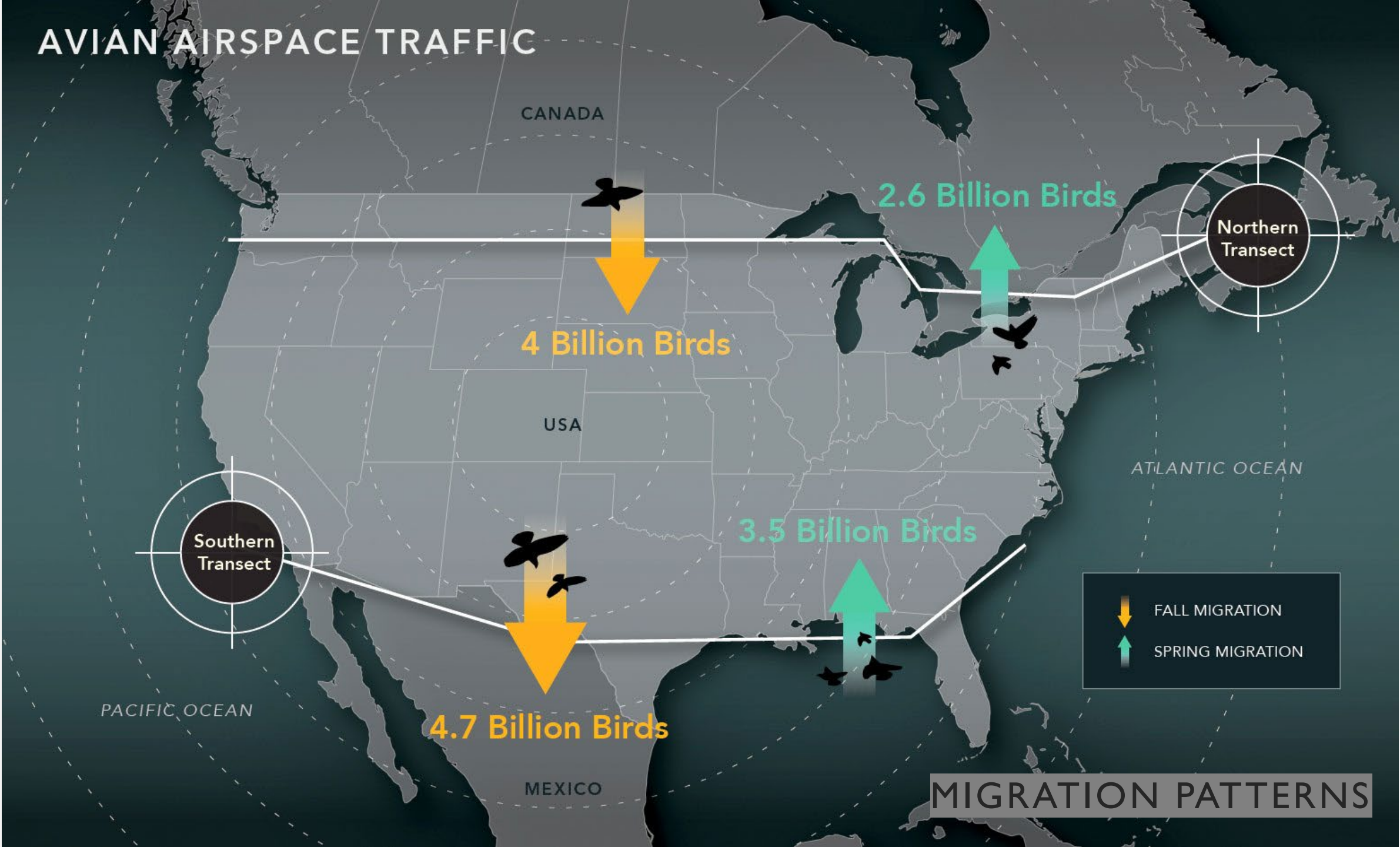
- Less lumens are better (more lights, more lumens expended. And larger area will be illuminated)
- Blue rich white light is not preferable
 - 3,000K or below
 - Warmer lighting
 - Matches recommendations made by American Medical Association and Dark Sky Association



WINDOW COLLISIONS

WHY ARE BIRDS FLYING INTO WINDOWS?

