Cerulean Warbler

In search of critical migratory habitat

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David Anderson, Louisiana State University
Edgar Selvin Pérez, Defensores de la Naturaleza
Gabriel Colorado, Univ Nacional de Colombia
David Mehlman, The Nature Conservancy

1) All of you are aware of the plight of the CERW and that a technical group formed in 2001 to discuss and prioritize CERW research and conservation needs.

One of the highest highest research needs id by the group was basic natural history info about the sp during the non-breeding season.

Paul Hamel immediately assembled a

El Grupo

Venezuela, Colombia, Ecuador, Peru, Bolivia, U.S., Canada

?
UNITED STATES
MEXICO
CUBA
COLOMBIA
VENEZUELA
GULF OF MEXICO
CARIBBEAN SEA
NORTH AMERICAN BASIN

Union Camp
Columbia River Forest Reserve
Belize
Guatemala
Honduras
El Salvador
Nicara

Ted Parker
1953 - 1993

Parker speculated that

In mid-March, most CERW move along the eastern slopes of the Andes to n. Columbia

Fly >1,500 km across the W Caribbean Ocean

Moving NW until reaching land somewhere over the coast from Nicaragua to Belize

They continue inland to suitable lower montane forest in low mountains facing the Caribbean coast

Where they spend the next three weeks (late-March - mid-April)

Potential staging area

Conservation Implications

Significant habitat degradation in a geographically small area could imperil the Cerulean Warbler

2004
Belize Expedition

The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH

TIDE
Toledo Institute for Development and Environment
Protecting Toledo's Natural Resources Through Conservation and Sustainable Development.

American Bird Conservancy
Conserving wild birds and their habitats throughout the Americas

