INTERNATIONAL WOOD THRUSH CONSERVATION ALLIANCE: FROM RESEARCH TO CONSERVATION PLANNING AND ACTION

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Acknowledgements

- To all IWOTHCA partners and collaborators who shared information for this session and have conducted research and conservation actions to conserve the Wood Thrush across its breeding and wintering region.

- To the session presenters:
  David I. King (daveking@eco.umass.edu)
  Alexis Cerezo (a.cerezo@fundaeco.org.gt)

- To the organizers of the session: Randy Dettmers, Becky Keller, David I. King, Ron Rohrbaugh

- To the organizers of this workshop: Alaine Camfield Ruth Bennett, Randy Dettmers

- To roundtable discussion facilitators

Wood Thrush *(Hylocichla mustelina)*
Photo by Jeff Moore
www.partnersinflight.org

Session outline

1) Introduction

   - Wood Thrush Conservation Alliance

   - Species Distribution

2) Wintering ecology

   - Big picture research questions

   - How can we use science to inform conservation?

     by Dave King, *USFS Northern Research Station; Dept. Environmental Conservation University of Massachusetts*

3) Conservation actions and partner building

   - Conservation partners on the ground

   - Wood Thrush conservation in Guatemala

     by Alexis Cerezo, *Fundación para el Ecodesarrollo y la Conservación (FUNDAECO)*

Before advancing in this session we will take a moment to establish connections with partners by getting to know who they are and what they do?

- Raise your hand to participate in the interactive poll

Are you from the breeding grounds for Neotropical migratory birds?

Are you from the wintering grounds for Neotropical migratory birds? Or year-round habitat for Neotropical resident birds?

Do you work in a University as a researcher and/or professor?

Do you work in an non-governmental organization, reserve, institution dedicated to conservation implementation?

Are you a student interested in research and/or conservation?

Do you work in an area not related to conservation or research (e.g. economics, social sciences, others)?

Introduction

- The International Wood Thrush Conservation Alliance was founded around 2010 to conserve this species

- Its mission is *to ensure the long-term viability of Wood Thrush populations and the habitats on which they depend through science-based, full life cycle conservation planning, management, and education.*

- Partners from at least 8 countries and 18 different organizations

- Today here at SMBC/PIF VI, we aim to identify areas of overlap and integrate efforts with other conservation groups

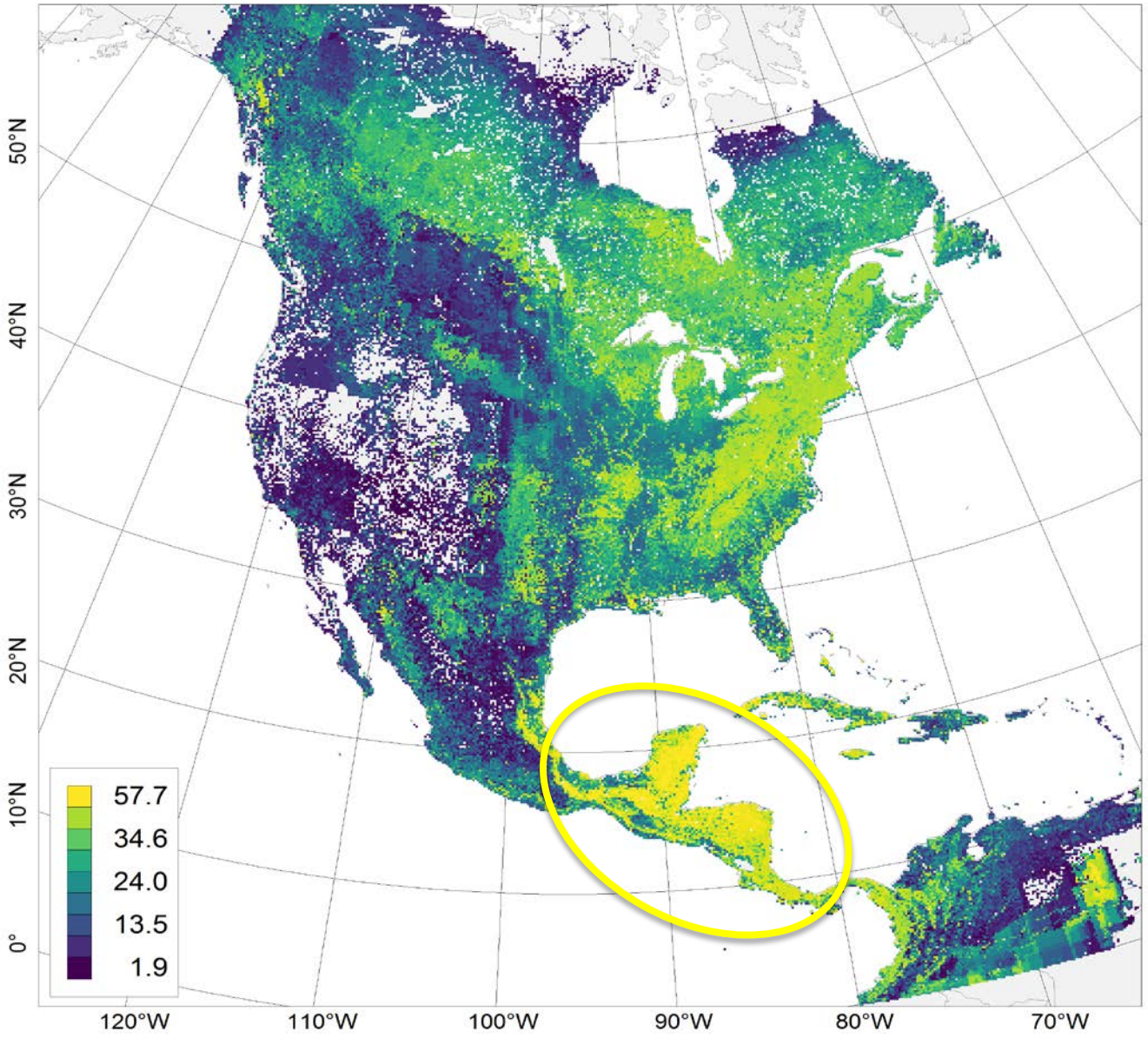
Wood Thrush Alliance Workshop
Veracruz, Mexico- 2010

Distribution of Wood Thrush

• La Sorte et al. (2017), analyzed the full-year distributions of 21 focal species of Neotropical migrants that breed in Eastern North America, to assess where these species are found during the non-breeding season.

• Observations were obtained from the eBird citizen-science database (Sullivan et al. 2014).

- Species richness maps were built with spatiotemporal models that incorporate environmental variables and eBird observations for each week of the year.
- The coloration represents duration (%) which is the percentage of the annual cycle the species persist in a region.
- The results illustrate the importance of Mexico and Central America for the 21 species evaluated.



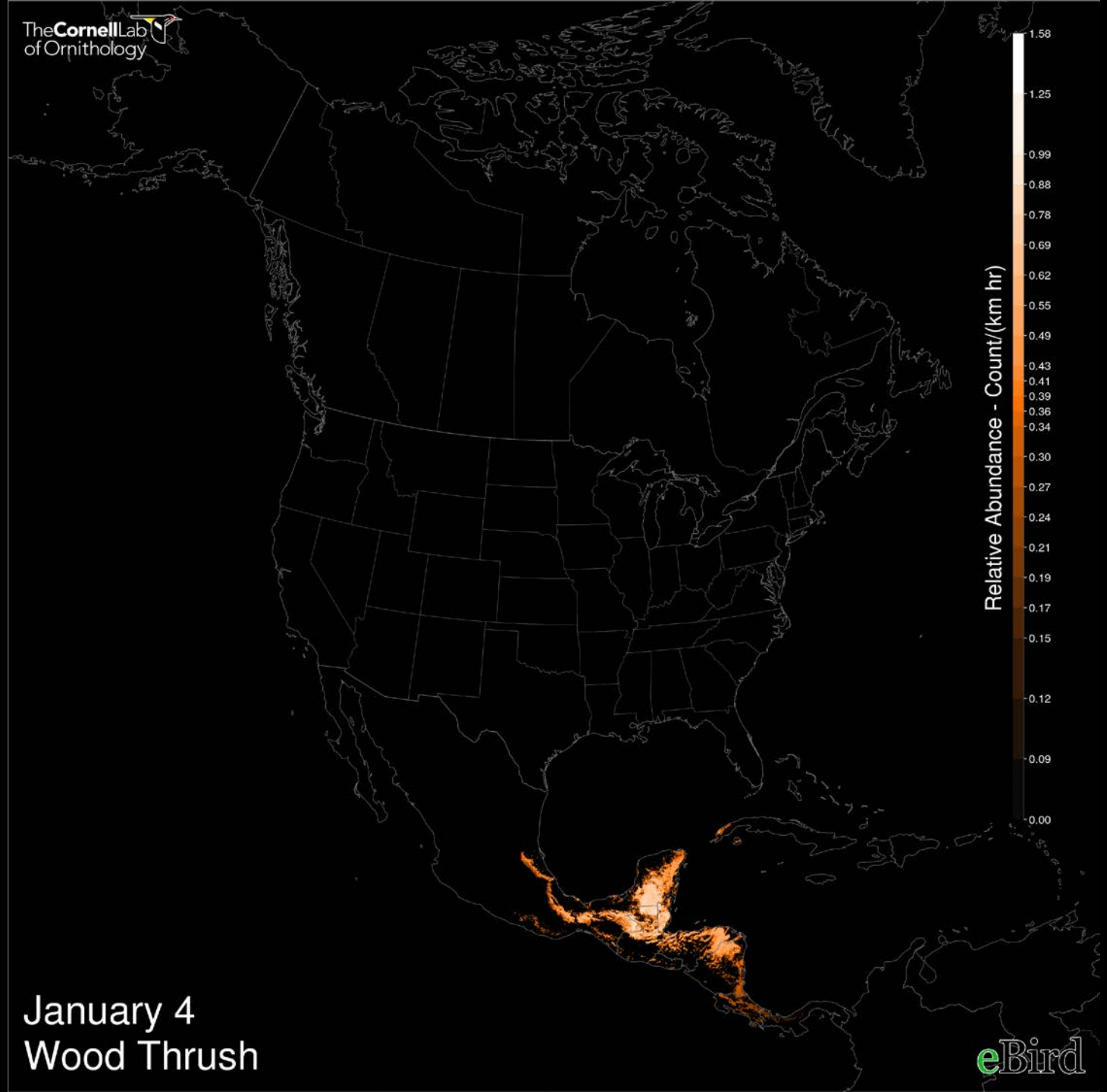
La Sorte et al. 2017. *Global Change Biology* (adapted from Fig. 1).

