CONSERVACIÓN DEL CICLO DE VIDA COMPLETA PARA REINITA CERÚLEA (*SETOPHAGA CERULEA*): ESTADO DEL CONOCIMIENTO Y DIRECCIONES FUTURAS

Photo curtesy of DiaGraphic

Randy Dettmers (USFWS), Jeff Larkin (Indiana Univ. of PA), Nick Bayly (SELVA), Than Boves (AR St. Univ.), Doug Raybuck (Univ. of TN), and Gabriel Colorado (Univ. Nac. de Col.)

- *Formado en 2001 para desarrollar un enfoque amplio y técnicamente sólido para la conservación de la Reinita Cerúlea.*

- Se enfoca en **soluciones proactivas de conservación a través de una ciencia sólida, comunicación clara y confianza**.

Compuesto por cuatro subcomités:

- Investigación de la temporada de reproductivo
- Monitoreo de la temporada de reproductivo
- Conservación de la temporada de reproductivo
- Cuestiones de temporada no reproductivo = “El Grupo Cerúleo”

Enfoque Inicial en Distribución y Ecología

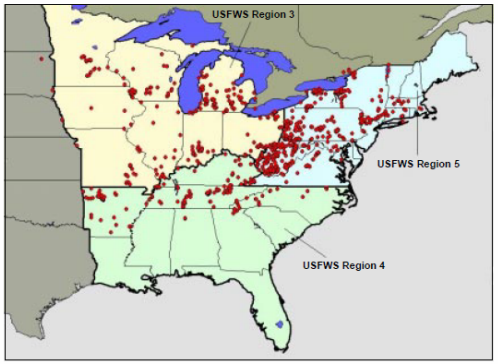
AN ATLAS OF CERULEAN WARBLER POPULATIONS

Final Report to USFWS: 1997–2000 Breeding Seasons

Kenneth V. Rosenberg, Sara E. Barker, and Ronald W. Rohrbaugh
Cornell Lab of Ornithology, Ithaca, NY 14850

December, 2000

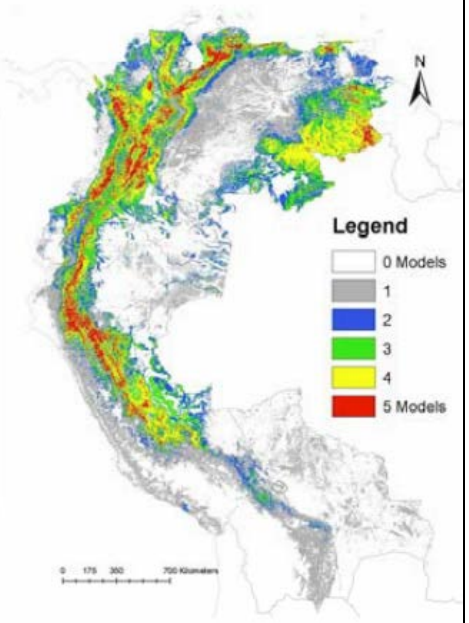
CEWAP populations throughout the Cerulean Warbler's range, 1997–2000



Map 1. Cerulean Warbler populations, as documented by CEWAP, in USFWS regions 3, 4, and 5.

Los inviernos en las estribaciones húmedas, los bosques subtropicales y los bosques nubosos de los Andes septentrionales, entre 850m y 2,000m de elevación

GIS modeling of existing data of Cerulean Warbler occcurrence to develop a map of potential occurrence of the species in the Andes (Barker et al. 2006)



Se reproduce en bosques maduros del este de América del Norte con una compleja estructura de dosel, a menudo con pequeñas dosel brechas

Cerulean Warbler Technical Group

Plan completo de conservación del ciclo de vida completado en 2007

A Conservation Action Plan
for the
Cerulean Warbler (*Dendroica cerulea*)

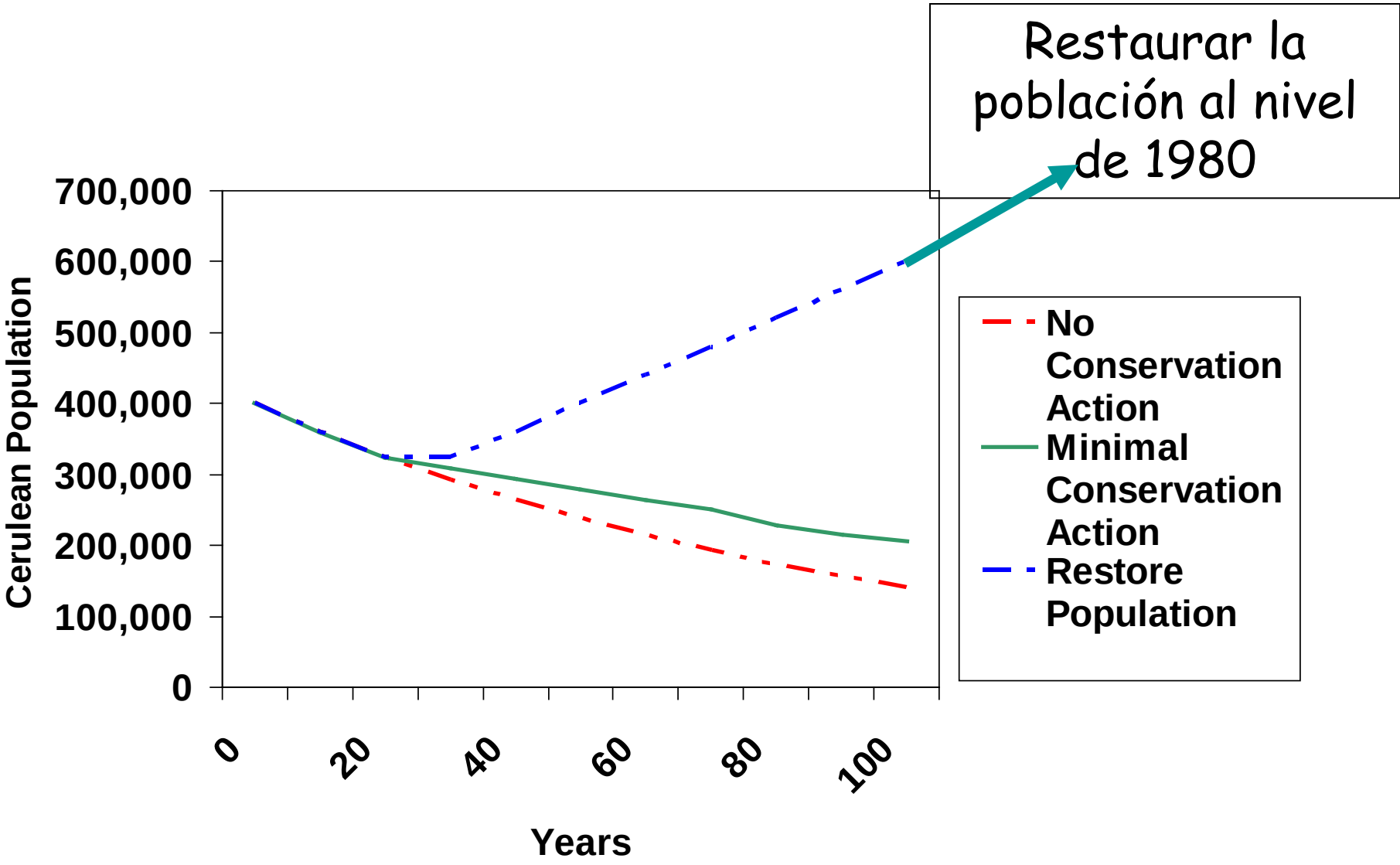
produced for the
USFWS Division of Migratory Bird Management
Focal Species Program

