

International Restoration Session

NRDAR meeting 2014



**Sacramento Field Office,
USFWS
Carolyn Marn
Janet Whitlock**



**Arizona Game and Fish
Department
Edwin Juarez**

**Virginia and New
England Field Office,
USFWS
Anne Condon
Molly Sperduto**

Objectives for the Session

- Why consider international restoration?
- Provide examples of international NRDAR efforts
- Southern Wings and NMBCA opportunities
- Overcoming challenges – lessons learned
- Other Benefits

Restoration in Belize



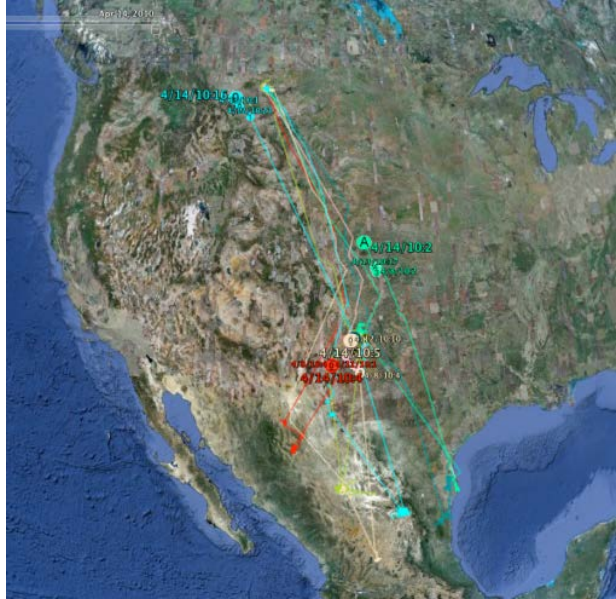
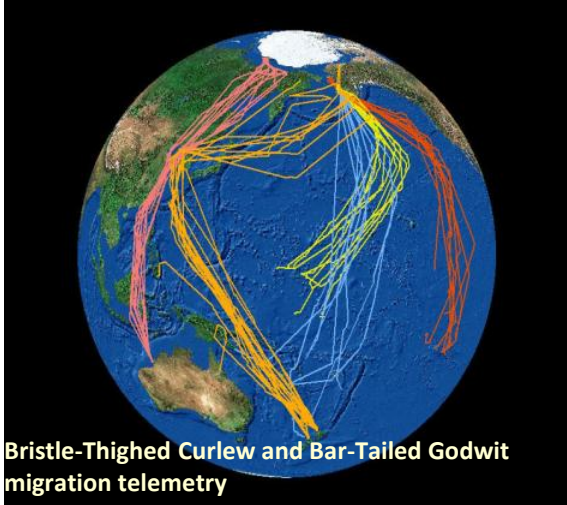
U.S. Fish and Wildlife Service, Region 5
Anne Condon (Virginia Field Office)
Molly Sperduto (New England Field Office)

Rationale for international restoration

- Many bird species that breed in the US spend $\sim 2/3$ of the year south of the border
- Neotropical migrant birds depend on both breeding and wintering habitats
- Cost/benefit (\$) ratio is greater in Neotropics

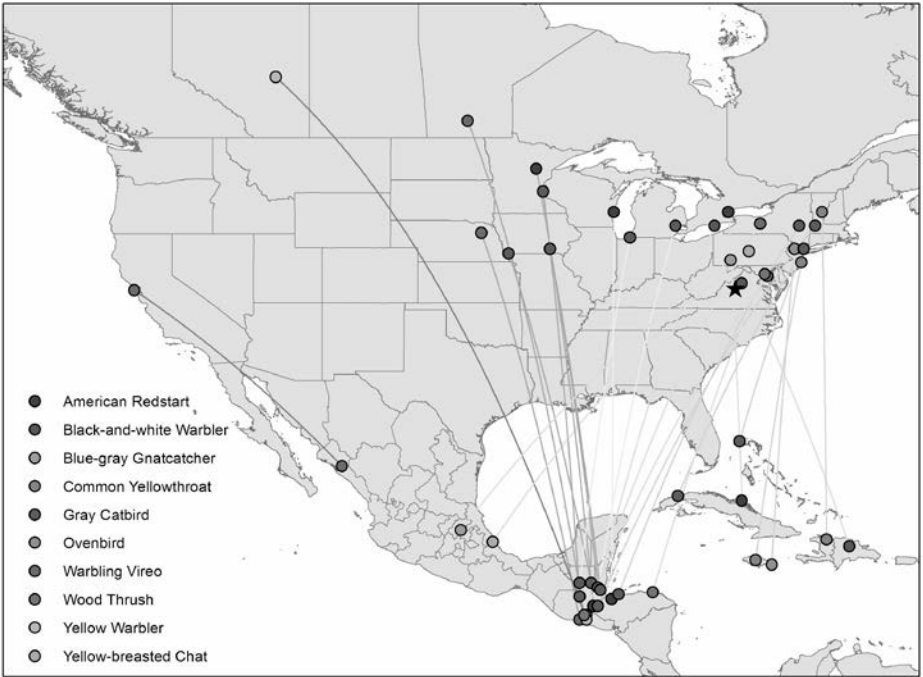
Advances in Technology Support Full Life Cycle Conservation