Global Change Biology
Volume 23, Issue 12, pages 5284-5296, 24 JUL 2017 DOI: 10.1111/gcb.13794
http://onlinelibrary.wiley.com/doi/10.1111/gcb.13794/full#gcb13794-fig-0001

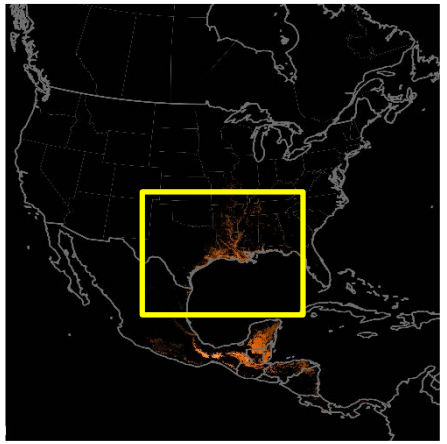
- Wood Thrush STEM model (La Sorte et al. 2017) illustrates the same pattern of distribution.

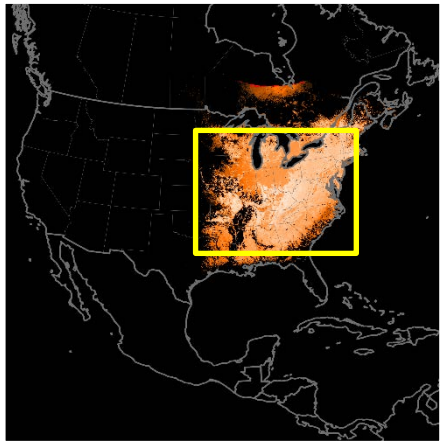
- Relative Abundance Estimate: Expected Wood Thrush count by typical eBirder from 7-8 AM while traveling 1 km.

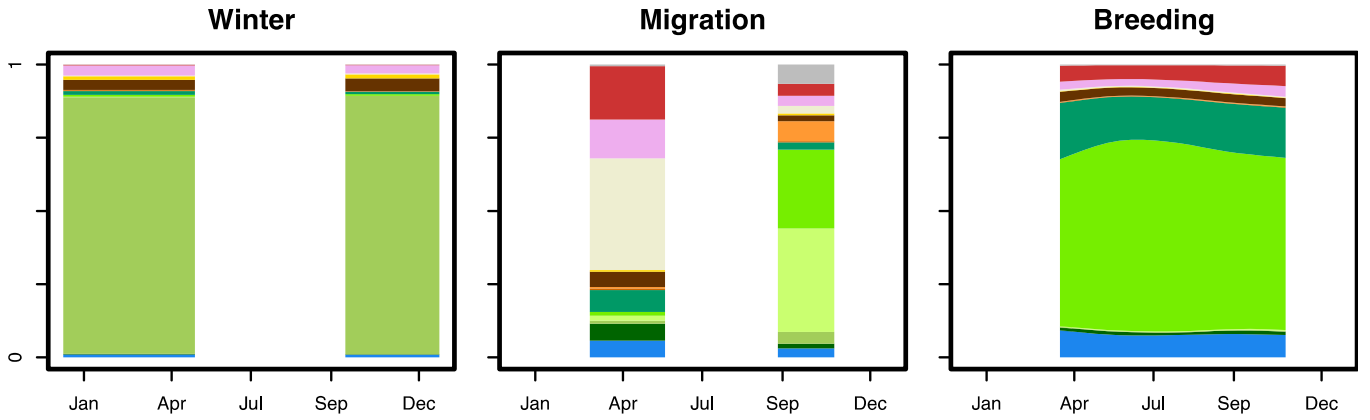
Wood Thrush
Photo by Eddie Callaway, 2008
www.allaboutbirds.org



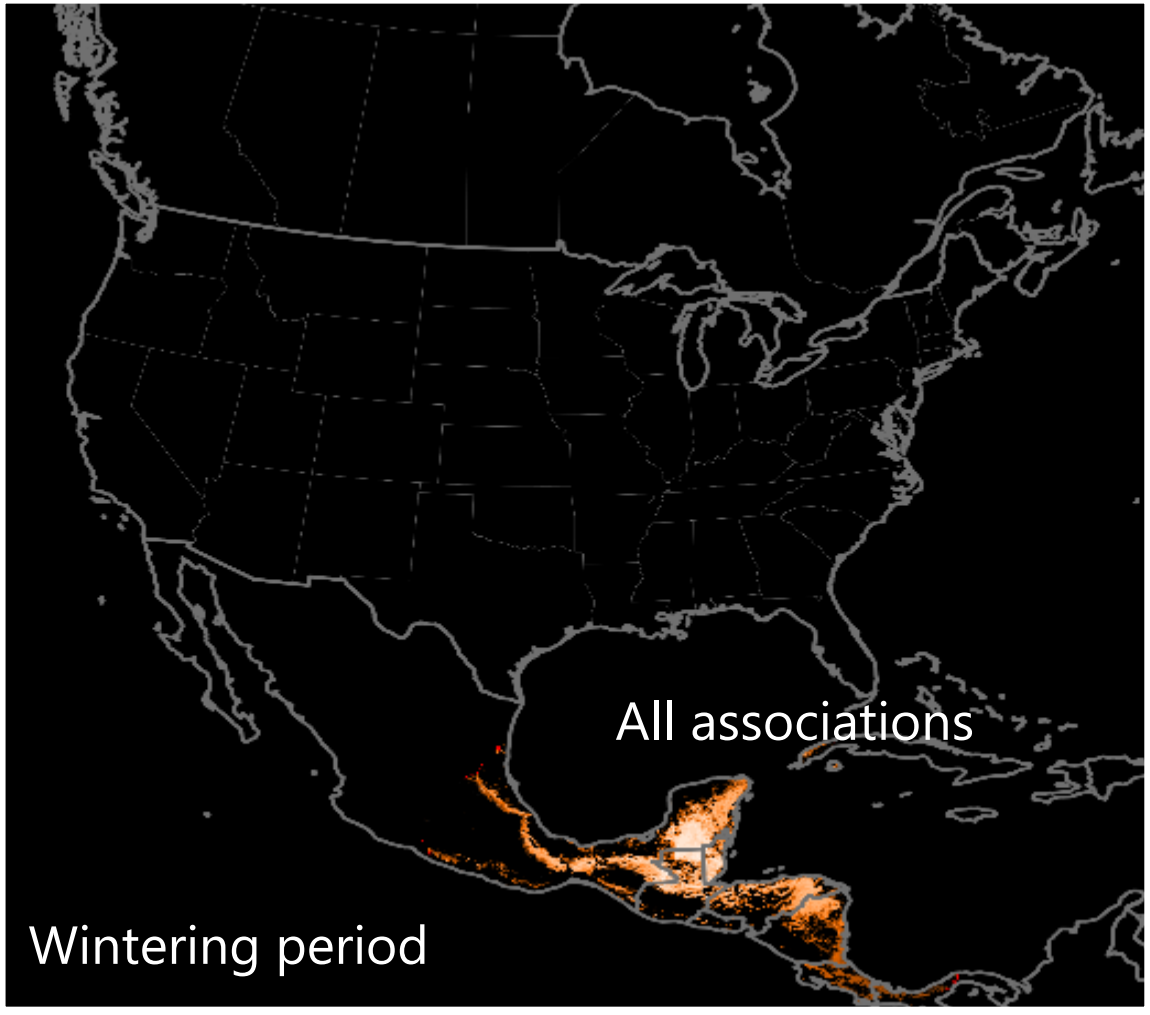
- Wood Thrush annual habitat associations were estimated from eBird data and MODIS land cover classification (La Sorte et al. 2017).

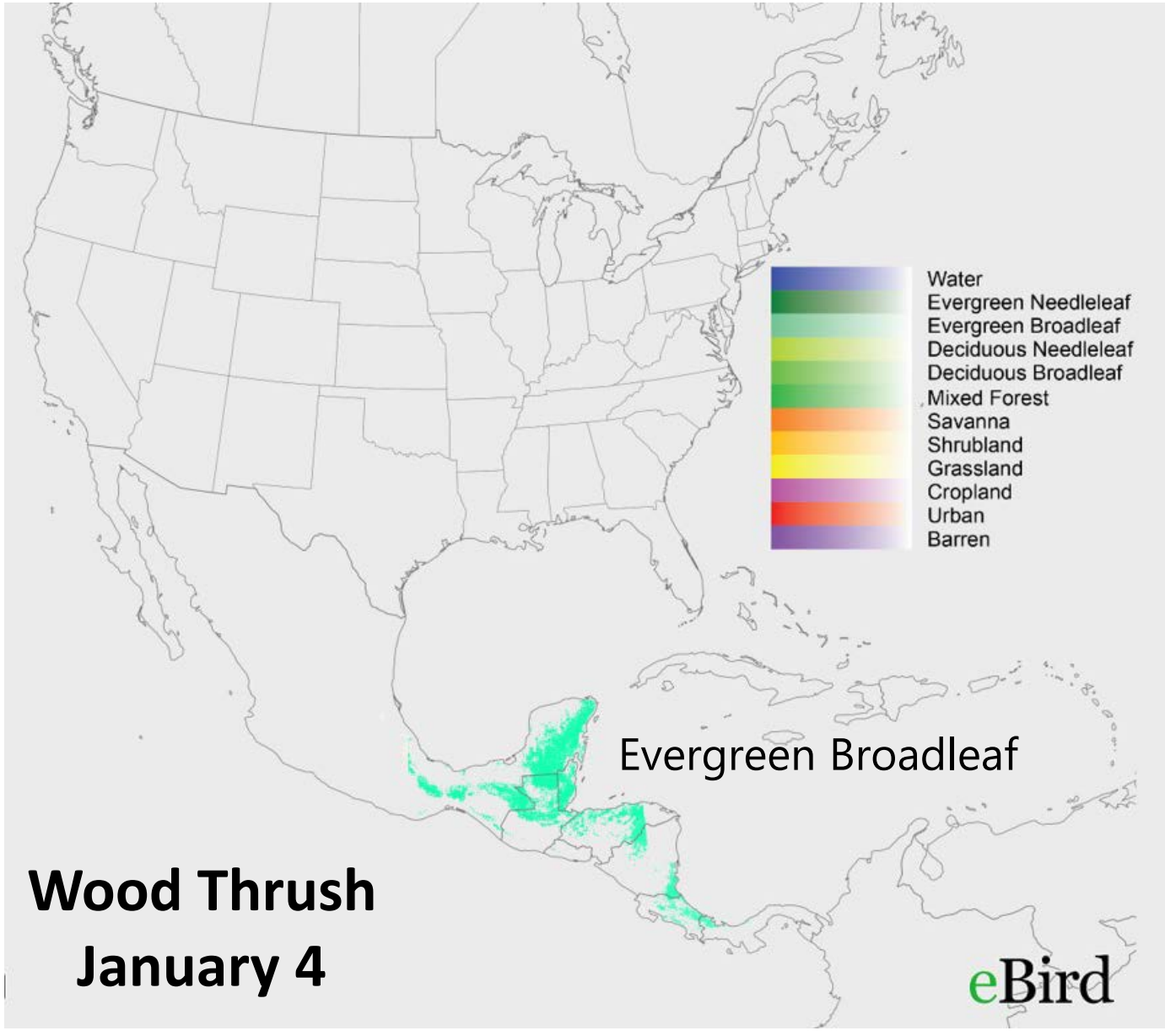






- During winter the most representative habitat association is Evergreen Broadleaf Forest.





