IOWA WILDLIFE WORKING LANDS HABITAT EVALUATION

I. This habitat evaluation will be used to decide if the quality criterion for wildlife is being met under either the current or planned future management for various land uses. It is used to document if wildlife component of an RMS plan is being met or to document if an area meets the Upland Wildlife Habitat Management Standard (645).

It is to be completed by NRCS staff or by partner agencies staff as part of developing a farm plan. It is not intended for landowner self-certification for any USDA programs.

II. This evaluation system applies to the following land uses:

A. Cropland

B. Grasslands (Pasture, Permanent or Rotational Hayland, and Idle Grasslands)

C. Woodland (Managed Timber Stands and Wildlife/Unmanaged Woodland)

D. Riverine – Use SVAP to measure impacts to streams on producer's property

III. Deciding if quality criteria is met:

When wildlife <u>is not a primary concern</u> for planning, then the minimum Habitat Suitability Index (HSI) score is 0.50 to meet the quality criterion for wildlife for any land use(s) on a farm or fields within a tract.

Where wildlife <u>is a primary concern</u> for a farm or field(s) within a tract, then the minimum HSI is a 0.75.

See appendix for some general discussion of Wildlife needs that this appraisal is designed to address.

CROPLAND WILDLIFE EVALUATION:

PRODUCER: _____ DATE: _____

FARM #: _____ TRACT #: _____ Field #(s): _____

1. CROP RESIDUE:

(Choose one of A through G that reflects dominant condition of field(s) being evaluated – not average of operation)

	Existing	Planned
a. Food plots or non-fall harvested grain that is ≥ 2.5% of field acres are maintained within or adjacent to field(s)	15 ☐	15 ☐
b. Continuous no-till for all grain crops (no stalk chopping or residue bailing)	12 ☐	12 ☐
c. No Fall tillage (no stalk chopping or residue bailing) for all grain crops **OR** food plots or non-fall harvested grain that is ≥ 1% of field acres are maintained within or adjacent to field(s)	10 ☐	10 ☐
d. Continuous No Till for all grain crops (with stalk chopping or residue bailing)	7 ☐	7 ☐
e. Over winter crop residues provide > 50% ground cover for all grain crops in the rotation	5 ☐	5 ☐
f. Over winter crop residues provide > 35% ground cover for all grain crops in the rotation	2 ☐	2 ☐
g. None of the above	0 ☐	0 ☐

2. Crop Rotation:

(Choose the one that reflects dominant condition of fields being evaluated)

a. Row crop-small grain-legume or meadow rotation (Either whole field rotations or strip cropping - Meadow not harvested after August 1)	10 ☐	10 ☐
b. Row crop-small grain-legume or meadow rotation (Either whole field rotations or strip cropping - Meadow harvested after July 1)	6 ☐	6 ☐
c. Row crop-small grain rotation **OR** row crop-small grain-legume **OR** meadow rotation harvested before July 1 **OR** continuous row crop with fall cover crop	4 ☐	4 ☐
d. Continuous corn	1 ☐	1 ☐
e. Continuous row crop	0 ☐	0 ☐

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3. Proximity to Other Cover Types:

(Choose ONE, either Herbaceous or Woody category which best reflects the dominant condition of field(s) being evaluated. All distances are from field edges.)