Telemetry

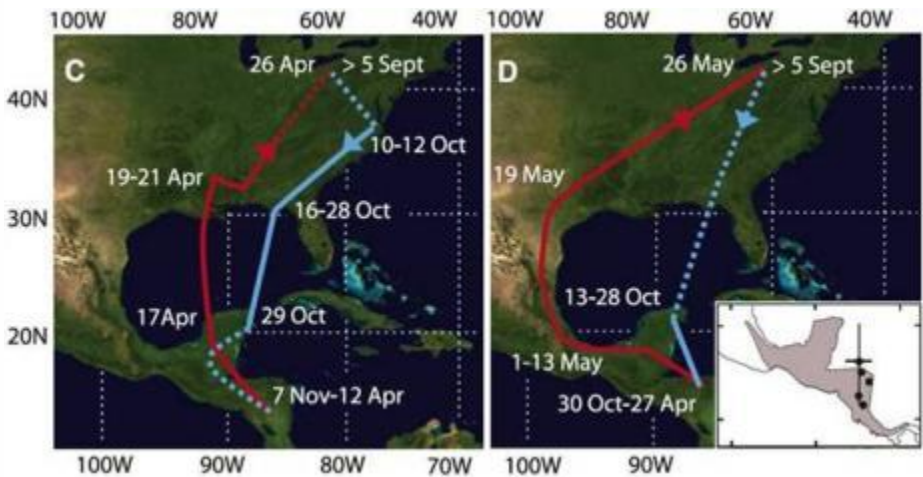


Credit: Bob Gill, USGS Alaska, Shorebird Project

Banding data



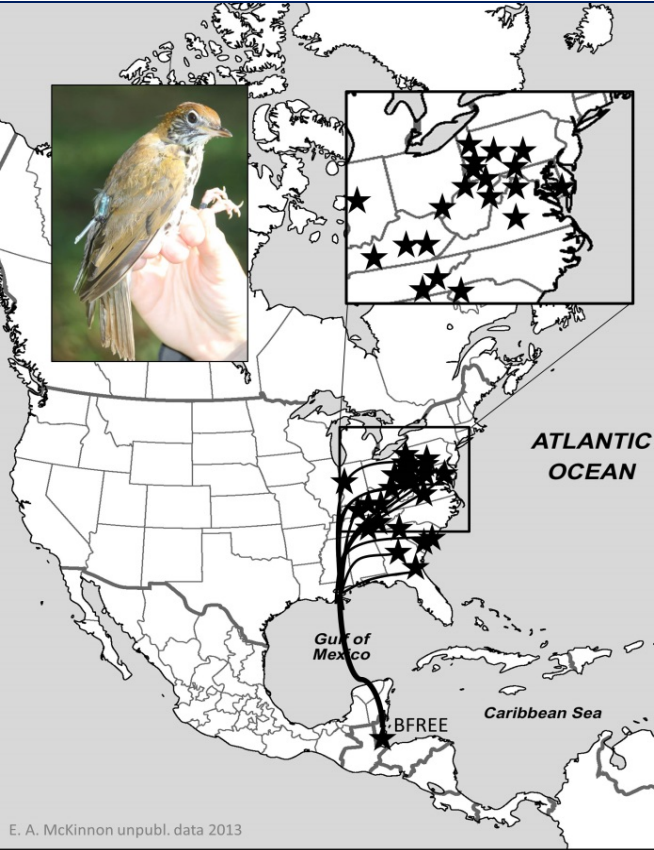
Geolocators



Actual Movements of Wood Thrush (Stutchbury et al. 2009)