AVIAN AIRSPACE TRAFFIC



CANADA

2.6 Billion Birds

Northern
Transect

4 Billion Birds

USA

ATLANTIC OCEAN

Southern
Transect

3.5 Billion Birds

FALL MIGRATION

SPRING MIGRATION

PACIFIC OCEAN

4.7 Billion Birds

MEXICO

MIGRATION PATTERNS

NOCTURNAL FLIGHT CALLS

- Flight calls increase when birds pass over illuminated areas
 - Is it confusion?
 - Attraction?
 - Likely important social cues for decision making during migration
- Species that give nocturnal flight calls are more likely to collide with buildings
 - “Super Colliders”



COLLISIONS: MOST COMMON SPECIES



1	Ruby-throated Hummingbird
2	Tennessee Warbler
3	Swainson's Thrush
4	Cedar Waxwing
5	Yellow-bellied Sapsucker
6	Ovenbird
7	Wood Thrush
8	American Robin
9	Red-eyed Vireo
10	Common Yellowthroat



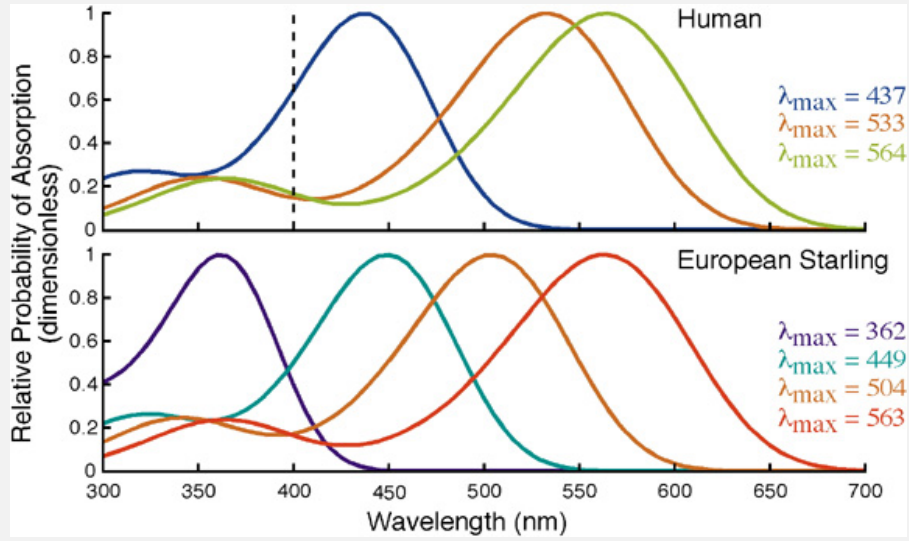
AVIAN VISION

Birds view the world very differently than humans





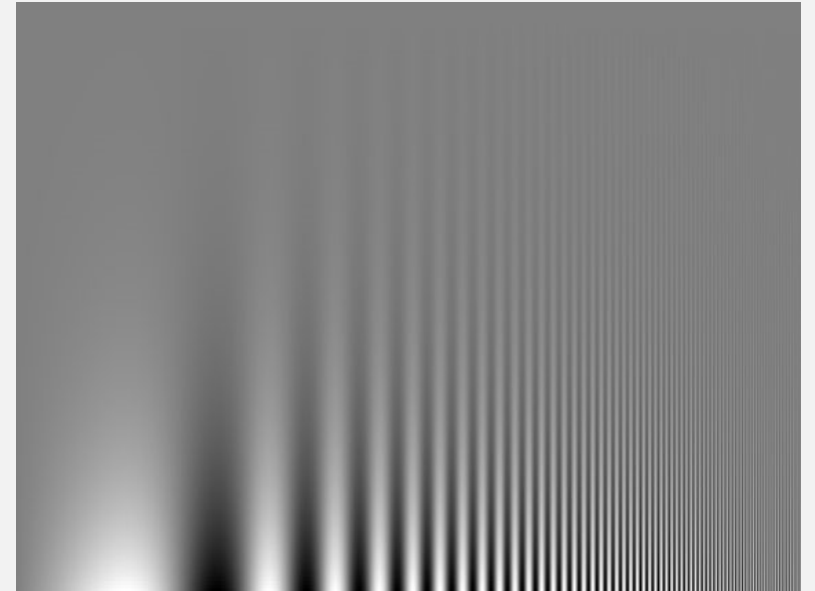
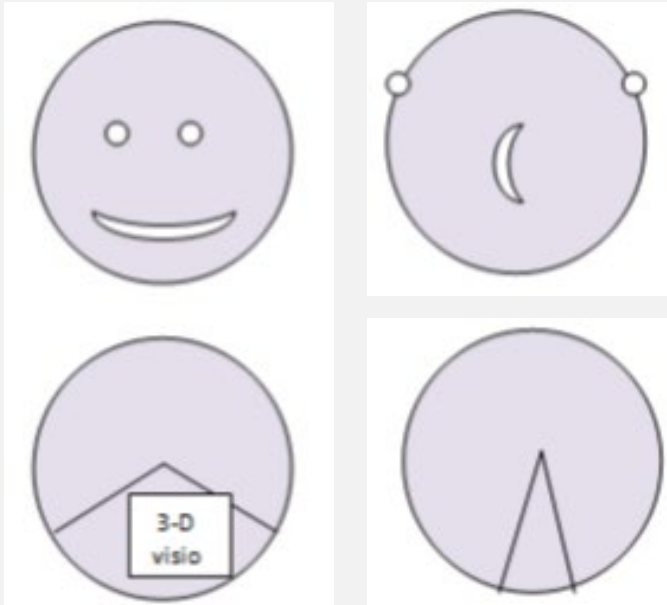
Eye positioning




UV Spectrum



Contrast



A large glass window reflecting a city street scene with buildings and trees. The reflection shows a multi-story building with many windows, some of which are lit up. There are also trees and a street with cars visible in the reflection. The window is set in a building with a stone or concrete facade. A black banner with white text is overlaid on the window. In the foreground, there is a yellow caution sign, a black bucket, and a white bucket. A cleaning cart is visible on the right side of the image.