3A Herbaceous Cover:	Existing	Planned
a. Herbaceous buffer (≥ 30 feet wide) or adjacent cover (> 10 acres) not mown from May 15 to August 1 around > 50% of field edges	20 ☐	20 ☐
b. Herbaceous buffers (≥ 30 feet wide) or adjacent cover (> 10 ac.) not mown from May 15 to August 1 around > 35% of field edges	15 ☐	15 ☐
c. More than 35% of field has adjacent herbaceous cover (> 10 acres) not mown prior to July 15	12 ☐	12 ☐
d. Field has adjacent herbaceous cover (> 5 acres) not mown from May 15 to August 1 **OR** is within 660 feet of herbaceous cover (> 10 acres) not mown prior to July 15	10 ☐	10 ☐
e. Field is within 660 feet of herbaceous cover (> 5 acres) or has buffer (> 30 feet wide) around ≥ 20% of field not mown from May 15 to August 1	8 ☐	8 ☐
f. Field is within 1320 feet of herbaceous cover (> 10 acres) not mown prior to July 15 **OR** has buffer (> 30 feet wide) around ≥ 20% of field not mown prior to July 1	6 ☐	6 ☐
g. Field is within 1320 feet of herbaceous cover (> 5 acres) not mown prior to July 1	4 ☐	4 ☐
h. Field has > 1 acres of un-mown herbaceous cover within the field or > 25% of the field is within 660 feet of this type of cover (>2 ac)	2 ☐	2 ☐
i. None of the above	0 ☐	0 ☐
3B Woody Cover:		
a. More than 50% of field edges abuts ungrazed woodland (> 5 acres. woodland)	20 ☐	20 ☐
b. More than 50% of field is within 660 feet of ungrazed woodland (> 5 ac. woodland)	15 ☐	15 ☐
c. More than 25% of field edges abut ungrazed woodland (> 5 acres woodland)	12 ☐	12 ☐
d. Field is within 1320 feet of ungrazed woodland (> 5 acres woodland)	10 ☐	10 ☐
e. Field is within 660 feet of woodland (> 10 acres woodland)	8 ☐	8 ☐
f. Field is within 2640 feet of ungrazed woodland (> 5 acres woodland)	6 ☐	6 ☐
g. Field is within 2640 feet of woodland (> 5 acres woodland)	4 ☐	4 ☐
h. Field has > 1 acres of un-grazed woody cover within the field or > 25% of the field is within 660 feet of this type of cover (>2 ac)	2 ☐	2 ☐
i. None of the above	0 ☐	0 ☐

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	Existing	Planned
Total Points from 1- 3A or 1- 3B	0	0

HABITAT SUITABILITY INDEX:

To derive HSI, divide total points by 45

Interim HSI: ----------→	0.00	0.00

Bonus Points: Add 0.1 to HSI value if any of the following apply to the evaluated fields (max 0.1):

*Integrated Pest management

*Buffers or adjacent herbaceous cover is composed of > 5 native grasses and > 10 native forbs/legumes

*Woody Cover has ≥30% of woodland composed of hard mast trees (oak, hickory, walnut, etc.) and has ≤10% of area infested with invasive woody species such as buckthorn or multiflora rose

Final HSI ----------→		

If wildlife is secondary concern, then the Minimum Wildlife HSI for Cropland HSI ≥ 0.5

Meets Planning Criterion?	**No** ☐	**No** ☐
	Yes ☐	**Yes** ☐

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GRASSLAND HABITAT - Permanent Pastureland

PRODUCER: _____ DATE: _____

FARM #: _____ TRACT #: _____ Field #(s): _____

1. Composition of Stand:

(Choose one that reflects dominant condition of fields being evaluated. *NOTE: Species must be a substantial component of whole field stand, not just a few scattered plants to be counted below.)*

	Existing		Planned	
a. Mixed native grasses and legumes (> 5 species total)	10	☐	10	☐
b. Mixed native and introduced grasses with legumes **OR** mixed introduced grasses and legumes (> 5 species total for either)	8	☐	8	☐
c. Mixed native grasses w/o legumes (> 3 species total) **OR** mixed introduced grasses with legumes (> 3 species)	5	☐	5	☐
d. Mixed introduced grasses w/o legumes (≥ 3 species)	3	☐	3	☐
e. Monoculture of one species of native or introduced grasses	1	☐	1	☐
f. None of the above **OR** Pasture is composed of mostly fescue or canary grass (> 65% of stand)	0	☐	0	☐

2. Vegetative Height on May 1:

(Choose one that reflects dominant condition of fields being evaluated)

a. Predominant stand height is > 12 inches	10	☐	10	☐
b. Predominant stand height is 8 - 12 inches	7	☐	7	☐
c. Predominant stand height is 4 – 8 inches	4	☐	4	☐
d. Predominant stand height is < 4 inches	0	☐	0	☐

