



WAFWA Habitat Evaluation Guide (HEG)

Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)

Sept 2022

The WAFWA Habitat Evaluation Guide (HEG) utilizes four categorical variables to assess habitat quality. These variables were specifically chosen because they can accurately describe LPC habitat quality and are not greatly affected by annual variation in weather patterns. Habitat quality is calculated from the four variables as the minimum score for questions 1-3 multiplied by the score of question 4. A HEG must be completed for all affected areas with homogenous vegetation under similar management (defined as an Evaluation Unit) and requires on-site vegetation sampling. A HEG is not assessed for areas of water, farmsteads, or where fully impacted by development (HEG score is 0.00).

WAFWA Site ID: <input style="width: 90%;" type="text"/>	Collection Date: <input style="width: 90%;" type="text"/>
Evaluation Unit ID: <input style="width: 90%;" type="text"/>	Collected By: <input style="width: 90%;" type="text"/>
Evaluation Unit Acres: <input style="width: 90%;" type="text"/>	Ecoregion: <input style="width: 90%;" type="text"/>

Collection Purpose: Industry Project, Remediation, Conservation Site Initial Visit, or Annual Monitoring

Score by using a "x" adjacent to appropriate condition.

1. Vegetative Cover

Non-overlapping canopy cover of herbaceous plants and shrubs within the Evaluation Unit. To evaluate, field vegetation monitoring using the WAFWA LPC Line Point Intercept method is required for all non-cropland areas (see attached protocol). Monitoring must occur during or immediately preceding the LPC breeding season.

Percentage:

- a) Cover is >45%
- b) Cover is 30-45%
- c) Cover is 15-29%
- d) Cover is < 15%
- e) Evaluation unit is used for crop production

Value	Current Condition	Maximum Potential ¹⁾
1.00	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.85	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.60	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.25	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.05	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
Assigned Point Value:	0.00	0.00

2. Vegetation Quality

Relative canopy cover of preferred native grasses and shrubs within the Evaluation Unit during the breeding season. Preferred species include little bluestem, sideoats grama, big bluestem, indiagrass, sand bluestem, switchgrass, sand sagbrush, and sand shinnery oak. To evaluate, field vegetation monitoring using the WAFWA LPC Line Point Intercept method is required for all non-cropland areas (see attached protocol). Monitoring must occur during or immediately preceding the LPC breeding season.

Percentage:

- a) >75% of vegetation is preferred species of grasses or shrubs
- b) 50-74%
- c) 25-49%
- d) < 25%
- e) Evaluation unit is used for crop production

Value	Current Condition	Maximum Potential ¹⁾
1.00	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.85	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.60	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.25	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
0.05	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
Assigned Point Value:	0.00	0.00

3. Presence of Tall Woody Plants (excluding sand sagebrush)

Average canopy cover of tall woody plants (> 3 ft. in height) within the Evaluation Unit. Typically, this includes mesquite and eastern red cedar but may include other grassland encroachment trees. Exclude sand sagebrush from this evaluation. To evaluate, field vegetation monitoring using the WAFWA Woody Plant Canopy Cover method is required for all non-cropland areas (see attached protocol).

- a) No woody plants >3ft in height within the evaluation unit
- b) <1%
- c) 1-5%
- d) >5%
- e) Evaluation unit is used for crop production

	Current Value	Maximum Potential ¹⁾
1.00		
0.85		
0.60		
0.25		
0.05		
Assigned Point Value:	0.00	0.00

4. Availability of Potential Habitat

Percentage of the area consisting of grass cover with <1% canopy cover of trees >3 feet in height, as estimated within a one-mile radius from the center of the evaluation unit (an area covering 2,000 acres). This evaluation question does not take into consideration the anthropogenic impacts on the landscape, such as oil and gas wells, transmission lines, etc.

Percentage:

- a) >90%
- b) 80-90%
- c) 70-79%
- d) 60-69%
- e) 50-59%
- f) 40-49%
- g) 30-39%
- h) 20-29%
- i) 10-19%
- j) 1-9%
- k) <1%

	Current Value	Maximum Potential ¹⁾
1.00		
0.90		
0.80		
0.70		
0.60		
0.50		
0.40		
0.30		
0.20		
0.10		
0.00		
Assigned Point Value:	0.00	0.00

Assigned Point Value: **0.00** **0.00**

Score

HEG Score: **0.00**

Maximum Potential HEG Score: **0.00**

*Score Calculation = (Minimum of Q1, Q2, Q3)*Q4*

¹⁾ Maximum Potential HEG Score - used for initial conservation site assessments.

WAFWA Line Point Intercept Data Form

for the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) Habitat Evaluation Guide (HEG)

WAFWA Site ID: _____
 Evaluation Unit ID: _____
 Eval. Unit Acres: _____

Collection Date: _____
 Collected By: _____
 Ecoregion: _____

Start Latitude: _____
 Start Longitude: _____

Woody Plants: _____
 (w/in Eval Unit) Excluding sand sagebrush

Growth Habit

PG LPC Preferred Grasses	FO Forb	SO Shinnery Oak	OL Organic Litter
TG Other Tufted Grass	SH Shrub	WL Woody Litter	AL Artificial Litter
SG Sod Grass	SS Sand Sagebrush	HL Herbaceous Litter	BG Bare Ground

LPC Preferred Grasses include little bluestem, side oats grama, big bluestem, Indiangrass, sand bluestem, and switchgrass. Bare Ground = No canopy or litter above exposed soil. TG = western wheatgrass, weeping lovegrass, sand dropseed, smooth brome, etc. SG = buffalo grass, blue grama, hairy grama, etc. Include yacca and prickly pear as "SH".

