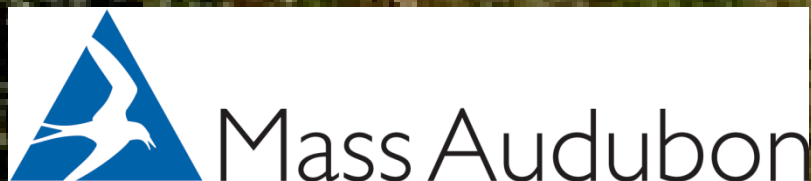


# Farming and Bird Conservation: why they are important, what works, and the potential for partnerships.

Kim Peters, Chief Scientist



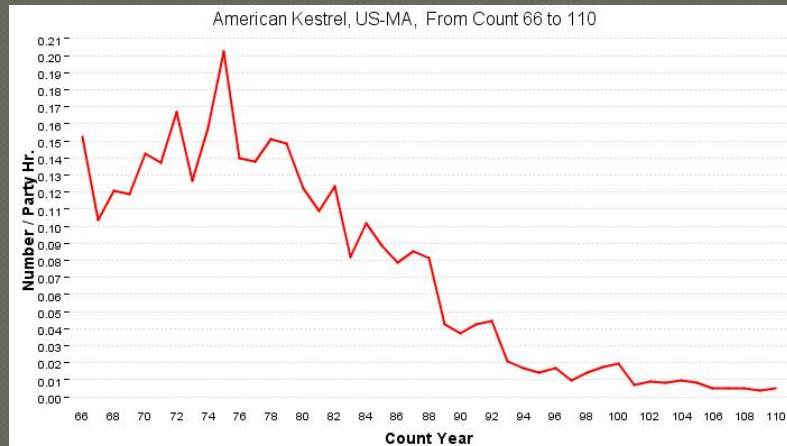
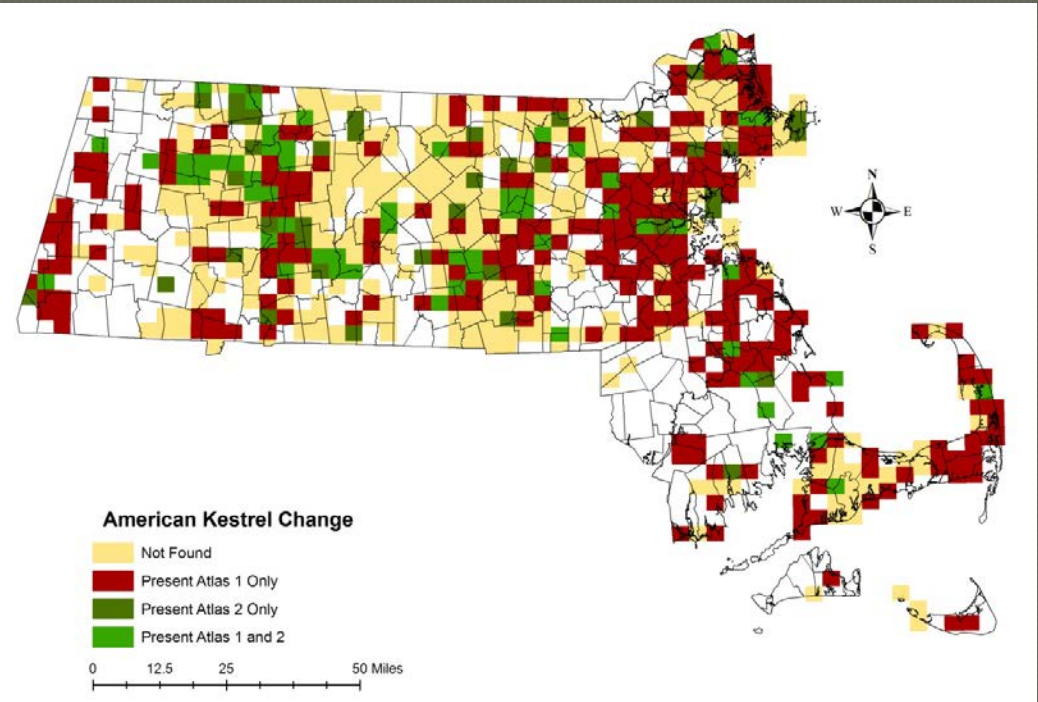
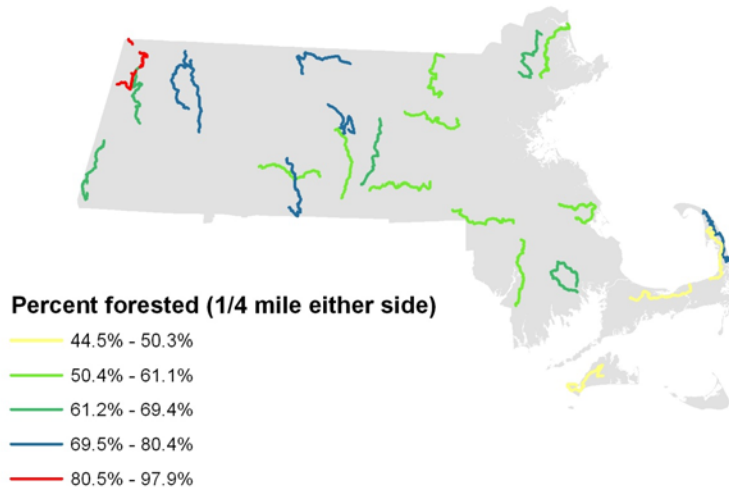
# STATE *Of The* Birds 2011

Documenting Changes in  
Massachusetts' Birdlife



# Atlas – BBS - CBC

BBS Routes and Land Use Within 1/4 Mile Buffer



# Describing Change

	Atlas	BBS	CBC
<i>Statistic used for Ranking</i>	<i>Percent change in block occupancy between Atlas 1 and Atlas 2</i>	<i>Average annual trend</i>	<i>Average annual trend</i>
<b>Strong Increase</b>	> 100%	> 5%	> 5%
<b>Likely Increase</b>	10% to 100%	1% to 5%	1% to 5%
<b>Likely Stable</b>	0% to 10%	-1% to 1%	-1% to 1%
<b>Likely Decrease</b>	-20% to 0%	-5% to -1%	-5% to -1%
<b>Strong Decrease</b>	< -20%	< -5%	< -5%



A lush green forest scene with sunlight filtering through the leaves, serving as the background for the entire slide.

# The Habitats

Grassland, Ag  
and Open  
Fields

Shrublands

Freshwater  
Open  
Wetlands

Forests

Urban and  
Suburban  
Habitats

Open water,  
rivers, lakes  
and ponds

Freshwater  
Forested  
wetlands

Coastal  
Habitats  
(winter)

Salt Marshes

# Grasslands

*Grassland* birds have declined significantly more than birds of other habitats



Upland Sand, Sav. Sp., Grasshopper Sp., Bobo

- Wild Turkey
- Eastern Bluebird
- Bobolink
- Barn Swallow
- Tree Swallow
- Red-winged Blackbird
- Savannah Sparrow
- American Woodcock (SWAP)
- Killdeer
- Brown-headed Cowbird
- Barn Owl (SC)
- Vesper Sparrow (T)
- Grasshopper Sparrow (T)
- Short-eared Owl (E)
- Horned Lark
- American Kestrel (SWAP)
- Eastern Meadowlark (SWAP)
- Northern Bobwhite (SWAP)
- Sedge Wren (E)
- Upland Sandpiper (E)
- Ring-necked Pheasant
- Henslow's Sparrow (E)
- Dickcissel