Hurricane Iris, October 8, 2001

Union Camp, April 2004

Forest to the south of the camp was badly damages

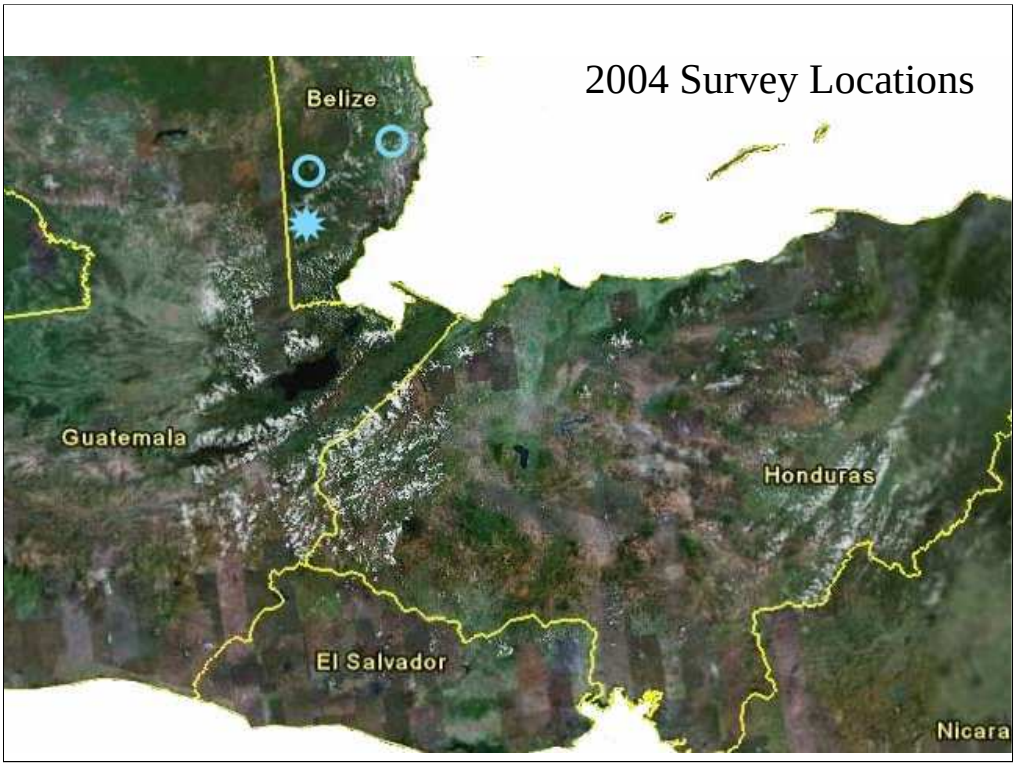
Remarkably, little damage to N,E,& W

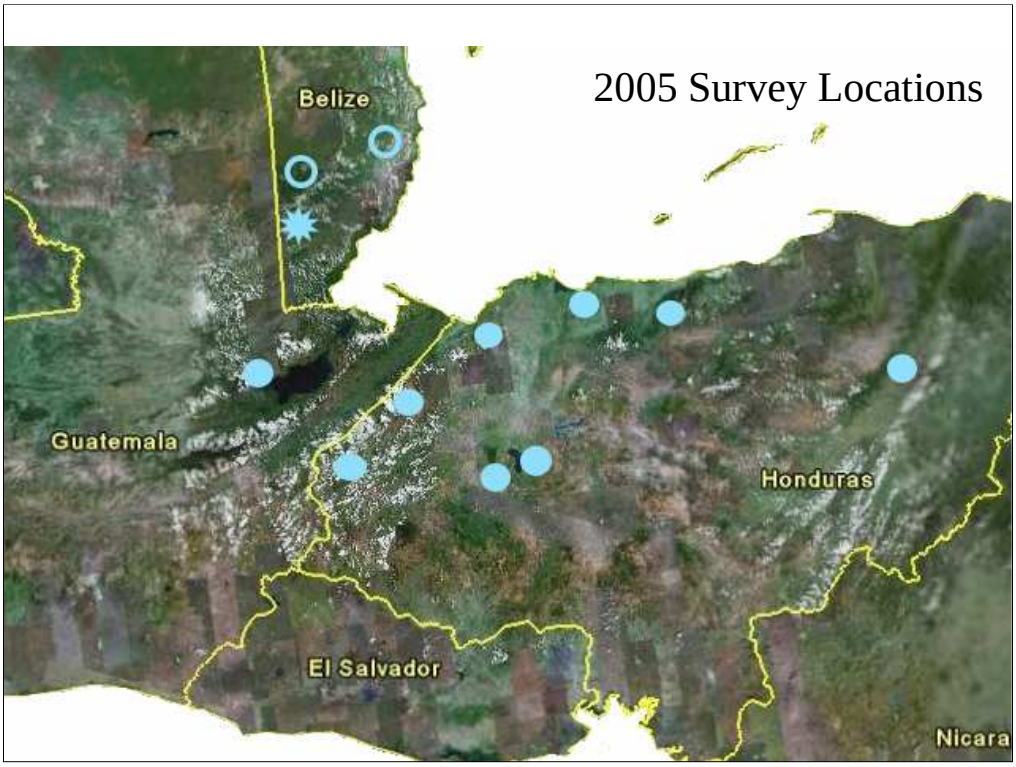
2004 Results

16 Cerulean Warblers
(13 males, 3 females)

April 2 – 4, 2004

Most common migrant recorded


2004 Survey Locations
Belize
Guatemala
Honduras
El Salvador
Nicara


2005 Survey Locations
Belize
Guatemala
Honduras
El Salvador
Nicara

Goals for 2005

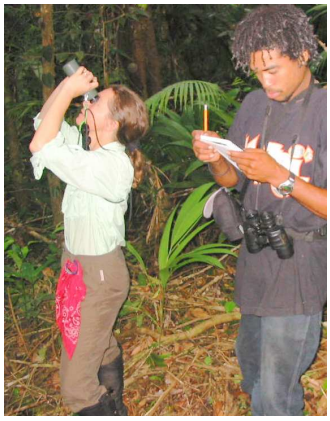
- Survey locations of historic records
- Survey sites consistent with Parker's criteria: lower montane forest, in low mountains facing the Caribbean coast
- Build capacity among local biologists

