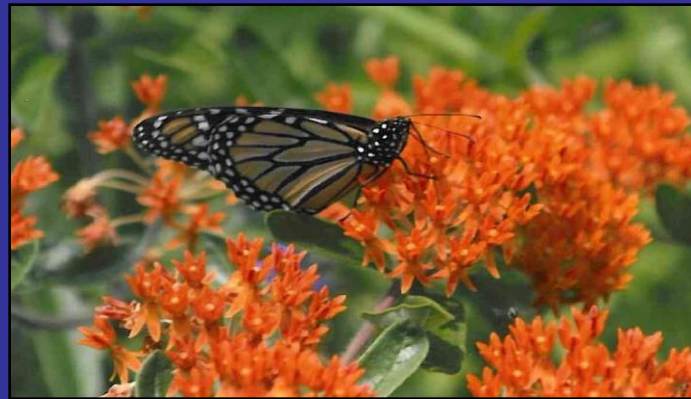


Habitat & Plant Choices in the Face of Climate Change

A Presentation by the Manomet Center for Conservation Sciences



Cambridge Plant & Garden Club



Menotomy Bird Club

Our Bird Populations...

40 years of change



A Presentation by the Manomet
Center for Conservation Sciences









www.manomet.org



In the years following 1896, Ellen Ernst and her gardener, Otto Andersen, transformed windswept farm land into a lush landscape flourishing with a profusion of flowers, shrubs and trees.





Photo: Manny d'Amonville

Ellen And Her Tea House

Designed after a tea house the Ernst visited on a tour through Japan. Many Asian plants were introduced, among them the Asiatic Bittersweet.





Fire on the Pine Hills

1ST May 1977



Long-Term Bird Migration Banding









Not what we meant to catch Silver-haired Bat



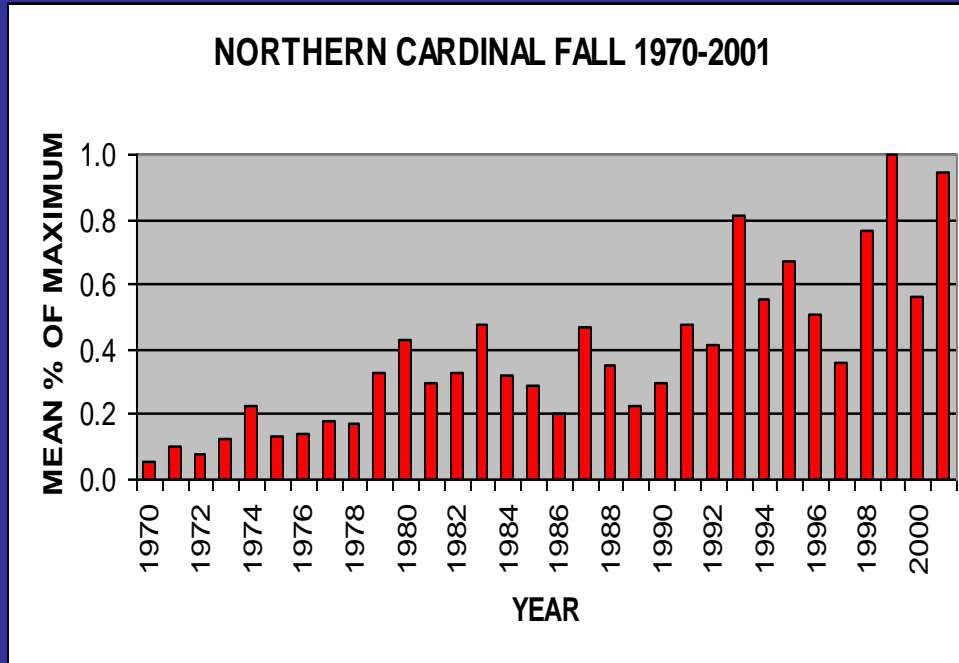
Spring Migration: 72 Species

1970 - 2001

- 50% of species show decreasing numbers.
- 5% of species show increasing numbers (Carolina Wren, Tufted Titmouse, Northern Cardinal, Orchard Oriole).
- Neotropical species are declining as well.