Wintering ecology

- Filling science and knowledge gaps will result in the improvement of conservation strategies.

- Wood Thrush is known to winter in low-land tropical rainforest (Rappole et al. 1993; Winker et al. 1990), and in pre-montane forest ecosystems (Tramer & Kemp 1982; Young et al. 1998).

- Examples of vegetation features identified within selected wintering habitats include: high degrees of ground cover and areas with gaps that may lead to higher understory density (Winker et al. 1990).

Wood Thrush *(Hylocichla mustelina)*
Photo by Jeff Moore
www.partnersinflight.org

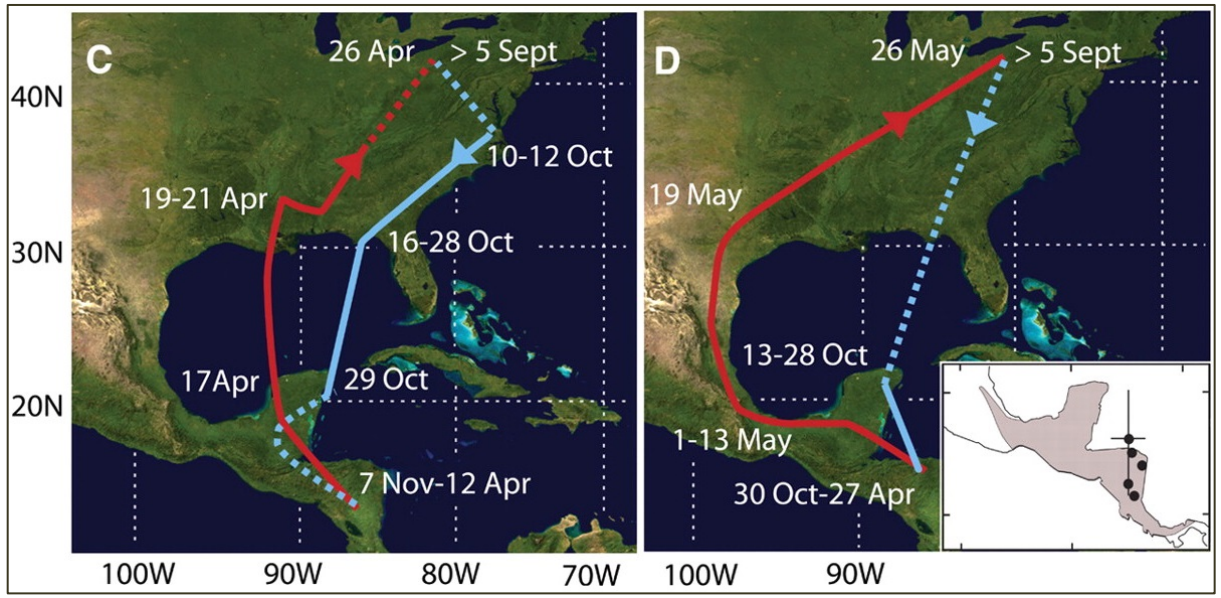
During the 2010 workshop in Veracruz, the following big picture questions were identified:

" 1. What is the driving decline of Wood Thrush:

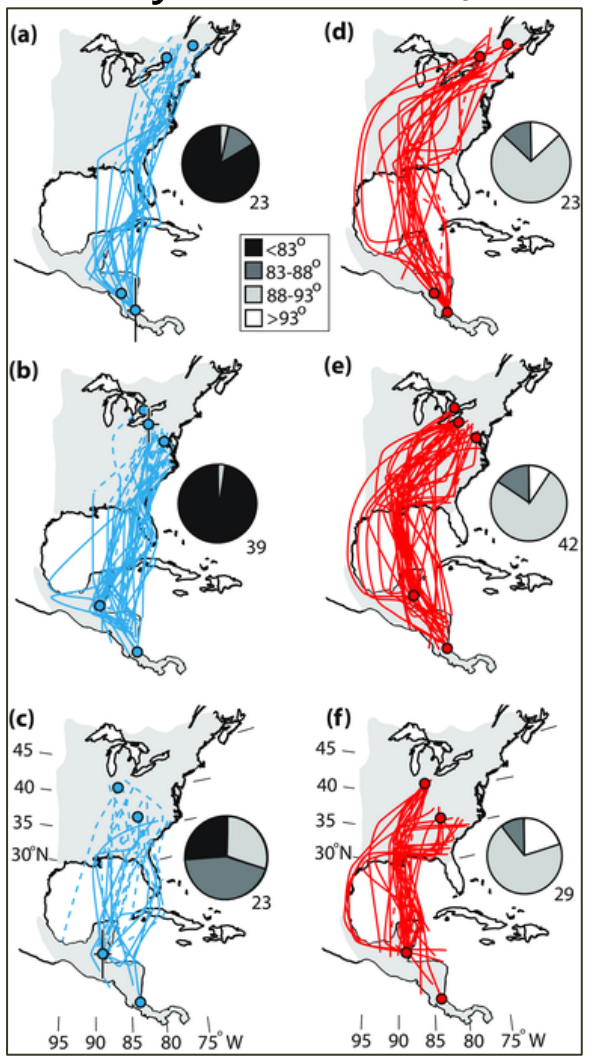
- When in the Wood Thrush annual cycle are the birds facing the greatest stresses/threats?
- What habitats are the birds using?
- What habitats provide best survivorship?
- What is the ecology of the species during breeding, migration, and winter? "

In the past 10 years advances in technology and research have contributed to knowledge of Wood Thrush wintering ecology, some examples:

- Researchers have used diverse sources of data from extrinsic (geolocators) and intrinsic (stable isotopes, morphometric data) markers to unravel patterns in connectivity and migratory routes (Stutchbury et al. 2009; Rushing et al. 2014; Stanley et al. 2015).



Stutchbury et al. 2009. *Science 323*(5916)
Adapted from Fig. 1 C & D



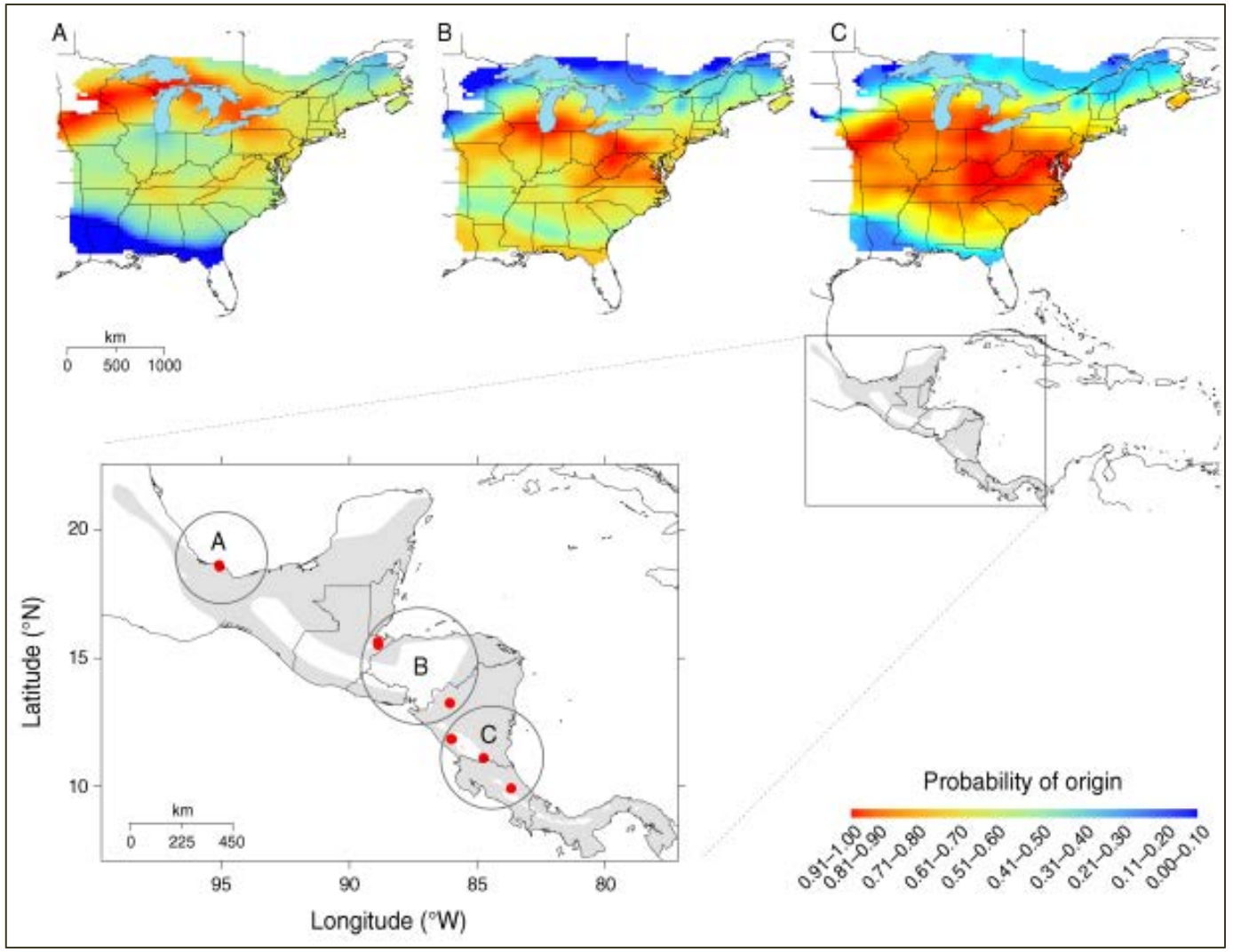
Stanley et al. 2015. *Conservation Biology 29*(1)
Fig. 2

Conservation Biology
Volume 29, Issue 1, pages 164-174, 22 JUL 2014 DOI: 10.1111/cobi.12352
http://onlinelibrary.wiley.com/doi/10.1111/cobi.12352/full#cobi12352-fig-0002

- Identifying population connectivity and migration routes is useful to determine which sites should be the focus of conservation strategies.