# Shrublands

*Shrublands (young forests) have declined by > 90% since 1950 in MA. Logging creates >70% of the shrublands in MA.*



■ Cedar Waxwing	■ Nashville Warbler
■ Northern Harrier (T)	■ Yellow-breasted Chat
■ Song Sparrow	■ White-throated Sparrow (SWAP)
■ Common Yellowthroat	■ Field Sparrow (SWAP)
■ Blue Jay	■ Brown Thrasher (SWAP)
■ Eastern Towhee (SWAP)	■ Northern Bobwhite (SWAP)
■ Ruffed Grouse (SWAP)	■ White-eyed Vireo
■ Great Crested Flycatcher	■ Eastern Whip-poor-will (SWAP)
■ Prairie Warbler (SWAP)	■ Common Nighthawk
■ Indigo Bunting	■ Golden-winged Warbler (E)
■ Eastern Kingbird	■ Ring-necked Pheasant
■ Least Flycatcher	■ Clay-colored Sparrow
■ Chestnut-sided Warbler	■ Lincoln's Sparrow
■ Black-billed Cuckoo	■ Blue Grosbeak
■ American Woodcock (SWAP)	■ Chuck-will's-widow
■ Brown-headed Cowbird	

Prairie, Nashville, White-throat, Brown Thrasher

In 40 Years  
30+% Loss of Cropland and Pasture

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400,000 acres in Mass in 1971

150,000 acres are gone

75,000 acres were  
developed

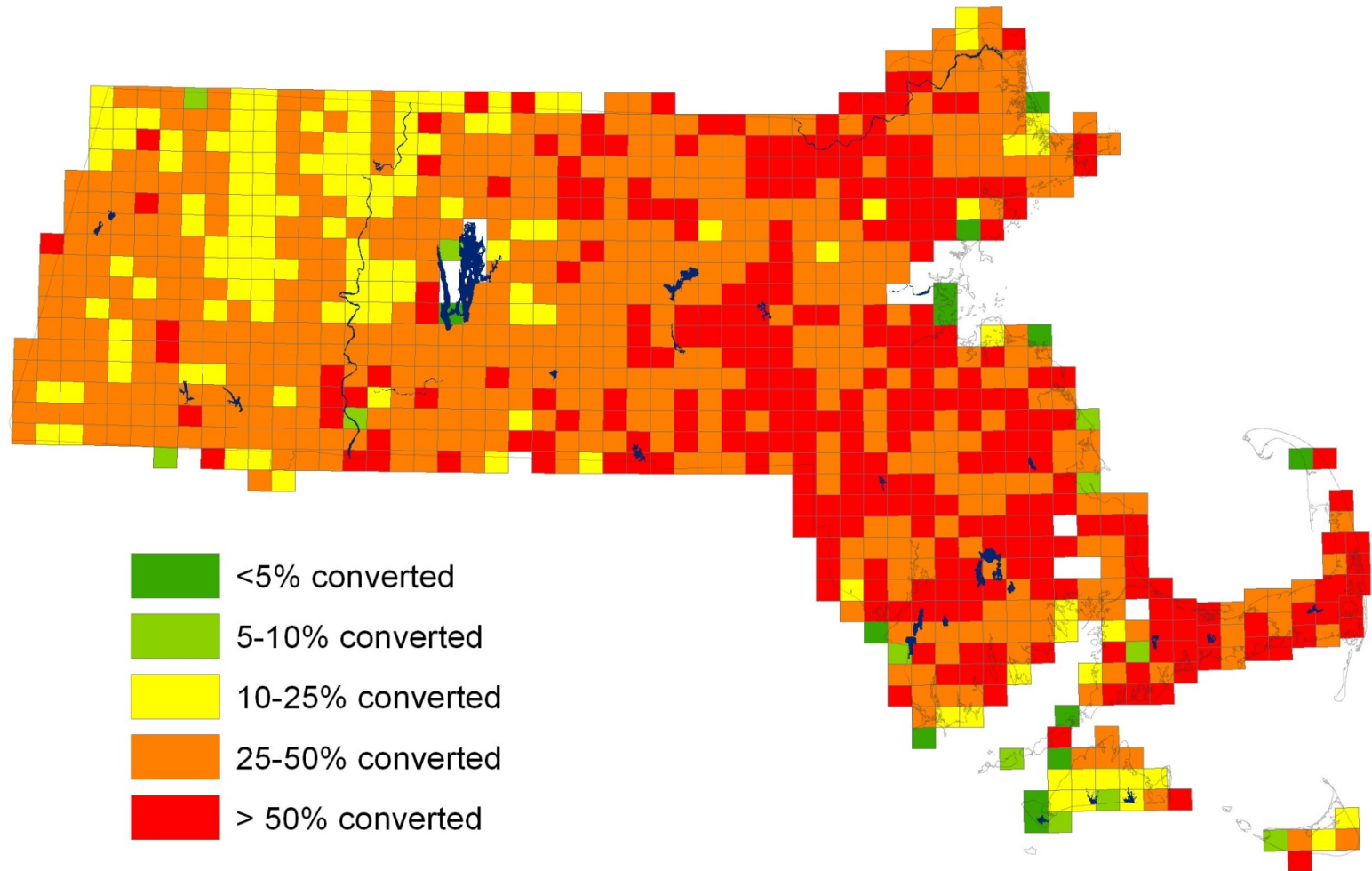
72,000 acres  
reverted to forest





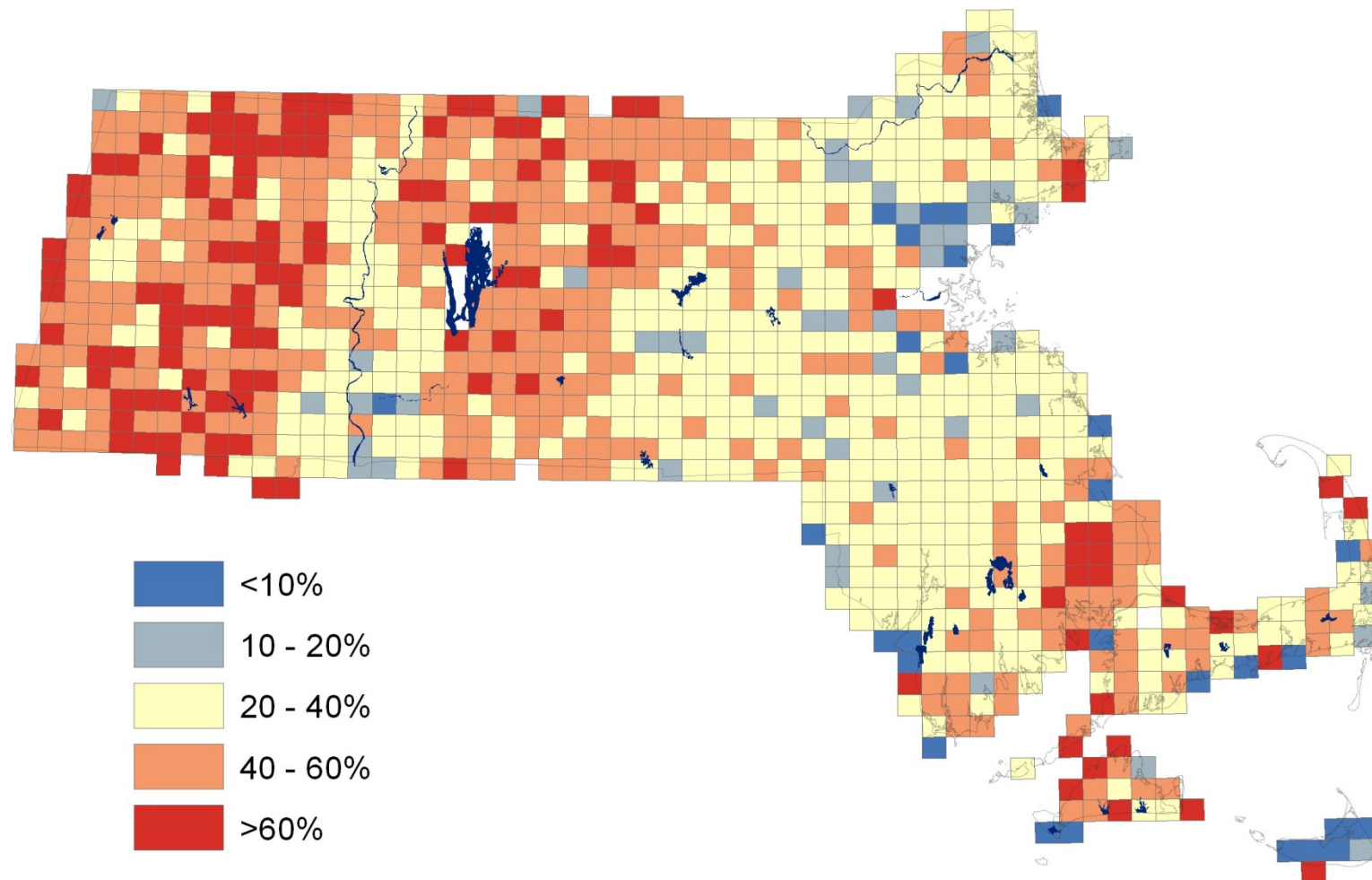
## Agricultural land conversion (1971 - 2005)