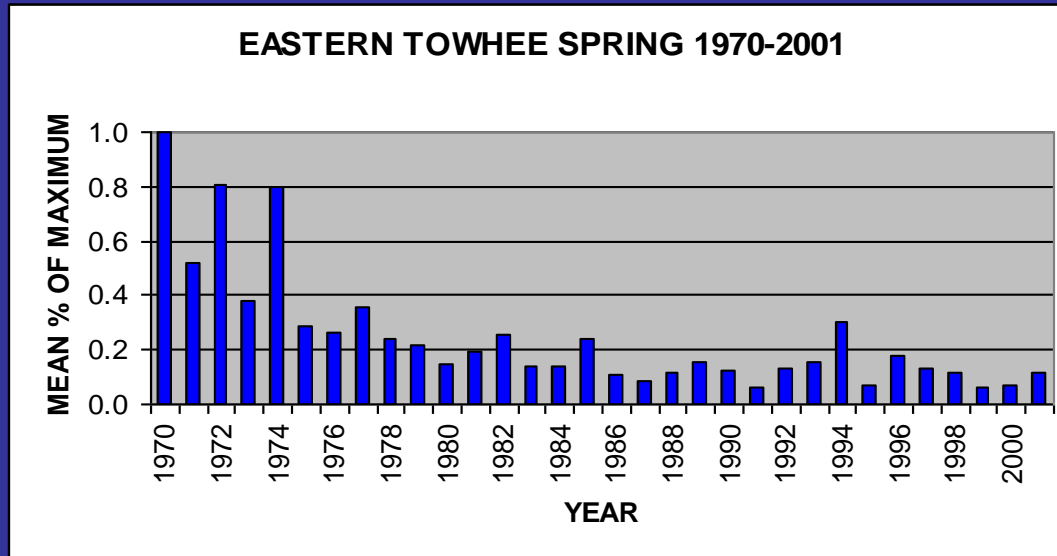
Northern Cardinal

Trending upward



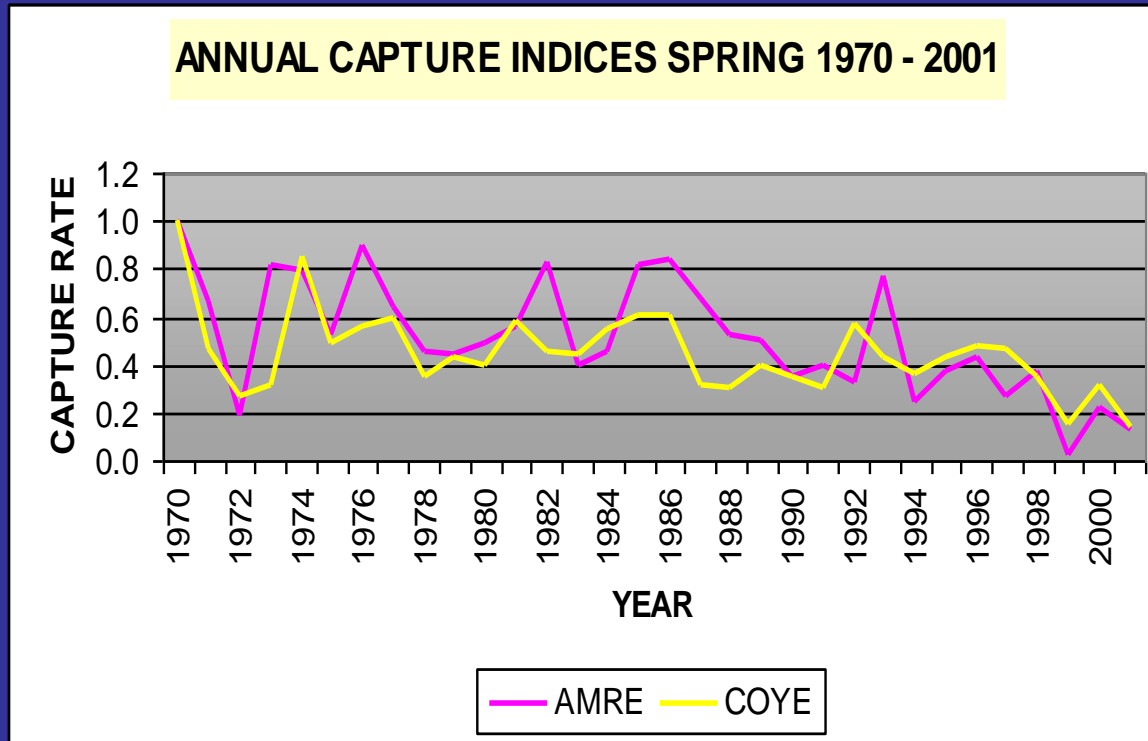
Eastern Towhee

Trending downward



Annual Capture Indices Are Declining

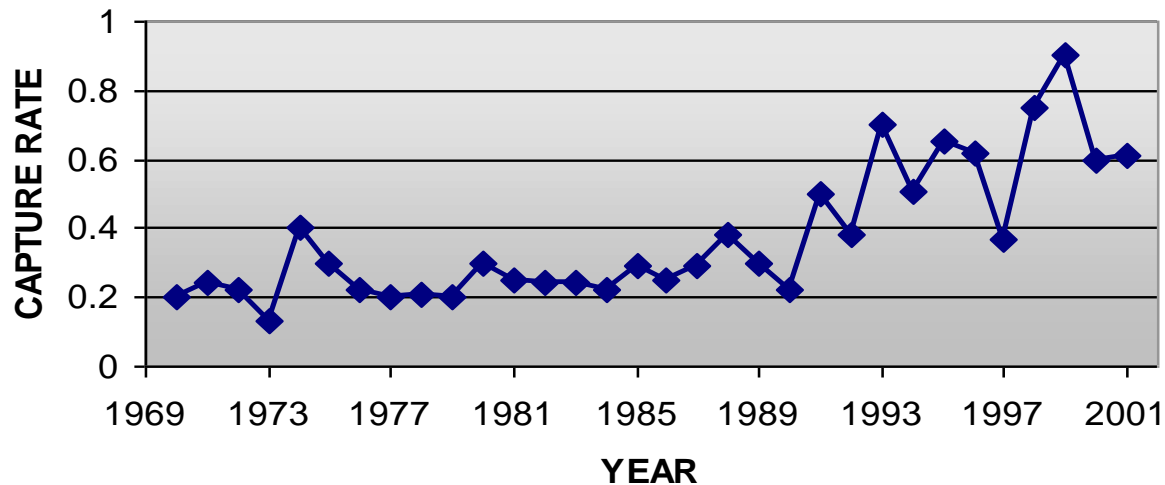
for many species



A Few Species Are Doing Well

Lloyd-Evans & Atwood. Wilson Bull. 2004

**ANNUAL CAPTURE INDICES
FALL (1970-2001)**

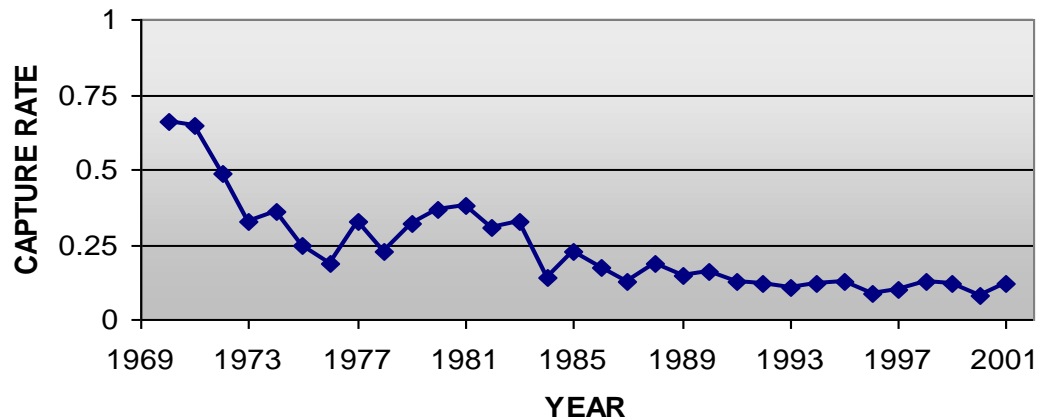


American Goldfinch, Black-throated Blue Warbler
Carolina Wren, Northern Cardinal



Short Distance Migrants Also Are Declining...