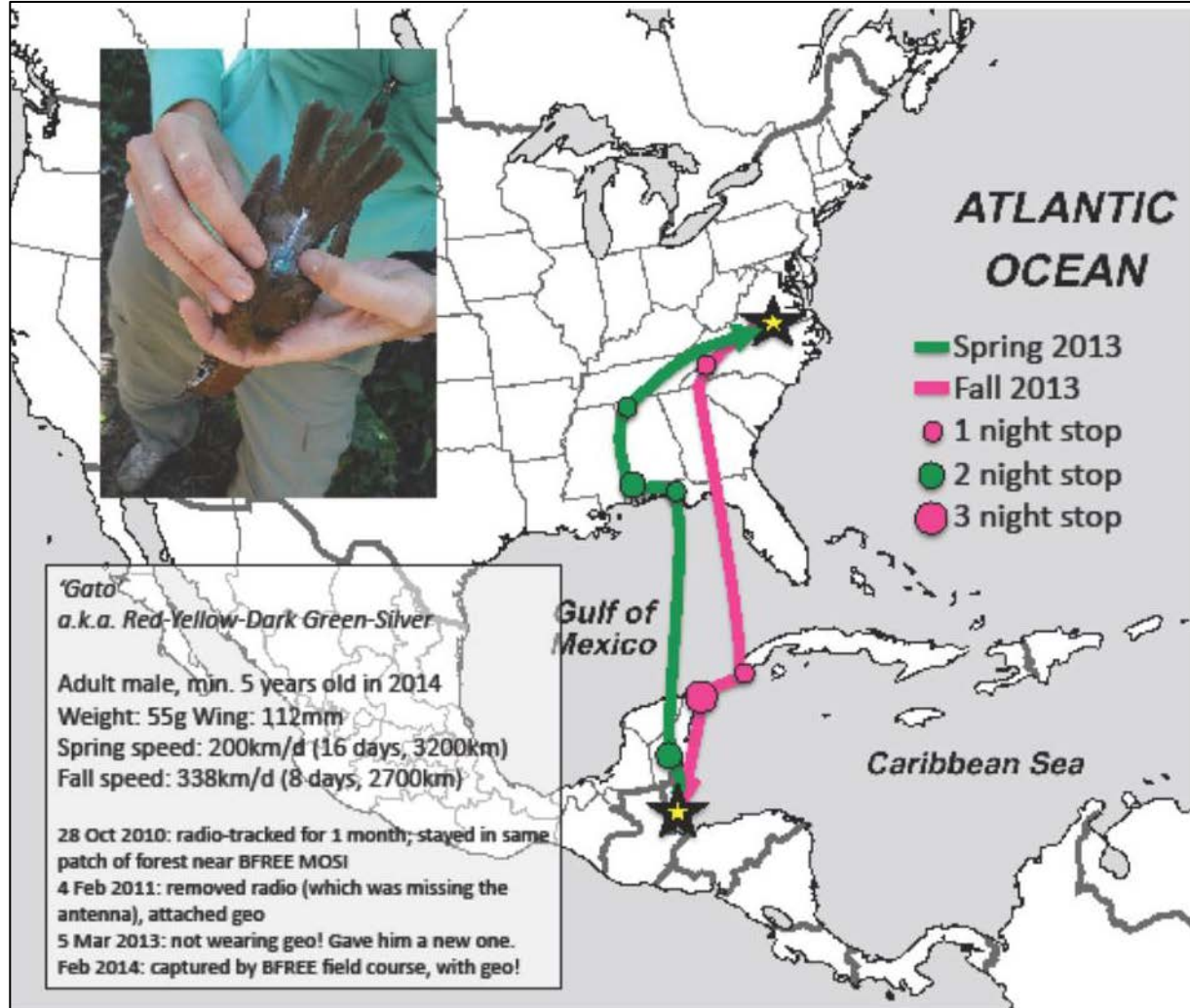
Wood Thrush

Geolocator studies



E. A. McKinnon unpubl. data 2013

2010-2012



'Gato'
a.k.a. Red-Yellow-Dark Green-Silver

Adult male, min. 5 years old in 2014
 Weight: 55g Wing: 112mm
 Spring speed: 200km/d (16 days, 3200km)
 Fall speed: 338km/d (8 days, 2700km)

28 Oct 2010: radio-tracked for 1 month; stayed in same patch of forest near BFREE MOSI
 4 Feb 2011: removed radio (which was missing the antenna), attached geo
 5 Mar 2013: not wearing geo! Gave him a new one.
 Feb 2014: captured by BFREE field course, with geo!

