

NORTH CAROLINA WILDLIFE HABITAT EVALUATION PROCEDURE FOR RESOURCE MANAGEMENT SYSTEMS

POLICY:

NRCS National Biology Manual (190-V-NBM, July 2003, Part 511.04(c)) set the threshold for Resource Management System quality criteria so that at least 50% of the habitat potential for the species of concern is achieved, regardless of the land use. The policy also directs states to establish approved Wildlife Habitat Evaluation Procedures.

The following Wildlife Habitat Evaluation Procedure (WHEP) will be used to quantify a planned resource management system's achievement of habitat potential. The WHEP measures general wildlife habitat diversity on typical agricultural landscapes. It is not a species-based model.

Conservation plans developed to meet a client's objectives for conserving specific wildlife species may be evaluated using:

- the WHEP
- a USGS Habitat Suitability Index Model for the species (or a suitably similar species). See: <http://www.nwrc.usgs.gov/wdb/pub/hsi/hsiindex.htm>
- a locally developed habitat assessment tool, based on habitat requirement summaries and limiting factors indicated in NRCS Wildlife Leaflets available from: <http://www.nrcs.usda.gov/technical/ECS/database/technotes.html> . Use of assessment tools based on information from Wildlife Leaflets must be approved by the NRCS State Biologist.

WHEP PROCEDURE:

- (1) Identify all forest, cropland, old fields, pasture, hayland and orchard/Christmas tree/nursery areas on the tract or farm. Fields should include borders around them such as woody fencerows that divide crop fields. If a particular type of land use does not seem to fit any of the types listed, combine it with the most similar land use category.
- (2) Observe the habitat types, cropping rotations, grazing and haying practices, and forest management practices currently in-use on the planning area. Select a sampling point location that is representative of each habitat type and land-use.
- (3) If different plant cover types or management practices exist within the same land use category; the areas should be evaluated separately. For example, if one hardwood dominated forest is a clearcut and another is mature standing timber - the two areas should be evaluated separately. A weighted average is used to determine a value for the whole planning area (see attached summary sheets).
- (4) Complete the habitat evaluation forms (see attachments) for the appropriate land uses and cover types then sum the points for each. That sum represents the wildlife habitat potential that is provided by the management system applied to each land use.
- (5) Observing which habitat criteria receive low scores will identify some conservation practices that will improve the condition of wildlife habitat.
- (6) Complete a summary sheet to determine if selected alternative meets the quality criteria for a Resource Management System and is acceptable to the decision-maker.

RMS QUALITY CRITERIA FOR PLANNING:

In order to meet the FOTG Quality Criteria for wildlife habitat, a Resource Conservation System plan must produce an index equal to, or greater than 0.50, regardless of the primary land use.

When the primary land use for the planning area is Wildlife Land then the plan must produce an index equal to, or greater than 0.75.

**NC WILDLIFE HABITAT EVALUATION FOR
PINE DOMINATED FOREST**

Client: _____ Date: _____

Planner: _____ Tract #: _____

	Points	Existing	Alternative one	Alternative two (OPTIONAL)
Grazing & Pine Straw Raking Management				
Ungrazed or Unraked	15			
Properly grazed, or $\leq 33\%$ stand raked annually	10			
Over-grazed, or more than 33% stand raked annually	1			
Stand Basal Area & Stocking Rate (pick only one, best-suited category)				
Existing Pine Stands				
Basal area < 80% of Site Index	30			
Basal area 80% – 90% of Site Index	20			
Basal area = Site Index	10			
Basal Area > Site Index	1			
New and Young Pine Plantings				
Trees planted @ 12" x 12" spacing or greater (approx. 300 TPA)	30			
Trees planted @ 10" x 10" spacing or greater (approx. 450 TPA)	20			
Trees planted @ 9" x 9" spacing or less (> 500 TPA)	1			
Percent of Forest in Permanent Wildlife Openings (0.5–2.0 acres in size - See Practice 645)				
>11%	10			
5%-10%	5			
Less than 5%	1			
Prescribed Burning Frequency				
≤ 3 year frequency	35			
4-6 year	20			
>6 year frequency	1			
Abundance of Hard Mast Trees				
>11% stand dominated by oaks/hickories $\geq 10"$ DBH	10			
1-10% stand dominated by oaks/hickories $\geq 10"$ DBH	5			
No oaks or hickories $\geq 10"$ DBH	1			
Invasive Species - presence of invasive species is restricting regeneration of natural vegetation and/or causing damage to trees	-10			
Longleaf or Shortleaf Pine Bonus (planting or existing stand)	10			
(A) Total Pine Forest Habitat Points (Max. possible = 110)				
(B) Pine Forest Habitat Index = (A) / 100				