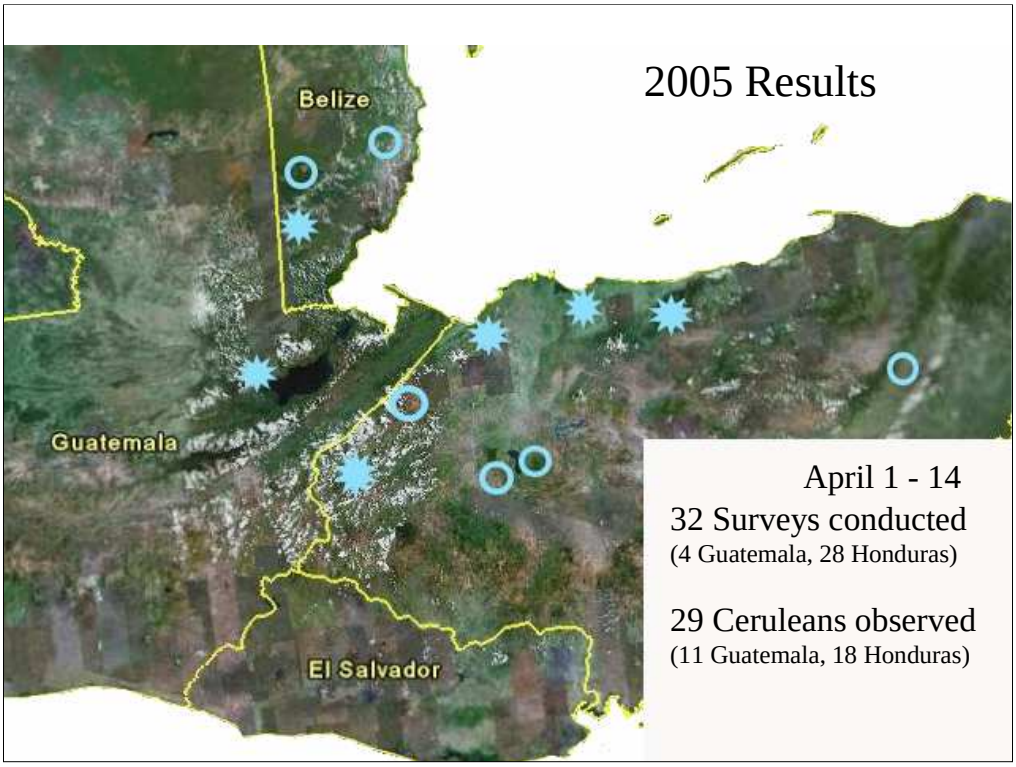
Workshop

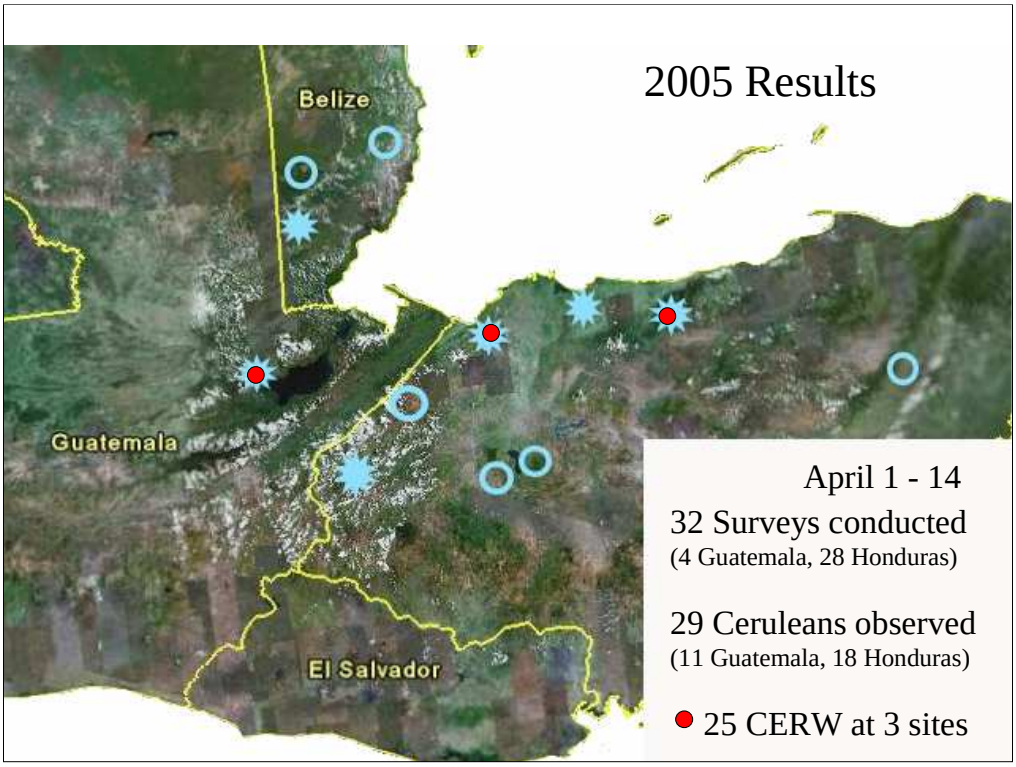
With the assistance of David Anderson, PhD candidate at LSU, and Selvin Perez, and several Honduran and Guatemala biologists

Methods

- Teams of 2 - 3 biologists
- Line transect length 2 to 3.5 km
- Timing 0630 - 1100 and
  1430 - 1630
- Composition of all flocks recorded
- Additional data collected for CERW



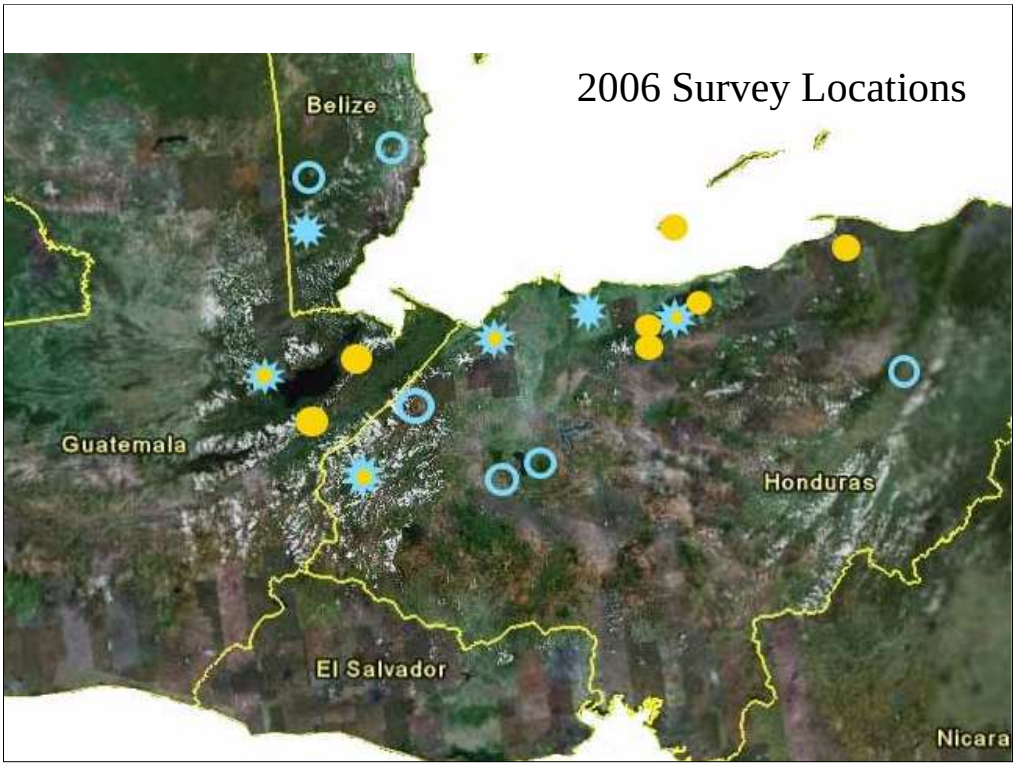

2005 Results
Belize
Guatemala
El Salvador
April 1 - 14
32 Surveys conducted
(4 Guatemala, 28 Honduras)
29 Ceruleans observed
(11 Guatemala, 18 Honduras)