- Wood Thrush populations may be affected by limiting factors that occur in the breeding and non-breeding grounds (Rushing et al. 2016; Taylor & Stutchbury, 2016).

- We need to understand these nuances in limiting factors or mechanisms that drive these factors. (e.g. What is the mechanism by which habitat loss in the wintering grounds affects population dynamics?)



Rushing et al. 2014. *Ecological Applications 24*(3) Fig. 2

Ongoing studies

- At local scales, studies are focusing on the influence of climatic conditions on distribution and habitat quality on the wintering grounds (Dave King, 2017- PIF VI talk).

- A few examples of countries where studies have been conducted or continue include: Belize, Honduras, Guatemala, and Costa Rica.

Belize:
The influence of climatic conditions on distribution and habitat quality on the wintering grounds.

Honduras:
Movement, habitat selection, and habitat-specific survival in native forest and coffee farms.

Integración del Zorzal de Bosque Invernada y Iniciativas de Conservación de Ecosistemas

Integrating Wintering Wood Thrush and Ecosystem Conservation Initiatives

David I. King
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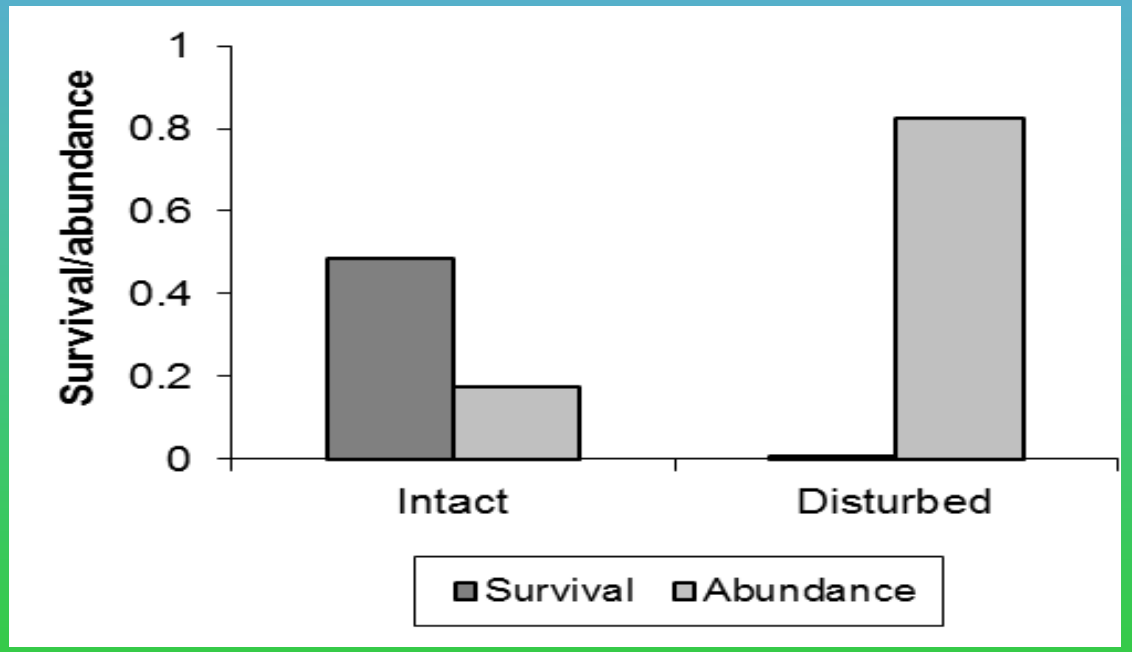
Matthew Jeffery
National Audubon Society, Washington D.C, 20036
Brett Bailey
University of Massachusetts, Amherst, MA, 01003

¿Cuáles son los hábitats adecuados?

Uso ≠ calidad?

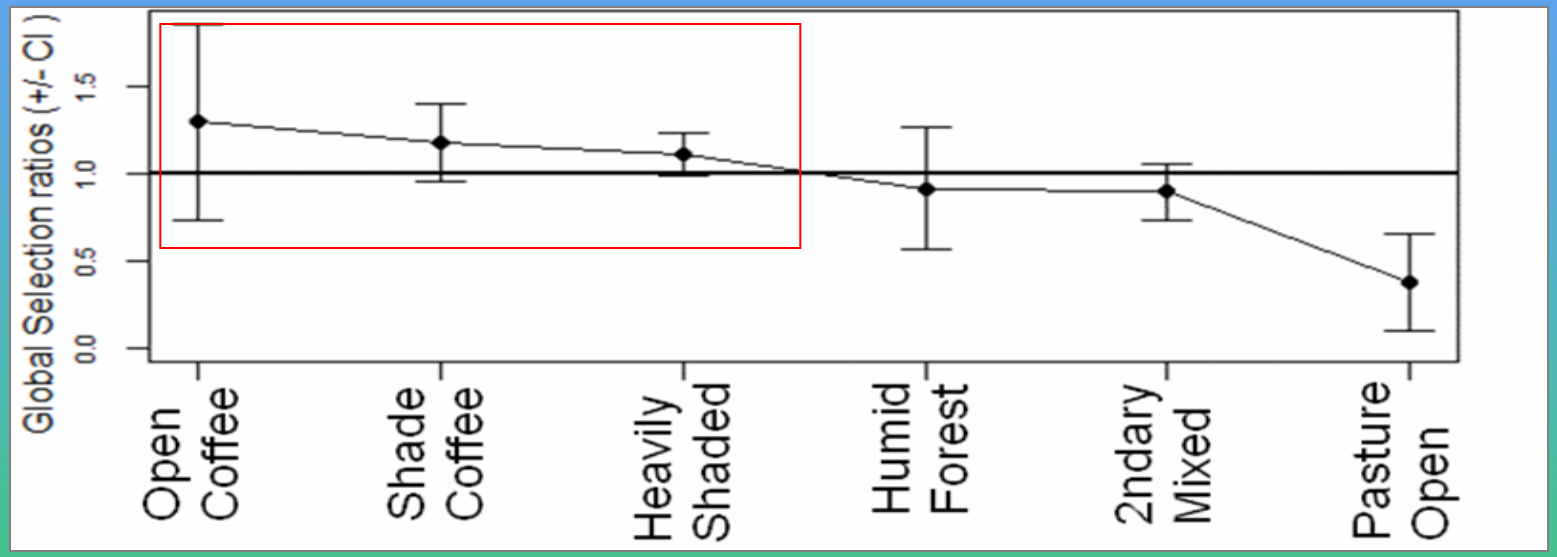


Rappole, Ramos and Winker 1989; Winker, Rappole and Ramos, 1990

Utilizamos telemetría para estudiar selección de hábitat y sobrevivencia de zorzales de bosque en Honduras

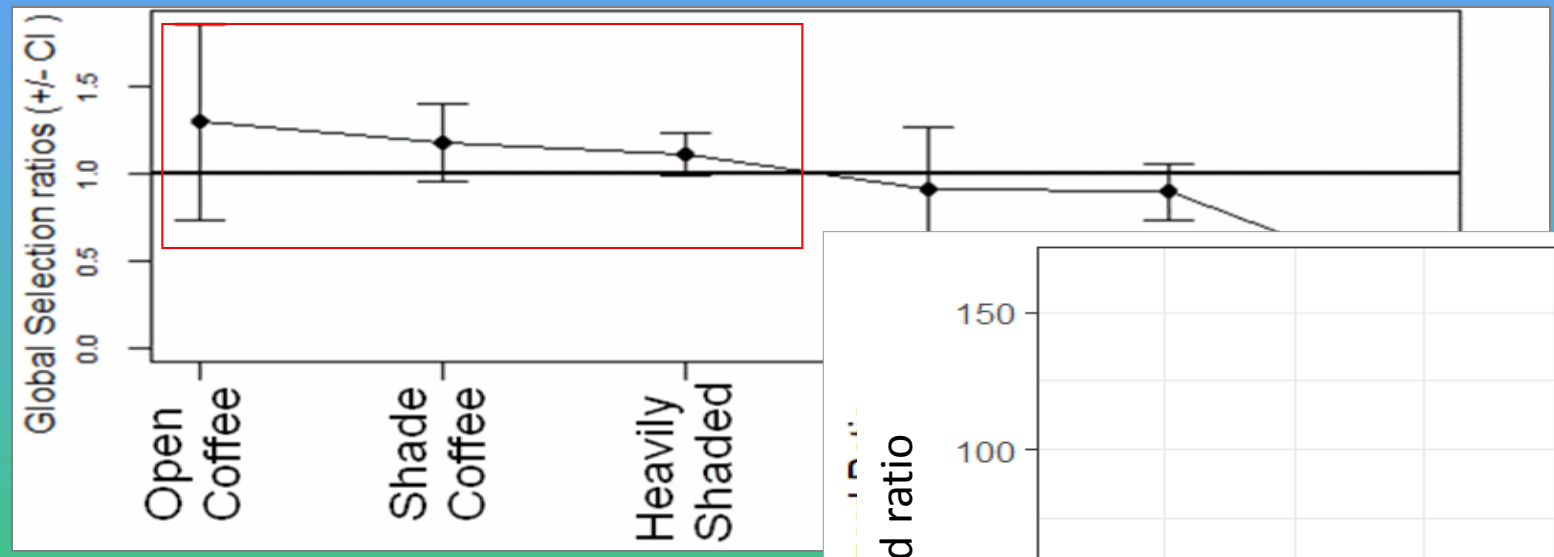
¿Uso ≠ calidad?