BIRDS DO NOT UNDERSTAND GLASS AS A BARRIER

AUTOMATIC SPRINKLER
SHUT OFF VALVE

A wooden boardwalk with a glass railing is shown, reflecting the surrounding forest. The railing is made of glass panels held together by metal frames. The boardwalk is made of light-colored wooden planks. The background is a dense forest of green trees under a blue sky. The reflection in the glass is very clear, showing a mirror image of the boardwalk and the forest. A semi-transparent white box with a black border is overlaid on the center of the image, containing the text "REFLECTIONS ARE REAL TO BIRDS".

REFLECTIONS ARE REAL TO BIRDS

TREE, REFLECTION, VIEW?









TO MAKE MY POINT...

PEOPLE CAN'T SEE GLASS
EITHER




WE HAVE LEARNED VISUAL CUES



BUILDING ORIENTATION

Cardinal orientation
not shown to effect
collision rate

Orientation to
landscape matters



LOW
WINDOWS
TYPICALLY
WORSE



ATTACKING ONE'S REFLECTION

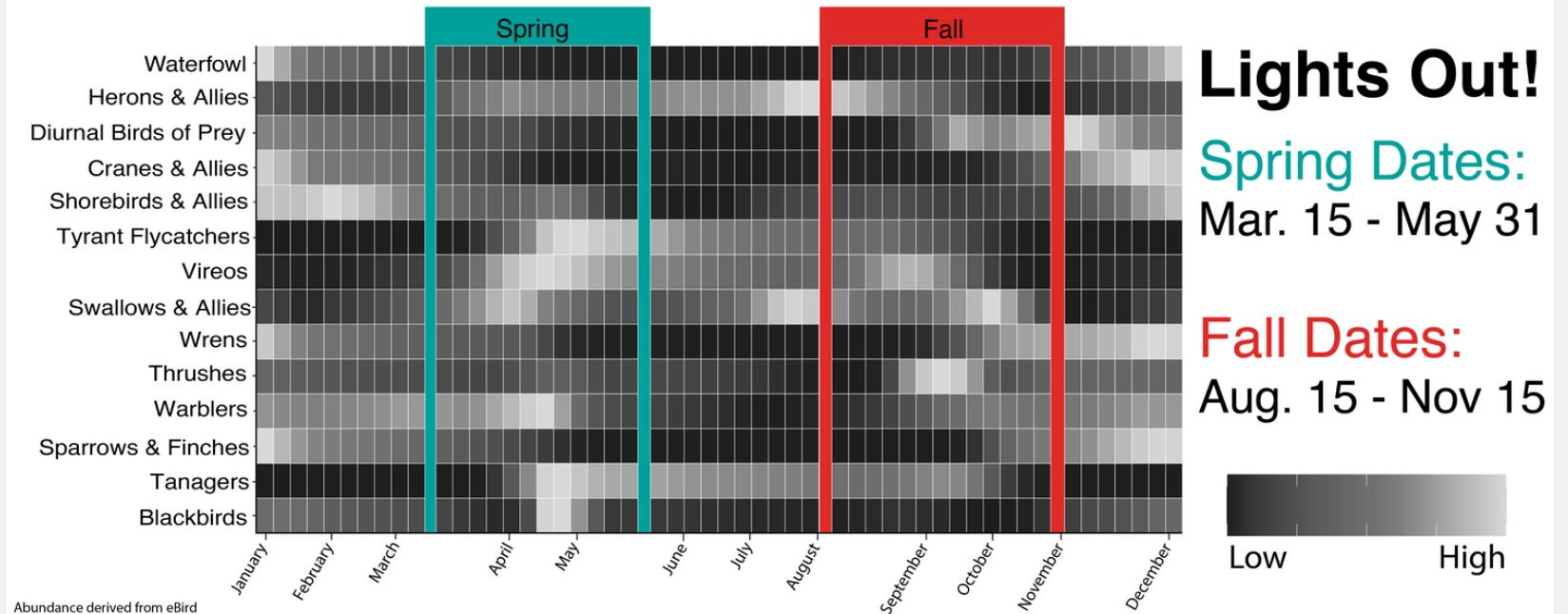
CORRELATES OF BIRD COLLISIONS

- Amount of glass
- Adjacent habitat
- Seasonality
- Time of day
- Avian density
- Guild
 - Foliage gleaners vs omnivores and ground foragers