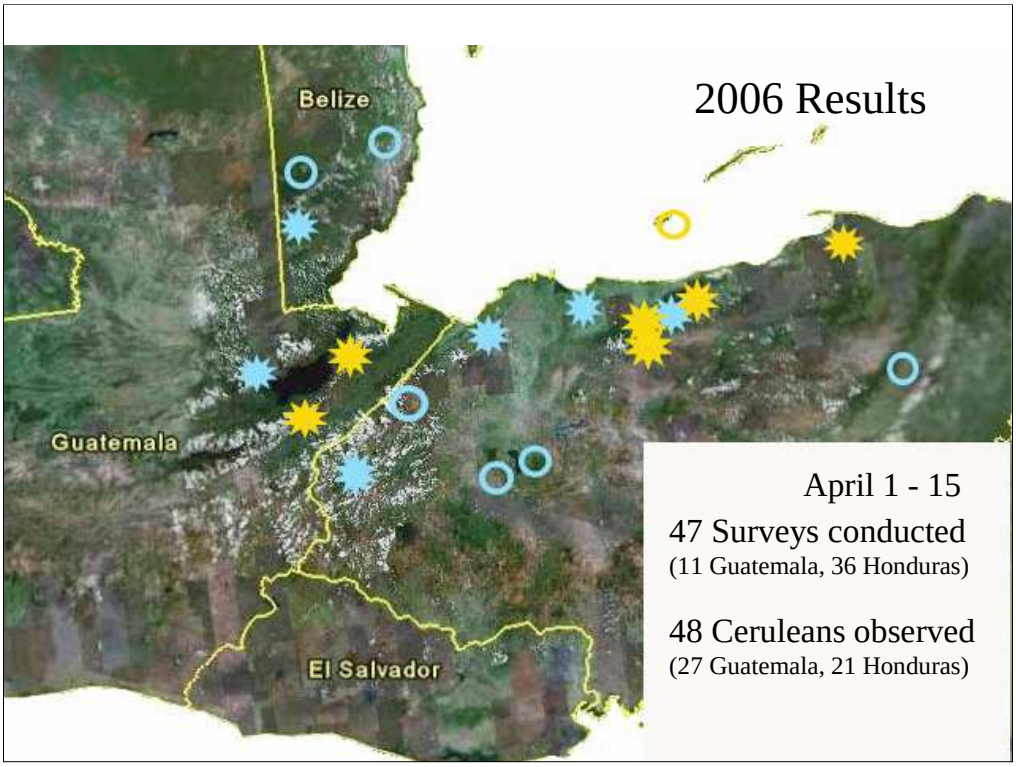

2005 Results
Belize
Guatemala
El Salvador
April 1 - 14
32 Surveys conducted
(4 Guatemala, 28 Honduras)
29 Ceruleans observed
(11 Guatemala, 18 Honduras)
25 CERW at 3 sites

Goals for 2006

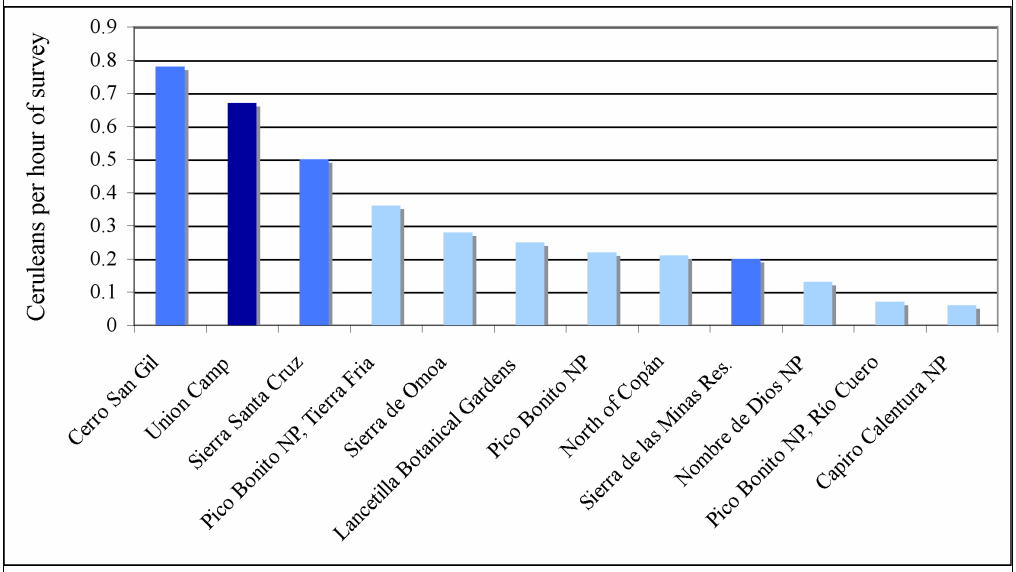
- Resurvey 2005 sites with Ceruleans
- Increase geographic range
- Increase elevation range
- Will playback increase detections?