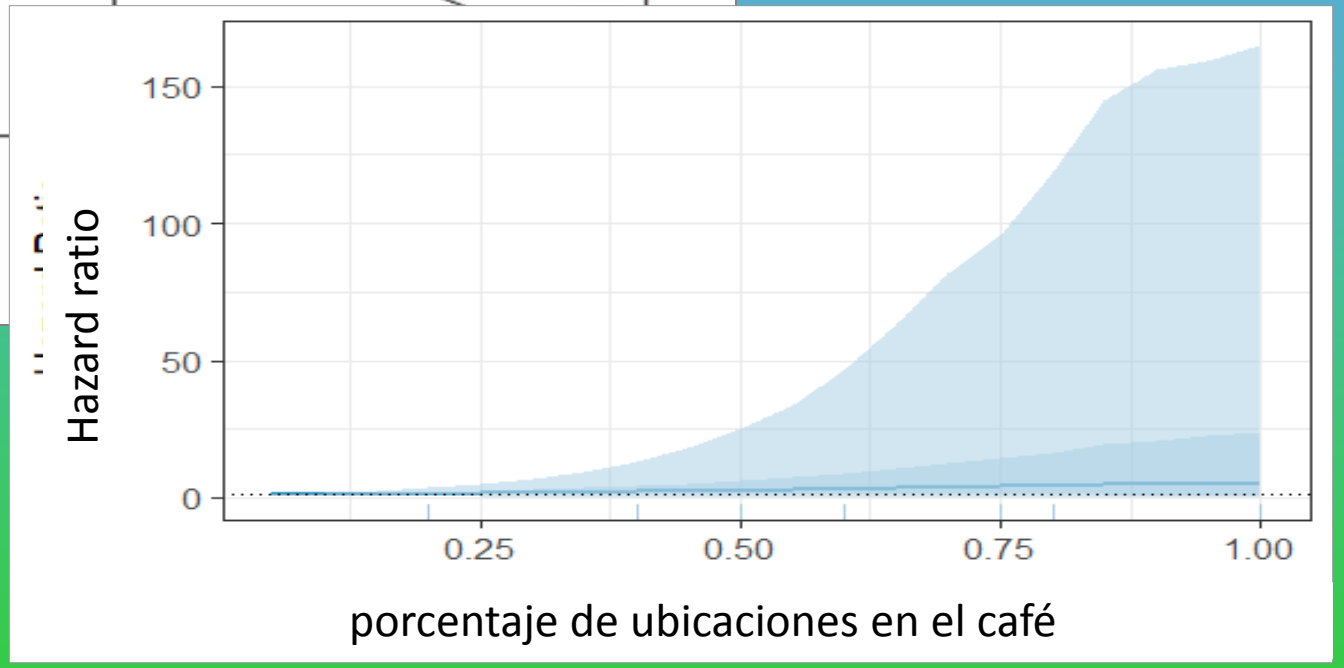
Los zorzales parecen seleccionar café en nuestros sitios.



¿Uso ≠ calidad?

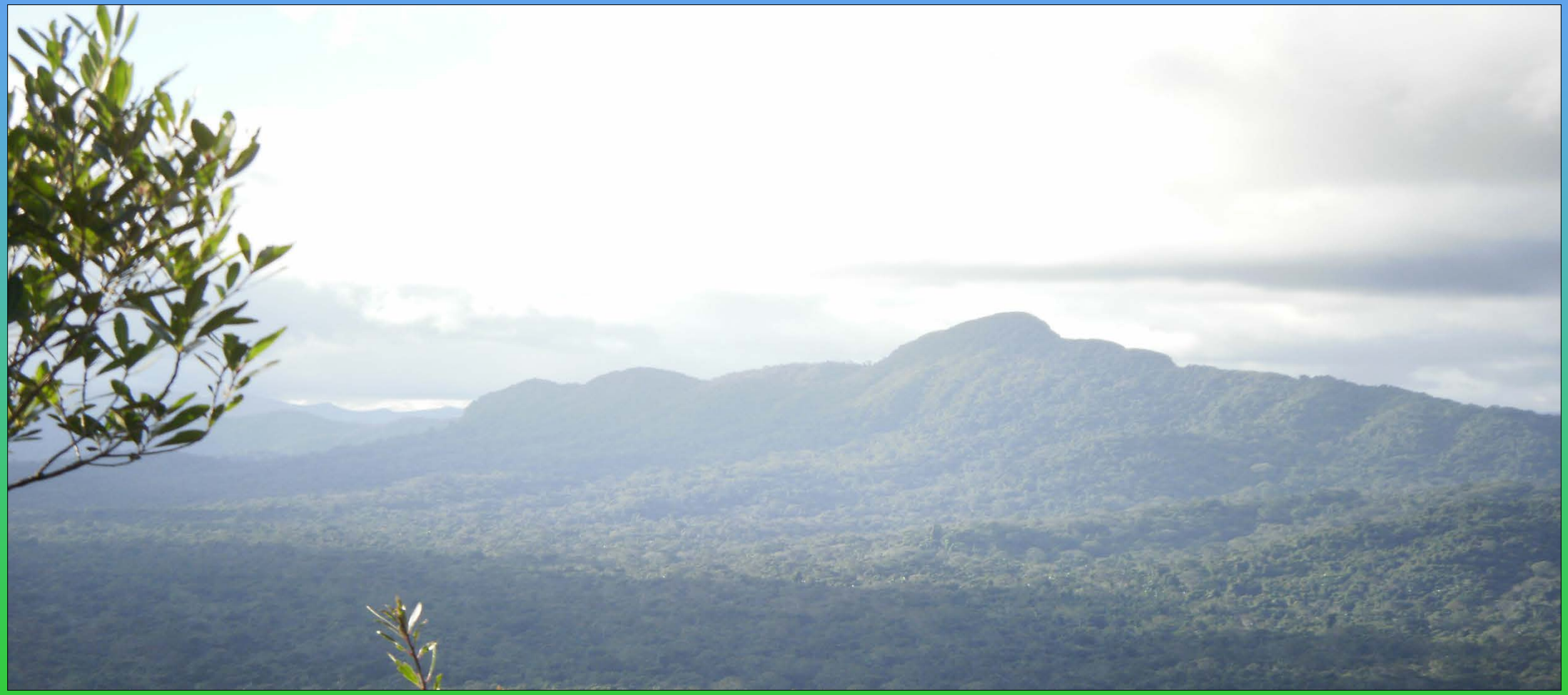
Los zorzales son ~5X más propensos a morir en los hábitats del café.



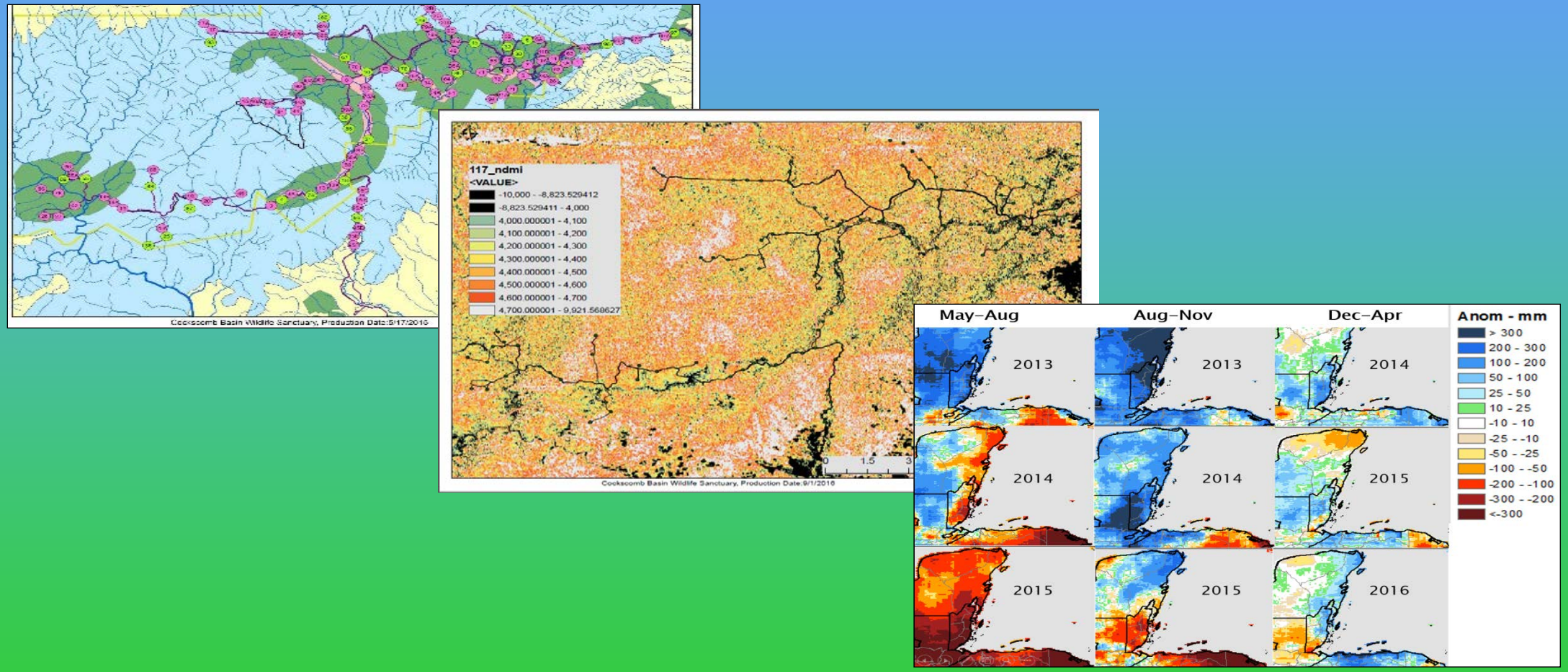


Monitoreo de amenazas a áreas protegidas

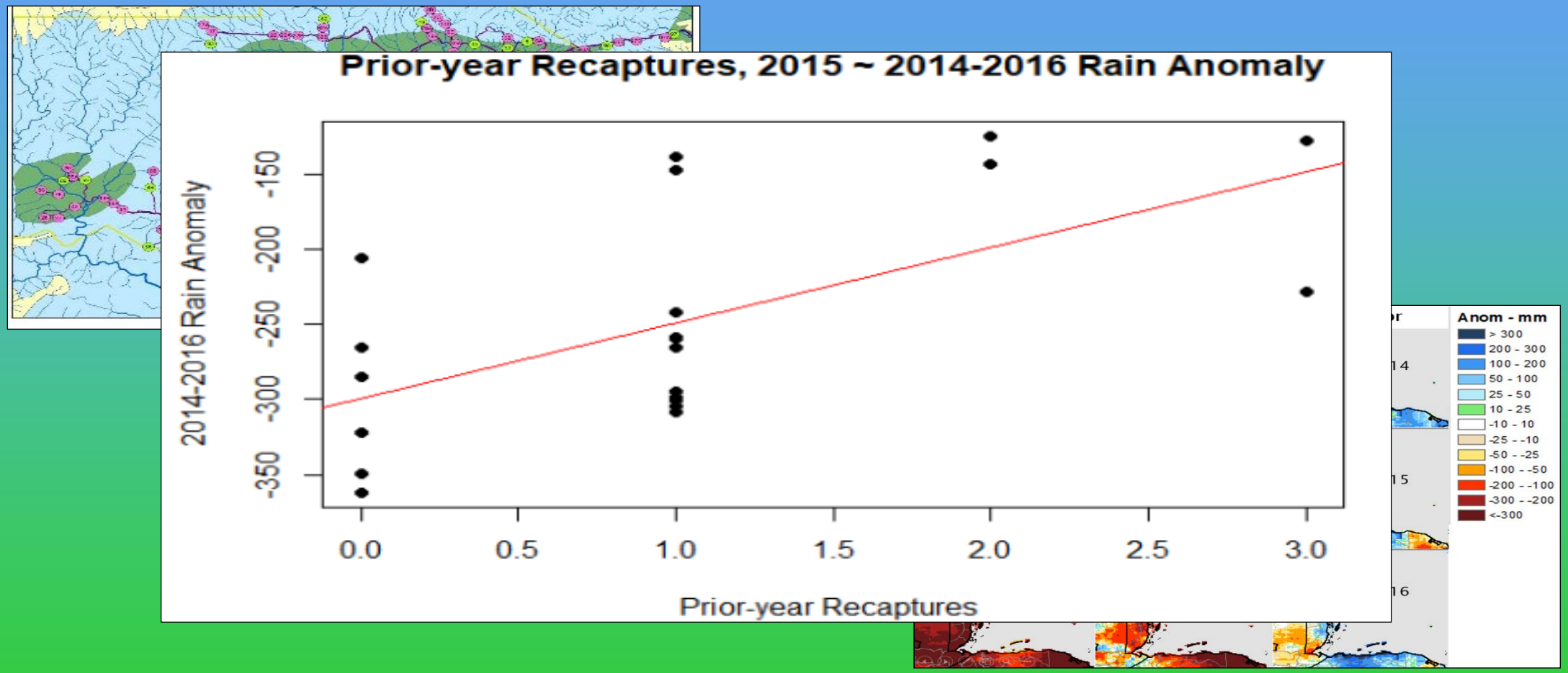
Santuario de Vida Silvestre Cockscomb, Belice



