Conserving Critical Stopover Habitat along the Gulf of Mexico

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2-3 Months

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1 Month
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7-8 Months

The quality of non-breeding habitats and the severity of drought can determine departure schedules, the condition of redstarts, the probability of survival, and dates of arrival or to breeding areas

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[Logos: NFWF, Southern Company]
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2-3 Months
Availability and quality of breeding habitats interact with winter effects to influence the breeding success of redstarts.

SPRING MIGRATION
1 Month
Food availability at stopover sites and strength of tailwinds during spring migration can further impact condition and arrival times.

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1 Month
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Threats to Migrating Birds
Gulf Coast Habitats are Essential

• North America’s breeding birds depend on the coast of the GOM for resting and refueling

• Billions of birds congregate on beaches, marshes, and coastal forests during spring and fall

• Many more pass through the airspace - also a critical habitat
Current Status

• Poor understanding of migrant stopover distributions and use of airspace

• We do not know if key habitats and sites are protected

• We now have the tools to measure the Gulf-wide distribution of migrants

Wetland habitat at Powderhorn Ranch, TX
Scarlet tanager in coastal scrub habitat at Mad Island, TX
Objectives

Comprehensive assessment of the distribution, abundance, timing and habitat affiliations of migratory birds in stopover and airspace habitat during spring and fall along the U.S. coast of the Gulf of Mexico
Methods

Data source

Low angle radar

Measure

Migrant density emerging from stopover habitat
Methods

Data source

High angle radar

Measure

Migrant density, direction & height in airspace
Methods

Data source

eBird

Measure

Migrant focal species distributions & richness

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Methods: weather radar
Brownsville, TX to Key West, FL

- Spring and Fall
- 2008-2015
Preliminary results: Stopover

Very recently finished processing all the spring data.

Coming soon!

Example map:
Fall migration through the Northeast U.S

Interpolate bird distributions across region outside of radar coverage using predictive model
Preliminary results: Airspace

Spring diurnal and nocturnal migration

Density

Direction

Variation in direction

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Preliminary results: eBird

BCR 37
Gulf Coastal Prairie
Spring

Yellow warbler

April 26 Distribution

Blue = Detections
Future Directions

• Generate state-level maps of high priority land areas for spring and fall migrants in the air and on land

• Classify the threats, vulnerability, and current conservation status of key habitats and sites

• Measure the quality of habitats and the condition of migrants in areas where they occur
Critical Applications

• Identify high priority areas for conservation of stopover habitat and passage corridors
• Minimize the impacts of future developments
• Identify where to target monitoring for at risk or declining species
Thank You