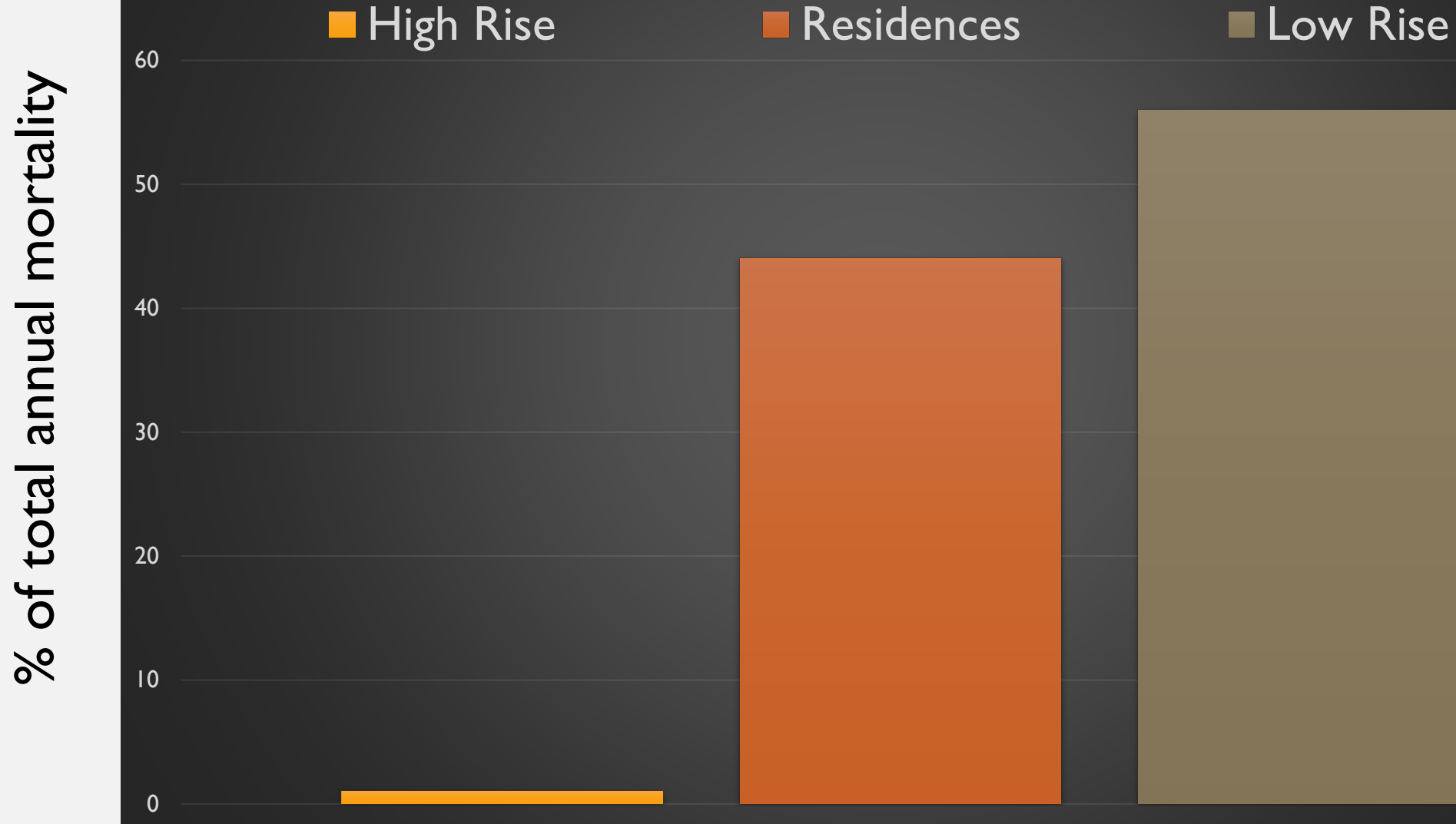


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Timing is everything!



Building Caused Mortality in US



Loss et al. 2014

WHAT DOES A BIRD-FRIENDLY
HOME LOOK LIKE?

DESIGNING A BIRD-FRIENDLY HOME

- Strategies (incorporate during construction)
 - Minimize use of glass
 - Reduce exposure of glass
 - Incorporate signals in/on glass
 - Install bird safe glass such as UV pattern glass or other alternatives
- This design overlaps with...
 - Solar shading
 - Glare control
 - Distinctive design aesthetic
 - Security
 - Thermal control
 - Energy efficiency and more