**SHORT DISTANCE MIGRANT INDICES
FALL 1970 - 2001**

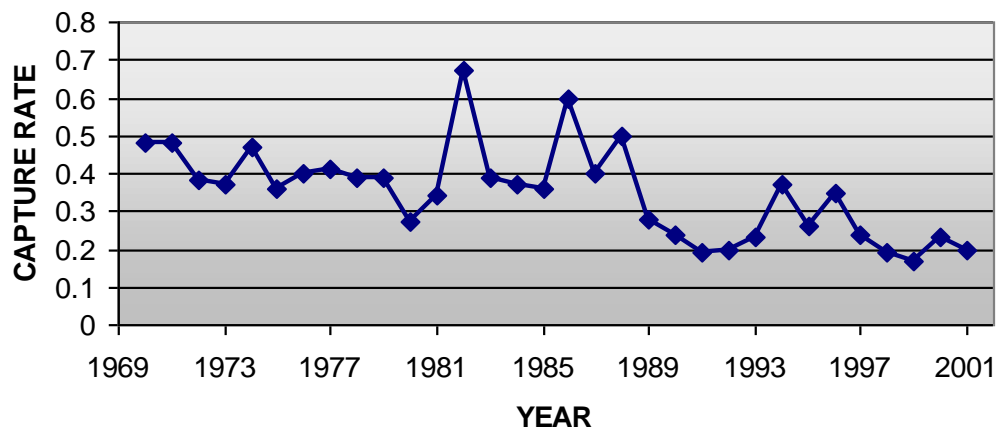


American Robin, Brown Creeper, Field Sparrow, Brown Thrasher
Eastern Towhee, Black-capped Chickadee, Blue Jay, Blackpoll Warbler



...As are Neotropicals

**NEOTROPICAL MIGRANT INDICES
FALL 1970 - 2001**



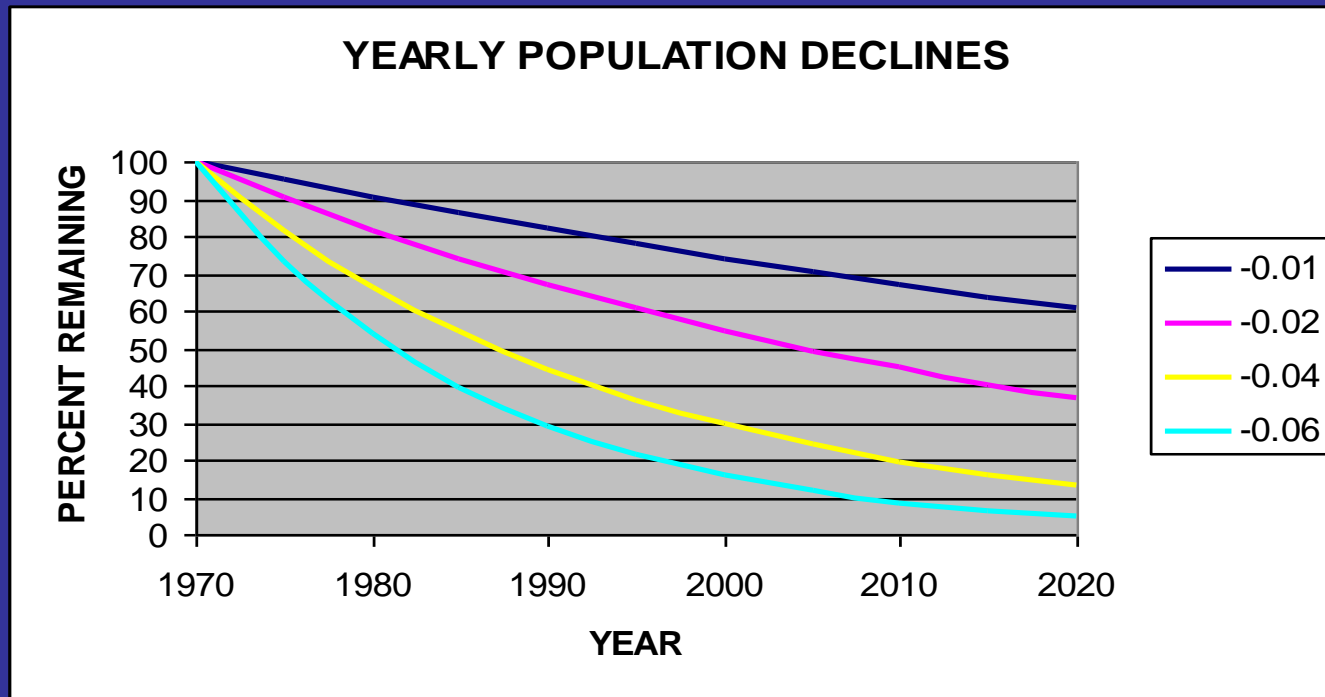
AMRE WIWA CONW WEVI BTNW MAWA CAWA VEER NAWA
BAOR YWAR BWBA OVEN GCTH CSWA LEFL BHVI OCWA



Theoretical Population Declines:

Small annual declines = a massive impact over time

How many North American species are extinct since 1800 ?