NC WILDLIFE HABITAT EVALUATION FOR HARDWOOD DOMINATED FOREST				
		Client: _____	Date: _____	
		Planner: _____	Tract #: _____	
	Points	Existing	Alternative one	Alternative two (OPTIONAL)
Grazing Management				
Ungrazed	20			
Properly grazed	10			
Over grazed	1			
Forest Size Class & Species Composition				
Existing Stands				
Mixed size classes - Open canopy	20			
Mixed size classes – Closed canopy	10			
One size class - Open canopy	5			
One size class - Closed canopy	1			
New & Young Stands (<15 years old)				
Trees planted or naturally regenerated at <350 TPA	20			
Trees planted or naturally regenerated at >350 TPA	10			
Cut-over hardwood stand with no Regeneration Methods Planned	1			
Dominant Forest Tree Species				
Combination of hard & soft mast-producing species	25			
Combination of hard mast producing species	15			
Combination of light seeded species dominant (e.g. Yellow poplar, Sweetgum, Maple, Ash, Sycamore)	10			
Single species groups of hardwoods dominant	1			
Snags & Cavity Trees				
>4 snags or cavity trees/acre average	20			
2-4 snags or cavity trees/acre average	10			
1 snag or cavity tree/acre average	5			
No snags present	1			
Understory Cover (trees, shrubs, and herbs ≤ 3 ft. tall)				
>75%	15			
25-74%	10			
<25%	1			
Invasive Species - presence of invasive species is restricting regeneration of natural vegetation and/or causing damage to trees	-10			
(A) Total Hardwood Forest Habitat Pts. (Max. = 100)				
(B) Hardwood Forest Habitat Index = (A) / 100				

**NC WILDLIFE HABITAT EVALUATION FOR
CROPLAND**

Client: _____ Date: _____

Planner: _____ Tract #: _____

	Points	Existing	Alternative one	Alternative two (OPTIONAL)
Crop Residue Management (at least 1/2 of the acreage in most years)				
No fall tillage; winter cover crop planted	20			
No fall tillage; no winter cover crop planted	10			
Residue mowed or chopped	5			
Conventional tillage in the fall; no residue	1			
Crops Grown (at-least 1/2 the acreage, in most years)				
Soybeans, corn, sunflower, sorghum, millets, small grains	10			
All other crops	1			
Average Field Size (fields are considered separate when divided by a hedgerow, or forest at least 20-feet wide)				
<20 acres	20			
21-40 acres	10			
>40 acres	1			
Permanent Wildlife Field Borders (see Practice 645, min. 20' wide, w/ native veg.)				
>50% with wildlife field border	40			
25%-49% with wildlife field border	30			
<25% with wildlife field border	1			
Field border bonus if width is > 30 feet	5			
Unharvested Crops (at-least 1/2 the fields, in most years)				
>10% of field left unharvested	10			
1%-10% of field unharvested	5			
Total field harvested; weed cover abundant	3			
Total field harvested; little or no weed cover present	1			
(A) Total Cropland Habitat Points (Max. possible = 105)				
(B) Cropland Habitat Index = (A) / 100				

**NC WILDLIFE HABITAT EVALUATION FOR
OLD FIELDS**

Client: _____ Date: _____

Planner: _____ Tract #: _____

	Points	Existing	Alternative one	Alternative two (OPTIONAL)
Average Field Size (fields are considered separate when divided by a hedgerow, or forest at least 20-feet wide)				
>20 acres	20			
20 - 10 acres	15			
10 - 5 acres	10			
<5 acres	5			
Habitat Mgt. Rotation (prescribed burning, light disking, chopping, mowing)				
3 yr. Rotation w/ fire or disking	30			
2 yr. Rotation w/ fire or disking	20			
Annual or > 3 yr. w/ fire or disking	10			
Mowing or Chopping rotation (<5 yr. rotation)	5			
Dominant Plant Composition (observe canopy of grass and forbs at mature height)				
Native warm season grasses combined with forbs and legumes	30			
Diverse native vegetation	25			
Native warm season grass, no forbs or legumes	15			
Stand containing more than 20% Tall fescue, Bahiagrass or Bermuda grass	1			
Invasive Species - presence of invasive species is restricting regeneration of desired vegetation	-10			
Percentage of Area Dominated by Woody Vegetation (dominance determined by percent ground cover created by leaf area)				
<10% Woody Vegetation	20			
10-20% Woody Vegetation	5			
>20% Woody Vegetation	1			
(A) Total Old Field Habitat Points (Max. possible = 100)				
(B) Old Field Habitat Index = (A) / 100				