### Percent of agricultural land converted



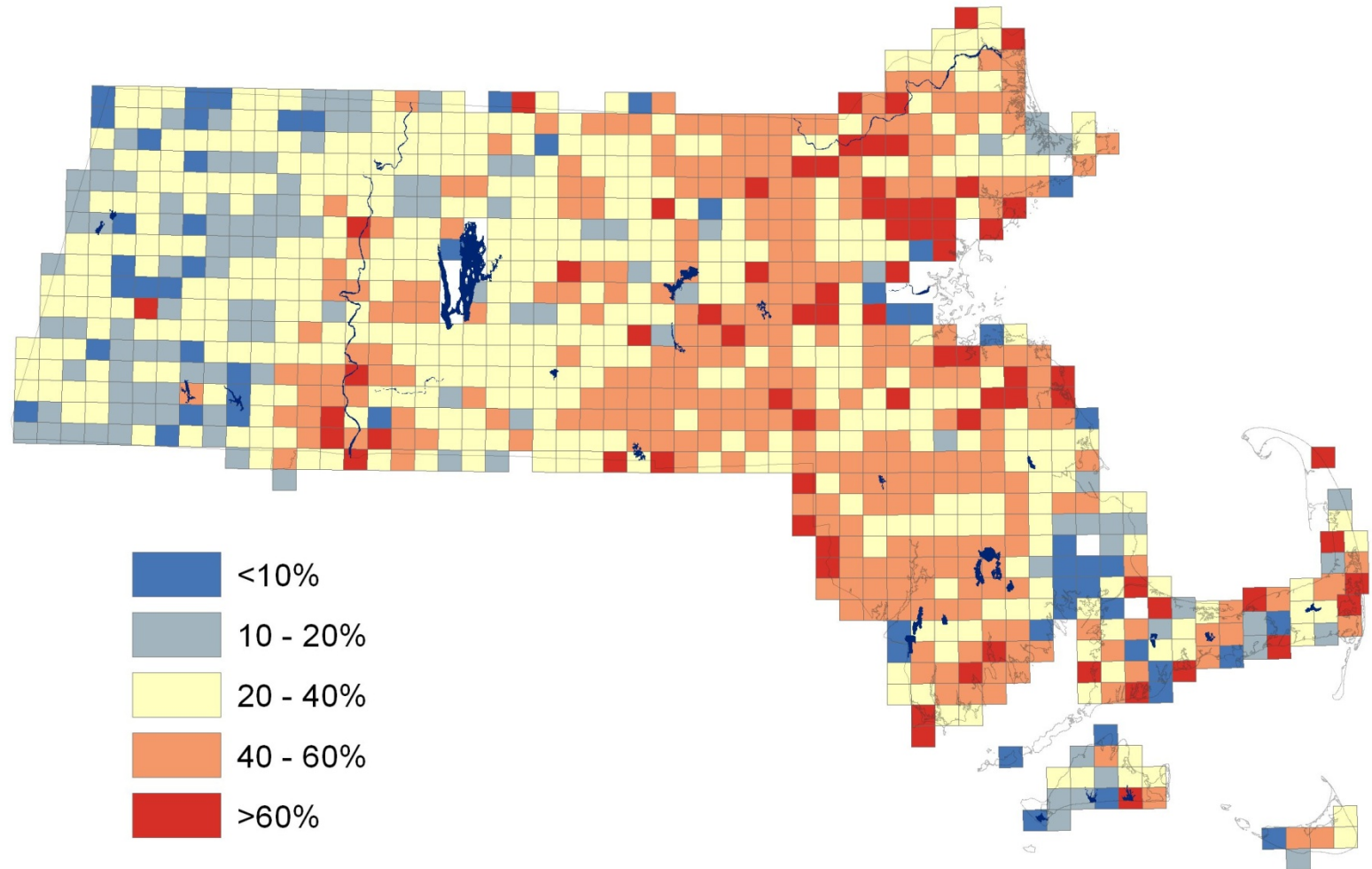
## Agricultural land conversion (1971 - 2005)

### Percent of agricultural loss due to reforestation



## Agricultural land conversion (1971 - 2005)

Percent of agricultural loss due to residential and commercial development





# Why are Farms Important to Wildlife?

- Species associated with grasslands and shrublands **are not doing well, ANYWHERE.**
- **50 percent (890 million acres) of land base in the contiguous U.S. is managed as cropland, pastureland, and rangeland.**
- **Global agricultural expansion is projected to replace upward of one billion hectares of natural habitat during the next fifty years, (Tilman et al. 2001, Fischer et al. 2008)**
- **Value of “wildlife Friendly Farms” and farming landscapes for biodiversity is becoming more apparent (Daily et al. 2001)**
- **“When appropriately managed, can support wildlife diversity approaching that found on natural lands.” Audubon CA.**

# Challenges to Agriculture and Bird Conservation

- **Money:** Farms work on very small profit margins

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- **APR Restrictions**
- **Perceptions:**
  - Local farms don't matter
  - Farms are wastelands
  - Birds are bad for farming
  - Farmers don't care, or are unable to do anything to help wildlife.
- **Marketing:** Need to make explicit the link between healthy farms, birds and quality of life in Massachusetts

# Public Perceptions are Changing, and Opportunities for Partnerships are on the Rise

- “Locavores” (CSA, Farmers Markets) and farm advocates
- Interest in Organically Grown foods
- Health/Environmentally-conscious consumers = demand for produce branded with biodiversity-friendly certifications.