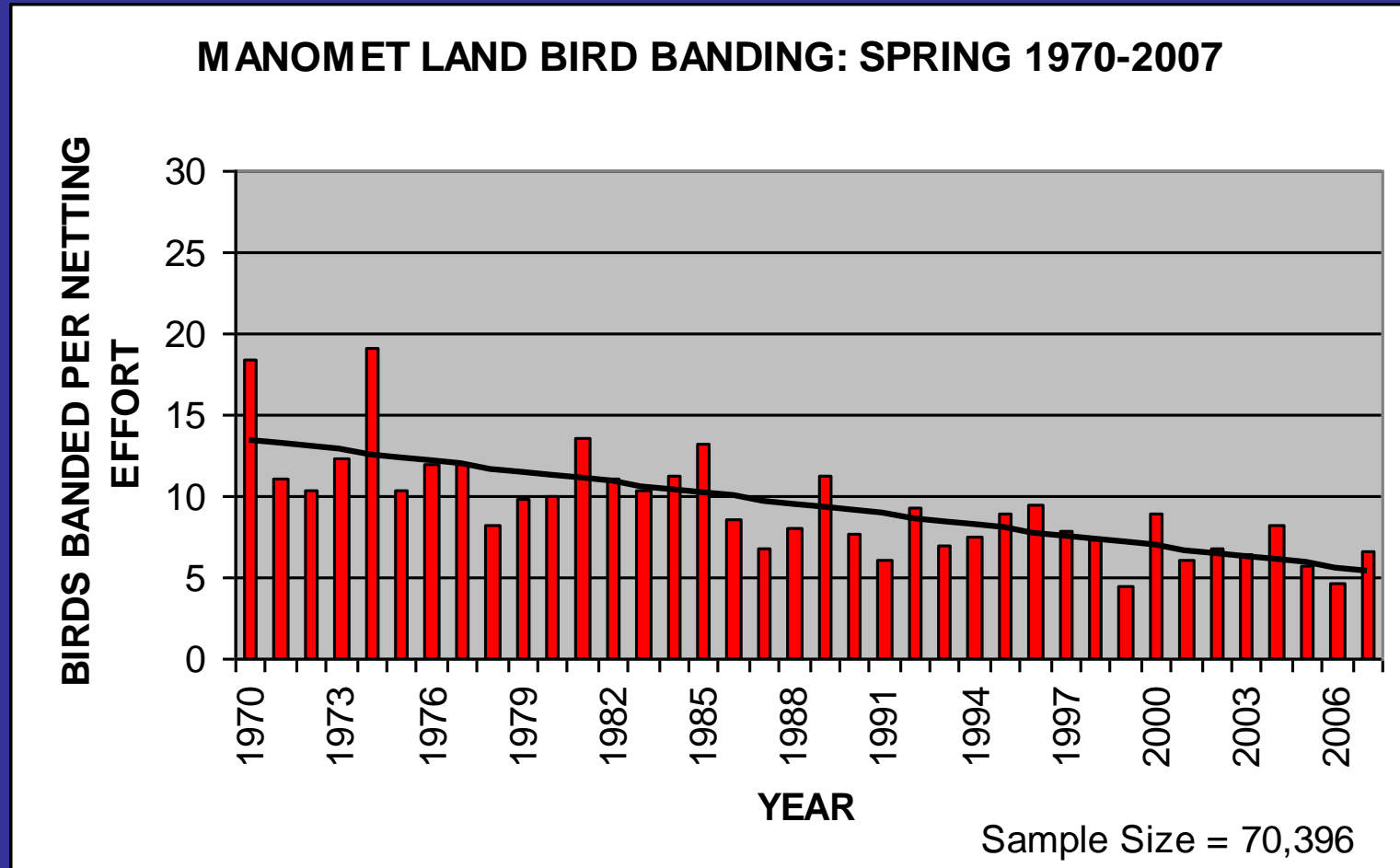


Extinct in N. America since 1800

- Labrador Duck ca. 1875
- Eskimo Curlew ? 1976 ?
- Great Auk 1841 (1844)
- Passenger Pigeon 1899 (1914)
- Carolina Parakeet 1904 ?
- Ivory-billed Woodpecker ? (1960's, 1980's)
- Bachman's Warbler 1962 ?
- (Heath Hen) Gt. Prairie Chicken 1932
- (Dusky) Seaside Sparrow 1980 (1987)

