

Cover Crops: Impacts on the Environment and Wildlife

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Overview of Environmental Impacts

- Carbon Sequestration
- Water Quality
- Wildlife habitat



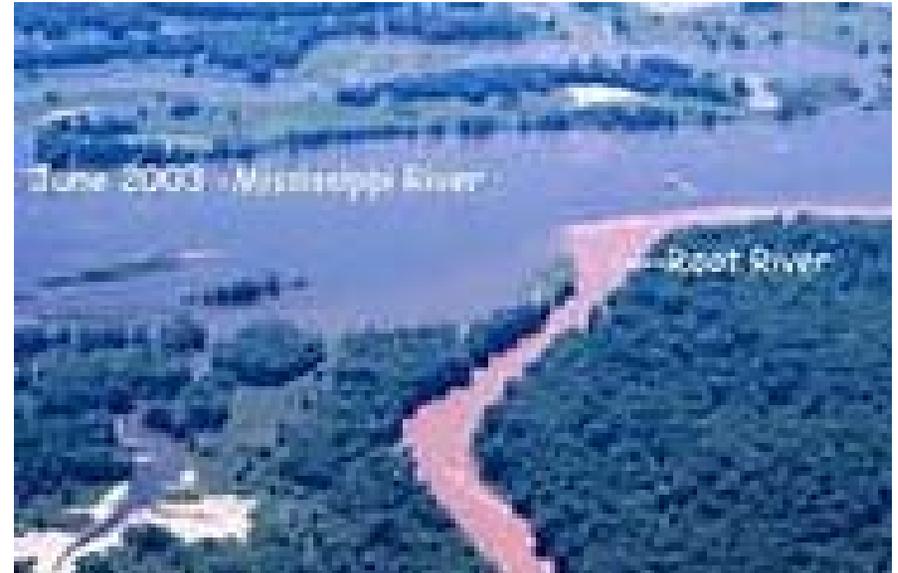
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Water Quality: Turbidity and Nutrients



Turbidity impacts on fish: limits visibility to pursue prey, reduces plant photosynthesis, reduces oxygen, reduces respiration, increases water temp, reduces reproduction.



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



Scott Ferraro



Cover crops and runoff into waterways

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



Terrestrial and avian wildlife species most directly impacted by cover crops:

- **Ground nesting birds: Bobolink, Eastern Meadowlark, Grasshopper Sparrow, American Kestrel, migratory waterfowl**
- **Game animals/mammals: deer, voles, mice**



Scot Ferraro

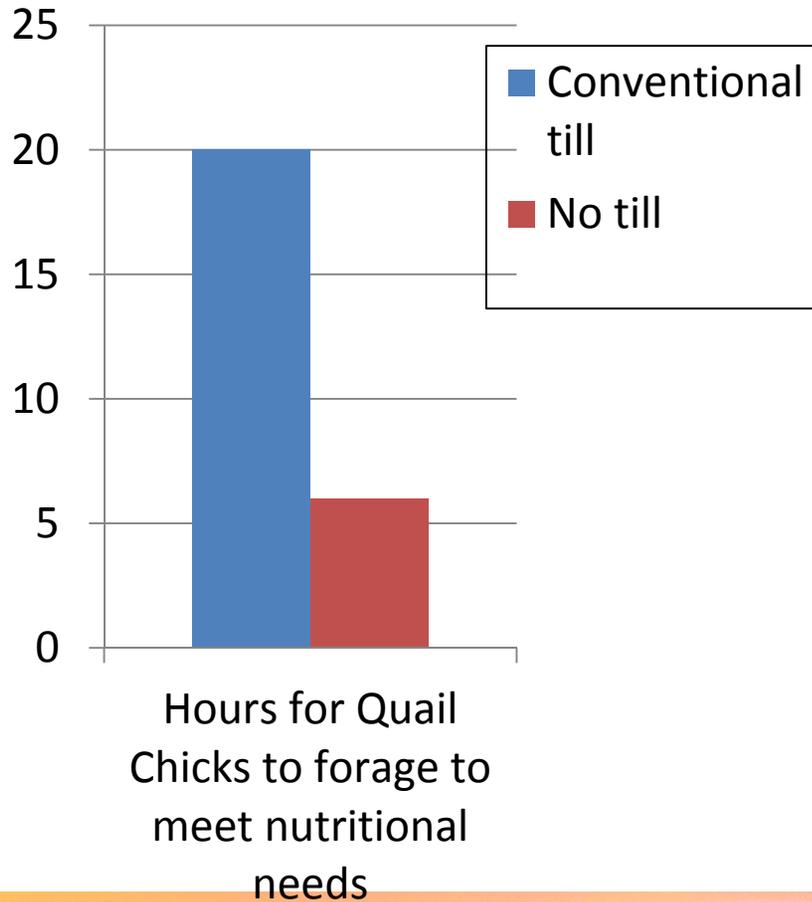


Cover crops as forage for wildlife

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



Cover crops as habitat for prey (soil organisms, mice, voles, etc.)