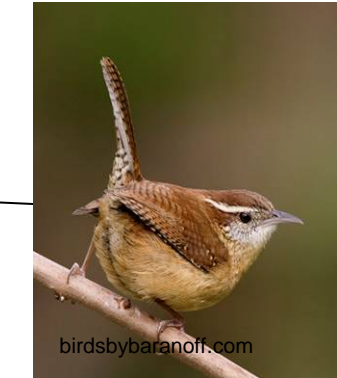
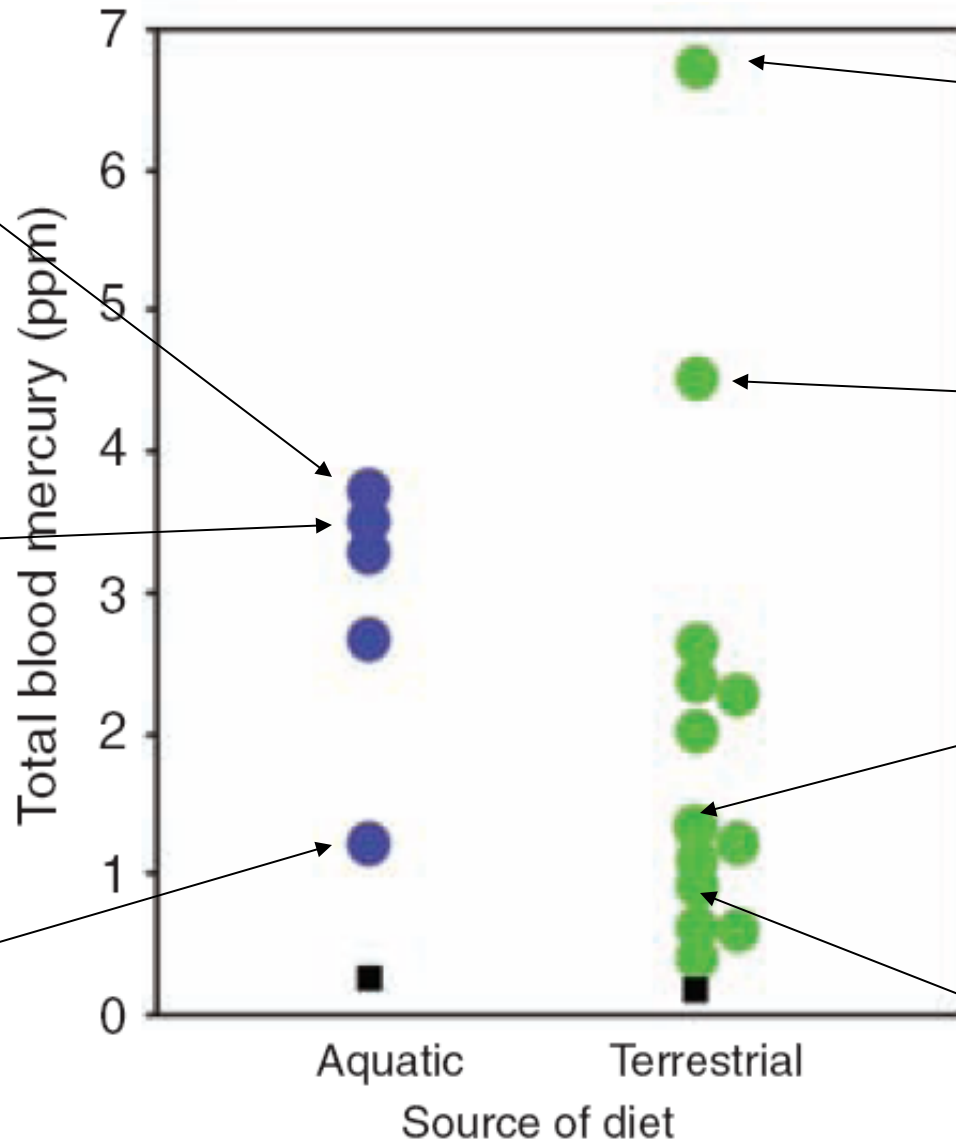
2013