3. Stand Management:

(Choose one that reflects dominant condition of fields being evaluated)

a. Rotational grazing, light to moderate use (average forage height > 6” CSG or > 10” WSG during growing season)	10	☐	10	☐
b. Continuous grazing with light to moderate use (average forage height > 6” CSG or > 10” WSG during growing season)	7	☐	7	☐
c. Rotational grazing, moderate to heavy use (average forage height 3 – 6” CSG or 6-10” WSG during growing season)	4	☐	4	☐
d. Rotational grazing, heavy use (average forage height < 3” CSG or < 6” WSG during growing season)	2	☐	2	☐
e. Continuous grazing with heavy use (average forage height < 3” CSG or < 6” WSG during growing season)	0	☐	0	☐

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Choose either 4A or 4B as appropriate. If have both pasture types need to do two sheets

4A. Field Size: (*upland pastures only*)

(Choose one that reflects dominant condition of fields being evaluated)

	Existing		Planned	
a. More than 80 acres	10	☐	10	☐
b. 40 to 80 acres	7	☐	7	☐
c. 20 to 40 acres	5	☐	5	☐
d. 10 to 20 acres	3	☐	3	☐
e. Less than 10 acres	1	☐	1	☐

4B. Field Configuration (*riparian pastures only*):

(Choose one that reflects dominant condition of fields being evaluated)

a. Average width of pasture > 300 feet	10	☐	10	☐
b. Average width of pasture > 200 - 300 feet	7	☐	7	☐
c. Average width of pasture > 100 to 200 feet	5	☐	5	☐
c. Average width of pasture > 50 to 100 feet	3	☐	3	☐
d. Average width of pasture < 50 feet	1	☐	1	☐

5. Water:

(Choose one that reflects dominant condition of fields being evaluated)

a. Livestock are watered without having direct water contact access to any ponds or streams as applicable to site	10	☐	10	☐
b. Livestock access to ponds or streams is through a single controlled access point to minimize water quality degradation from livestock waste and sediment `	5	☐	5	☐
c. Livestock have free access to water bodies or streams	0	☐	0	☐

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6. Proximity to Other Cover Types:

(Choose one that reflects dominant condition of fields being evaluated. Distances are from field edges)

		Existing	Planned
a. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) adjacent	10	10	10
b. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) < 660 feet	7	7	7
c. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) < 1320 feet **OR** cropland > 50% residue adjacent	5	5	5
d. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) < 2640 feet **OR** cropland > 50% residue < 660 feet	2	2	2
e. None of the above	0	0	0

Total Points from 1- 6 — Existing: 0 — Planned: 0

HABITAT SUITABILITY INDEX:

Total Possible Points: 60

To derive HSI, divide total points by 60

Initial HSI ----------→ Existing: 0.00 — Planned: 0.00

Bonus Points:

Add 0.1 to HSI value if any of the following apply to the evaluated fields (max 0.1):

*Using Integrated Pest Management

*Following a Prescribed Grazing Plan that meets 528 Standard

Final HSI: ----------→ Existing: ☐ — Planned: ☐

If wildlife is secondary concern, then the Minimum Wildlife HSI for Pastureland HSI ≥ 0.5

Meets Planning Criterion?

	Existing	Planned
No	☐	☐
Yes	☐	☐

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GRASSLAND HABITAT - Hayland
(Permanent Hay or Condition of the Hay in a Rotational Cropping System)

PRODUCER: _____ DATE: _____

FARM #: _____ TRACT #: _____ Field #(s): _____

1. Composition of Stand:
(Choose one that reflects dominant condition of fields being evaluated)
(Note: species must be a substantial component of whole field stand, not just a few scattered plants to be counted below.)