Mark (ft.)	Interceptions						
	1	2	3	4	5	6	BG
0							
3							
6							
9							
12							
15							
18							
21							
24							
27							
30							
33							
36							
39							
42							
45							
48							
51							
54							
57							
60							
63							
66							
69							
72							
75							

Mark (ft.)	Interceptions						
	1	2	3	4	5	6	BG
78							
81							
84							
87							
90							
93							
96							
99							
102							
105							
108							
111							
114							
117							
120							
123							
126							
129							
132							
135							
138							
141							
144							
147							
150							

Total of 51 marks

Results	Canopy Cover							Litter				Bare	Total
	LPC Preferred		SO	TG	SG	SH	FO	WL	HL	OL	AL	BG	
PG	SS	0											0
Vegetative Hits:	0	0	0	0	0	0	0	0	0	0	0	0	0
Vegetative Cover:	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####

TOTAL CANOPY COVER = _____ (HEG question #1)

Total Canopy Cover Hits / Total Hits.

Relative cover of LPC preferred grasses and shrubs: _____ (HEG question #2)

LPC Preferred Grass & Shrub Hits (PG, SS, SO) / Total Grass & Shrub Hits (PG, TG, SG, SH, SS, SO)

Woody Plant Canopy Cover Guidance

for the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) Habitat Evaluation Guide (HEG)

- Step 1.** Determine the approximate acreage of the area with trees or shrubs that are > 3 feet in height. Do not include sand sagebrush in this evaluation. If this is a conservation site, GPS the area for potential treatment.
- Step 2.** Flag or visual mark one square mile that is representative of the area. 1 square mile = 208 ft x 208 ft.
- Step 3.** Determine the average canopy diameter (edge of drip line to edge of drip line) of the trees and/or shrubs
- Step 4.** Count the number of trees in the flagged area.

REFERENCE TABLE

Canopy (Diameter in ft.)	# Tree/Shrub Per Acre	
	2	139
4	35	173
6	15	77
8	9	43
10	6	28
Canopy Cover:	1%	5%

Step 5. Reference the table to determine the approximate canopy cover within the sampling area.

Step 6. Apply the findings to the entire Evaluation Unit.

The estimate of canopy cover must be scaled up to the size of the entire evaluation unit. For example, if canopy cover is 5% within 30 affected acres of a 100 acre evaluation unit the overall coverage for the unit would be calculated as follows: $\{(30 \text{ acres}/100 \text{ acres}) \times 0.05\} = 0.015 \times 100 = 1.5\%$

Step 7. Record the average woody canopy cover for the Evaluation Unit on the Line Intercept form.

Reminder: Line intercept transects are not needed if evaluation unit averages >5% canopy cover.

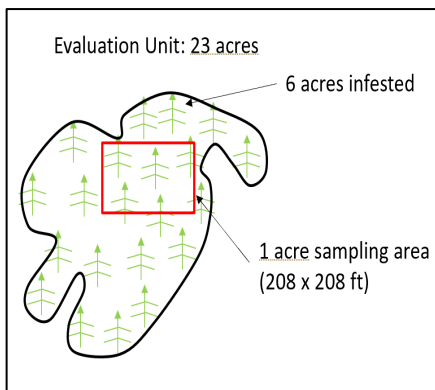


Fig. 1. Example Sample Plot Layout

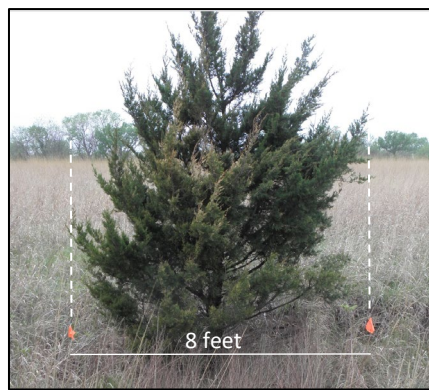


Fig. 2. Canopy Diameter (flags are at dripline).

Example:

There are 23 trees in the sample area with an average 8 ft. canopy diameter. From the chart, that's approx. 2.5% canopy cover.

1 acre = 2.5% canopy cover
6 acres infested with trees
23 acre evaluation unit

Eval. Unit = 0.65% Canopy Cover
 $(6/23) \times 2.5\% = 0.65\%$

Availability of Potential Habitat Guidance

for the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) Habitat Evaluation Guide (HEG)

Percentage of the area consisting of grass cover with <1% canopy cover of trees >3 feet in height, as estimated within a one-mile radius from the center of the evaluation unit (an area covering 2,000 acres). This evaluation question does not take into consideration the anthropogenic impacts on the landscape, such as oil and gas wells, transmission lines, etc.

To provide consistency in determining this percentage, WAFWA developed a GIS data layer that uses specific, approved data sources that are updated as the data sources become updated.

- This dataset is available online at www.sgpchat.org