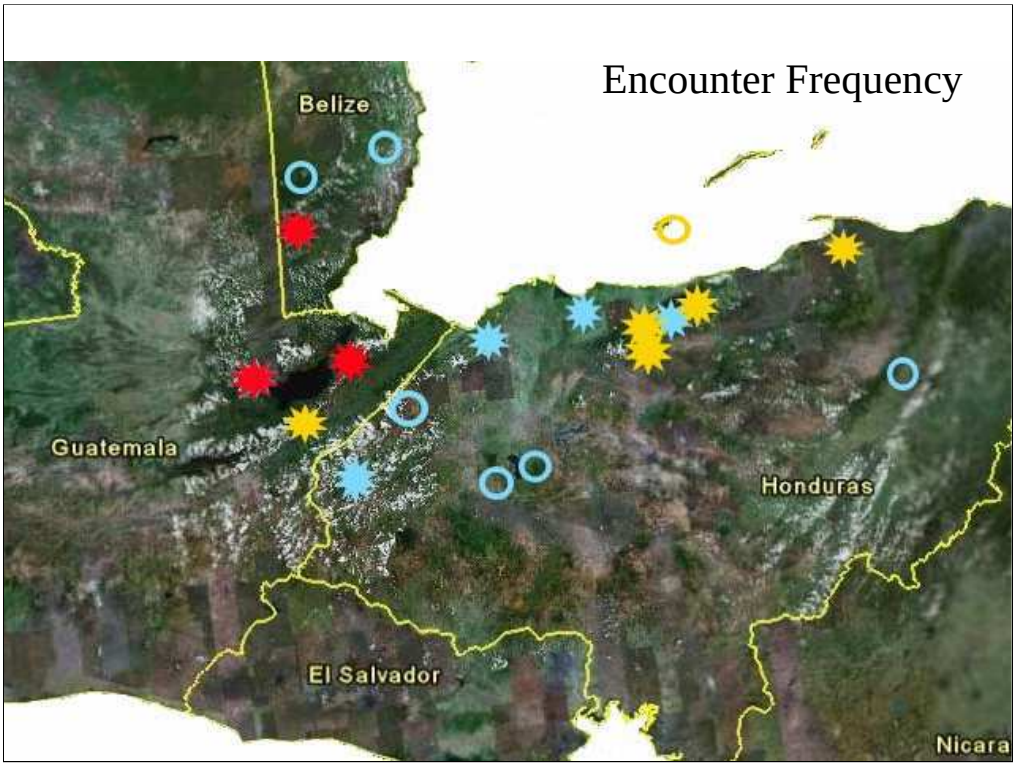
Playback


2006 Survey Locations
Belize
Guatemala
Honduras
El Salvador
Nicara


2006 Results
Belize
Guatemala
El Salvador
April 1 - 15
47 Surveys conducted
(11 Guatemala, 36 Honduras)
48 Ceruleans observed
(27 Guatemala, 21 Honduras)

Encounter Frequency




Encounter Frequency
Belize
Guatemala
Honduras
El Salvador
Nicara

What have we learned?

- Ceruleans use the same sites in subsequent years
- They use a broad elevation range
- Found in both primary and mature secondary
- Erratic in their response to playback
- Geographic range conforms to Parker

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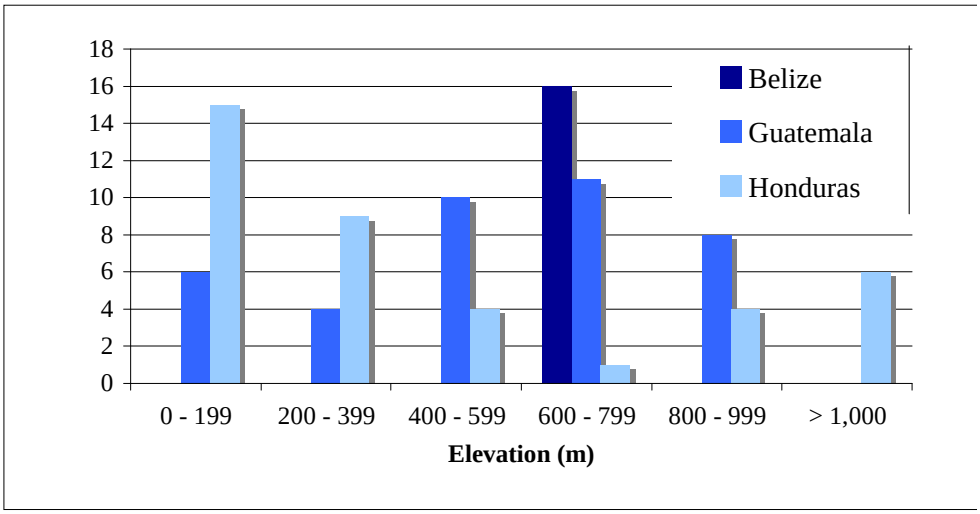
Ceruleans by Elevation



