

# **Wildlife Benefits from Cover Crops on Working Lands**

**Jess Espenshade  
Agriculture Program Coordinator  
National Wildlife Federation**

**[espenshadej@nwf.org](mailto:espenshadej@nwf.org)**



# National Wildlife Federation

- **Not a research organization**
- **Translator of science to on-the-ground action**
  - **Cover Crop Champion Program**
- **Agriculture is directly linked to the environment**



# Basic Wildlife Requirements

- **Food**
- **Water**
- **Cover**
- **Space**

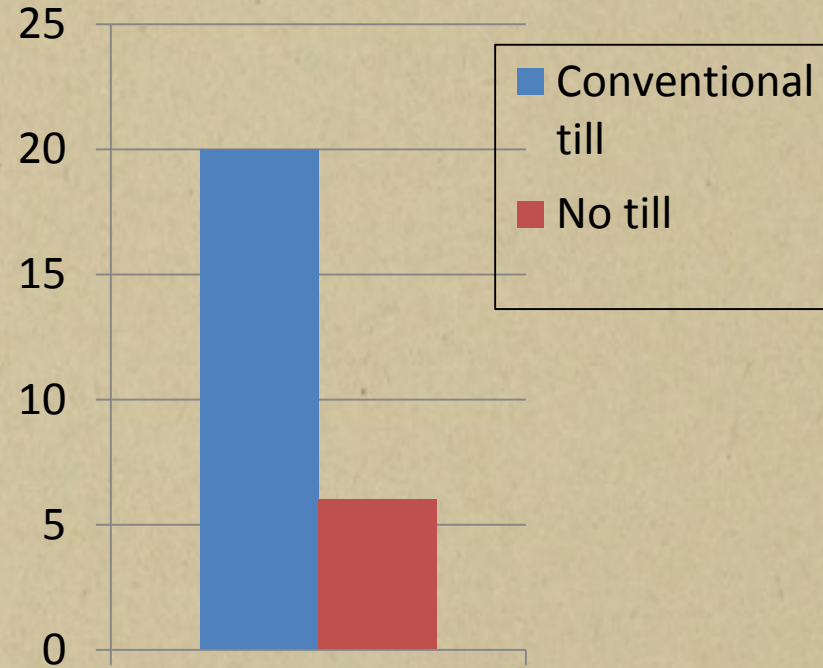


# Cover Crops- Wildlife Food

- **Potential food sources:**
  - **seeds**
  - **invertebrates**
  - **cover crop biomass**



# Cover crops as habitat for prey (soil organisms, insects, etc.)



Hours for Quail Chicks to forage to meet nutritional needs



# Cover Crops- Wildlife Water



**Turbidity impacts on fish**



**Nutrients contribute to algae blooms, resulting in oxygen depletion and dead zones.**



# Cover Crops- Wildlife Water

Rotation	N loss/acre (lbs)	% reduction
Corn + beans	46	
w/ rye cover crop	20	57%



# Cover Crops- Wildlife Cover

- **Safety from predators**
- **Breeding/ Nesting ability**



# Nesting and protection value of no-till

Land Management	Species Diversity	Nest Count	Nesting Success
Conventional Tillage	4	4	13%
No till	12	36	42%



# Cover Crops- Wildlife Space

- **Fragmentation**
  - **Population isolation**
  - **Inbreeding depression**
- **Corridors**
- **Migration stop over sites**



# Ideal Agriculture Scenario for Wildlife

- **Cover crops**
- **No-till**
- **3<sup>rd</sup> crop rotation**
- **Edge of field buffers**



# Use of cover crop fields by migratory and resident birds

Cassandra A. Wilcoxon<sup>a,\*</sup>, Jeffery W. Walk<sup>b</sup>, Michael P. Ward<sup>a</sup>

<sup>a</sup> Department of Natural Resources and Environmental Sciences, University of Illinois at Urbana-Champaign, IL 61821 USA

<sup>b</sup> The Nature Conservancy, Illinois Chapter, Peoria, IL, 61602 USA

**Table 2**

Total bird species relative abundance (# birds/100 m) and number of species by field type with 95% confidence intervals. Number of fields (n) and total number of individuals detected per field type are also included. Surveys were conducted in east-central Illinois, 2015–2016.

Field Type	Fields (n)	Individuals Detected	Relative Abundance (# birds/100 m)	Species (n)
Maize	12	516	2.2 (1.5, 2.9)	28
Maize + Cover Crop	28	3431	4.4 (3.2, 5.6)	44
Soybean	19	938	2.4 (1.5, 3.4)	23
Soybean + Cover Crop	16	1248	3.0 (2.3, 3.7)	34
Totals	75	6133	3.4 (2.8, 4.0)	52



# Bobwhite quail use of no-till versus conventionally planted crops in western Tennessee

William G. Minser and Ralph W. Dimmick



Photo Courtesy of Shane Wellendorf, Tall Timbers Research Station



# Cautions

- **Termination**
  - **Timing**
  - **Herbicides**
- **Pesticides**



# More research is needed

1. **Cover crop impact on wildlife at the local ecosystem (one section) and landscape scales (watershed level)**
2. **Cover crop termination timing: impact on habitat quality**
3. **Potential for cover crops to be trap crops**
4. **Impact on bees and other pollinators**



# **Key Lessons of Cover Crop Impacts on Wildlife:**

- **Encouraging wildlife provides benefits to agronomic production**
- **Practices that advance soil health will also generally advance wildlife health**



# Questions?



## Contact information:

Jess Espenshade

[espenshadej@nwf.org](mailto:espenshadej@nwf.org)

734-887-7114