South River, Virginia - Dupont NRDAR



B

Adapted from Cristol et al. 2008



Long distance		Medium distance	Other Virginia Birds that winter in Belize
Acadian Flycatcher	Northern Parula *	Blue-gray Gnatcatcher	Blackburnian Warbler
American Redstart	Orchard Oriole	Common Yellowthroat	Blue-winged Warbler*
Baltimore Oriole	Ovenbird *	Eastern Phoebe	Chestnut-sided Warbler
Barn Swallow	Purple Martin	Gray Catbird *	Golden-winged Warbler*
Black and White Warbler *	Red-eyed Vireo	Grasshopper Sparrow *	Least Flycatcher
Blue Grosbeak	Scarlet Tanager *	House Wren	Lincoln's Sparrow
Bobolink	Warbling Vireo	Northern Rough-winged Swallow *	Kentucky Warbler*
Black-throated Green Warbler *	Worm-eating Warbler *	Prairie Warbler	Magnolia Warbler
Cedar Waxwing	Willow Flycatcher *	Ruby-throated Hummingbird	Nashville Warbler
Chimney Swift *	Wood Thrush *	Savannah Sparrow	Northern Waterthrush
Cliff Swallow	Yellow-breasted Chat *	Tree Swallow	Olive-sided Flycatcher
Dickcissel	Yellow-billed Cuckoo *	Vesper Sparrow	Philadelphia Vireo
Eastern Kingbird *	Yellow-throated Vireo *	12 Species	Prothonotary Warbler*
Eastern Wood-Pewee *	Yellow Warbler *		Rose-breasted Grosbeak*
Great-crested Flycatcher	32 Species		Summer Tanager
Hooded Warbler			Swainson's Thrush
Indigo Bunting			Tennessee Warbler
Louisiana Waterthrush *			Veery
			White-eyed Vireo
			Wilson's Warbler
			Yellow-bellied Flycatcher
			Yellow-rumped Warbler

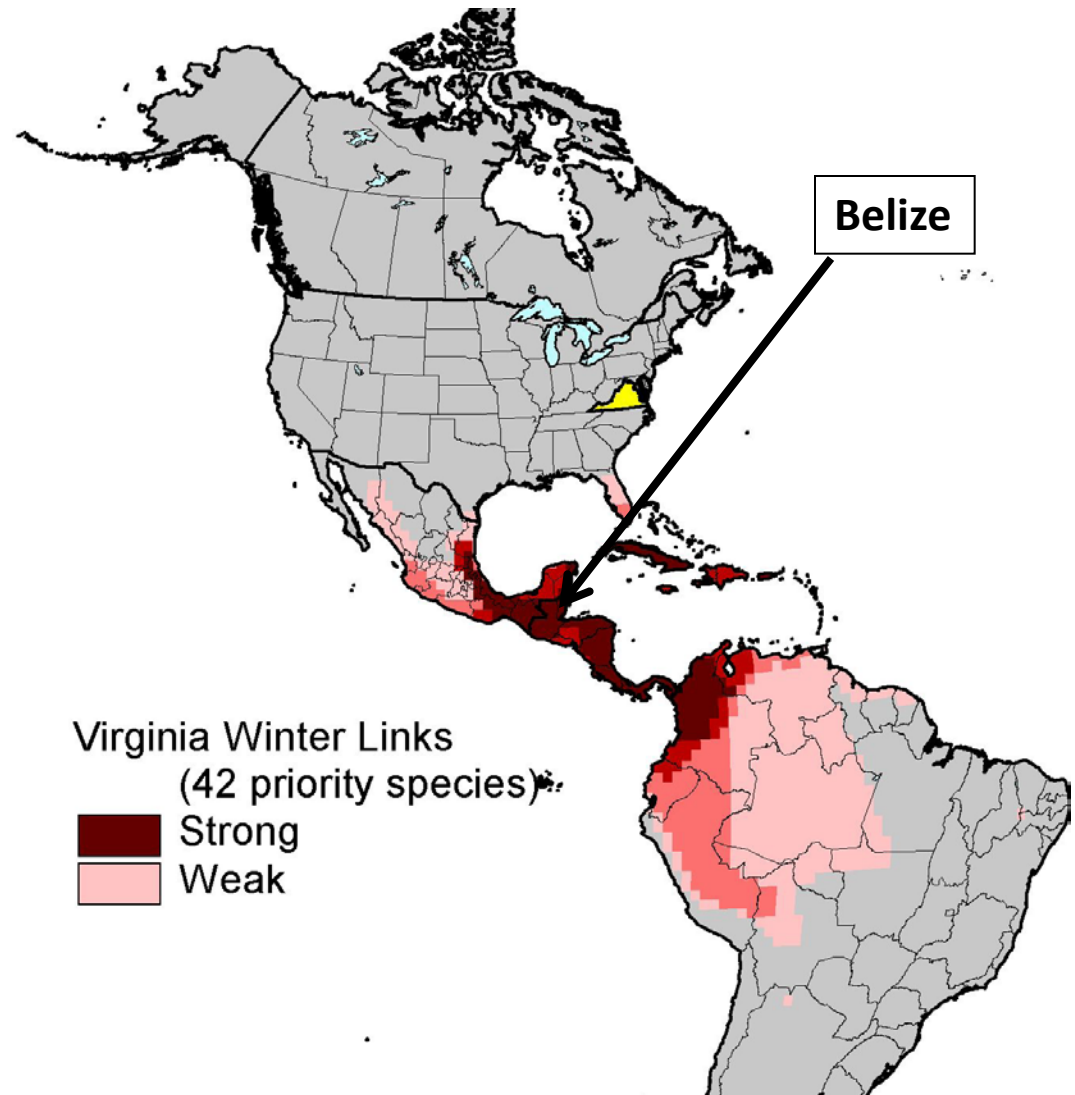
32 overlap (43%)