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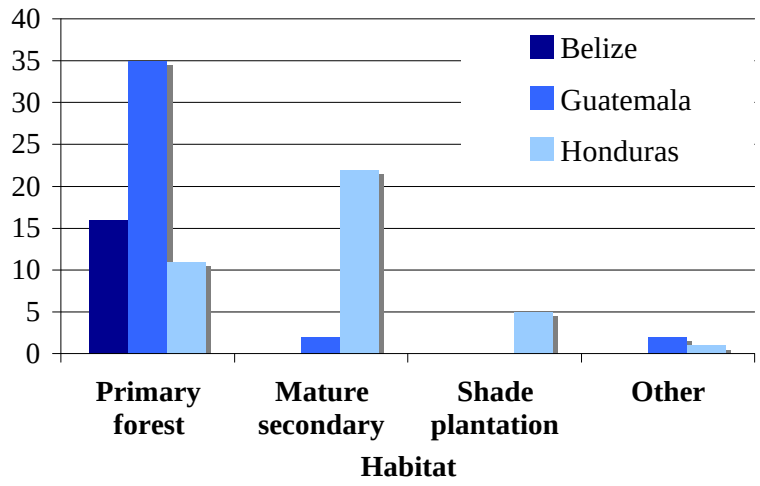
Ceruleans by Habitat Type



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Playback

- 2004 two positive responses
- 2005 two positive responses
- 2006 no responses to playback
- 2006 9 Ceruleans singing
  (8 Guatemala, 1 Honduras)