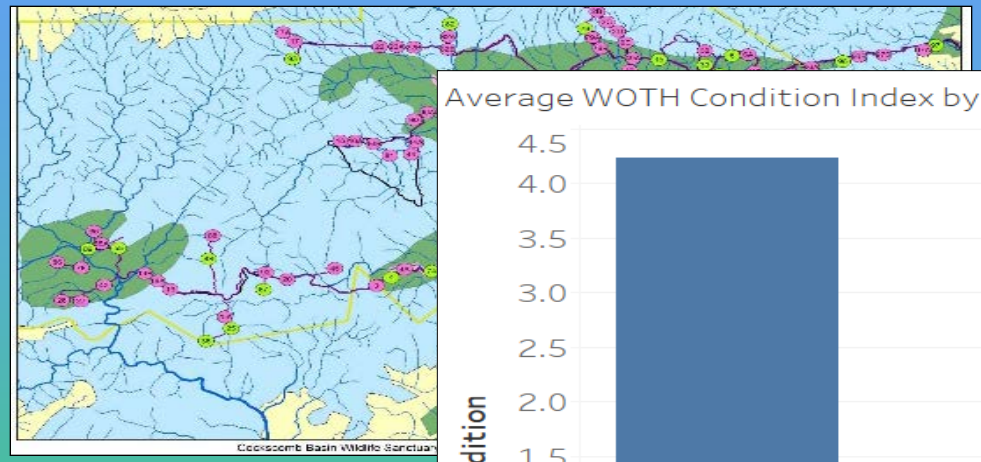
Estudiamos el efecto de la variabilidad espacial y anual en la humedad del suelo en el zorzal de bosque.

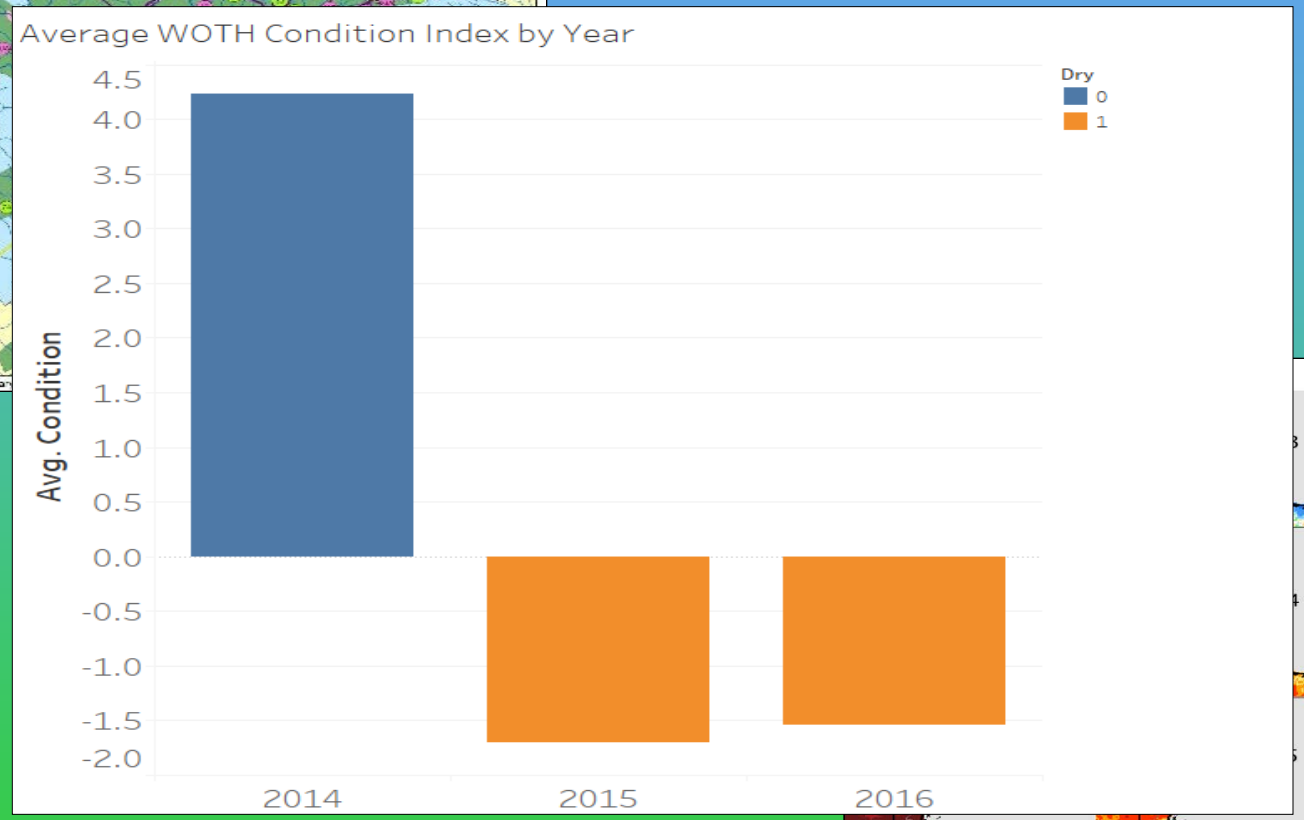


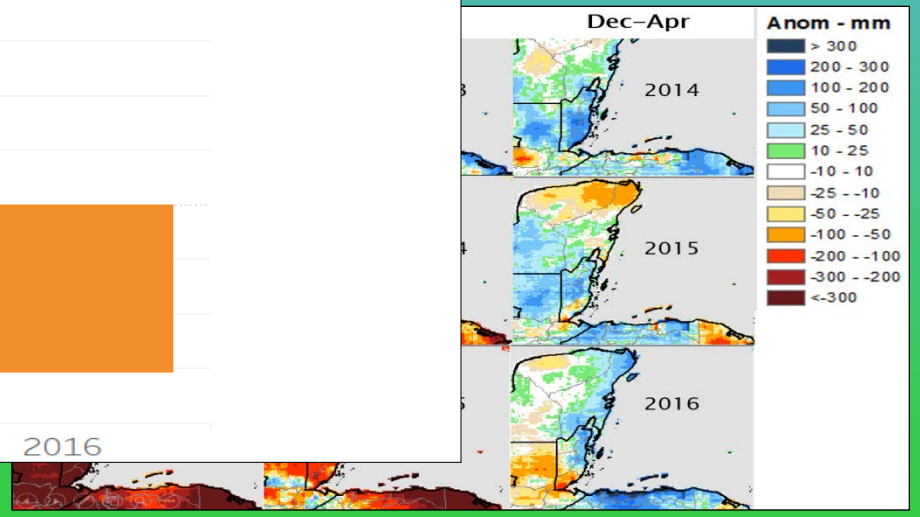
Los zorzales regresan menos a los sitios que se secan más



Los zorzales están en peores condiciones en años secos







Conclusión

- Las aves ocurren en hábitats de mala calidad.
- Todavia hay amenazas incluso en áreas protegidas.
- El monitoreo es importante para identificar hábitats adecuados y amenazas a las poblaciones.
- Priorizar estrategias para la conservación de áreas forestales, zonas mésicas, y que promueven la resistencia al cambio climático .

¡Gracias!

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
Audubon
BELIZE AUDUBON SOCIETY
Mesoamerican Development Institute
GOBIERNO DE LA REPÚBLICA DE HONDURAS
INSTITUTO NACIONAL DE CONSERVACIÓN Y DESARROLLO FORESTAL, ÁREAS PROTEGIDAS Y VIDA SILVESTRE
The University of Georgia
FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE
COMISUYL
UNAH
UNIVERSIDAD NACIONAL AUTÓNOMA DE HONDURAS
UNIVERSITY OF MASSACHUSETTS
AMHERST 1863

Conservation actions

- Countries where research and/or conservation activities have been conducted include:

  USA, Canada, Mexico, Nicaragua, Costa Rica, Panama, Belize, Honduras, Guatemala

- Conservation actions include: maintenance of protected areas, forest conservation through carbon trading, establishment of biological corridors.

- Challenges vary per region but may include: rural poverty, lack of funds, lack of political will, climate change.