Revised version – 30 June 2007

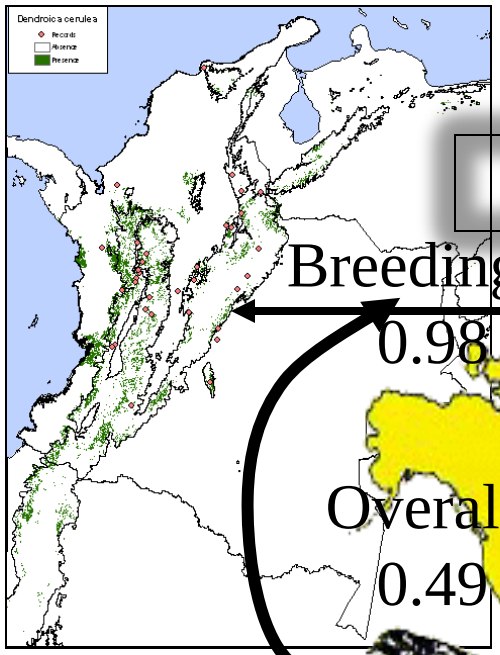
www.fws.gov/migratorybirds

Plan de conservación no reproductivo completado en 2010

Estableció un objetivo de conservación



Identificadas Amenazas y Factores Limitantes



Survival

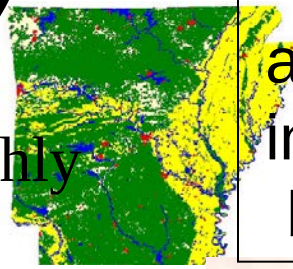
Breeding Monthly
0.98 ± 0.01

Overall Annual
0.49 ± 0.05

Non-breeding Monthly
0.93 ± 0.01

Landuse changes along migratory pathway

Landuse changes in northern Andes Mountains



forest fragmentation and urbanization in portions of the breeding range

Lack of appropriate forest structure

Large-scale habitat loss due to mining and agriculture

Reduced Breeding Success

Acciones para abordar las amenazas y factores limitantes

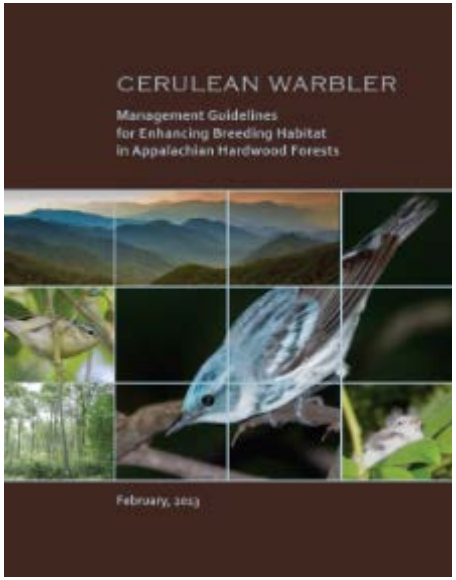
- **Proteger y mejorar el hábitat no-reproductivo en América del Sur**
- **Mejorar y proteger el hábitat reproductivo**
- **Identificar y proteger el hábitat de migración en América Central**
- **Reducir las brechas de información crítica**
- **Mejorar la educación y la comunicación al público y a las partes interesadas clave**

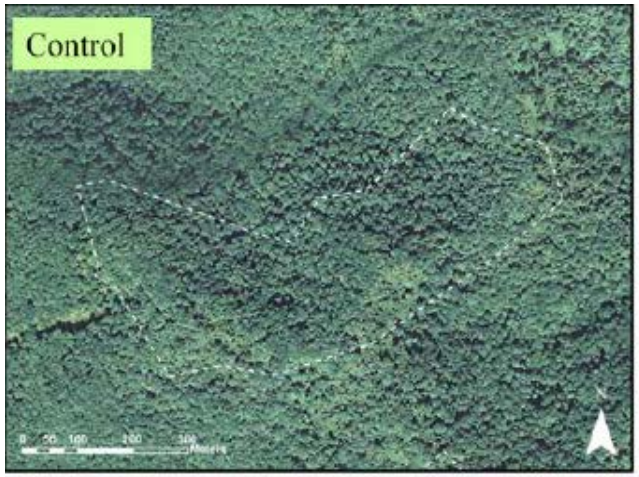
CWTG Estado Actual

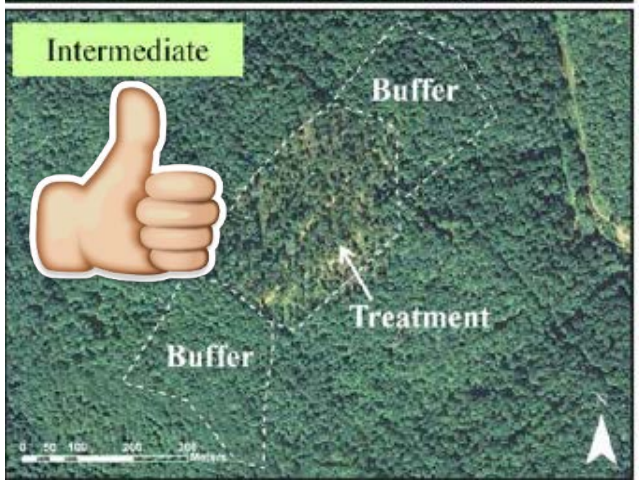
- En los últimos 8-10 años:
  - no actividades organizadas como un Grupo completo
  - esfuerzos continuados por grupos más pequeños
  - reuniones en otras conferencias
- Proyectos actuales de investigación y conservación:
  - Manejo del hábitat de reproductivo
  - ecología post-plumar
  - Conectividad migratoria
  - Definir áreas de invernada prioritarias y desarrollar estrategias de conservación