**NC WILDLIFE HABITAT EVALUATION FOR
PASTURE & HAYLAND**

Client: _____ Date: _____

Planner: _____ Tract #: _____

	Points	Existing	Alternative one	Alternative two (OPTIONAL)
Species Composition (at-least ½ the acreage, in most years)				
Native warm-season grasses and forbs dominant	30			
Stand dominated by a single native warm-season grass	20			
Stand dominated by cool-season grass with at least 30% legumes present	10			
Stand containing greater than 20% Tall fescue, Bahiagrass or Bermuda grass	1			
Average Field Size (fields are considered separate when divided by a hedgerow, or forest at least 20-feet wide)				
<20 acres	10			
21-40 acres	7			
>40 acres	1			
Forage Management				
Light use – planned grazing system, or < 3 hay harvests/ yr.	20			
Heavy use – yearlong grazing system, or 3 - 4 hay harvests/ yr.	5			
Over use (>4 hay harvests, or grazed/cut below recommended stubble height.)	1			
Over winter habitat bonus – no harvesting from August 15 until March 15	10			
Permanent Wildlife Field Border (not grazed/hayed) (See Practice 645, min. 20' wide, w/ native veg.)				
>50% with wildlife field border	40			
25%-49% with wildlife field border	20			
<25% with wildlife field border	1			
Field border bonus if width is \geq 30 feet	5			
(A) Total Pasture/Hayland Habitat Pts. (Max. possible =115)				
(B) Pasture/Hayland Habitat Index = (A) / 100				

**NC WILDLIFE HABITAT EVALUATION FOR
FRUIT & NUT ORCHARDS, CHRISTMAS TREE
FARMS, AND NURSERIES**

Client: _____ Date: _____

Planner: _____ Tract #: _____

	Points	Existing	Alternative one	Alternative two (OPTIONAL)
Average Field Size (fields are considered separate when divided by a hedgerow, or forest at least 20-feet wide)				
<20 acres	10			
21-40 acres	5			
>40 acres	1			
Permanent Wildlife Field Borders (see Practice 645, min. 20' wide, w/ native veg.)				
>50% with wildlife field border	30			
25%-49% with wildlife field border	15			
<25% with wildlife field border	1			
Field border bonus if width is > 30 feet	5			
Vegetation Mgt. Between Rows (mowing, herbicide, burning, chopping, etc)				
Management activities conducted outside of the nesting season	30			
Single activity conducted during the nesting season	15			
Multiple activities per year	1			
Dominant Plant Composition (Species composition between rows)				
Native warm season grasses combined with forbs and legumes	30			
Diverse native vegetation	25			
Native warm season grass, no forbs or legumes	20			
Stand containing more than 20% Tall fescue, Bahiagrass or Bermuda grass	1			
(A) Total Orchards Habitat Points (Max. possible = 105)				
(B) Orchards Habitat Index = (A) / 100				

RESOURCE MANAGEMENT SYSTEM SUMMARY

A tract or farm habitat index is calculated by taking the sum of the weighted habitat indexes divided by the total acres in the planning area.

EXISTING CONDITION

HABITAT TYPE	HABITAT INDEX	ACRES	WEIGHTED INDEX	FARM/TRACT INDEX (A)
Pine Dominated Forest	X	=		
Hardwood Dominated Forest	X	=		
Cropland	X	=		
Old Fields	X	=		
Pasture & Hayland	X	=		
Orchards, Christmas Tree Farms & Nurseries	X	=		
	TOTAL			
			Total Wt. Index / Total acres =	

ALTERNATIVE ONE

HABITAT TYPE	HABITAT INDEX	ACRES	WEIGHTED INDEX	FARM/TRACT INDEX (B)
Pine Dominated Forest	X	=		
Hardwood Dominated Forest	X	=		
Cropland	X	=		
Old Fields	X	=		
Pasture & Hayland	X	=		
Orchards, Christmas Tree Farms & Nurseries	X	=		
	TOTAL			
			Total Wt. Index / Total acres =	
NET EFFECT OF PLAN = (B) – (A)		-	=	

ALTERNATIVE TWO

HABITAT TYPE	HABITAT INDEX	ACRES	WEIGHTED INDEX	FARM/TRACT INDEX (B ¹)
Pine Dominated Forest	X	=		
Hardwood Dominated Forest	X	=		
Cropland	X	=		
Old Fields	X	=		
Pasture & Hayland	X	=		
Orchards, Christmas Tree Farms & Nurseries	X	=		
	TOTAL			
			Total Wt. Index / Total acres =	
NET EFFECT OF PLAN = (B¹) – (A)		-	=	

Total Weighted Index of the Planned Condition must be 0.50 or greater to meet RMS Quality Criteria.

EXISTING CONDITION SUMMARY

(Optional Worksheet)

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				

PLANNED CONDITION SUMMARY

(Optional Worksheet)

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				

HABITAT:				
FIELD	HABITAT TYPE NO.	INDEX	WEIGHTED ACRES INDEX	HABITAT TYPE INDEX
	X	=		
	X	=		
	X	=		
	X	=		
TOTAL				
Total Wt. Index / Total acres =				