RETROFIT: WINDOW FILM

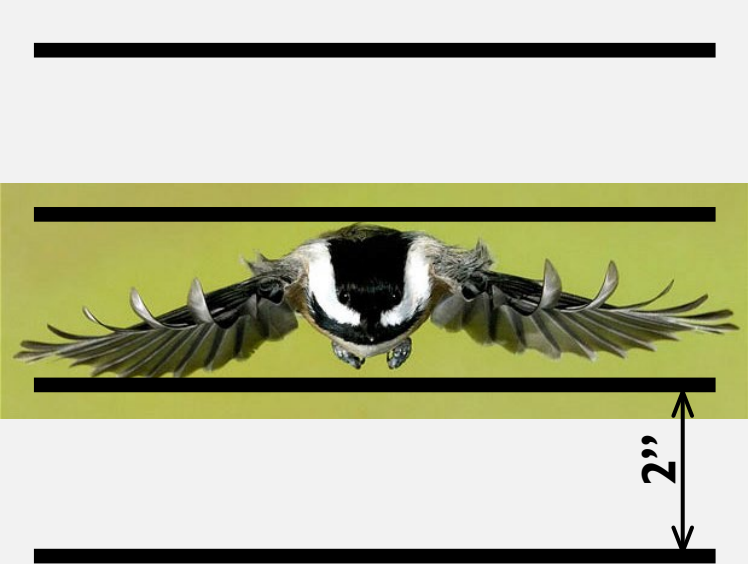


WHAT STOPS
COLLISIONS?

Patterns that
become visual
barriers

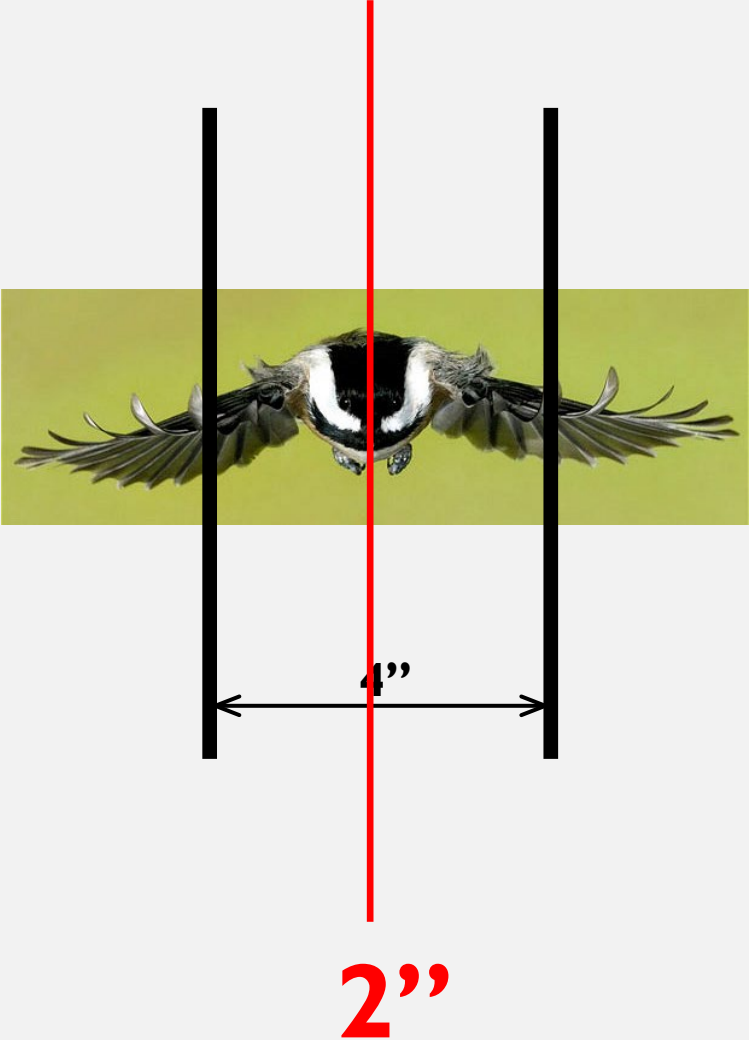


SOLUTIONS - 2" / 4" RULE



Horizontal lines with a maximum spacing of 2"

Pattern elements at least 1/8"



- Applications should be on surface one (exterior)
- Screens work well
- Variety of external applications are effective

VISIBILITY AND CONTRAST CRUCIAL FOR EFFECTIVENESS



ACOPIAN BIRD SAVERS/ZEN CURTAINS

“PUT ACOPIAN BIRDSAVERS ON YOUR KILLER WINDOWS”