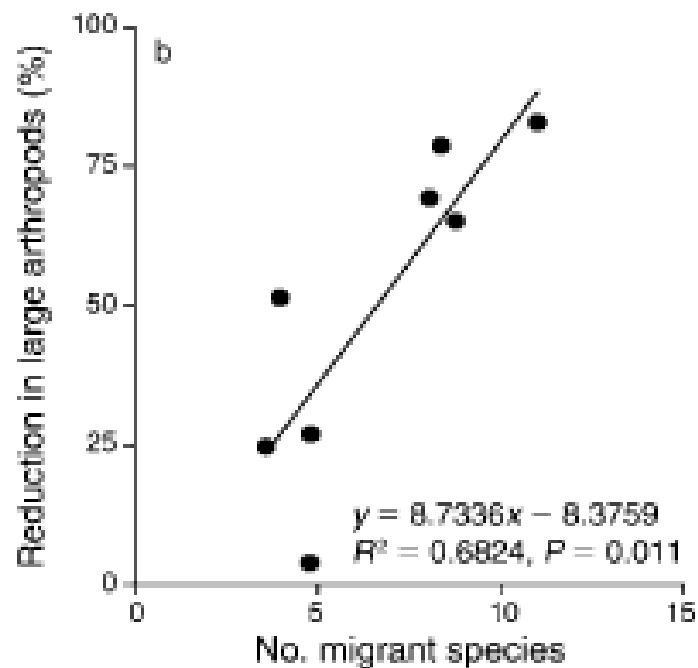
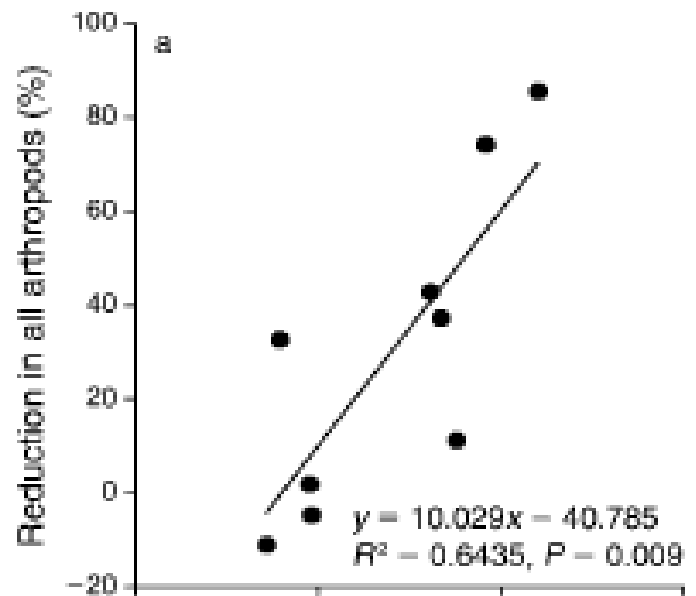
# Are Birds Necessarily Bad for Farms?



Photo: smithsonian national zoological park



Sieving & Jones 2003 (report to Organic Farming Research Foundation.)



From Van Bael et al. 2008.

- Arthropod reduction in relation to number of bird species
- Across all studies birds reduce all arthropods, herbivores, carnivores, and plant damage.



## Crop Damage – limited, species and crop-specific





**Figure 4.** A Great-crested Flycatcher with insect in beak, perched on a nestbox. Insect-eating birds might aid farmers by helping to lower insect pest populations on farms. Photo used with permission from Karl E. Miller. Credits: Karl E. Miller

Jacobson et al. 2010 – Farms and birds in FL



# Are Farms Wastelands for Birds?

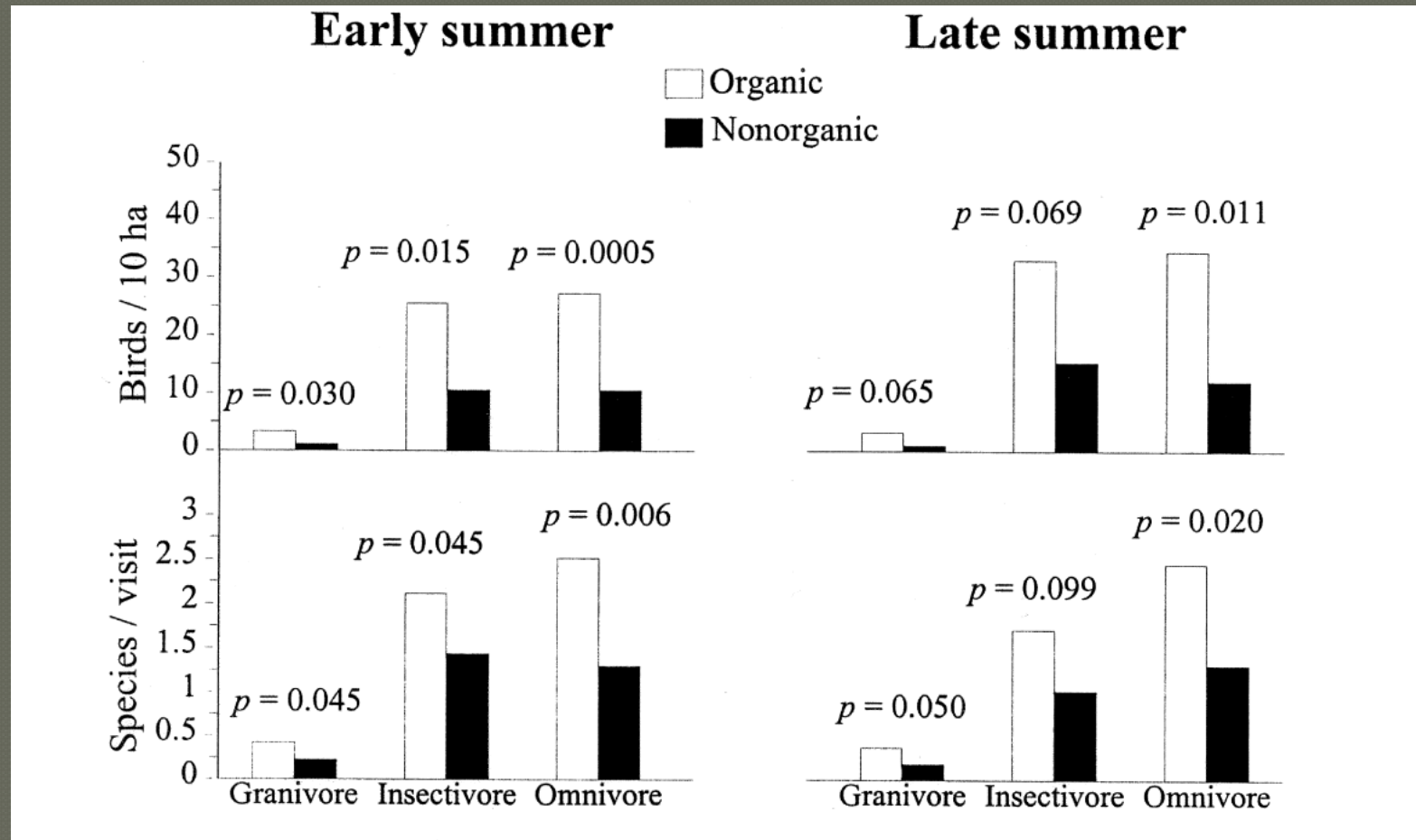


**Figure 1.** Farms can provide good habitat for birds as long as certain practices are adopted. Photo by Eric Zamora.  
Credits: Eric Zamora



# What do we know about what works?

- Organic



Beecher et al. Conservation Biol. 2002

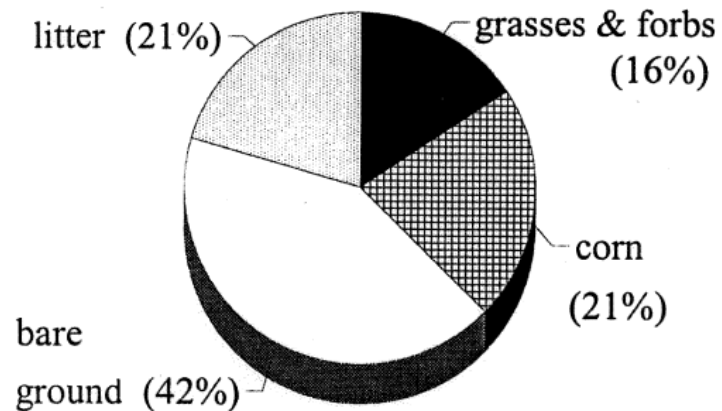
# Why?