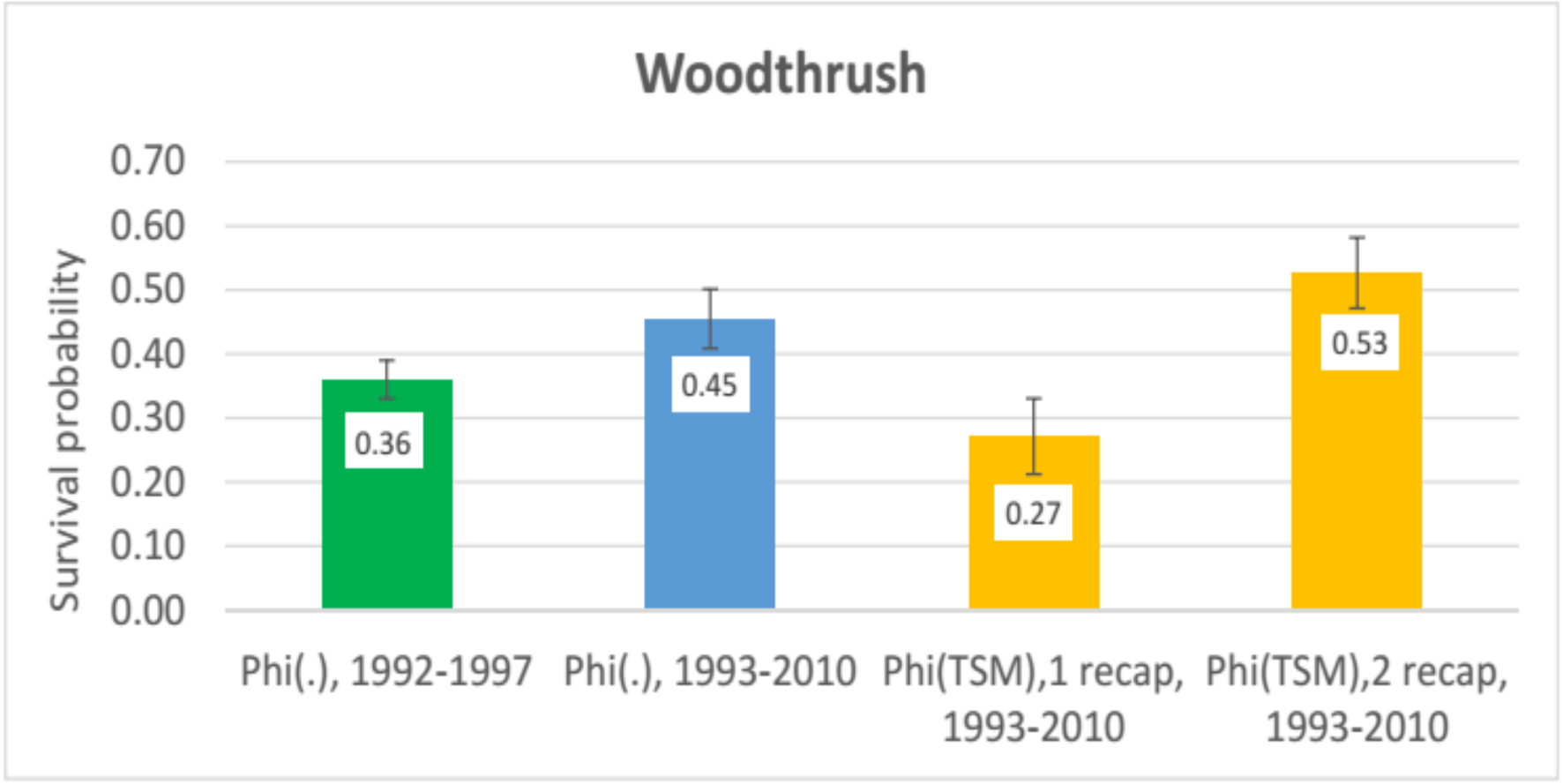
Coffee growing region of Honduras
Photo by Fabiola Rodríguez

STATE OF THE WOODTHRUSH IN EASTERN TROPICAL GUATEMALA

Alexis Cerezo Blandón

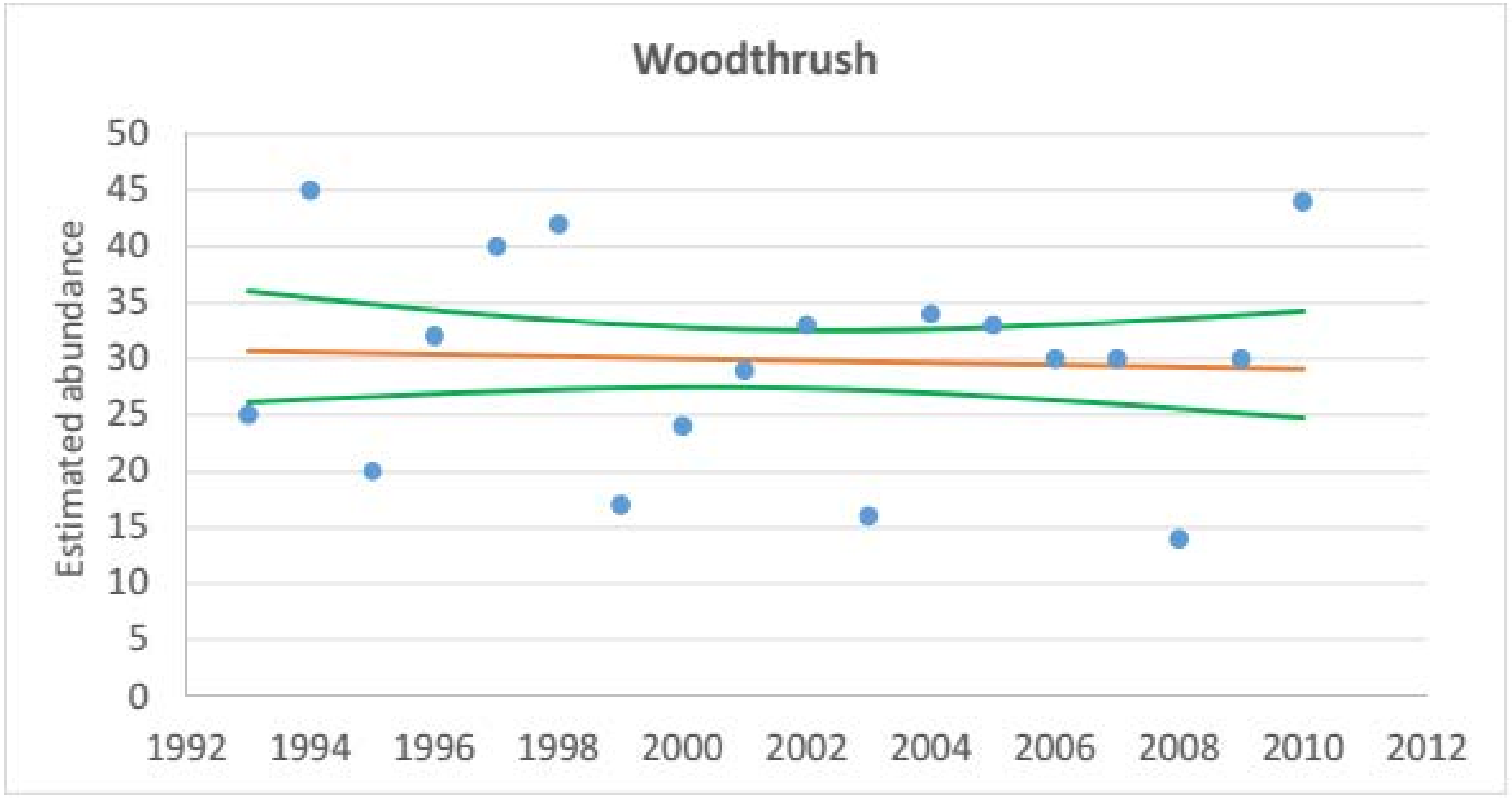
Foundation for Ecodevelopment and Conservation

WOODTHRUSH- SURVIVAL

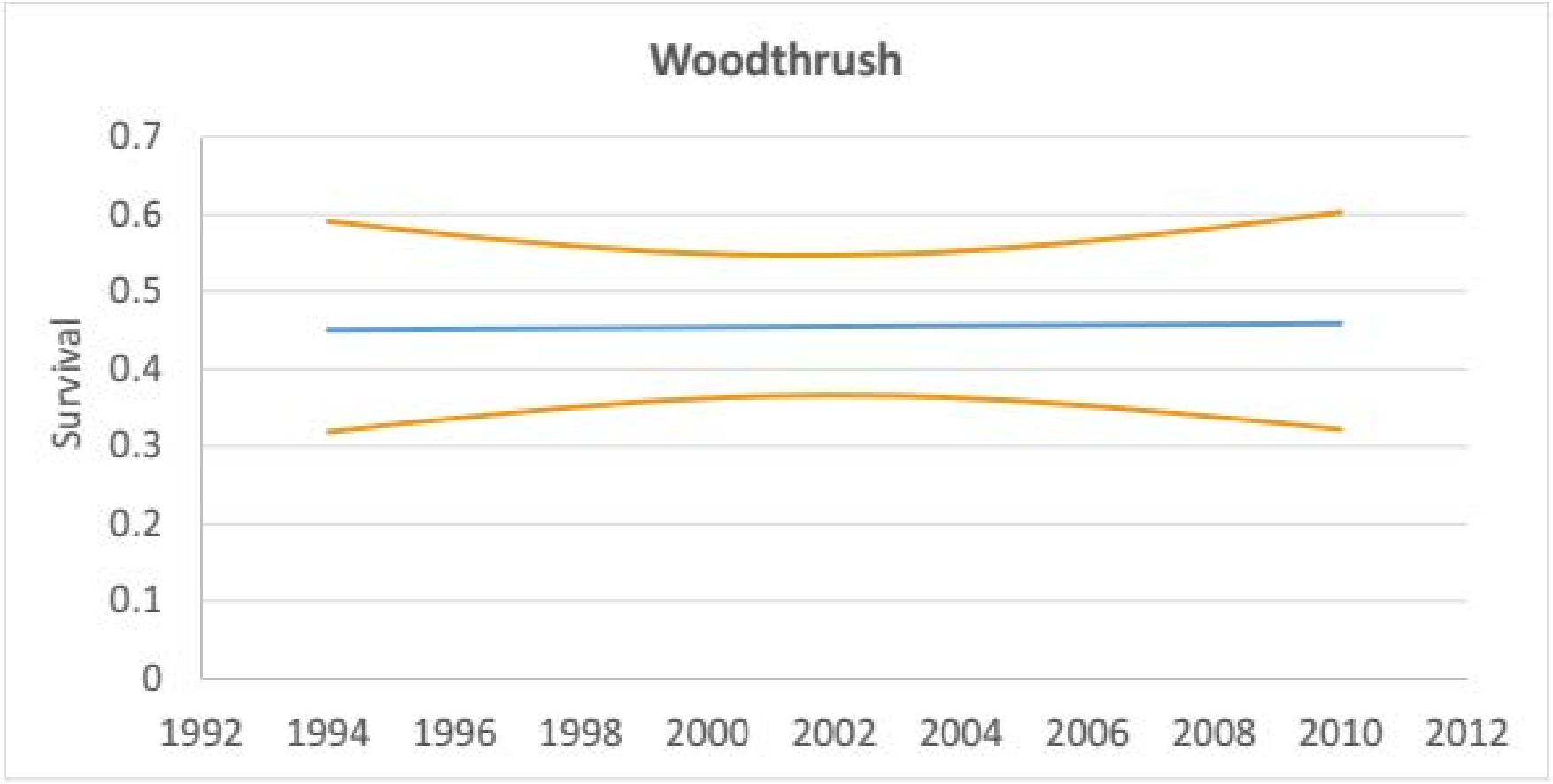


Data from the MoSI program indicates that overwintering monthly survival is very high: 0.93 (0.03 ± S.E.).