	Existing		Planned	
a. Hayland seeding mixture contains of grasses and legumes (> 5 species total)	10	☐	10	☐
b. Hayland seeding mixture contains of grasses and legumes (> 3 species total)	7	☐	7	☐
c. Hayland seeding mixture > 1 legume	4	☐	4	☐
d. Hayland seeding mixture > 1 grass	2	☐	2	☐
e. Hayland seeding mixture is a monoculture of grass or legume	1	☐	1	☐

2. Stand Management:
(Choose one that reflects dominant condition of fields being evaluated)

a. First hay cutting is before April 15 or after July 15th	10	☐	10	☐
b. First hay cutting is between May 1st and July 15th but leave 20% of hayland acres un-mown until after August 1st	8	☐	8	☐
c. First hay cutting on ≥ 25% of hayland in field is after July 15th	6	☐	6	☐
d. First hay cutting is between May 1st and July 15th but leave ≥ 10% of hayland acres un-mown until after August 1st	4	☐	4	☐
e. No hay cutting on ≥ 25% of hayland in field after August 15th	2	☐	2	☐
f. None of the above applies	0	☐	0	☐

3. Over Winter Stand Height:
(Choose one that reflects dominant condition of fields being evaluated)

a. September 30th stand height > 6 inches on ≥ 65% of hayland acres	10	☐	10	☐
b. September 30th stand height > 6 inches on ≥ 40 % of hayland acres OR September 30th stand height 3 - 6 inches on ≥ 65% of hayland	6	☐	6	☐
c. September 30th stand height stand height 3 - 6 inches on ≥ 40% of hayland	3	☐	3	☐
d. None of the above.	0	☐	0	☐

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4. Field Configuration:

(Choose one that reflects dominant condition of fields being evaluated)

	Existing	Planned
a. Minimum width > 200 feet	10 ☐	10 ☐
b. Minimum width 100 - 200 feet	5 ☐	5 ☐
c. Minimum width < 100 feet	2 ☐	2 ☐

5. Proximity to Other Cover Types:

(Choose one that reflects dominant condition of fields being evaluated. Distances are from field edges)

a. More than 5 acres of non-fall tilled cropland, food plot (≥ 1acre), ungrazed woodland, or idle grassland adjacent	10 ☐	10 ☐
b. More than 5 acres of non-fall tilled cropland, food plot (≥ 1acre), ungrazed woodland, or idle grassland within 660 feet	7 ☐	7 ☐
c. More than 5 acres of non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland within 1320 feet **OR** cropland > 50% residue adjacent	5 ☐	5 ☐
d. More than 5 acres of non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland within 2640 feet **OR** cropland > 50% residue within 660 feet	2 ☐	2 ☐
e. None of the above	0 ☐	0 ☐

Total Points from 1- 6 0 | 0

HABITAT SUITABILITY INDEX:

To derive HSI, divide total points by 40

Initial HSI ----------→ 0.00 | 0.00

Bonus Points: **Add 0.1 to HSI value if using Integrated Pest management**

Final HSI ----------→ ☐ | ☐

If wildlife is secondary concern, then the Minimum Wildlife HSI for Hayland HSI ≥ 0.5

Meets Planning Criterion?

No ☐	**No** ☐
Yes ☐	**Yes** ☐

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WOODLAND WILDLIFE EVALUATION

(This includes woodland, savanna, wooded portions of pasture, draws, etc.)

PRODUCER: _____ DATE: _____

FARM #: _____ TRACT #: _____ Field #(s): _____

1. Woodland Composition – stand diversity:

(Choose one that reflects dominant condition of fields being evaluated. To count, a species must be > 1% of trees in stand)

	Existing		Planned	
a. Stand > 50% hard mast trees, > 3 hard mast species, and invasives such as honey locust, buckthorn, multiflora rose, honey suckle, etc. are < 5% of stand.	15	☐	15	☐
b. Stand > 35% hard mast trees, > 3 hard mast species, and invasives such as honey locust, buckthorn, multiflora rose, honey suckle, etc. are < 5% of stand.	12	☐	12	☐
c. Stand < 35% hard mast species but has ≥ 3 hard mast species and invasives such honey locust, buckthorn, multiflora rose, honey suckle, etc. are < 10% of stand.	10	☐	10	☐
d. Stand mixture of species, ≥ 4 species present, at least 1 hard mast species invasives such honey locust, buckthorn, multiflora rose, honey suckle, etc. are < 10% of stand.	7	☐	7	☐
e. Stand has < 4 species, but at least 1 is a hard mast species, invasive are <20% of stand.	5	☐	5	☐
f. Stand has < 4 species, no hard mast and invasive are <20% of stand.	3	☐	3	☐
g. Stand dominated by 1 species or invasives such honey locust, buckthorn, multiflora rose, honey suckle, etc. are < 20% of stand.	1	☐	1	☐
h. Stand has > 20% invasive/undesirable species.	0	☐	0	☐