Effect of Population Decline on Bird Banding at Manomet

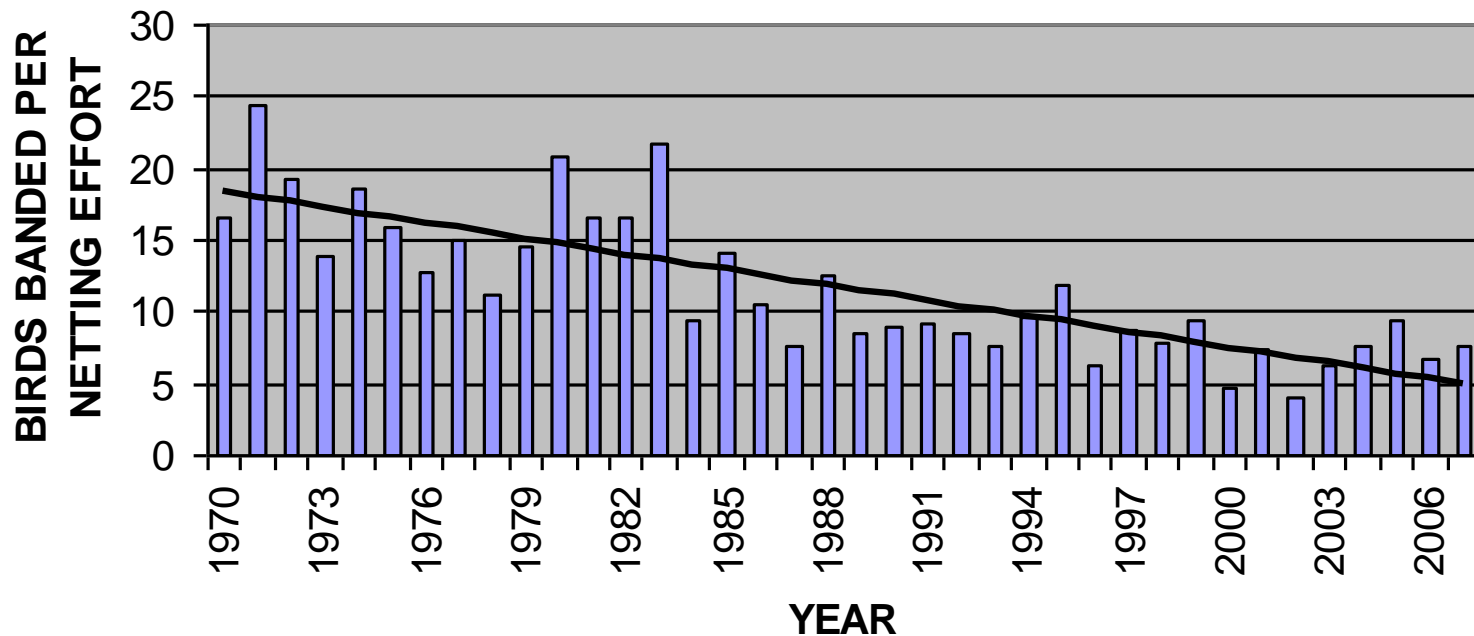
Spring 1970 - 2007



Effect of Population Decline on Bird Banding at Manomet

Fall 1970 - 2007

MANOMET LANDBIRD BANDING: FALL 1970-2007
(INITIAL BANDINGS 15TH AUGUST - 15TH NOVEMBER)



Sample Size = 139,298

Risks to Pitch Pine / Scrub Oak habitat



Inexorable Development



Causes of Migratory Songbird Population Declines

*Citrus Farming
Development in Belize...*



Rainforest in Bladen Branch, Belize



Belize Rainforest



Red-capped Mannikin



Hooded Warbler



Winter Ranges of Significantly Declining Species

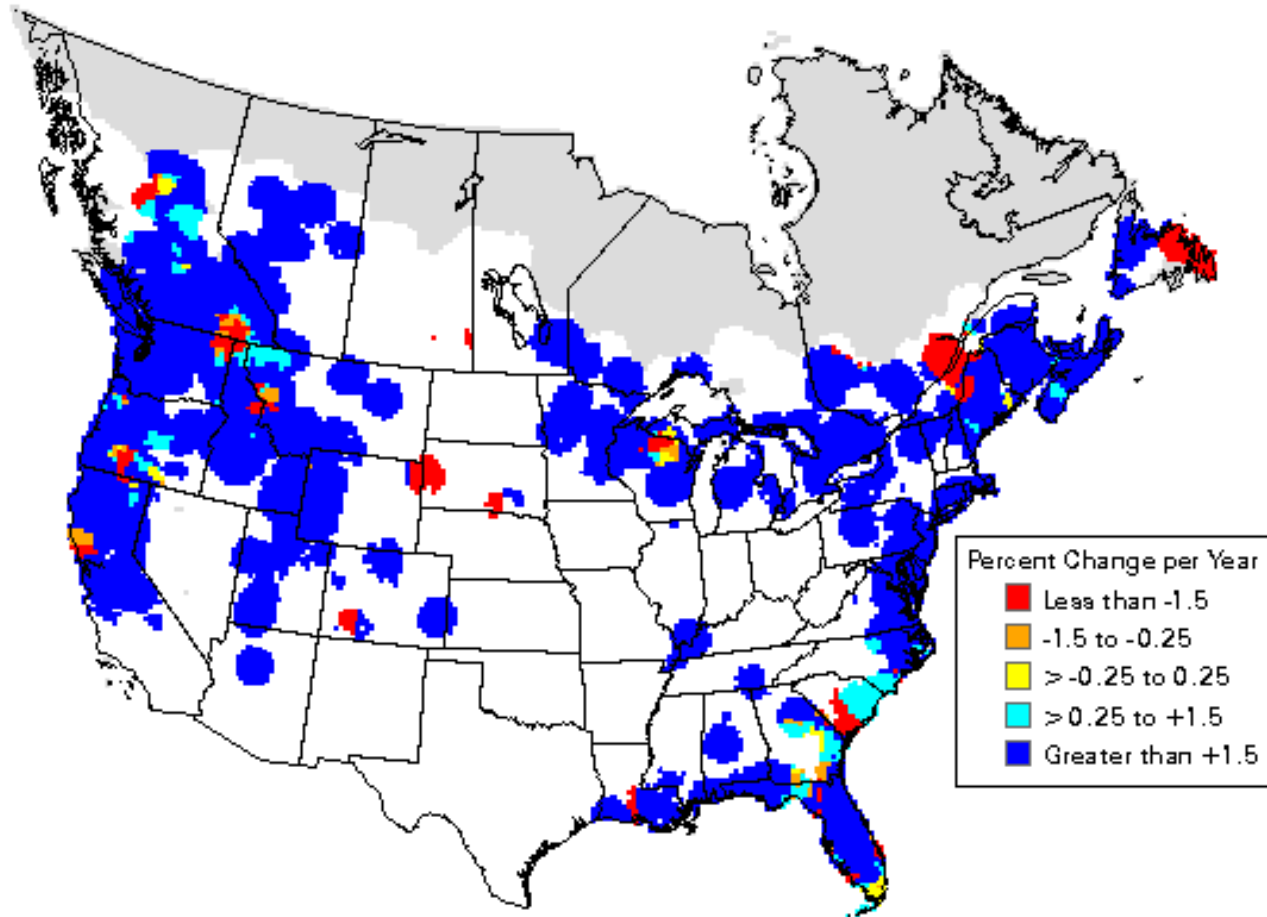
	%	Sig. Decline	N
NE North Am.	33%	4	12
SE North Am.	54%	13	24
Cent. & S. Am.	70%	31	44
Trop. Forests	84%	16	19