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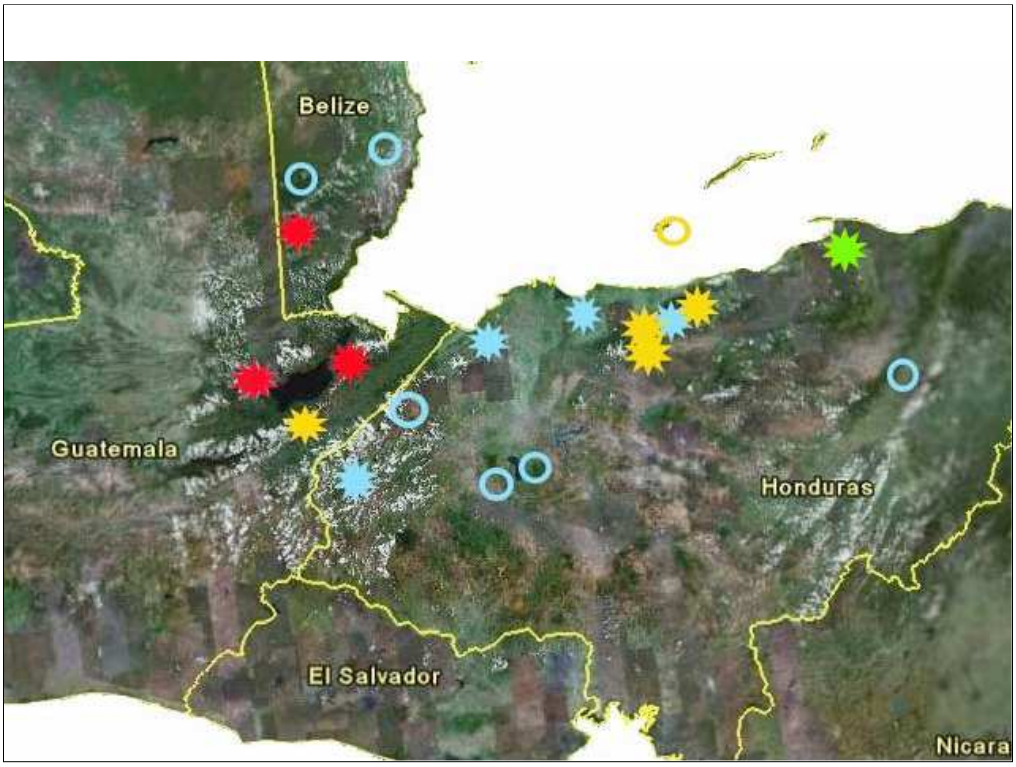
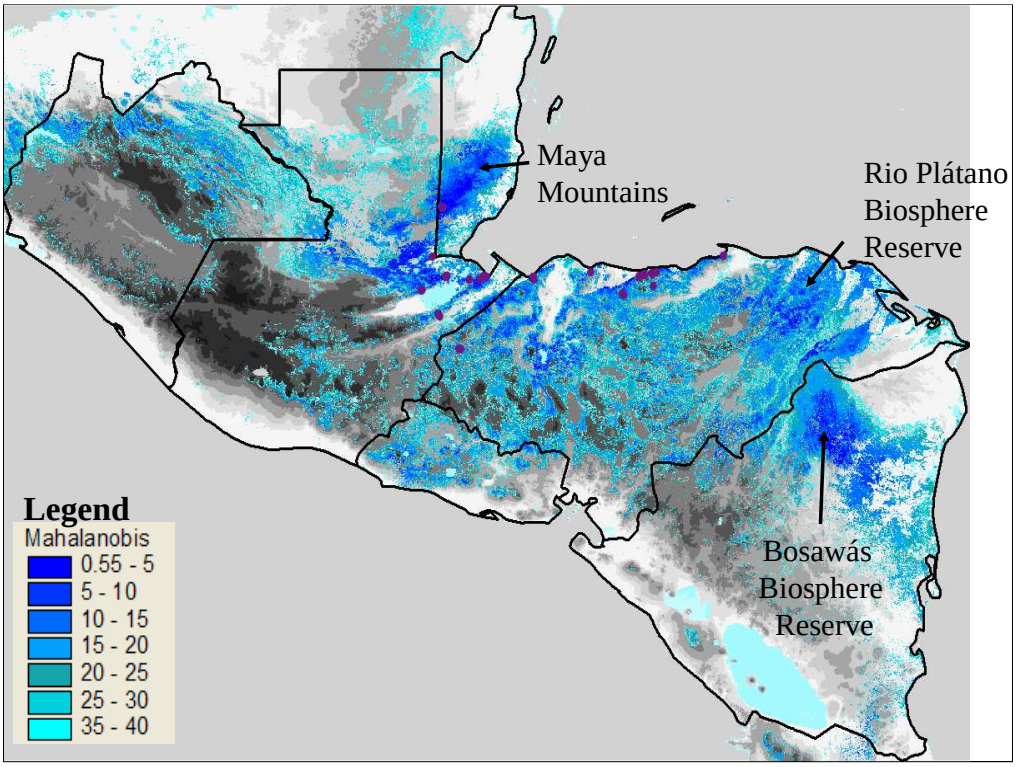
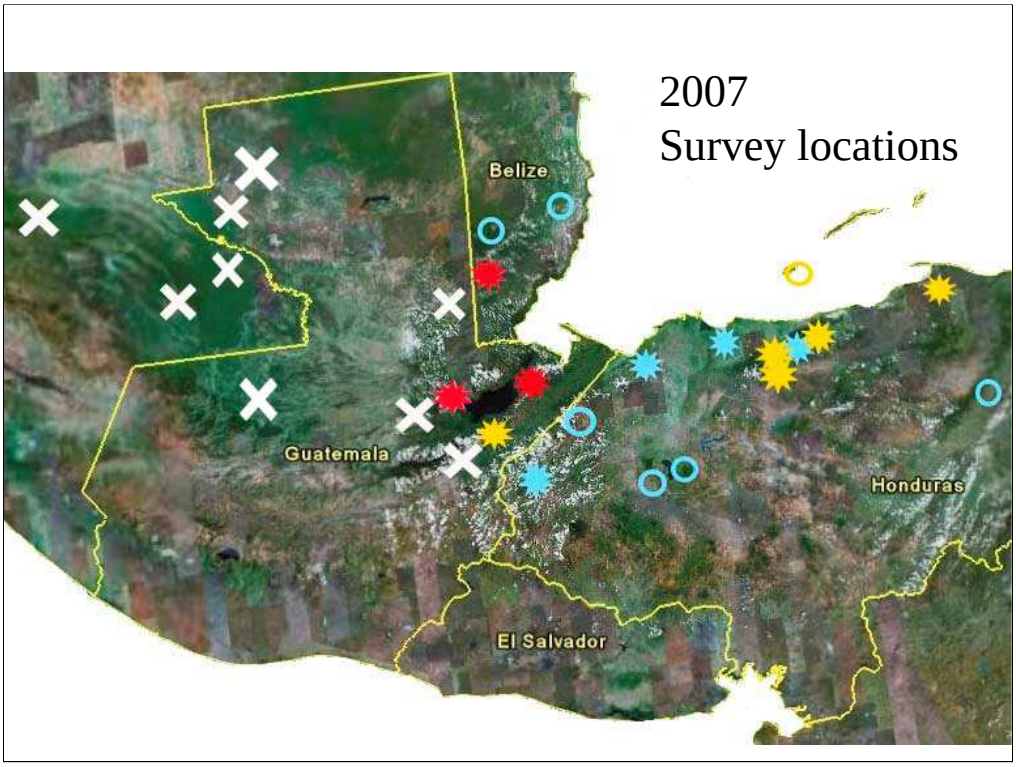

Belize
Guatemala
Honduras
El Salvador
Nicara

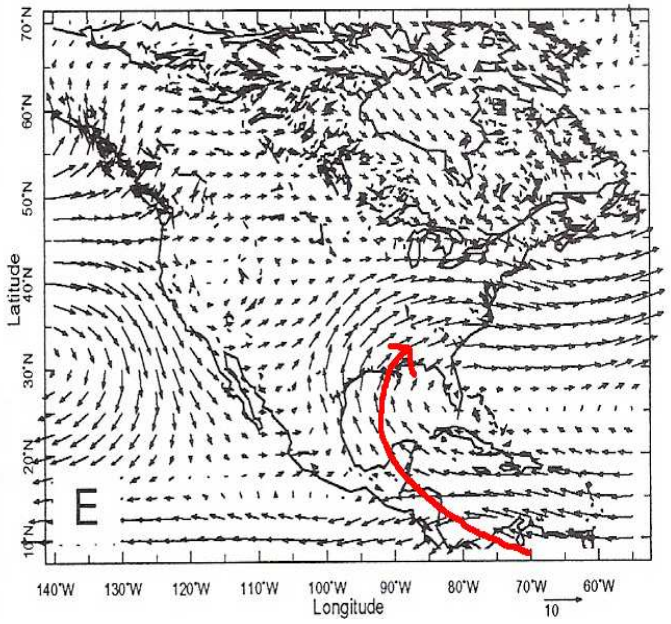
Goals for 2007

- Expand the geographic range of surveys
- Extend survey dates to the 3rd week in April
- Ground truth a predictive habitat model


Maya
Mountains
Rio Plátano
Biosphere
Reserve
Bosawás
Biosphere
Reserve
Legend
Mahalanobis
0.55 - 5
5 - 10
10 - 15
15 - 20
20 - 25
25 - 30
35 - 40


2007
Survey locations
Belize
Guatemala
Honduras
El Salvador

Do all Ceruleans need to stop?