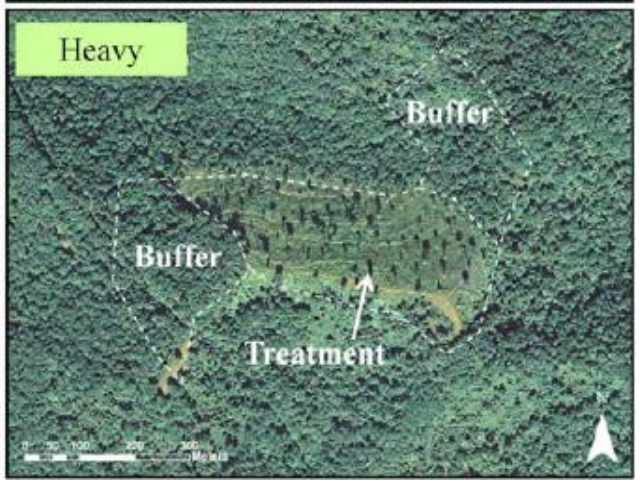
Cerulean Warbler Forest Management Guidelines

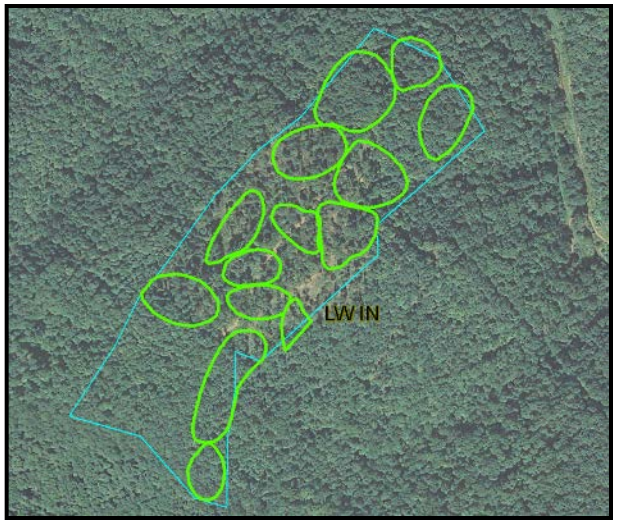
- Multi-state study conducted from 2005-11 (density, nest success, and associated vegetation metrics)



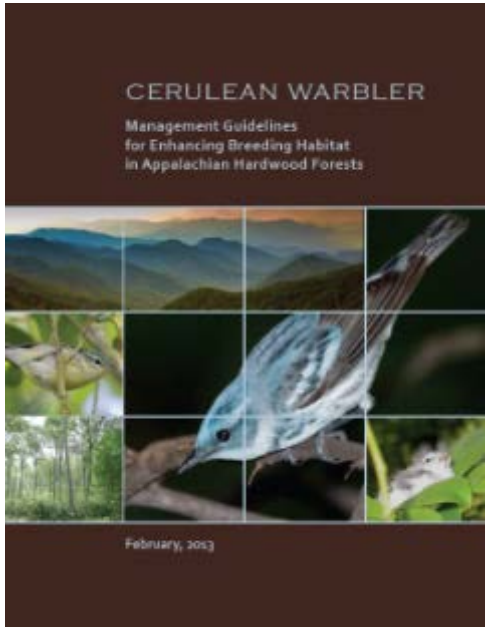








Limitations of Habitat Management Guidelines



Breeding Season Demographics

Territory density…… ✓

Nest success..... ✓

Post-fledgling ecology…….. ?

Habitat selection and movement of fledgling Cerulean Warblers in managed mixed-oak forests of the Central Appalachians.

Douglas Raybuck, Than Boves, Scott Stoleson, and Jeff Larkin

Importance of Post-fledging Period

Researchers have shown differences between **nesting habitat** and **post-fledging habitat** (i.e. King et al. 2006)




Study Objectives

1. Quantify movements and habitat selection by dependent fledglings within a matrix of managed forests in Pennsylvania

- Microhabitat scale (structure at observed vs. available points)

2. Estimate survival rates of fledglings during the dependent period

3. Continue to improve management recommendations for forest management planning that considers nesting **and** post-fledging periods of these priority species

Cerulean Warbler Summary Results (2014-2015)