Increasing Non-passerines



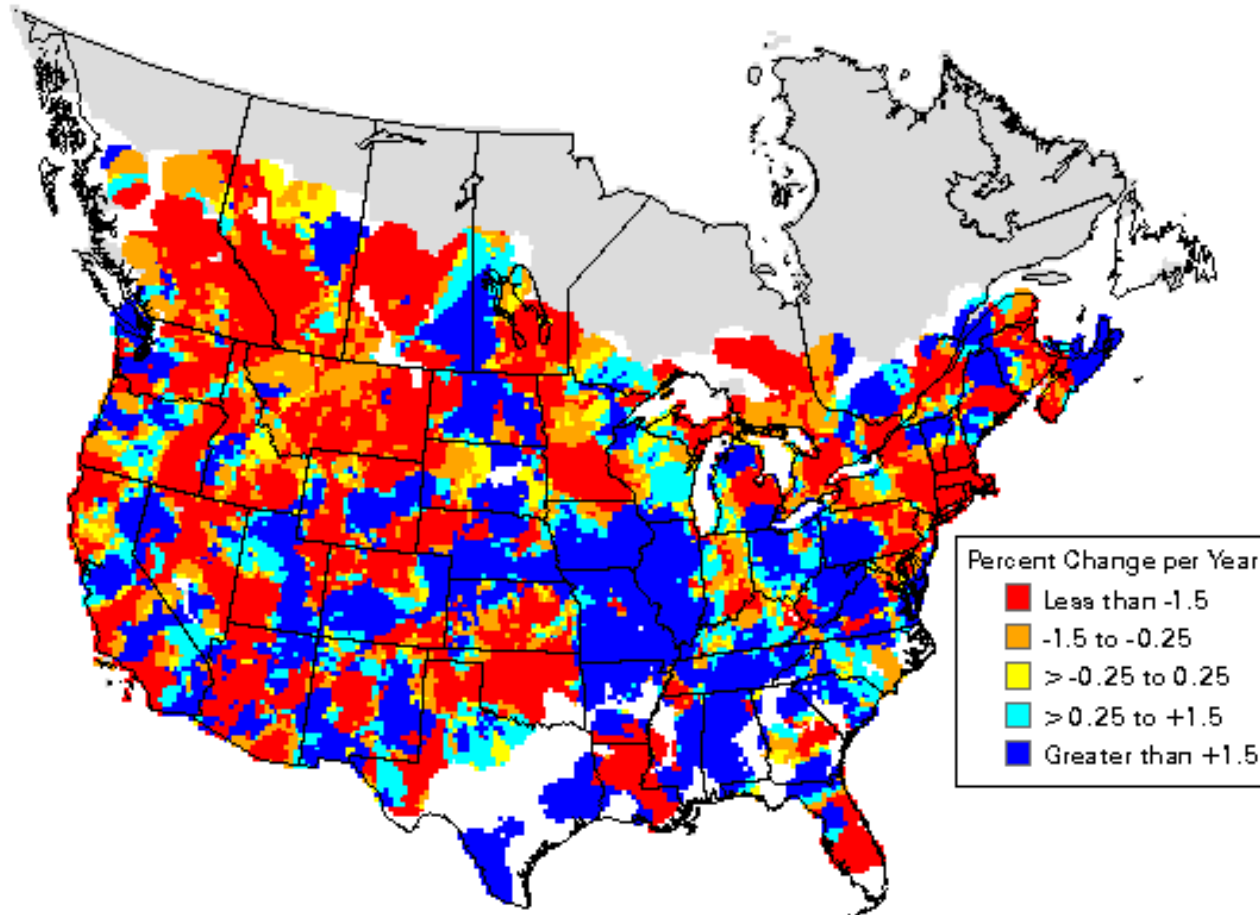
Osprey 1966-2003

USGS Breeding Bird survey



American Kestrel 1966-2003

USGS Breeding Bird survey

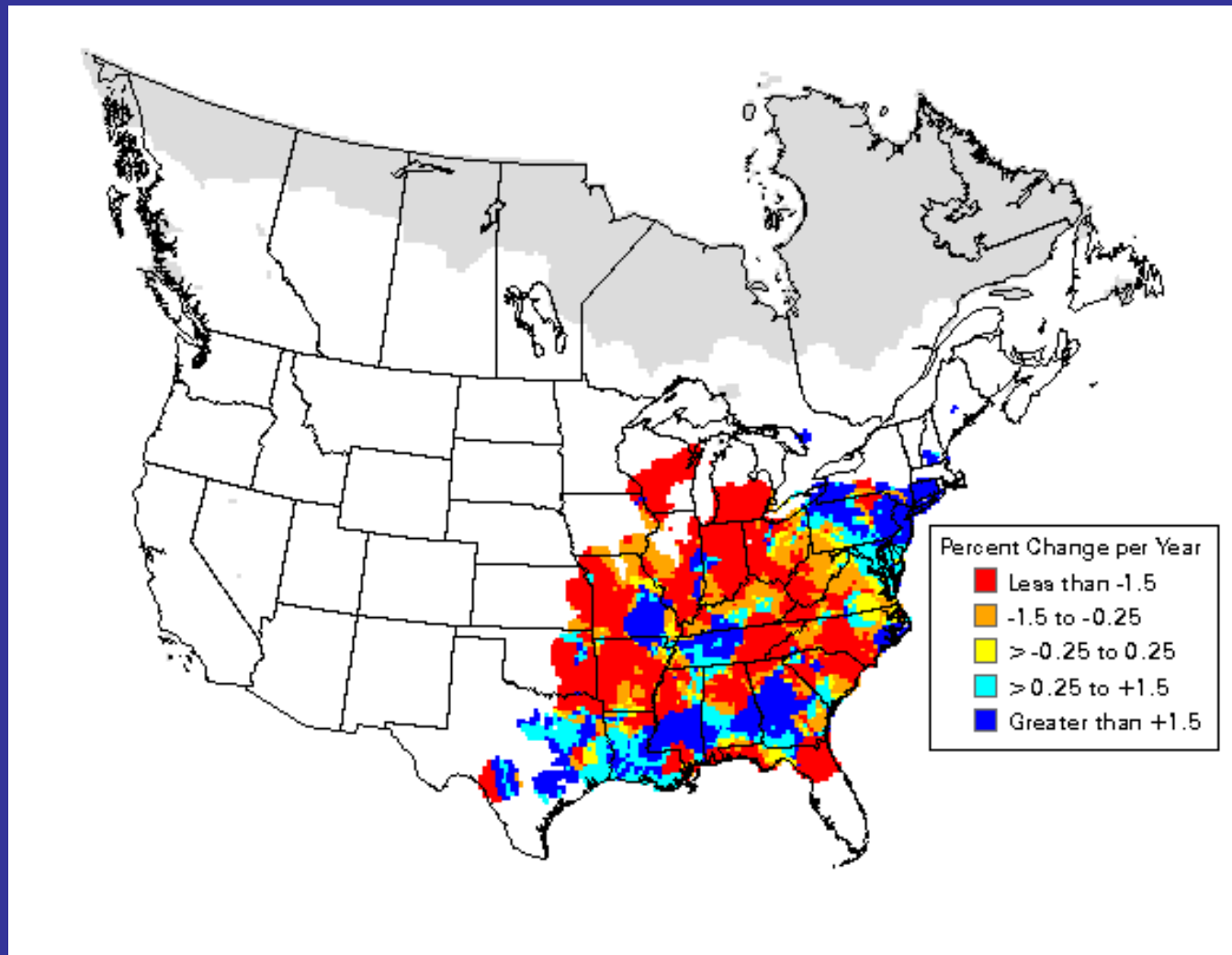


Increasing Passerines



Acadian Flycatcher 1966-2003

USGS Breeding Bird survey

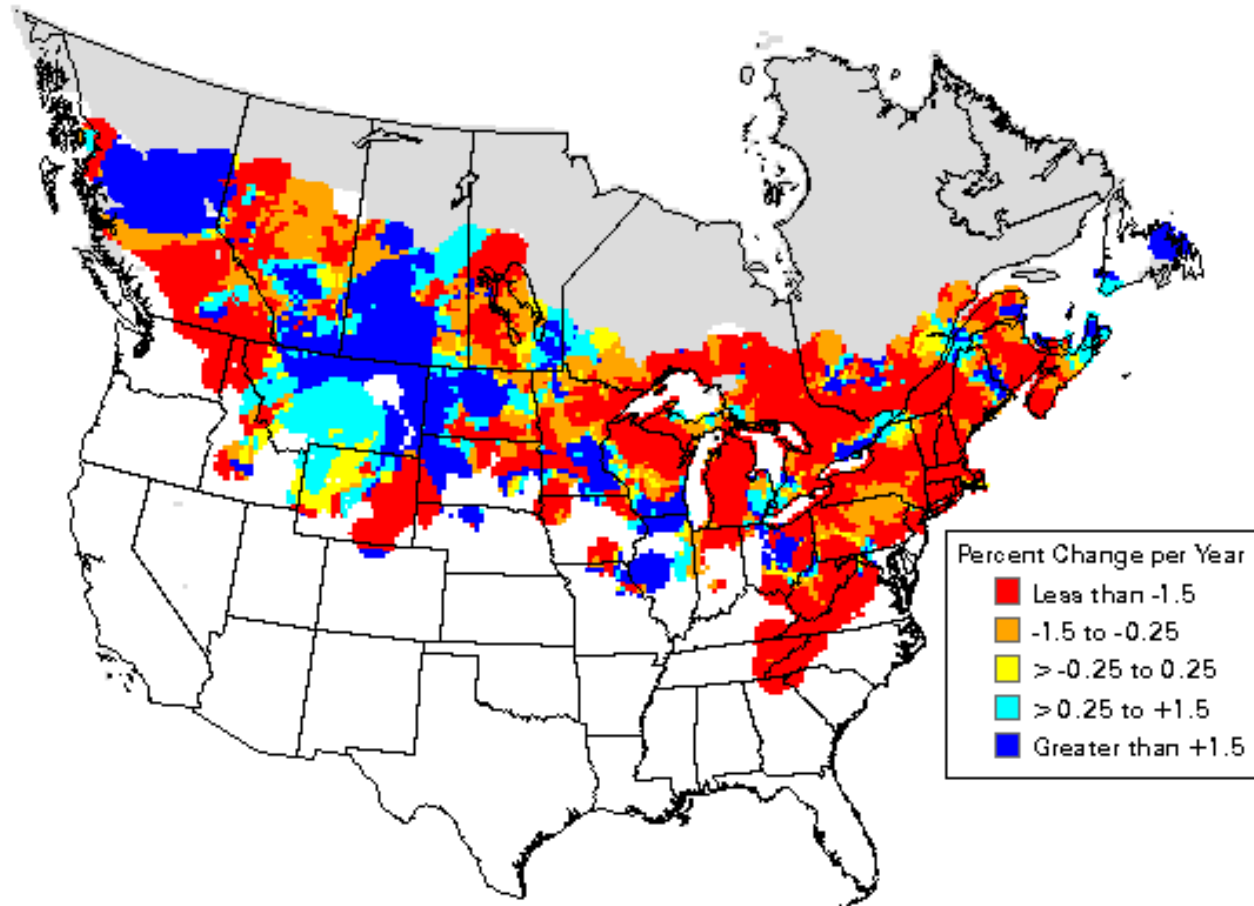


Decreasing Passerines



Least Flycatcher 1966-2003

USGS Breeding Bird survey



Shorebird Declines

- 48% of the world's shorebirds with known population trends are in decline, and only 16% increasing.
- 33 of North America's 72 taxa are in apparent or significant population decline, PUSA & LBDO may be increasing.