2. Woodland Age Diversity:

(Choose one that reflects dominant condition of fields being evaluated – to count, the species must be > 5% of trees in stand)

a. Mixed age classes (all 4 classes: Saw timber, > 12" DBH; Pole, 6-11 DBH; Small Trees, 2-5" DBH; and Reproduction, < 2"DBH)	10	☐	10	☐
b. 2-3 age classes present	5	☐	5	☐
c. Woodland dominated by one age class	1	☐	1	☐

3. Woodland Management:

(Choose one that reflects dominant condition of fields being evaluated)

a. Woodland is ungrazed	20	☐	20	☐
b. Woodland periodically grazed as part of a NRCS approved grazing plan	5	☐	5	☐
c. Woodland has unmanaged livestock access	0	☐	0	☐

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4. Understory Conditions:

(Choose one that reflects dominant condition of fields being evaluated)

	Existing		Planned	
a. Mostly shrubs, saplings, brush piles, downed trees, woody debris, and herbaceous plants	10	☐	10	☐
b. Few, scattered downed trees, woody debris, brush piles, saplings, and shrubs, mostly herbaceous cover	5	☐	5	☐
c. Mostly open ground with little cover	1	☐	1	☐
d. Dominated by invasive species	0	☐	0	☐

5. Snags or Den (cavity) Trees:

(Choose one that reflects dominant condition of fields being evaluated)

a. Average is more than 5 trees per acre	5	☐	5	☐
b. Average is 2 - 5 trees per acre	3	☐	3	☐
c. Average is less than 2 trees per acre	0	☐	0	☐

6. Proximity to Other Cover Types:

(Choose one that reflects dominant condition of woodland being evaluated. Distances are from woodland edge)

a. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed grassland (> 10 acres) adjacent	10	☐	10	☐
b. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed grassland (> 10 acres) < 660 feet	7	☐	7	☐
c. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed grassland (> 10 acres) < 1320 feet **OR** cropland > 50% residue adjacent	5	☐	5	☐
d. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed grassland (> 10 acres) < 2640 feet **OR** cropland > 50% residue< 660 feet	2	☐	2	☐
e. None of the above	0	☐	0	☐

Total Points from 1- 7 0 0

HABITAT SUITABILITY INDEX:

To derive HSI, divide total points by 70

Final HSI ----------→ 0.00 0.00

If wildlife is secondary concern, then the Minimum Wildlife HSI for Woodland HSI ≥ 0.5

Meets Planning Criterion?	**No**	☐	**No**	☐
	Yes	☐	**Yes**	☐

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GRASSLAND HABITAT - Idle Grasslands (CRP, odd areas, or other herbaceous dominated areas not being used for production)

PRODUCER: _____ DATE: _____

FARM #: _____ TRACT #: _____ Field #(s): _____

1. Composition of Stand:

(Choose one that reflects dominant condition of fields being evaluated
NOTE: species must be a substantial component of stand, not just a few scattered plants to be counted below.)

		Existing		Planned	
a.	Native species with ≥ 15 species grasses, forbs, legumes	15	☐	15	☐
b.	Native species with ≥ 10 species grasses, forbs, legumes	10	☐	10	☐
c.	Mixed Introduced grasses (w/o fescue or reed canary grass), > 5 total species with ≥ 2 forbs/legumes	10	☐	10	☐
d.	Mixed natives w/o forbs/legumes, ≥ 5 species	7	☐	7	☐
e.	Mixed introduced grasses ≥ 5 total species with at least 1 legume	7	☐	7	☐
f.	Mixed grasses, ≥ 2 species grasses and 1 legume (not reed canary grass or fescue)	5	☐	5	☐
g.	Mixed grasses > 2 species	3	☐	3	☐
h.	Stand is none of the above	1	☐	1	☐