N=63

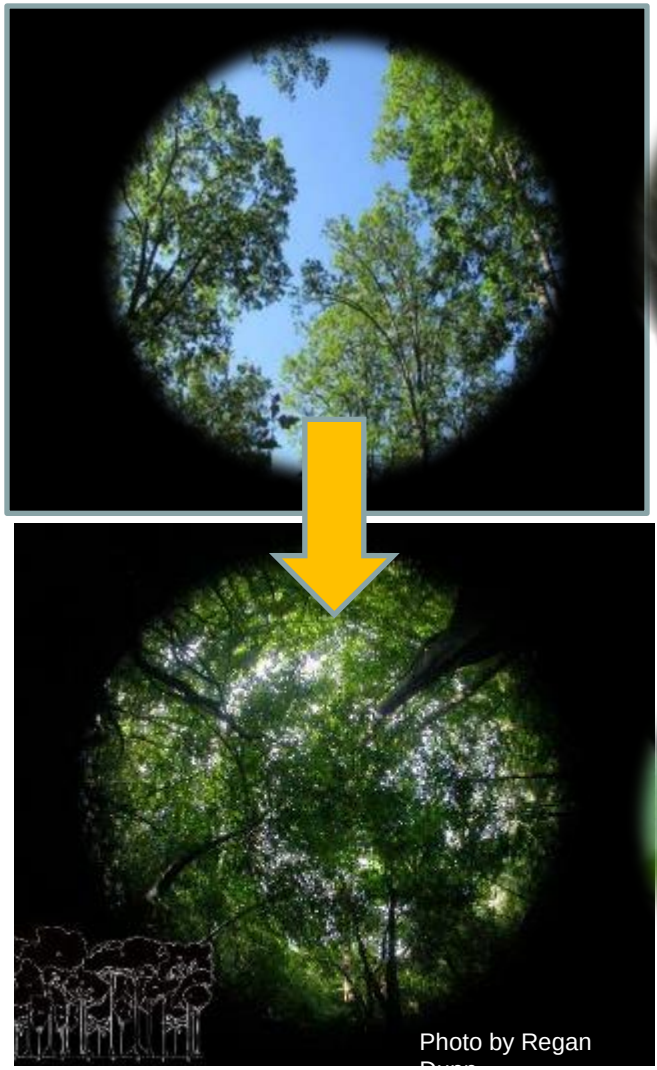
N=576

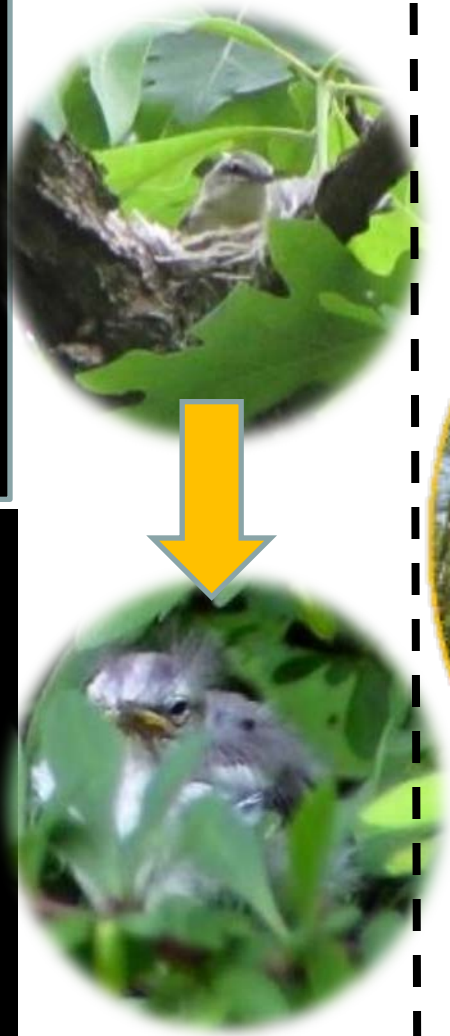
N=21

(288 each of observed and random)

Findings

CERW fledglings select for micro-habitat features that differed from nest sites





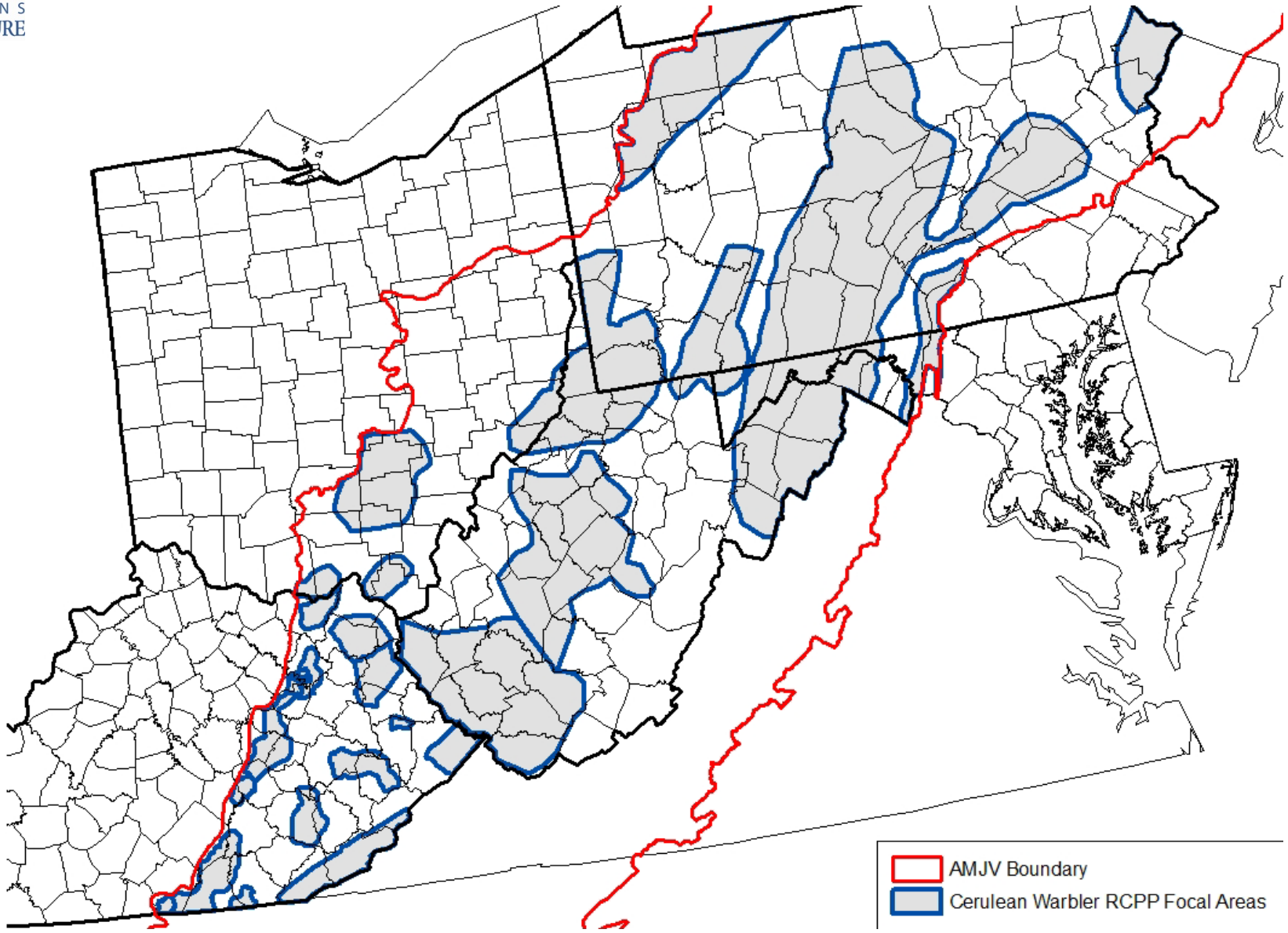
Appalachian Mtns Joint Venture Cerulean Warbler RCPP

Forest Management Objectives				Progress to date		
State	RCPP Total Acre Goal	RCPP Annual Acre Goal	FA Available	# Contracts	FA Obligated	Acres Enrolled
MD	558	112	$201,760	3**	$14,513**	55**
PA	7,961	1,592	$2,856,031	84	$2,190,649	3674.2
WV	3,981	796	$1,425,774	34	$218,097	1107
Total	12,500	5,000	$4,483,565	121	$2,423,259	4,836.2
Surface Mine Reforestation Objectives						
KY	1000 across both states		$1,214,905	2	$131,325	81.4
OH				4	$381,337	337
Total				6	$512,662	418.4