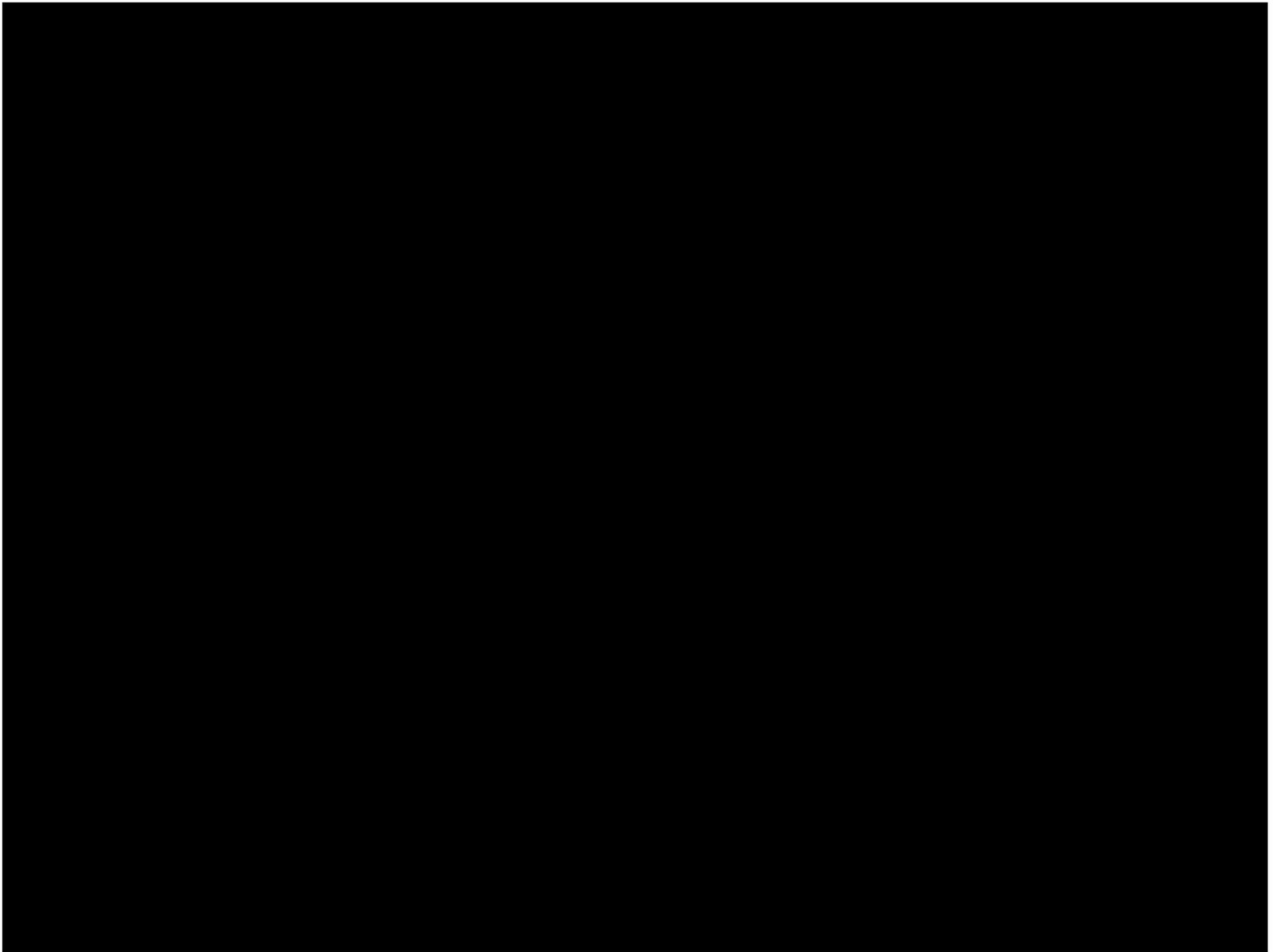
Nesting and protection value of cover crops

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



Robert Johnson





Common Midwestern cropping systems and cover crop opportunities

- 1. Continuous Corn
(possibly some opportunity for winter rye cover crop)**
- 2. Corn>rye>soybeans>oats, winter pea, radish**
- 3. Corn>rye>soybeans>winter wheat>clover or oats/radish/winter pea**



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**



Upcoming Cover Crop/Wildlife Research

- 1. Research in Indiana: amphibian, insect, and bird response to cover crops.**
- 2. Research in Missouri: Bobwhite quail nesting success and foraging.**



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**



Candy Childrey