2. Size of Stand:

(Choose one that reflects dominant condition of fields being evaluated)

a.	More than 40 acres or linear strip ≥ 50 feet wide	10	☐	10	☐
b.	20 - 40 acres or linear strip ≥ 40 feet wide	7	☐	7	☐
c.	10 – 19 acresor linear strip ≥ 30 feet wide	5	☐	5	☐
d.	1 - 10 acres or linear strip ≥ 20 feet wide	3	☐	3	☐
e.	less than 1 acre or linear strip < 20 feet wide	0	☐	0	☐

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3. Choose either 3A or 3B whichever best fits site conditions. Use 3A if site is CRP or non-grassland remnant. Use 3B if stand is a native grassland remnant

3A. Proximity to Other Cover Types:

(Choose one that reflects dominant condition of fields being evaluated. Distances are from field edges)

	Existing	Planned
a. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) adjacent	10 ☐	10 ☐
b. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) < 660 feet	7 ☐	7 ☐
c. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) < 1320 feet **OR** cropland > 50% residue adjacent	5 ☐	5 ☐
d. Non-fall tilled cropland, food plot (≥ 1acre) or ungrazed woodland (> 5acres) < 2640 feet **OR** cropland > 50% residue < 660 feet	2 ☐	2 ☐
e. None of the above	0 ☐	0 ☐

3B. Remnant Area:

(Choose one that reflects dominant condition of fields being evaluated)

a. Area is a native prairie remnant with a documented Federally listed or candidate T&E Species living on the site	10 ☐	10 ☐
b. Area is a native prairie remnant with a documented State listed T&E species living on site.	7 ☐	7 ☐
c. Area is a native prairie remnant with a documented State listed Species of Special Concern living on the site	5 ☐	5 ☐
d. Area is a native prairie remnant	3 ☐	3 ☐

Total Points from 1- 3 0 | 0

HABITAT SUITABILITY INDEX:

To derive HSI, divide total points by 35

Final HSI ----------→ 0.00 | 0.00

If wildlife is secondary concern, then the Minimum Wildlife HSI for Idle Grassland HSI ≥ 0.5

Meets Planning Criterion?

	Existing	Planned
No	☐	☐
Yes	☐	☐

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Appendix: **WILDLIFE HABITAT**

Fish and wildlife survival depends upon habitat. Habitat is composed of those thing that wildlife needs to survive, water, food and cover. This appraisal system is intended to measure general habitat value for those three criteria for upland wildlife which are the target of the 645 Standard. In Iowa water is usually not essential for most upland wildlife species and this system focuses on cover and food. This appraisal looks at cropland grassland and woodland habitats.

Tillage practices affect wildlife in 4 primary ways:

1. Amount of cover provided by crop

2. Availability of wildlife food in crop residue

3. Timing and frequency of disturbance

4. Toxicity of nutrient inputs and Pesticides

Standing crop residue is particularly important for Winter Cover and Food

Small mammal diversity increases with crop residue

In Ag fields, crop residue can provide wildlife cover

In general, the higher the amount of crop residue, the greater the value for wildlife cover

Undisturbed cropland can also provide nesting habitat as the following table form research by Dr. Louis Best done at Iowa State University.

Bird species found to nest in conventionally-tilled (T) and no-till (NT) corn and soybeans (from Best 1986)

	Corn		Soybeans	
Species	T	NT	T	NT
Ring-necked pheasant		x	x	x
Killdeer	x	x		
Mourning dove	x	x	x	x
Horned lark	x		x	
American robin		x		
Common yellowthroat		x		
Bobolink		x		
Eastern meadowlark		x		
Western meadowlark		x		x
Red-winged blackbird	x	x		
Brown-headed cowbird	x	x	x	x
Dickcissel		x	x	
Savannah sparrow		x		
Grasshopper sparrow		x		
Vesper sparrow	x	x	x	x
Field sparrow		x		x

Undisturbed crop residue also can provide more food for wildlife than tilled fields since tillage buries food making it less accessible, especially for smaller species. If tillage is done, it is best done in the spring months when other sources of food become available. Tillage done early without later trips such as cultivating, reduce nest loss and direct mortality to wildlife.