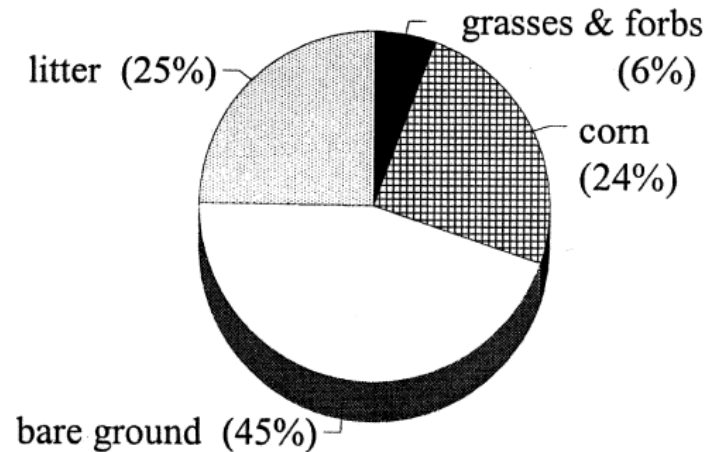
**Figure 2.** Organic farmers usually grow many different crops and rely on biological interactions and IPM strategies for pest control. Photo by Greg Jones. Credits: Greg Jones

# Diversity = more grasses and forbs

**Organic cornfields**

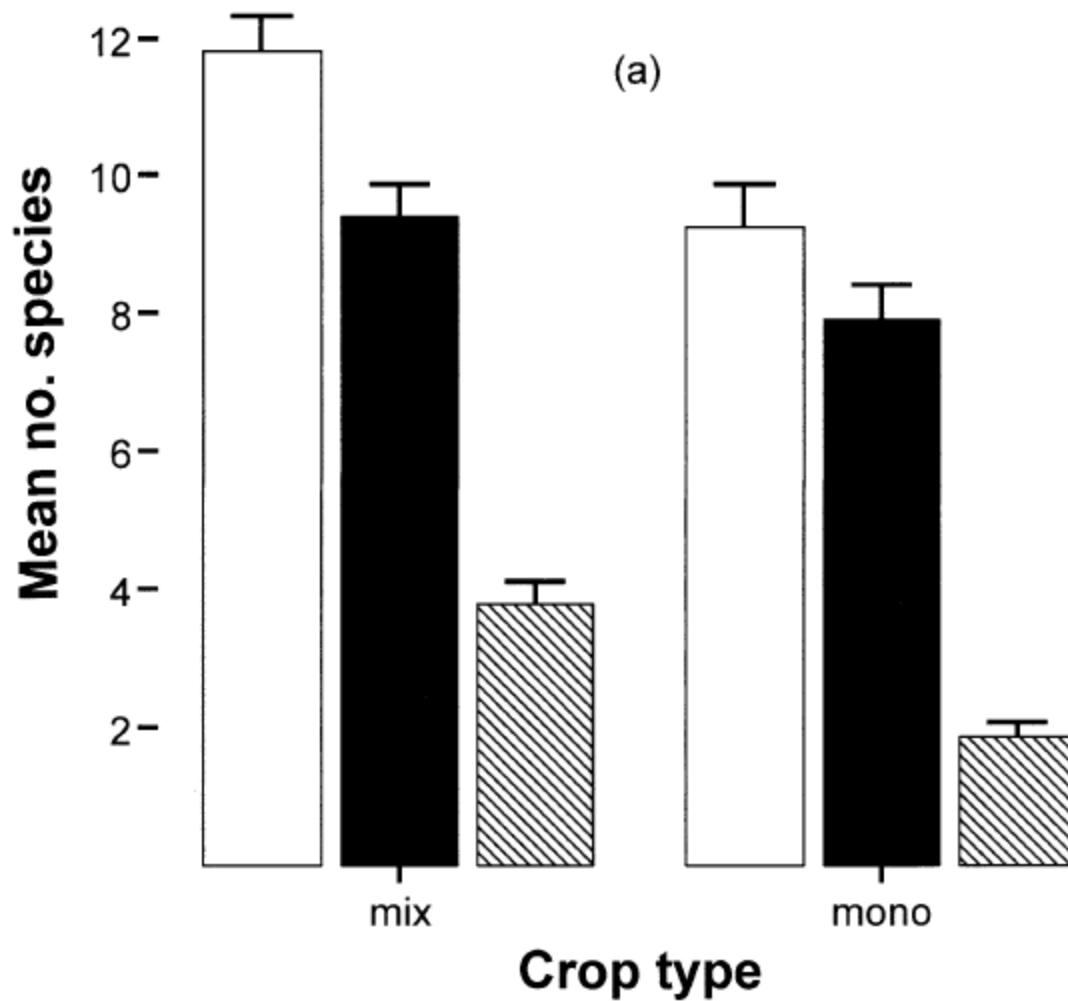


**Nonorganic cornfields**



**Beecher et al. Conservation Biol. 2002.**





Jones et al. 2005.