**Does not include FY17 data.

APPALACHIAN MOUNTAINS JOINT VENTURE

AMJV Cerulean Warbler RCPP Focal Areas

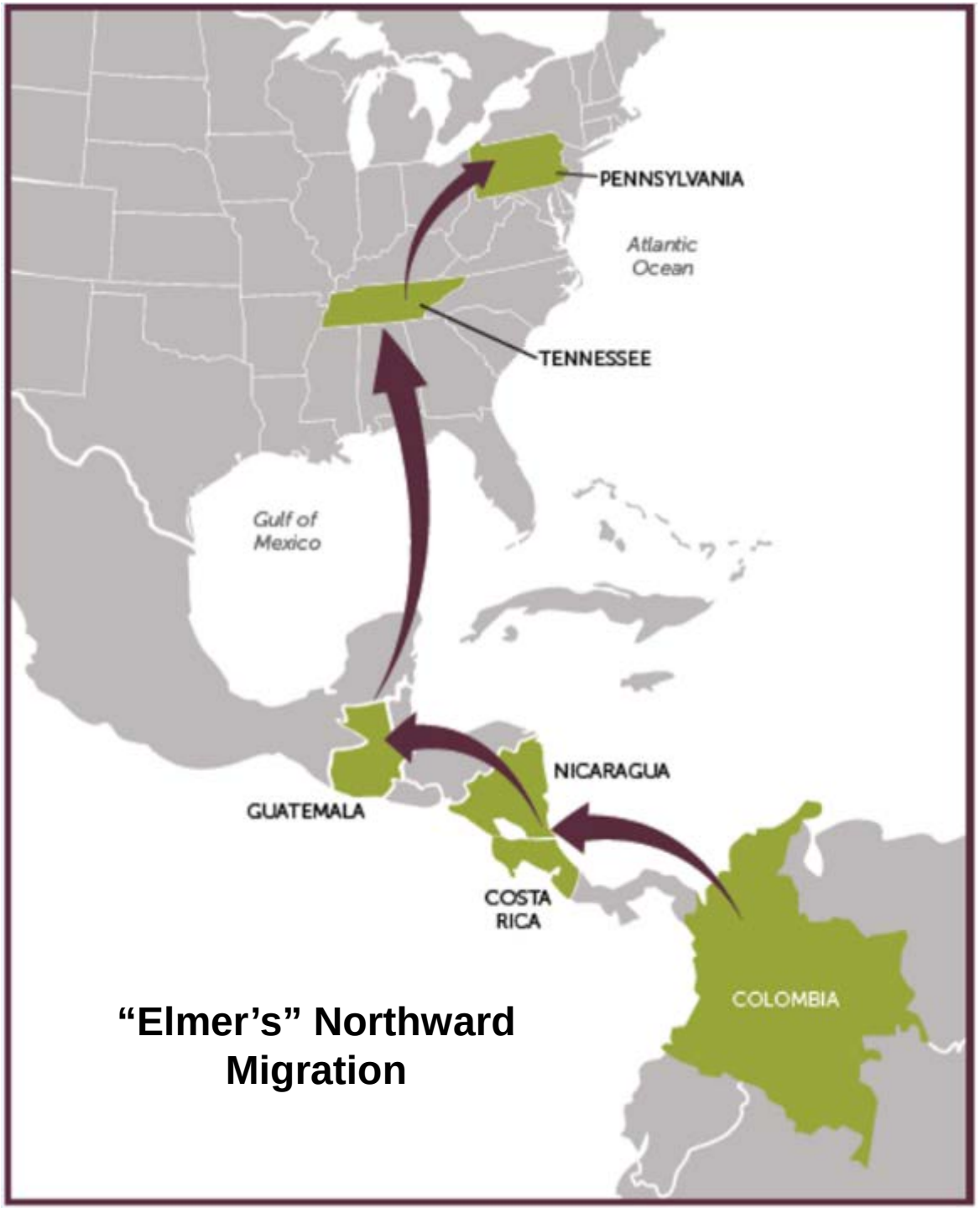


2017 Cerulean Warbler migratory connectivity project

Douglas Raybuck, Than Boves, Scott Stoleson, Jeffrey Larkin, and David Buehler

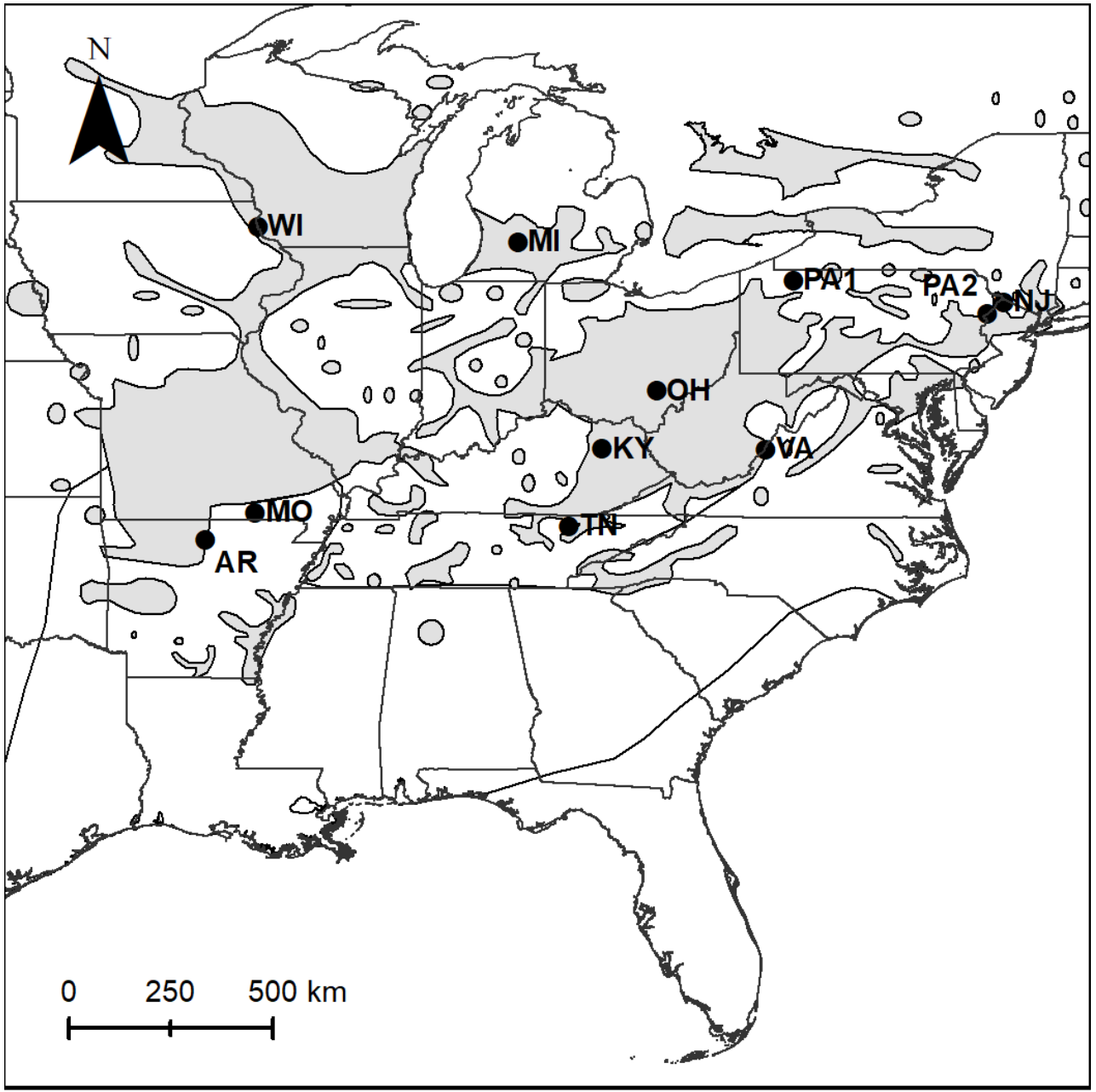
In collaboration with:

Lesley Bulluck, Department of Biology, Virginia Commonwealth University
Sergio Harding, Virginia Department of Game and Inland Fisheries
Kate Slankard, Kentucky Department of Fish and Wildlife Resources
John Cox, Department of Forestry, University of Kentucky
Beth Christensen, London Ranger District, Daniel Boone National Forest
Laura Kearns, Ohio Division of Wildlife
Steve Matthews, School of Environment & Natural Resources, The Ohio State University
Rachel Vallender, Environment and Climate Change Canada
Greg George, Department of Biology, Delaware Valley University
Sharon Petzinger, New Jersey Division of Fish and Wildlife
Kristin Mylecraine, New Jersey Audubon
Nicholas Bayly, SELVA: Investigación para la Conservación en el Neotrópico
Gabriel Colorado, Universidad Nacional de Colombia

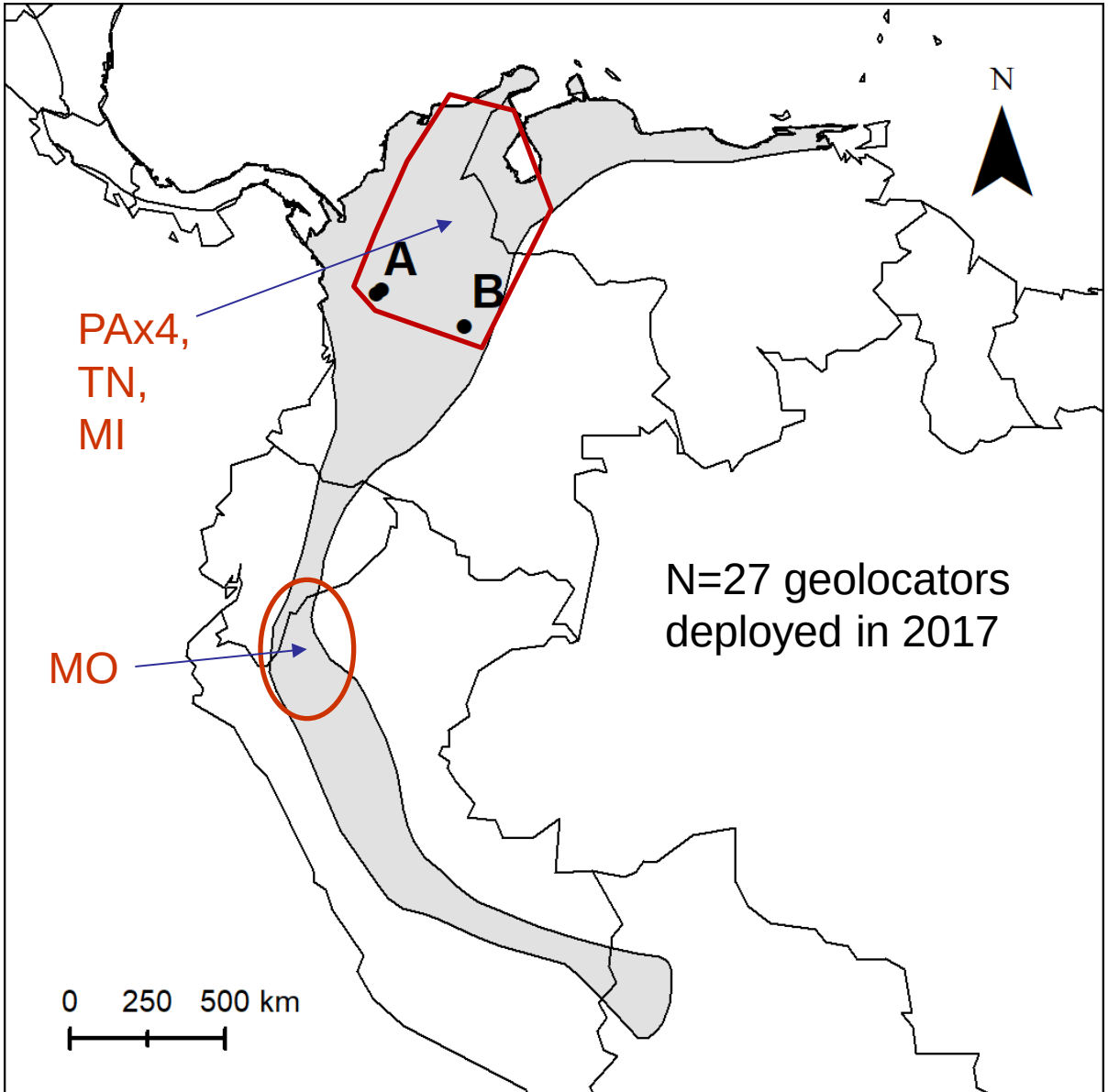


“Elmer’s” Northward Migration

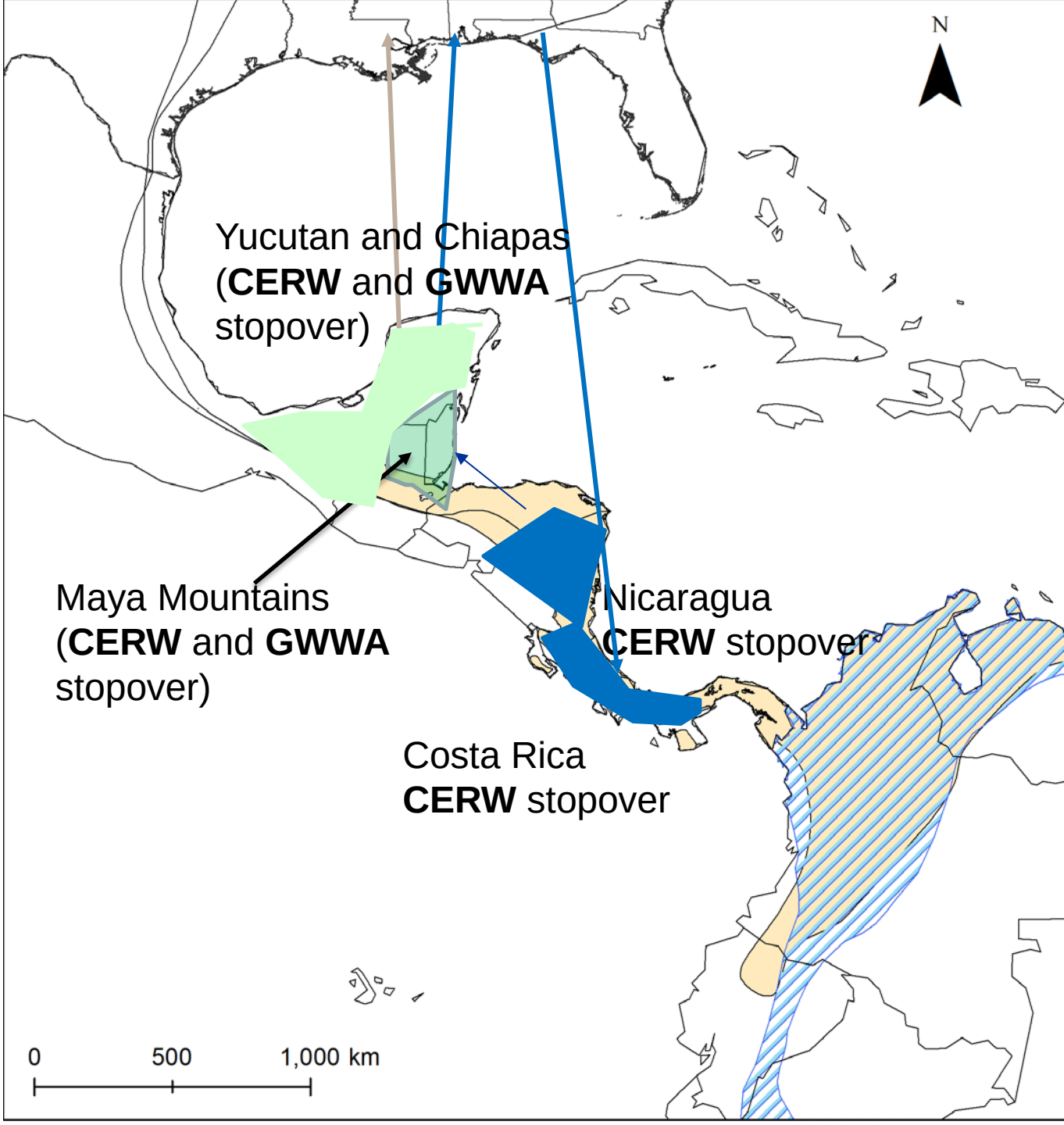
Range-wide effort: From 29 April to 20 June 2017, we deployed a total of 166 geolocators on male Cerulean Warblers (at 10 states/11 sites)



Study sites in Colombia. **(A)** Fredonia and Jericó municipalities in Antioquia, Colombia are being led by Gabriel Colorado, a biologist at Universidad Nacional de Colombia. Efforts at **(B)** Santa María municipality in Boyacá, Colombia