Conservation Tillage, especially No-Till, in conjunction with:

- Integrated Pest Management,
- Crop rotation
- Nutrient management
- Conservation buffers

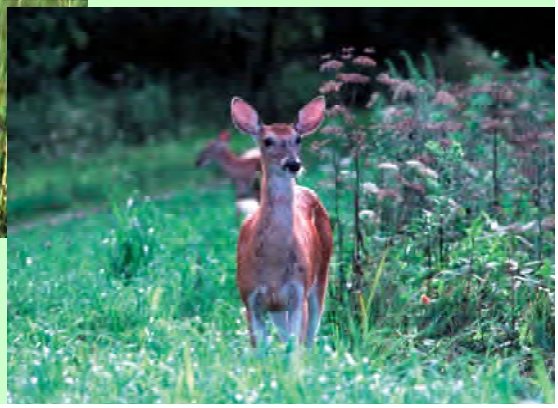
Greatly improves wildlife habitats in cropland fields

The interspersion of cover types is also valuable. The shorter the distances between different habitats, the less vulnerable species are when moving across open landscapes such as cropland or short grassland such as heavily grazed pasture. Long travel distances expose wildlife to predation.

Smaller species of wildlife such as small mammals and small bird that have to travel long distances for food in the winter use up valuable stored fat reserves and waste much or the energy from the food they consume just to make the trip.

While larger species such as deer can travel longer distances, a Bobwhite Quail for instance, would prefer to have all their food and cover needs within a home range of 40 acres. Benefits of other habitat types or food resources start to be less valuable if they are more than 1/8 of mile away.

Grassland provides nesting and fawning cover



Wildlife needs a diversity of grass and forbs and legumes for cover. More species and taller residual cover is important to providing quality habitat.

- Grasslands are sources of food for broods: forbs or legumes for energy and insects for protein

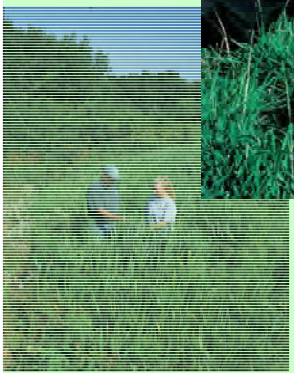
Many wildlife species have a varying diet throughout the year. In the spring for instance, the hen pheasant or quail needs large amount of protein when laying her clutch of eggs rather than just carbohydrates. When the young birds hatch they need protein to grow muscles and feather and their mother needs more protein to replace the feathers she sheds. . When fall and winter come, carbohydrate from seeds and waste grain are used

much more extensively. This is why a variety of food types and sources are valuable to wildlife.

Grassland also provide escape and winter cover for wildlife

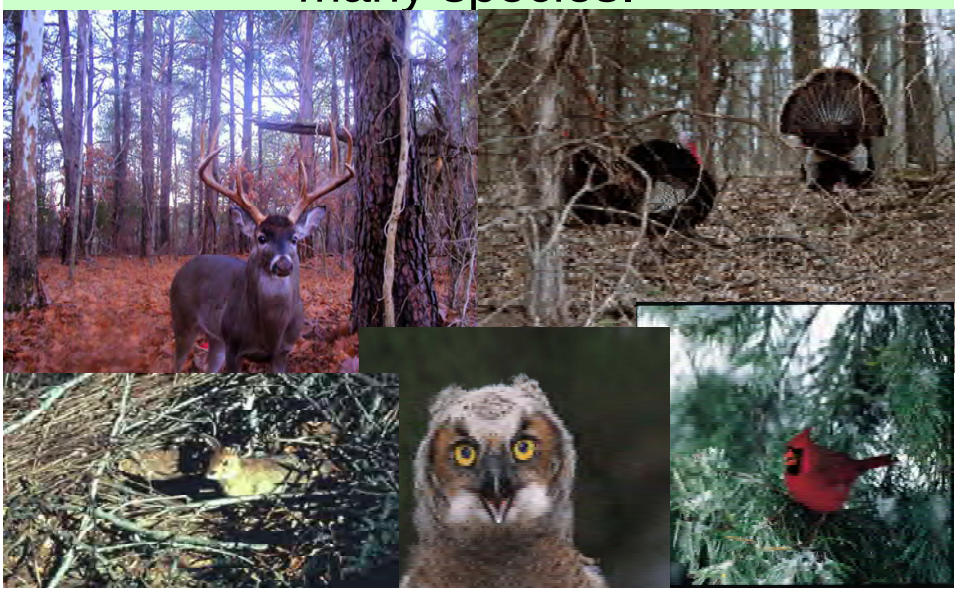
In the winter much like people, wildlife needs places that provide thermal cover so that they can get in out of the cold and wind.