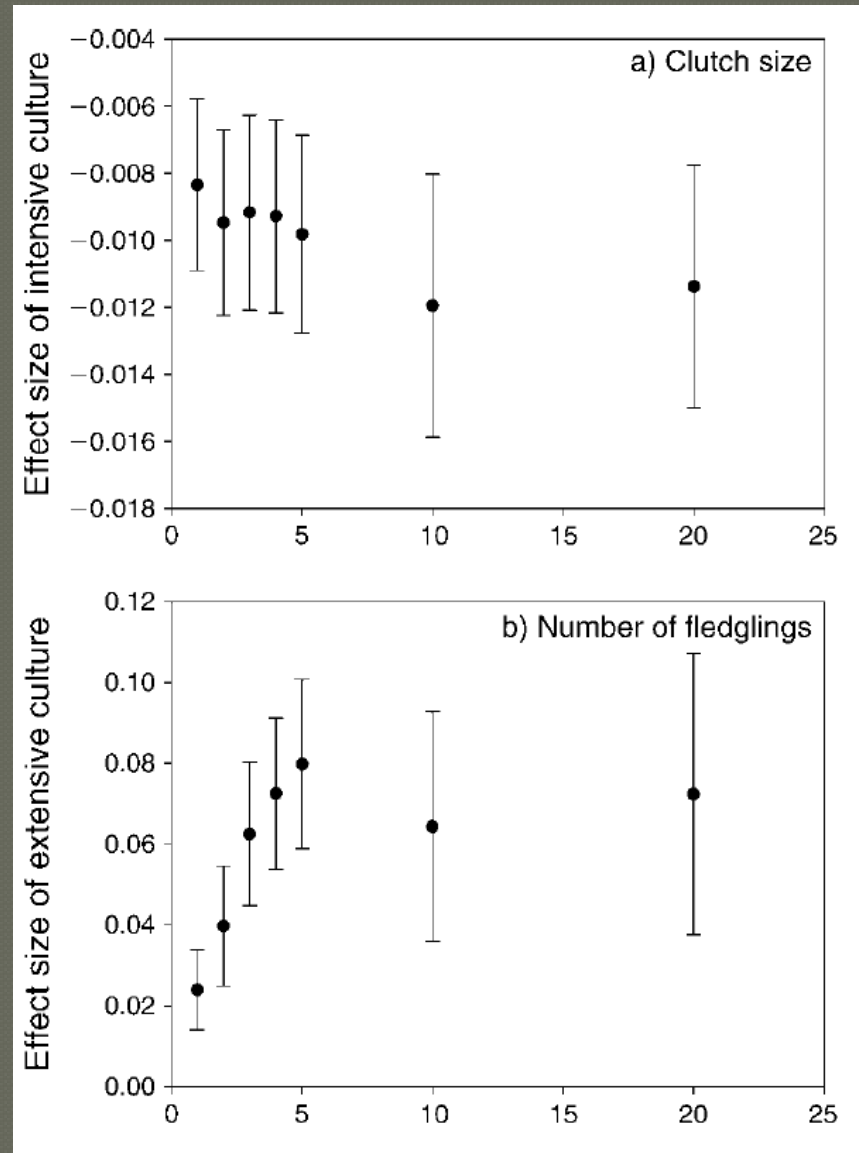
Photo by Lynn Betts, NRCS

# Breeding Success?



Ghilain et al. 2008.

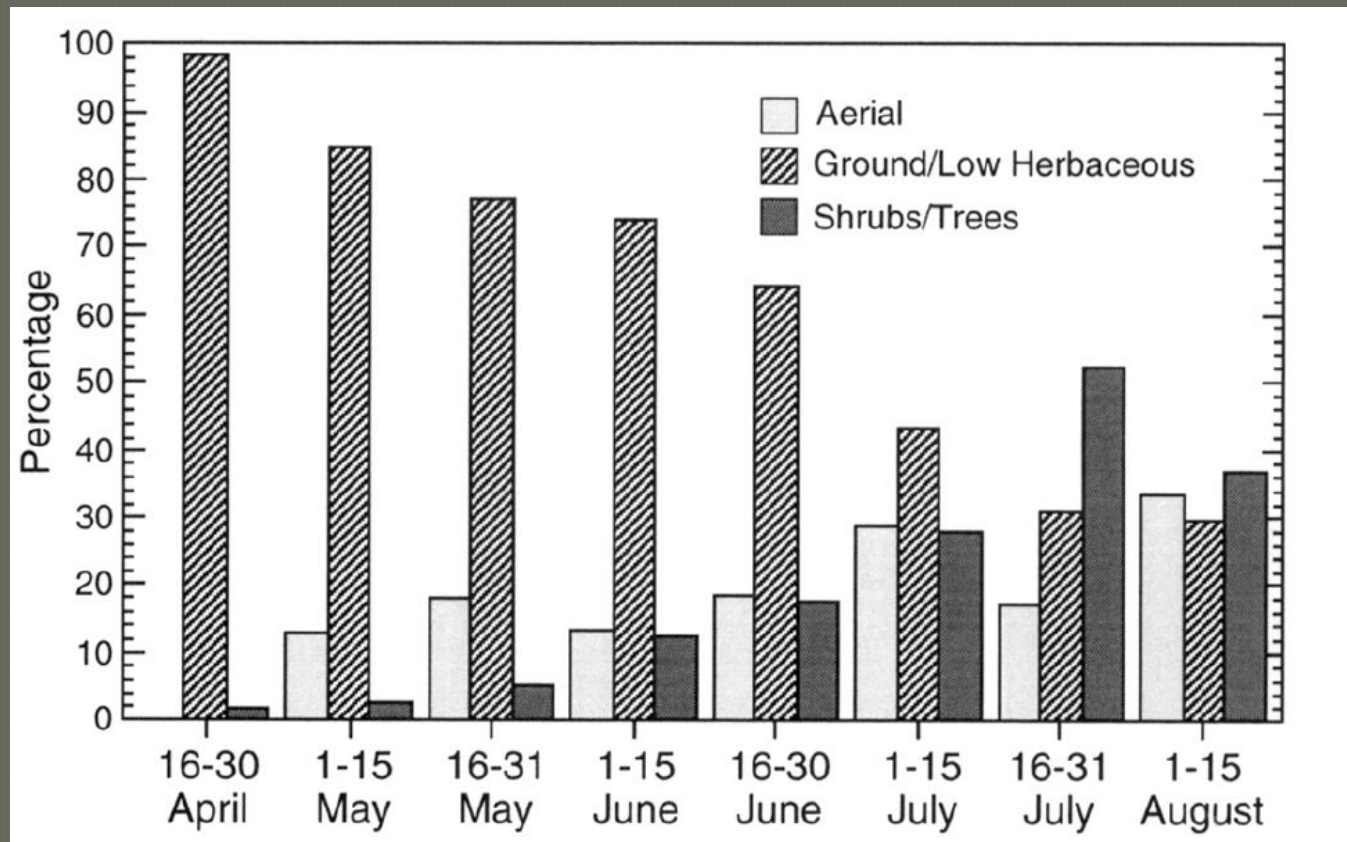




Ghilain et al 2008.

# What do we know about what works?

- Timing



**Best 2001 Am Midl Nat.**

# Haying dates

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- Direct Nest Failure
- Loss of Prey Base
- Site Fidelity
- Changing Schedules  
Works!





# What else can the farming community do?

(Pummill et al. 2007)

- **Provide Perches**

- Leave standing dead trees where safe
- Leave dead trees on ground in woodland areas
- Watering devices, or other tall objects in fields

- **Maintain Hedgerows and Borders**

- Limit mowing of grass waterways or fence lines between April and mid Aug
- Maintain or plant farmstead windbreaks
- Allow trees and shrubs to grow in fence rows
- Allow grasses/forbs to grow unmowed in fence rows
- Limit mowing of grass borders until mid Aug
- Create buffer strips and leave them unmanaged (farm borders, fence lines)

- **Manage for more natural vegetation: trees, shrubs, natural meadows**

- **Mow around known nests**

- **Provide Nest Boxes**

# What else can the farming community do?

- **Change Farming Practices**

- Leave crop stubble through winter
- No-till
- Leave 5% of farm as non-cropped wildlife habitat
- Not use pesticides

- **Remove Pipes**



Protect birds from the danger of open pipes



Dave Menke/USFWS

## **WITH SOME COMPENSATION (Pummill et al. 2007):**

- Leave turn rows planted, unsprayed and unharvested as winter food plots
- Create buffer strips and mow about 1/3 of them every year (where strips won't interfere with farm operation)
- Leave small areas of crops unharvested as winter food plots
- Leave turn rows unsprayed with herbicides or insecticides
- Plant grass strips (6 ft wide) across the middle of large crop fields
- Employ grazing practices that benefit birds
- Incorporate cover crops into rotations
- Provide habitat corridors (strips of non-cropped land) connecting large un-cropped areas.
- Grow several crops (3-5) of varying heights in a field at the same time
- Create and maintain strips of native vegetation along streams (15 ft wide) and rivers (30 ft wide)
- Plant native grasses and forbs in corners of field where pivot doesn't reach
- Remove tall trees surrounding grasslands
- Maintain wetland areas





Conservation Innovation Grant (CIG) funded “Walking Wetlands”

# Why Partnerships?

- **Birds can bring economic benefits**
  - **Agro-tourism**
  - **Increased production/economic viability**
- **Organic farmers are facing new biodiversity guidelines from USDA/NOP**
- **Agroecosystems, especially if they are organic or sustainably-managed, can support :**
  - **Soil invertebrates**
  - **Beneficial foliage insects**
  - **Bees and other pollinators**
  - **Lizards, bats, other vertebrates**