Migrating Shorebirds Concentrate



Arctic Alaska and Northwest Canada



Shrinking Arctic Ice – 1979-2008

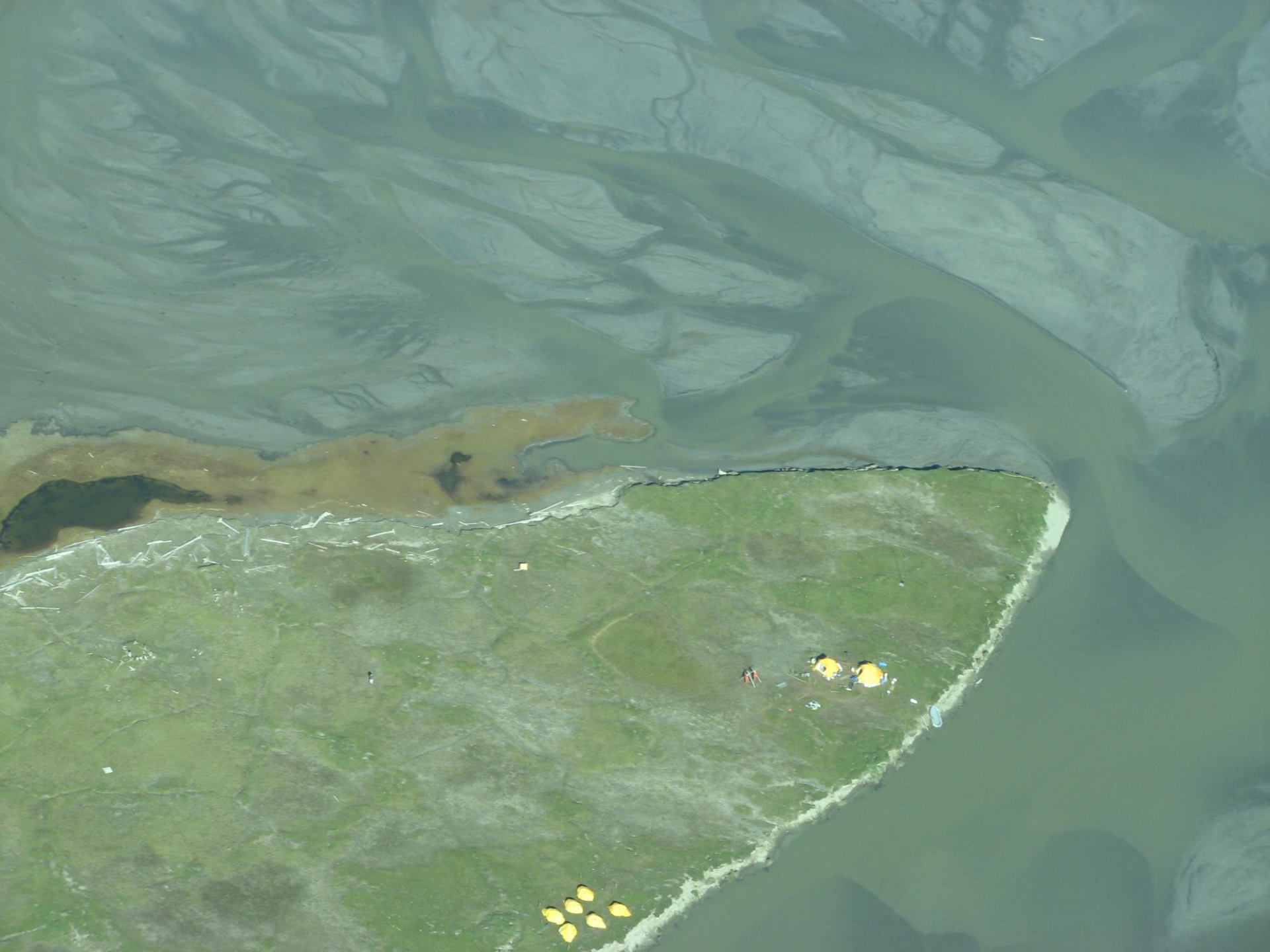








































Together we can make a difference!

- Protect breeding, wintering and migration stopover habitats.
- Support research on factors affecting bird populations.
- Make your back yard attractive to migrating songbirds.
- Education, preserve nature for your children, and for *their* children.

Sustainable Gardening Practices

- Right Plant- Right Place
- Disease Resistant Varieties
- Reduce, Reuse, Recycle
- Go Organic – Eliminate Chemicals
- Water Conservation –Rain Barrels
Mulch Grass/Leaves To Fertilize
- Lawns - Reduce, Replant
- MOSTLY NATIVE vs. Invasive

Manomet 2009/10

- Integrating New Energy and Wildlife
- Advancing Climate Change Adaptation-
New England
- Promoting Sustainable Agriculture
- Using Forests for Carbon Offsets
- Conserving Wetlands
- Creating new “Markets” for natural
systems
- Conserving Bird Populations and habitats

This is the most effective weapon
in the fight to save nature



