

Appendix:

WILDLIFE HABITAT

Fish and wildlife survival depends upon habitat. Habitat is composed of those things 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 from 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)

Species	Corn		Soybeans	
	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 interspersed 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 birds that have to travel long distances for food in the winter use up valuable stored fat reserves and waste much of 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 a 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.



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 in 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 from 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.



Establish multiple travel corridors where possible

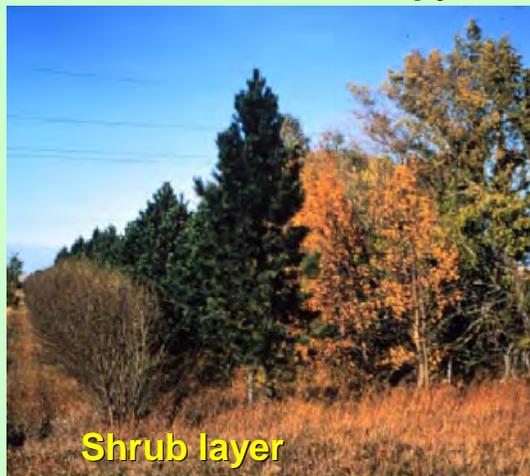
Practices like CRP riparian forest corridors can help provide more corridors. Maintaining existing wooded draws in crop and pasture fields is important in maintaining both travel and escape/winter cover for wildlife, especially those that are least mobile.

In general, abrupt forest edges are less desirable



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

Canopy



Shrub layer

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 are 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 act like a shrub layer.