# Why Partnerships are Important and Attainable

## Examples:

- **Audubon California – CA Rice Commission**
- **TNC – Farming For Wildlife**
- **Audubon NY/NRCS – Local Farmers**
- **New Jersey Audubon –**





# Sunflowers

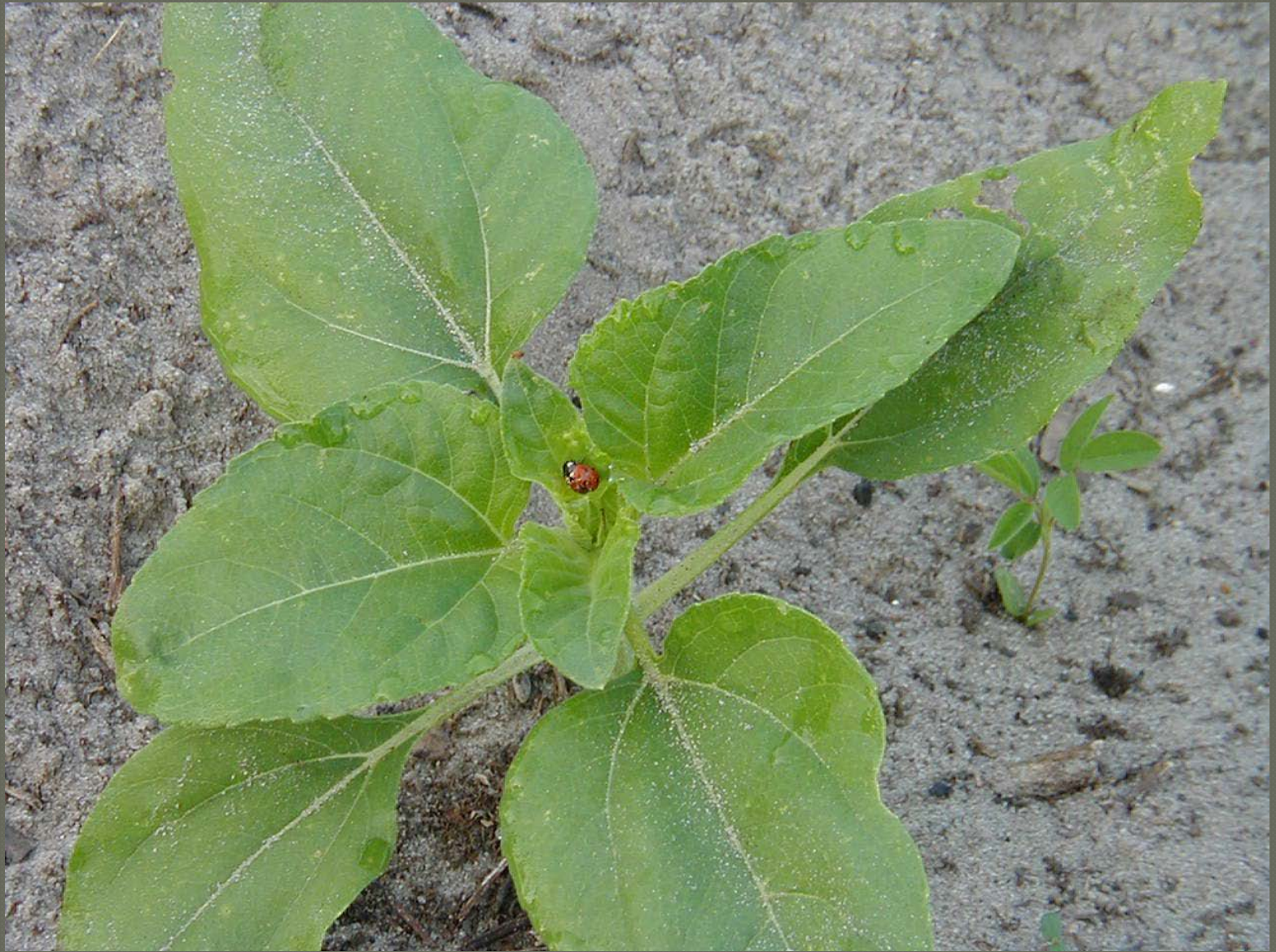




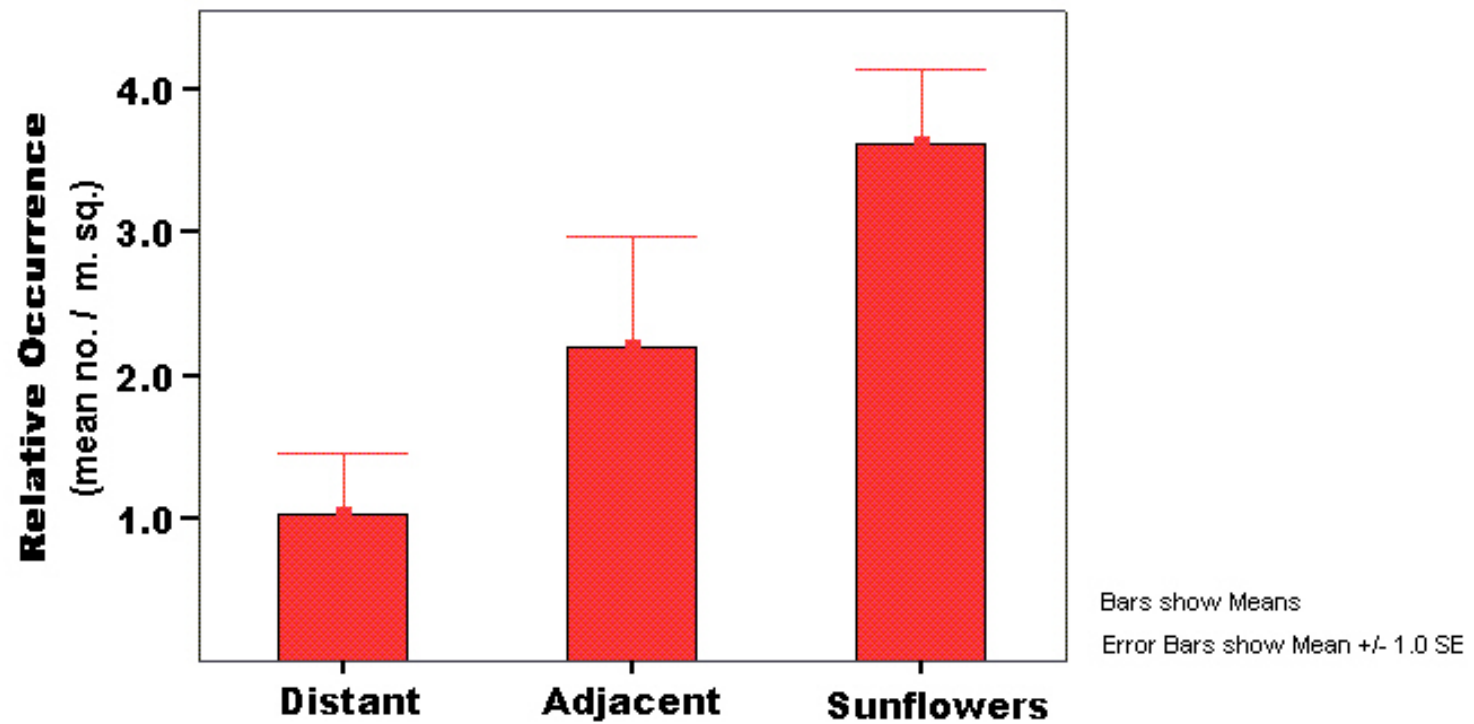


**Sieving & Jones 2003**



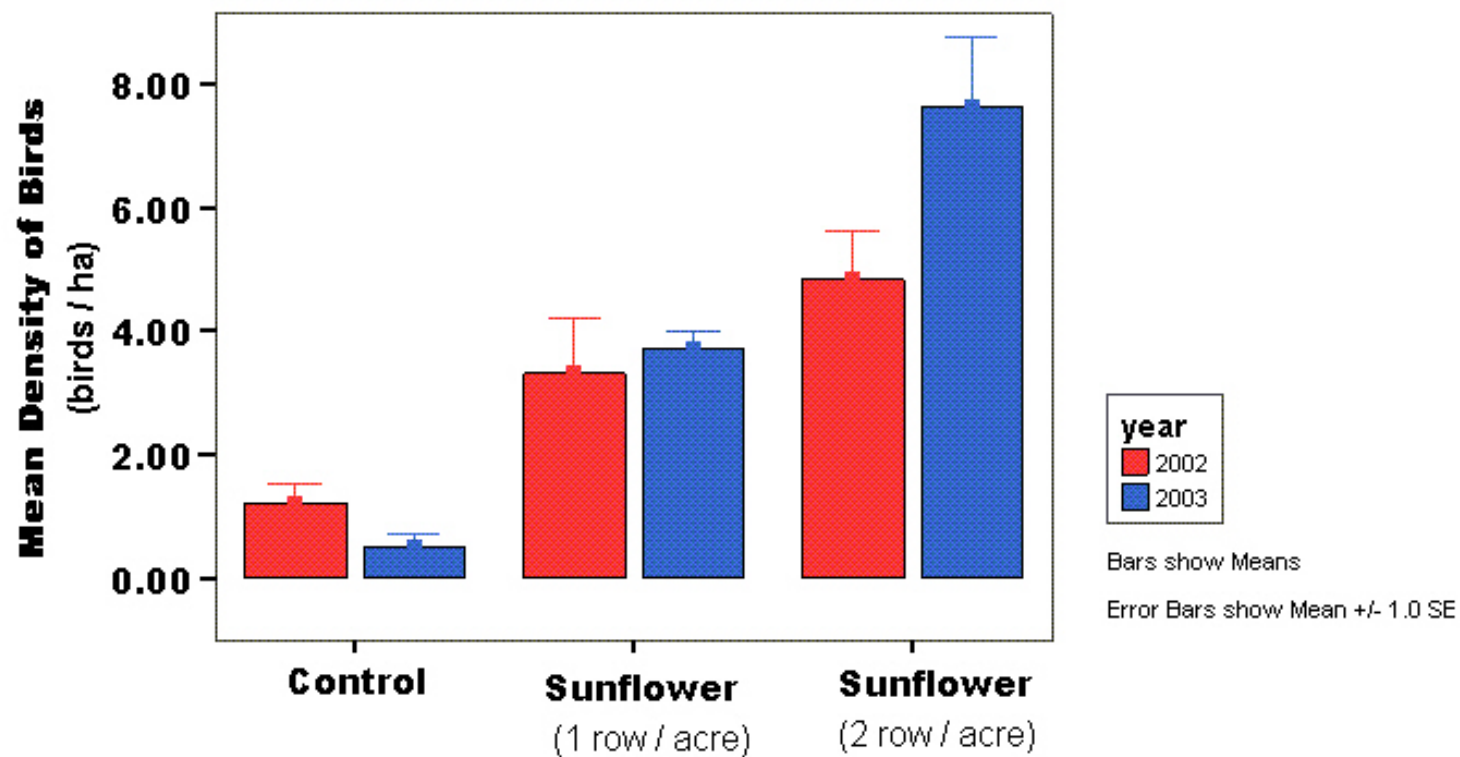






Sieving & Jones 2003





Sieving & Jones 2003



# Support Agricultural Viability and the Environment

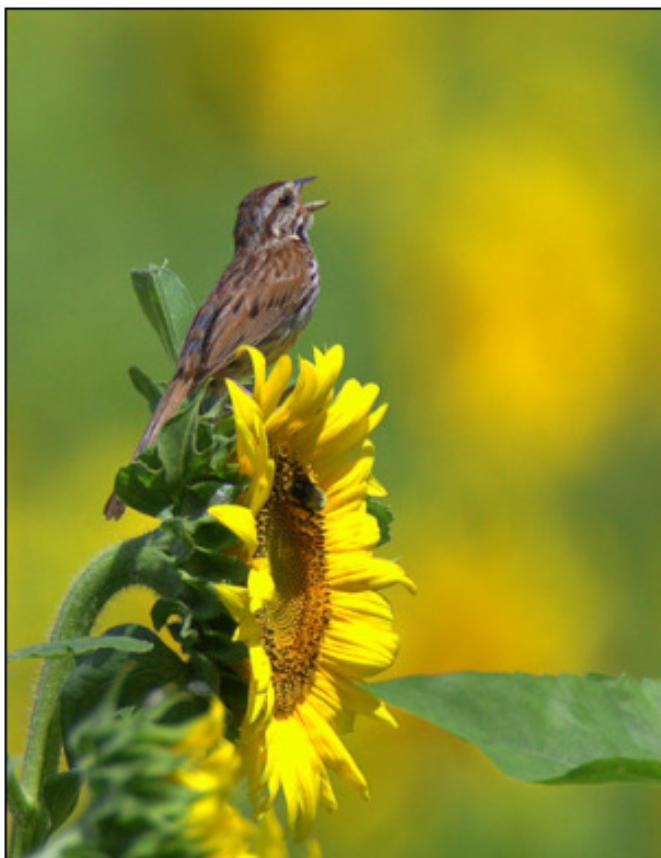


- **Sunflower seed** grown as a cash crop
- Bought by NJ Audubon and packaged and sold as **Local, Bird Friendly product.**
- **Conservation Commitment.** -- For every 5 acres planted in sunflowers, NJAS will manage 1 acre of grassland habitat.
- Seed sells out every year
- 52 Acres of grassland habitat affected so far
- Extremely positive public response



SATURDAY, SEPTEMBER 25, 2010

## Locavoring for the birdfeeders with Jersey-grown sunflower seed



Thinking about getting those birdfeeders ready for fall and winter? I know mine need another wash and disinfection rinse.

But what about the seed? Now's the time when ardent birders stock up. For locavores who want to keep their birds' diets local as well, New Jersey Audubon has an answer.