Additional 22 species

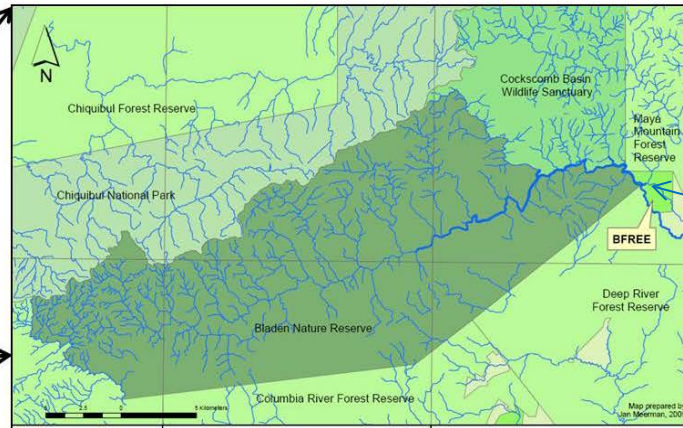
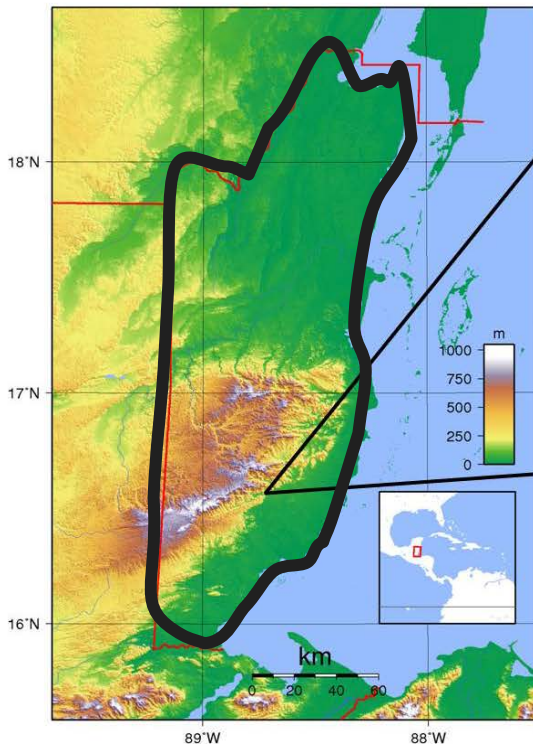
Neotropical migrant link is strong between Virginia and Belize

Why BELIZE?

- North American Neotropical migrants present
- Politically stable
- Environmental ethic
- Established environmental non-profits present
- Large private landholdings
- Threats



Potential project: long-term habitat protection



**Belize Foundation
for Research and
Environmental
Education (BFREE)**

- US registered non-profit
- Leasing property since 1995
- 1,153 acres
- Adjacent to over 1.9 million acres of continuous tropical rainforest



Why BFREE?