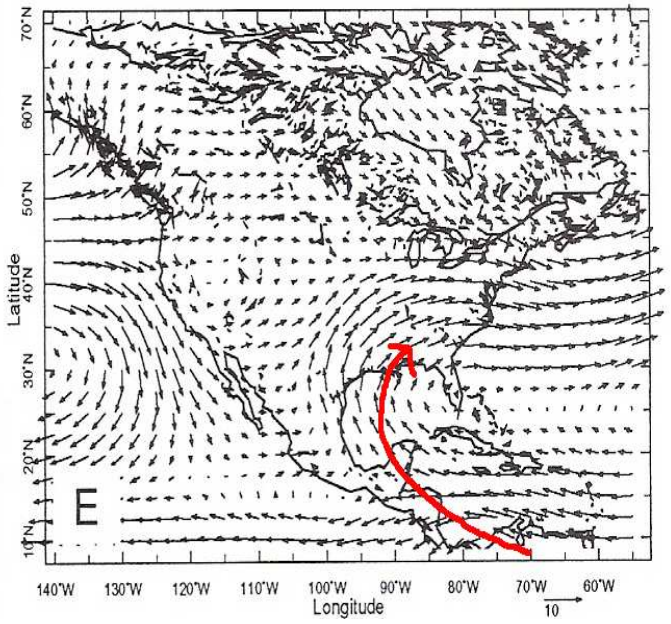
Winds aloft

April

1,525 meters

From Gauthreaux (2005)

Do all Ceruleans need to stop?



Winds aloft

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From Gauthreaux (2005)

Acknowledgements

Field & Technical Assistance

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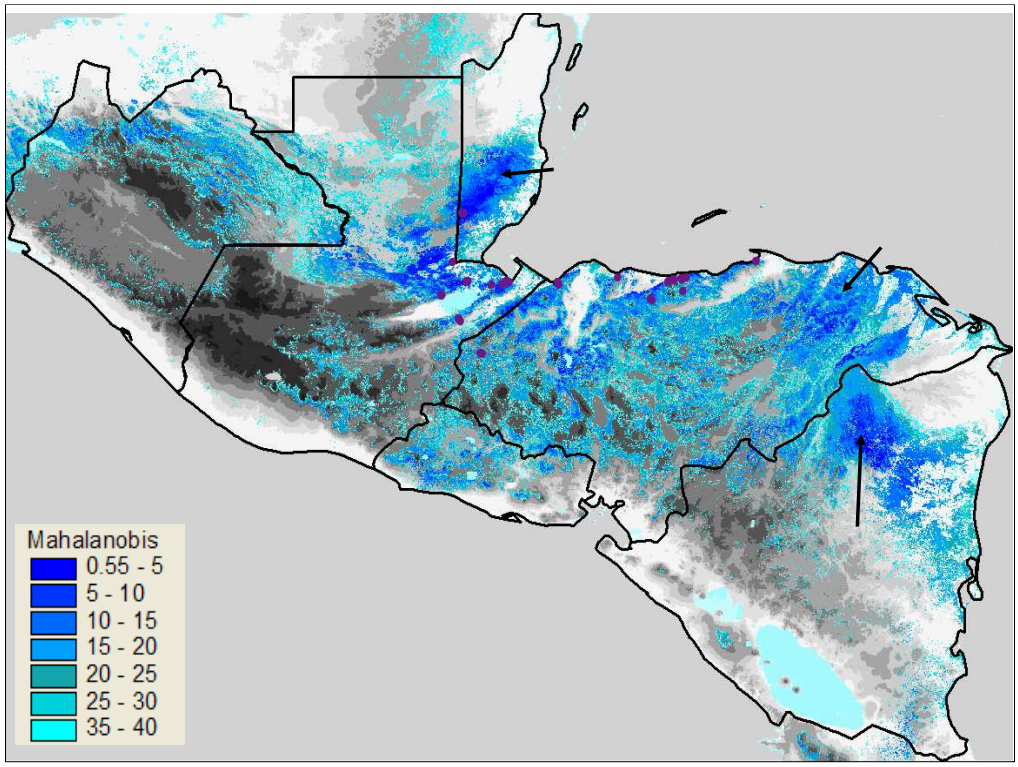
Questions?


Mahalanobis
0.55 - 5
5 - 10
10 - 15
15 - 20
20 - 25
25 - 30
35 - 40

Questions?

Ceruleans forage in mixed-species foraging flocks in mid-canopy

Average
Foraging height 15.0 m

Tree height 20.6 m

Canopy height 23.5 m

Emergent trees 29.3 m