Beginning next Saturday, New Jersey Audubon will begin selling this year's crop of local sunflower seed. The organization has dubbed it S.A.V.E. -- for Support Agricultural Viability and the Environment. Audubon touts it as a green, sustainable product that benefits New Jersey's agricultural community and the environment.

As part of the program, farmers plant sunflowers to harvest for their seed, and for every five acres planted, Audubon agrees to manage and maintain one acre of grassland habitat for threatened and endangered birds.

The "official" sale days for the seed are Oct. 2, Dec. 4 and Feb. 12, because that's when the seed will be delivered to the stores that carry it. And, based on enthusiasm for the seed last year, customers who come too long after those dates might find that the seed has been sold out.

But you can pre-order on the Audubon website, [www.njaudubon.org](http://www.njaudubon.org), which also lists all the retail locations for the seed.

ewards"  
nce Award)



# What can Mass Audubon Bring to the Table?

- **Provide information on Bird-Friendly practices that are:**

- **Low Cost**
- **Simple**
- **Serve multiple functions**
- **Do not attract wildlife with negative impacts**

- **Help with Messaging**

- **Identifying Incentive Programs and Designing Monitoring Programs (including CEAP)**

- **Pilot Studies on Mass Audubon Lands: **Drumlin Farm****

Questions?



Mass Audubon