- Direct connection with Virginia birds
 - Neotropical migrants
 - Species of conservation concern
- Size, Location and Expected Benefit-Cost/Acre
- Established NGO
 - Scientific research
 - Education
- Multiple partners
- Research and monitoring opportunities
- Urgency



Next steps

- Work with Trustees, Solicitor, and DuPont to move forward



Growing Chocolate for the Birds

- Implement wintering habitat restoration in Belize to benefit neotropical migrants impacted by Hg from the Nyanza Chemical Waste Dump, Ashland, MA



Sudbury River, Great Meadows NWR



Ovenbird – Jackie Ricardi

Restoration Planning

- Public Information Meetings
- Solicited Project Ideas from the Public
 - Received nearly 50 ideas, none specifically for migratory birds



Invasive Species Control



Recreational Amenities

Neotropical Migrants

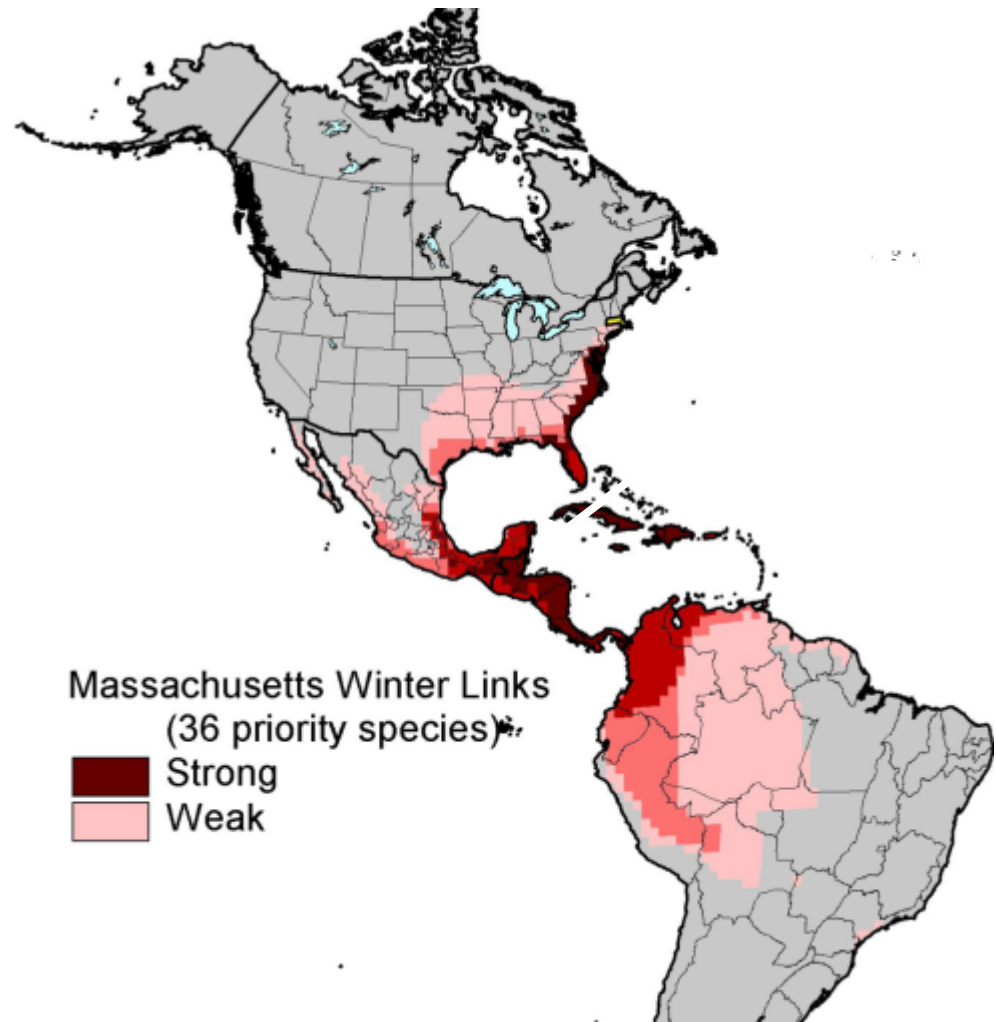
Great Blue Heron¹
Great Egret
Snowy Egret
Green Heron¹
Blue-winged Teal
Osprey
Sharp-shinned Hawk
Solitary Sandpiper
Spotted Sandpiper¹
Yellow-billed Cuckoo
Common Nighthawk
Ruby-throated Hummingbird
Belted Kingfisher¹
Eastern Wood-Pewee
Least Flycatcher¹
Great Crested Flycatcher
Yellow-bellied Flycatcher
Northern Rough-winged Swallow¹
House Wren
Blue-gray Gnatcatcher¹
Gray-cheeked Thrush
Swainson's Thrush
Wood Thrush