Grasslands can be Idle, CRP, or working lands with good management.



All can provide good wildlife habitat with good management

Woodlands provide habitat for many species.



Woodlands can provide reproductive cover, escape cover and winter for many species. Again a diversity of tree and shrub species provide better habitat than single species or even aged stands (tree plantations).

Woodland Wildlife Habitat

Diversity of tree species is good – want both hard mast trees and soft mast species to provide varied foods for different species

Hard mast: oaks, hickories, walnuts, pecan, etc. that produce a seed is a shell

Soft mast: ashes, maples, berry producers, etc. that don't have a hard shell

Wildlife tends to eat more of the fruit and seeds of soft mast species during the summer and early fall months. The hard mast species "fruits" are better protected from the elements and provide food in the winter and early spring months.

Woodland should not all be one age class of trees even if have multiple species

Need to keep some old mature saw timber size trees as well as pole and sapling aged trees for diverse wildlife values

Want to open the canopy enough to have light reach forest floor and allow forbs and shrubs to grow

Saw timber trees are those >12 inches DBH, Pole trees are from 6-12 inch DBH, saplings are 2-6 inches DBH, and reproduction are those <2 inch DBH. Typically prefer a canopy of less than 70 percent coverage to allow light top reach the floor in larger stands. In small stands, wooded draws, etc., usually enough light reaches the forest floor from the sides so overhead canopy is less of an issue.

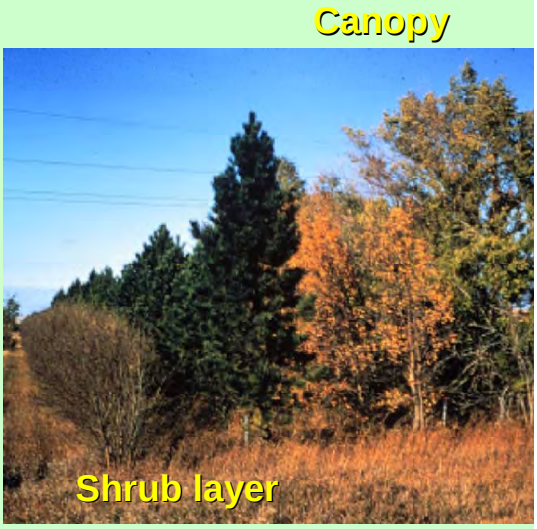
Woodlands in large blocks provide habitat for woodland dependent wildlife species

Unrestricted grazing of timber has one of the worst impacts on the woodland habitat. The cattle trample and eat the herbaceous layer, destroy young trees and compact the forest floor making regeneration of woody and herbaceous plants much more difficult. For quality woodland wildlife habitat, cattle should be fenced form woodlands. Typically woodland tracts have little forage for cattle so fencing them out of woodlands does not limit their food availability by much. In open grassland woodland habitats like savannas, limited flash grazing may be useful to maintain the open woodland nature.

Wooded draws provide travel lanes for wildlife between habitats as well as escape cover.

Practices like CRP riparian forest corridors can help provide more corridors. Maintaining existing wooded draws in crop and pasture fields is important in maintaining both travel and escape/winter cover for wildlife, especially those that are least mobile.

SHRUBS such as Hazelnut Wild plum, Aromatic sumac, Shrub lespedeza, Roughleaf dogwood, etc., planted along abrupt woodland edges softens the transition to other habitats and provide additional food and cover to a woodland stand for wildlife



Another method to provide softer edge transitions is to conduct edge feathering to provide a gradual transition from mature trees to cropland grasslands in particular. In this practice, trees along the edge a felled randomly both into the woodland and out toward the open field. Some or all can be left partially attached, in this case the trees leaf out for a few years and acts like a shrub layer.