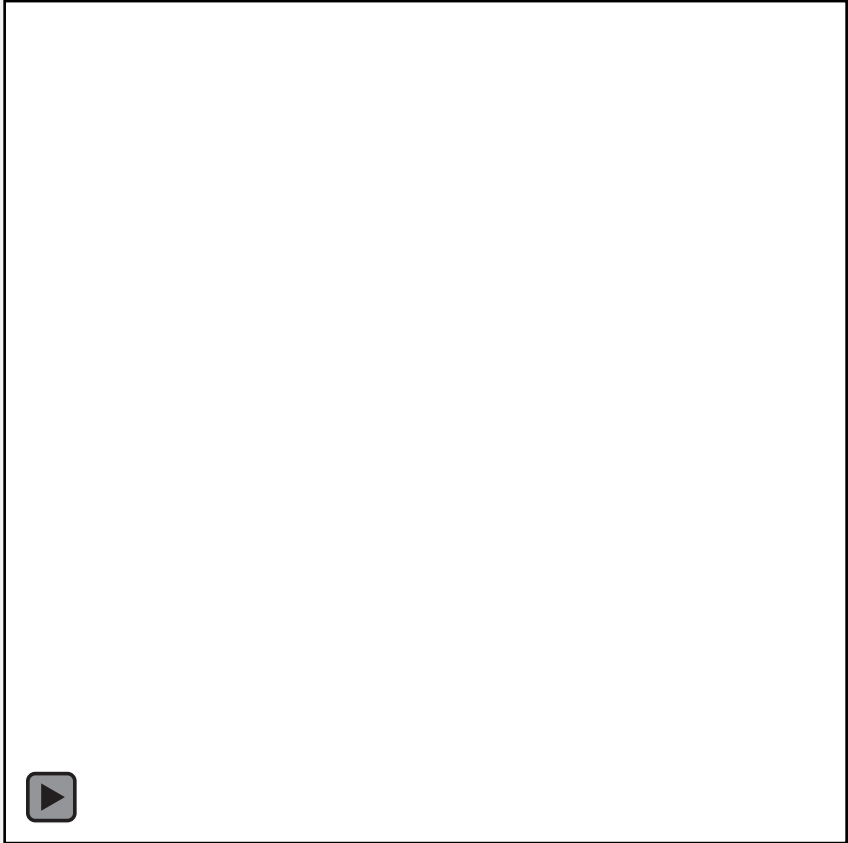


© Dr. Ellen K. Rudolph



PRICE RANGE: \$\$ - \$\$\$

RETROFIT – CHATTAHOOCHEE NATURE CENTER



PRICE RANGE: \$\$

SAWNEE MOUNTAIN

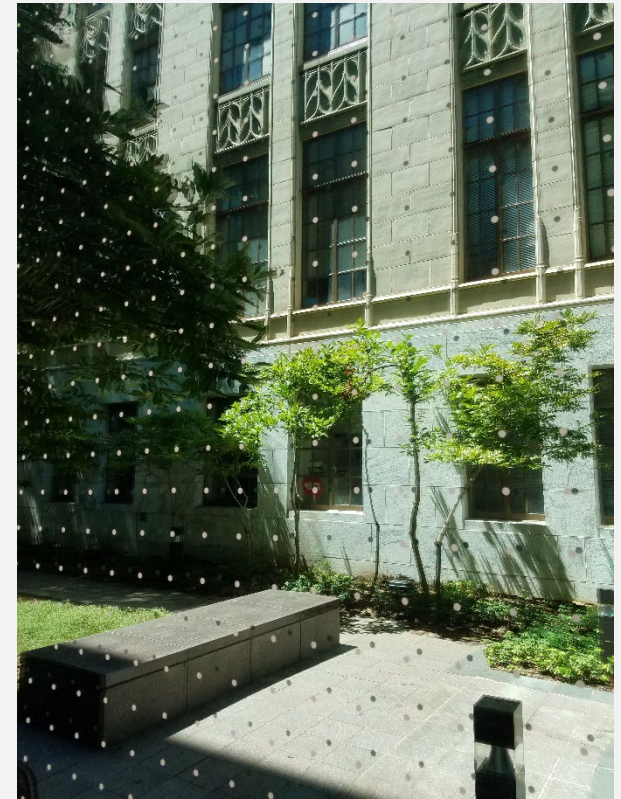


CAMP JEKYLL



CAMP JEKYLL





PRICE RANGE: FREE - \$\$



**PARTICIPATING IN COLLISION
MONITORING**

PROJECT SAFE
FLIGHT GEORGIA

Monitor different areas of coastal
Georgia

Determine extent of problem locally,
species present, areas of concern

Lights Out

Partner w/ architects, building
managers, local government

Next: push for legislation for bird
friendly buildings/glass/design

PSFG SURVEYING



During peak migratory periods

Spring – March 15 through May 31
Fall – August 15 through Mid November



Permanent Walking Routes

Brunswick
Savannah



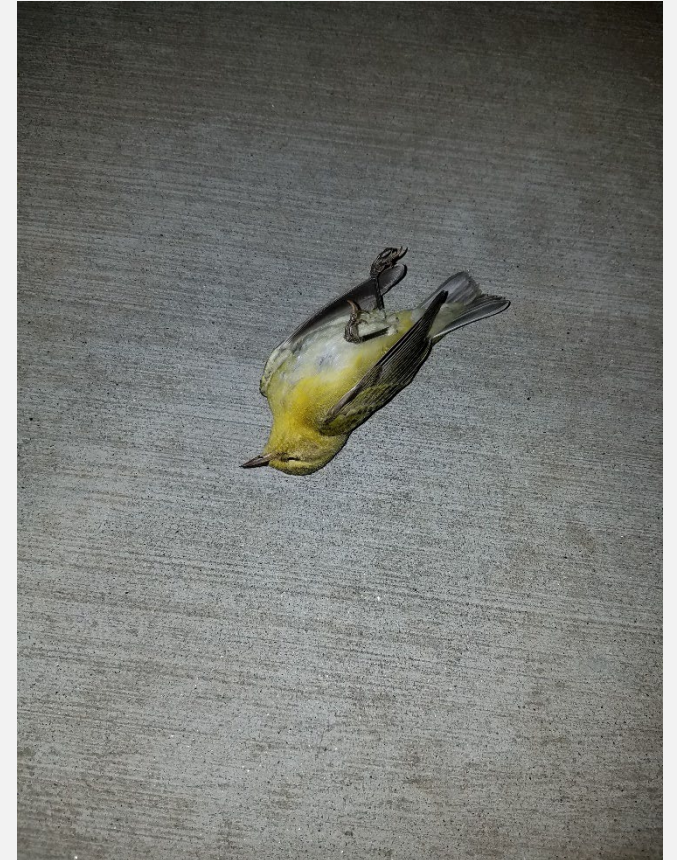
Standalone Buildings



Incidental

PSFG: STEPS FOR VOLUNTEERS

1. Join Google Calendar and download app on your phone
2. Conduct pre-established route in Brunswick or Savannah
 - Bring supplies
 - Take photos of any birds found
 - Collect birds
 - Visit rehabber or freezer with birds found
3. Log information into shared effort log



SUPPLIES

What to take with you on a route

- Tote or backpack (not provided)
- Ziplocs
- Brown paper bags
- Binder clips
- Gloves
- Pencils
- Data cards
- Flashlight (or phone)
- Cooler
- Program info (letter, permits, business card)
- Brochures/handouts

WHEN

- Any day your schedule permits
- Starting time
 - Preferably ~30-45 min before sunrise
 - However, fitting other times during the day into your schedule is acceptable.
 - Shared google calendar for scheduling