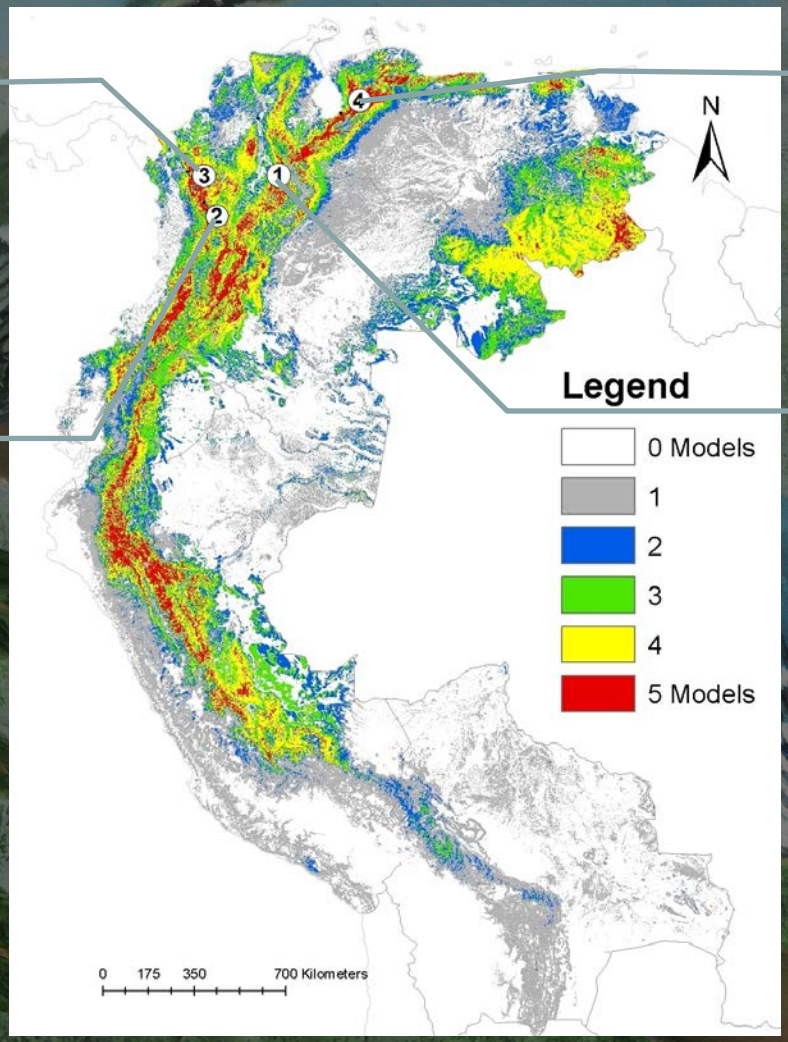
Central American overlap of CERW & GWWA



Winter Distribution Model Helps Identify Important Areas

Montane forests in Northern Antioquia department

Coffee and cacao shade plantations in Southern Antioquia and Caldas departments

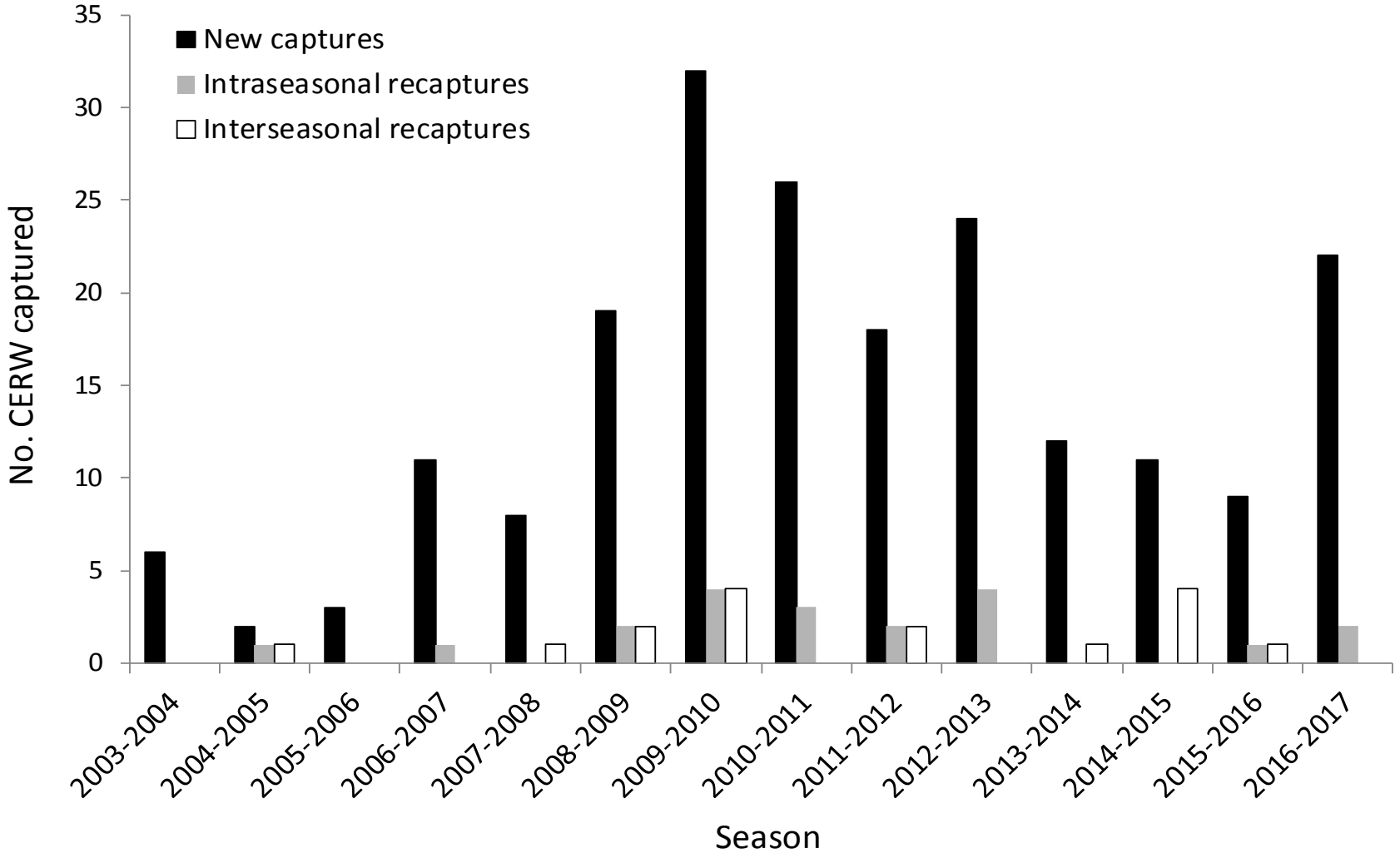


Shade coffee and secondary forests in Merida Cordillera

Subtropical forests of the Serrania de los Yariguies National Park

Important areas for Cerulean Warbler in the Northern Andes

Areas with high levels of presence of Cerulean Warbler (> 50% naïve occupancy; Colorado et al. unpublished data) - based on surveys to test winter distribution model



First captures, intraseasonal and interseasonal recaptures of Cerulean Warbler over the period 2003-2017 in Southwestern Antioquia, Colombia. Long-term demographic data from G. Colorado et al.

Priority Areas in Colombia

2014

- Workshop to define overlapping priority areas for Cerulean, Golden-wing & Canada Warblers
- 30 areas selected
- Threats & opportunities defined for each area
- 10 critical areas identified

- Main threats:
- Agricultural expansion
- Logging and extraction
- Conversion to cattle pastures

- Report led by SELVA published Sep 2014

2015

- Conservation strategies developed for 4 areas with GWWA & CERW at workshop in Virginia

EVALUACIÓN DE LAS ÁREAS FOCALES NO-REPRODUCTIVAS DE LA REINITA ALIDORADA (*Vermivora chrysoptera*), LA REINITA CERÚLEA (*Setophaga cerulea*) Y LA REINITA DEL CANADÁ (*Cardellina canadensis*) EN COLOMBIA

Fotografía: Nicholas Bayly

AMERICAN BIRD CONSERVANCY

SELVA

The Cornell Lab of Ornithology

Direcciones Futuras

- Integración de iniciativas de una sola especie y escala de ecosistema
- Desarrolle un modelo de ciclo de vida completo para comprender mejor los factores limitantes
- Desarrollar la capacidad para la implementación a escala de paisaje de las pautas de gestión del hábitat de reproducción
- Desarrollar e implementar estrategias para proteger y restaurar sitios claves de invierno y escala migratoria

Key Questions for Discussion

- Revitalize CWTG or better integrate with other initiatives?
  Where are the best places for conservation implementation, given current knowledge?
- How can more conservation implementation be fostered?
- How to communicate where conservation is taking place and share what is learned?