

Cover Crop Impacts on Wildlife, Birds and Pollinators



COVER CROP TRAINING MODULE

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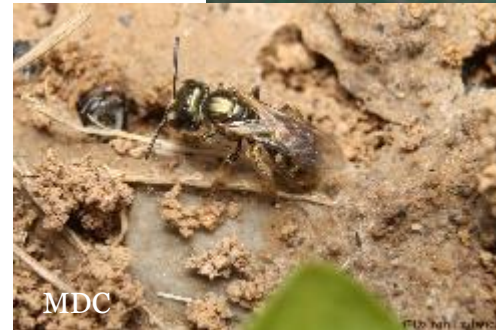
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Cover crops impact a wide range of wildlife, birds and invertebrates

- Mammals
- Songbirds, raptors, and game birds
- Herpetofauna (reptiles and amphibians)
- Pollinators and beneficial insects
- What's good for invertebrates is good for everything else – key part of the food chain



Cover crops impact invertebrates

Food

- Supports earthworms with detritus and by protecting soil (and the earthworms are a food source for some birds and mammals)
- Decomposing invertebrates enrich the soil



Habitat

- Ground cover is critical for overwintering insects

Invertebrates are a key part of the food chain

- Invertebrates: insects, spiders, mites, earthworms, snails, etc.
- Beneficial insects: **insects** that provide some service to people (pollinators, predators/parasitoids, nutrient cyclers)
- Natural enemies: invertebrate predators and parasitoids that help control pest insects
 - Spiders, insect predators, millipedes, etc.
- **The base of the food chain: invertebrates feed birds, reptiles, bats, and other mammals**

Invertebrate impacts

- Flowering cover crops provide nectar and pollen to pollinators and natural enemies
- Cover crop supports diverse plant-feeding insects that support predators until cash crop planting
- Spraying insecticide eliminates predators



Other invertebrate impacts

- Nectar and pollen year for late-emerging insects
- Maintain natural enemy populations
- Reproductive habitat
 - Insects that oviposit in plants



NRCS Montana



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Cover crops as habitat

- Cover crops can help wildlife bridge the green gap between harvest and planting in Midwestern corn-soy rotations
- Huge conservation potential given the percentage of land in row-crop agriculture, over 250 million acres



Bird impacts of cover crops: winter

Food and protective cover

- Resident birds benefit
 - Quail
 - Turkey
 - Pheasant
 - Songbirds



Birds: Winter impacts

Food and cover for
migratory birds

- Waterfowl
- Songbirds



Birds: spring impacts

- Nesting habitat
 - Protection from predators
 - Could save grassland species like dickcissel and eastern meadowlark
- Food
 - Insects very important for bird diets in the spring
 - Quail may benefit from cover crops both from more insects to eat as well as cover/habitat



Birds:

Summer impacts

- Potentially the greatest benefits for grassland birds come in the summer
- Brood-rearing cover
- Late nesters
 - Gold-finches
- Food
 - Seeds
 - Insects
- Stocking up for fall migrations



Mammals: Winter impacts

- Forage
 - Food plot mixes often contain the same plant species as cover crop mixes
- Food and cover for voles, rabbits and furbearers



Small mammals



Mammals: Spring and summer impacts

- Deer
 - Fawning and bedding habitat
 - Potential for diverse diet
- Voles and rabbits have potential to reach damaging populations



Herpetofauna

- Understudied
- Cover crops probably offer overwintering habitat and protection from predators
- Cover cropped areas can provide protection for moving between breeding ponds or other breeding locations



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Predators

Raptors

- More food from small mammals and herpetiles
- Hunting may be more difficult in tall cover crop but also more game to hunt
- Raptors benefit from places to perch



Predators

- Benefit from cover and greater prey populations
- Raptors, coyotes, foxes, and other predators consume potential crop pests



Cover crops as habitat

- Cover crops can help wildlife bridge the green gap between harvest and planting in Midwestern corn-soy rotations
- Huge conservation potential given the percentage of land in row-crop agriculture



Managing cover crops for wildlife

– try more than just cereal rye

- Plant mixes
 - Include flowering species that bloom at different times
- Let cover crops grow through peak bloom
 - Supports insects (particularly pollinators and natural enemies)
 - Nesting birds switching to an insect-based diet



Combining cover crops with other conservation practices: No-till impacts

Invertebrates

Protects overwintering invertebrates from fall tillage

Allows natural enemies to better move from cover crops to cash crops in the spring

Birds

Protects bird nests. Tillage destroys 100% of nests, no-till planting only 70-90%

Reptiles, amphibians, and mammals

Protects them from being killed by tillage

Maintains insect food source

Predators

Tillage eliminates most of prey base during critical breeding periods in the spring



Cover crops combined with contour buffer strips



Photo credit: Edwin Remsburg

Other conservation practices

- Perennial wildflower strips
- Windbreaks
- Beetle banks
- Riparian buffers
- Edge feathering

- NRCS and state funding options are available



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Cover crops can be a key part of a diversified farm landscape

- Cover crops in row crop fields can help tie together natural habitat areas that would otherwise be too small to sustain certain populations of animals, birds, and invertebrates
- Also, many indirect but still important benefits to wildlife like better water quality, reduced impacts from ag chemicals, etc.