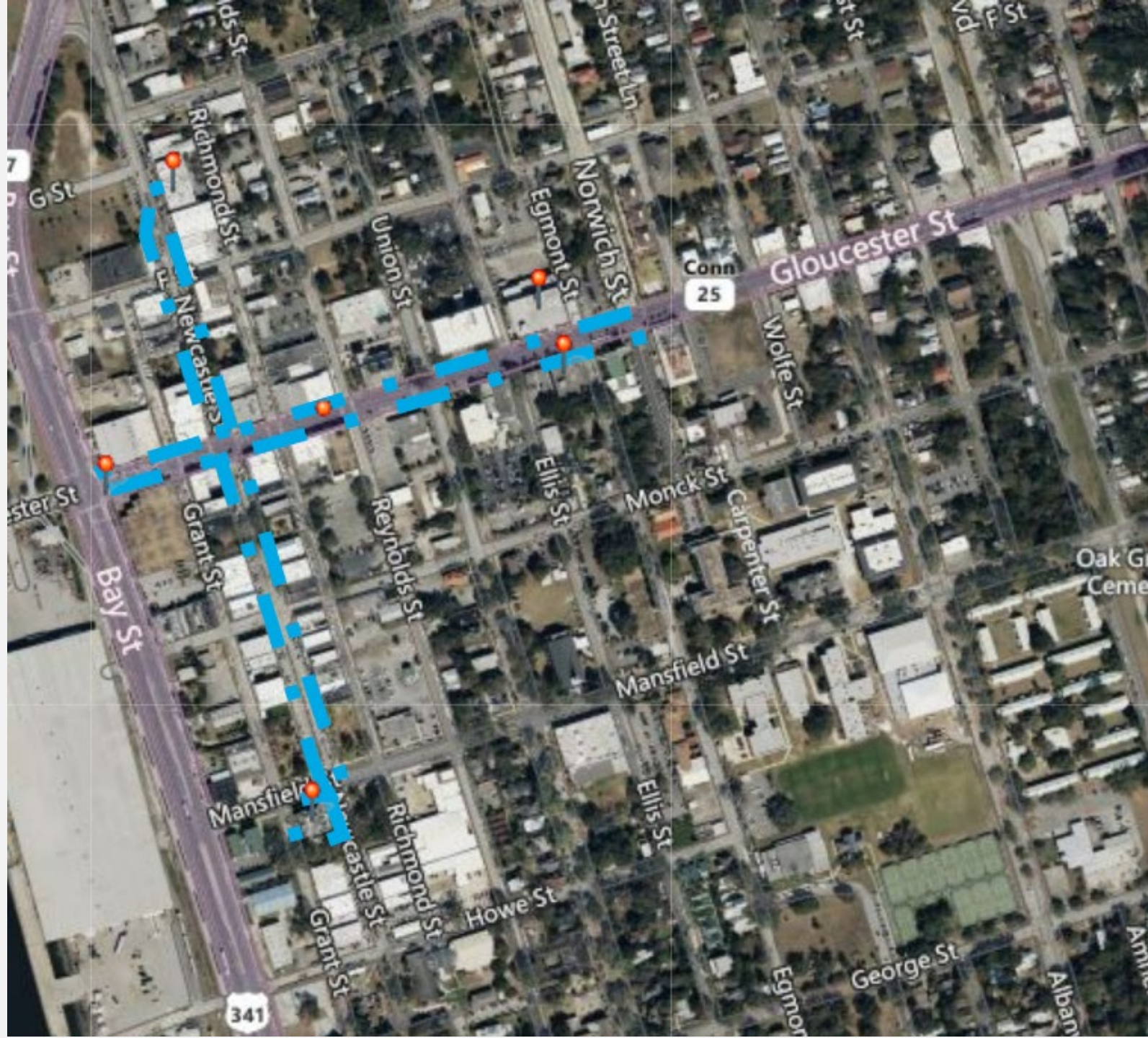
BRUNSWICK ROUTE

Directions:

- Starting at Brunswick public library
- Go down Gloucester street to post office and back down other side of the street
- Follow Newcastle street from 'Gallery on Newcastle' to City Hall building

Focal buildings:

- public library
- city hall
- post office
- Old southern LINC wireless building



CAMPUS ROUTE

- Focal buildings:
- Campus center
- Student activities center
- Clara Gould Library
- Correl Center
- Nunally Health and Science Building



LOGGING WINDOW COLLISION INCIDENTS IN DBIRD

dBird.org

If you find a dead or injured bird, you can make an important contribution to bird mortality research by filing a report here.

In cases of multiple birds, please submit a separate report for each one.

Scroll down to start a report

1. Select location

Where did you find the bird? *

Map data by OpenStreetMap contributors, Imagery © Mapbox, © OpenStreetMap contributors, Imagery © Mapbox, © OpenStreetMap contributors, Imagery © Mapbox

2. About the bird

Do you know the bird's species?

Yes No

Species*

3. Details

When did you find the bird? *

Bird status *