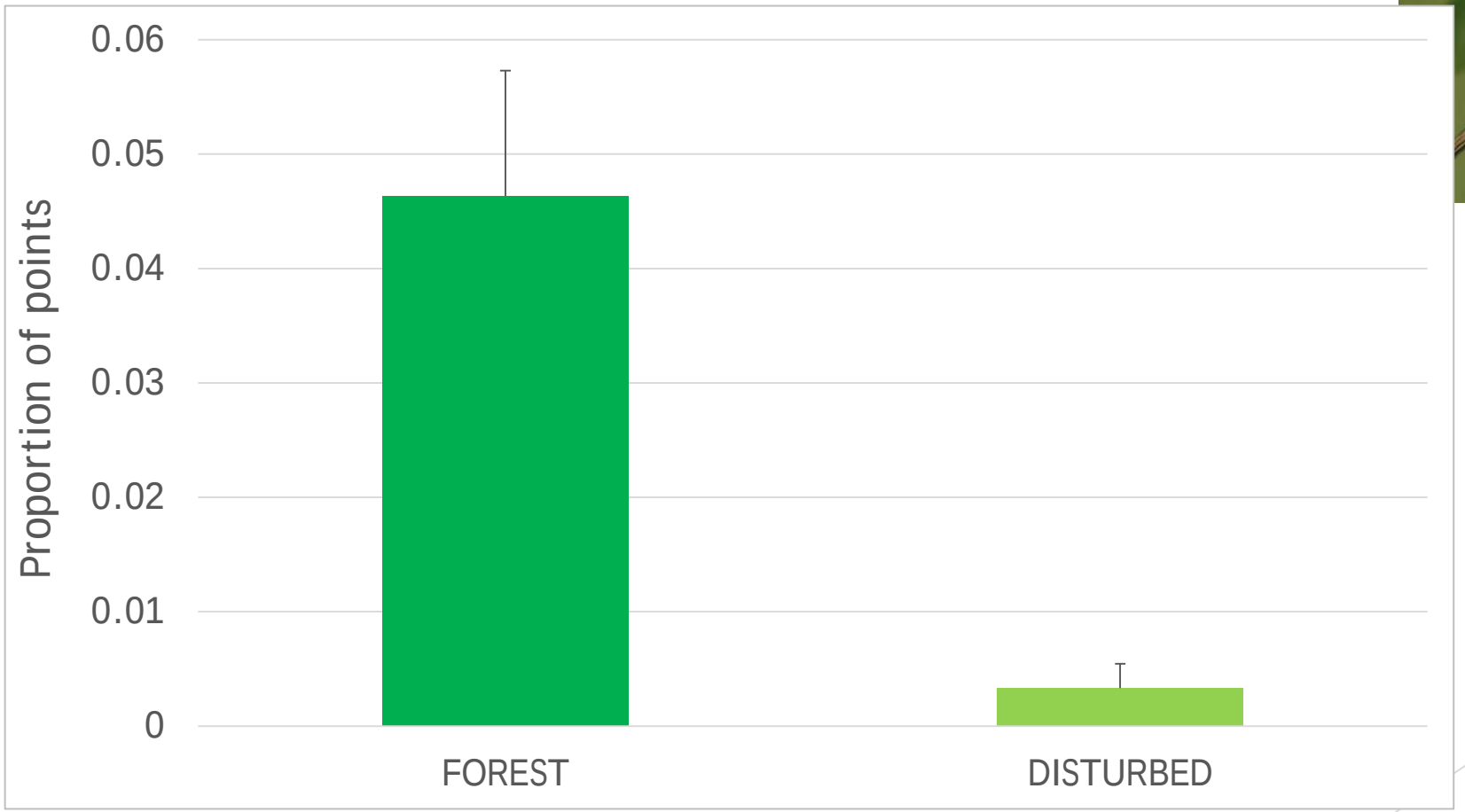
WOODTHRUSH-TREND IN ABUNDANCE



WOODTHRUSH-TREND IN SURVIVAL



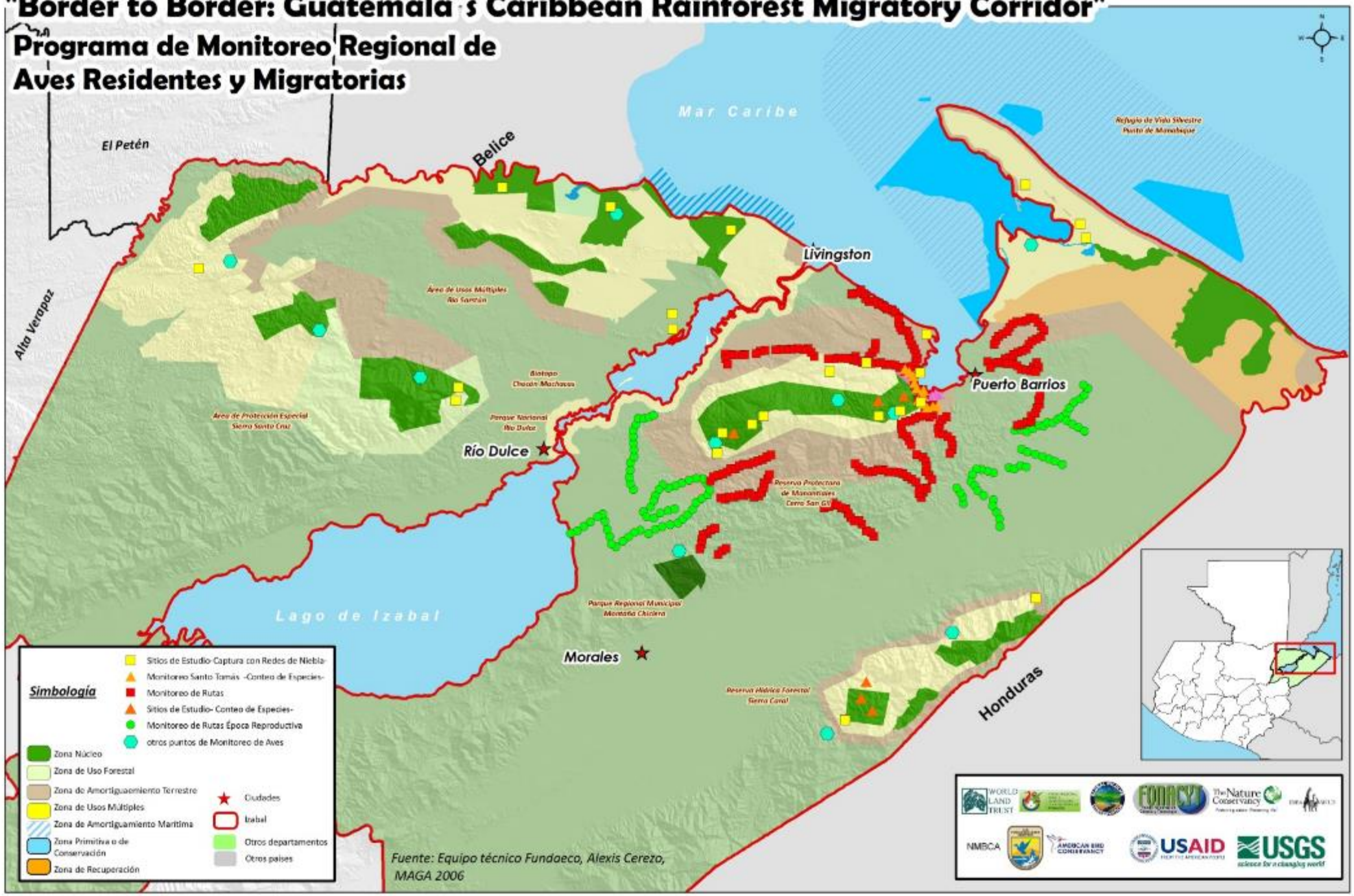
WOODTHRUSH-HABITAT USE



Woodthrush is mainly found in primary forest

MANAGEMENT ACTIONS

- Because the Woodthrush mainly depends on pristine forest to maintain healthy populations, the main conservation strategy is the conservation of pristine forest.
- We have implemented two mechanisms:
  - Land purchase in strategic areas; around 10,000 hectares of pristine forest have been purchased, usually within nuclear zones of reserves.
  - Legal declaration of protected areas; 5 protected areas have been established nationally, with approximately 55,000 ha of Woodthrush habitat. One more reserve is on its way to being declarated.


"Border to Border: Guatemala´s Caribbean Rainforest Migratory Corridor"
Programa de Monitoreo Regional de Aves Residentes y Migratorias
Mar Caribe
El Petén
Belice
Livingston
Alta Verapaz
Puerto Barrios
Río Dulce
Lago de Izabal
Morales
Honduras
Simbología
Sitios de Estudio-Captura con Redes de Niebla-
Monitoreo Santo Tomás -Conteo de Especies-
Monitoreo de Rutas
Sitios de Estudio- Conteo de Especies-
Monitoreo de Rutas Época Reproductiva
otros puntos de Monitoreo de Aves
Zona Núcleo
Zona de Uso Forestal
Zona de Amortiguamiento Terrestre
Zona de Usos Múltiples
Zona de Amortiguamiento Marítima
Zona Primitiva o de Conservación
Zona de Recuperación
Ciudades
Izabal
Otros departamentos
Otros países
Fuente: Equipo técnico Fundaeco, Alexis Cerezo, MAGA 2006
NMBCA
USAID
USGS

Activity/Actividad (Short break-out/Discusión relámpago)

During this session we summarized the importance of Broadleaved Evergreen forests for Wood Thrush, the research questions, and the conservation scene.

Durante esta sesión resumimos la importancia de los bosques siempreverdes para *Hylocichla mustelina*, las preguntas de investigación y el marco de conservación.

(7 minutes)

1. Designate a person within your group (preferrably the translator) that will summarize in a maximum of 1min 30 seconds the results of the discussion for the rest of the group.

2. Share among the small group: What habitats and/or species do you work with? Find common areas among the group.

3. Identify if the group has a common objective.

***

1. Designe a una persona del grupo (de preferencia el traductor) que resumirá en un máximo de 1m 30s, los resultados de la discusión para el resto del grupo.

2. Compartan en grupos: ¿En qué hábitats y/o con cuáles especies trabajan? Encuentren áreas en común

3. Identifiquen si su grupo tiene un objetivo en común.

(5 minutes)

Summarize the message per group.

We have found areas we have in common.

Keep them in mind for the discussion exercises in this workshop ahead.

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