Gray Catbird¹
White-eyed Vireo
Yellow-throated Vireo
Red-eyed Vireo¹
Yellow Warbler¹
Chestnut-sided Warbler¹
Magnolia Warbler
Black-throated Blue Warbler
Yellow-rumped Warbler¹
Black-throated Green Warbler
Black-and-white Warbler
American Redstart¹
Ovenbird
Northern Waterthrush
Mourning Warbler
Common Yellowthroat¹
Wilson's Warbler
Yellow-breasted Chat
Scarlet Tanager¹
Rose-breasted Grosbeak
Indigo Bunting
Orchard Oriole
Baltimore Oriole



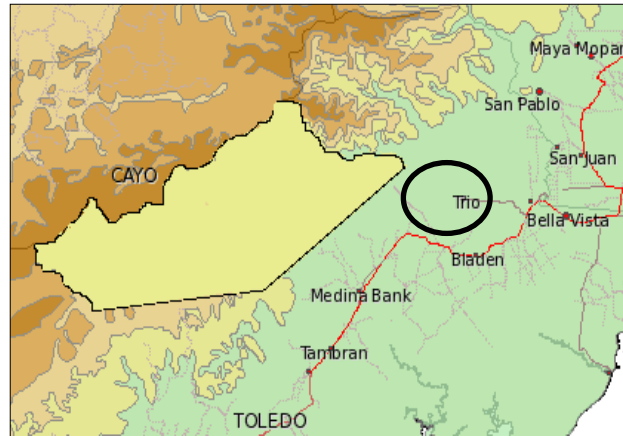
Eastern Kingbird¹ at Great Meadows NWR

Neotropical migrant link is strong between Massachusetts and Belize



Belize - Trio Agricultural Area

- “Protected Areas” being de-reserved and converted to farmlands
- Unregulated land clearing
- Loss of bird habitat



Why Cacao Makes Sense



Belize Habitat Restoration

Proposal: working with BFREE, support transitioning land to sustainable shade grown cacao (goal: five 30-acre farms)

- Develop agreements with farmers to support effort and protect investment
- Educate and assist farmers with planting and growing cacao
- Monitor birds utilizing cacao forests to evaluate species diversity and abundance
- Use geolocators to track migration of birds from Belize as well as from Sudbury River Watershed
- Implement school to school outreach



**Draft Restoration Plan and Environmental Assessment
for the Nyanza Chemical
Waste Dump Superfund Site**

Prepared for Nyanza NRD Trustee Council:

Commonwealth of Massachusetts

U.S. Fish and Wildlife Service
U.S. National Oceanic and Atmospheric Administration

Prepared by:

Stratus Consulting Inc.
PO Box 4059
Boulder, CO 80306-4059

<http://www.mass.gov/dep/cleanup/sites/nrd/nydrpea.pdf>

Began Project Implementation - 2012

- Held numerous meetings with farmers
- Selected 3 farmers to start (2012)
- Developed contracts with assistance from UFL
- 5 additional farmers in 2013



Cacao Agroforestry Training



Farmers Construct Cacao Nursery



Preparing the Restoration Sites





Planting the Cacao



Evaluating the Sites







Connecting Communities Through Birds





Rehinaldo Tzalam

Golden Stream village
Rehinaldo Tzalam
Toledo district
March 14th 2014.

Dear Friend

We are so blessed to be able to share these Letters with you. My name is Rehinaldo Tzalam, I live in Golden Stream village. I am ten years old, my birth day is on August 25th 2003. My favourite food is rice and beans and my favourite sport is football. My pet name is Scarlet Macaw.

This is my hand. When you place your hand on mine, think about me! I prayed for you to receive this letter. Sending you a special word of encouragement from the Actings.



you are loved and very special!

Thanks

please send me back.



*Welcome,
Brown Bird*



Mary Lyn Ray

ILLUSTRATED BY Peter Sylvada

Cacao Habitat Restoration Benefits (so far...)

- Prevent loss of tropical forest habitat (enhance degraded habitat)
- Benefits numerous neotropical migrants
- Sustainable program, environmentally friendly
- Timing is good
- Tropical work is cost-effective
- Monitoring critical to help ensure success, minimize risks
- Program led from within country
- Connects cultures and engages the public in bird conservation
- Fits with Departmental and Presidential priorities