Dead Injured

DBIRD

2. About the bird

Do you know the bird's species?

Yes

No

Species *

Start typing...



Sex *

Male

Female

Unknown

Age *

Adult

Juvenile

Unknown

3. Details

When did you find the bird? *



Aug 16, 2021, 2:03 PM

Bird status *

Dead

Injured

Do you know the cause of death/injury?

Yes

No

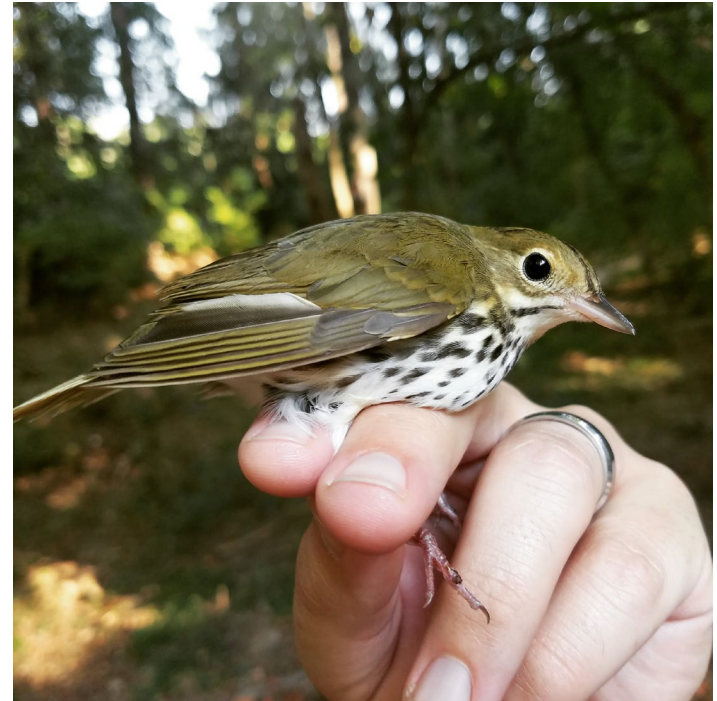
Cause of death/injury *

Select cause...



OVERVIEW

- Biggest threats to birds:
 1. Habitat loss
 2. Outdoor cats
 3. Window/glass collisions
 - Primarily during migration
- Spread the word, join volunteer efforts!
- This is not just an urban threat – private residences have high rates of collisions too
- You can help!





Make Windows Safer



Do Citizen Science



Keep Cats Indoors



Use Less Plastic



Use Native Plants



Drink Shade-Grown Coffee



Avoid Pesticides

7

SIMPLE ACTIONS

TO HELP BIRDS



REVIEW: WHAT CAN YOU CAN DO?

- Sign up for Lights Out Georgia
- Make your home/lights bird friendly
- Report incidental findings to Dbird
- Become a Project Safe Flight Georgia volunteer

QUESTIONS?



CONTACT INFO

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