



United States Department of Agriculture
Natural Resources Conservation Service

Cerulean Warbler Appalachian Forestland Enhancement RCPP Habitat Evaluation Guide for the Cerulean Warbler - Appalachian Mountain Population

This Wildlife Habitat Evaluation Guide (WHEG) is based on the habitat requirements of Cerulean Warbler (*Setophaga cerulea*). It is accepted that managing for this species benefits many other Appalachian Mountain forest habitat-dependent species (e.g., Hooded Warbler, Kentucky Warbler, Ruffed Grouse, Eastern Wild Turkey, and Eastern Whip-poor-will). This model can be applied to all ecological sites with the potential to support Appalachian Mountain forest habitat, even if Cerulean Warblers do not currently occupy the habitat.

The Cerulean Warbler is a migratory songbird that breeds in mature deciduous forests of eastern North America. Cerulean Warblers require heavily forested (>80% within 1.5 miles) landscapes for nesting and, within Appalachian forests, primarily occur on ridge tops and steep, upper slopes. They are generally associated with oak-dominated (*Quercus* spp.) stands that contain gaps in the forest canopy, that have large diameter trees (>16 inches diameter breast height (dbh)), and that have well-developed understory-and upper-canopy layers. Cerulean Warblers primarily use the mid-and upper-canopy where they glean insects from the surface of leaves and conceal their open cup nests.

If a factor is not applicable or is not feasible to determine do not score that factor. While every factor may not fit every situation, the WHEG should be completed by placing the corresponding score in the "Before Score" column which most closely represents that factor. Planners should carefully read each factor prior to assigning a score to a particular situation. The "Before Score" represents the habitat in a benchmark state without improvements implemented. Interpolate between values if necessary. All scores are for current year (previous 12 months) unless otherwise stated. The "After Score" is when the conservation plan or practice is mature, which will vary in time. The after score is an estimate of what impact a conservation practice will make to the site. This is done during the planning phase. If a factor is scored as N/A (identified in red) do not count that factor in the final total. In order to achieve quality criteria on a 0-1 scale an "After Score" must equal 0.75 or greater. It is recommended that a minimum of ten (10) acres result in open-canopy forest habitat and be managed for breeding Cerulean Warblers.

NOTE: The use of the term "**project area**" in this document refers to that portion of a tract where habitat management activities for CERW actually occur.

Owner/Operator:	Field Office:	
County:	Ecological Site:	
NRCS Planner:	Acres:	Field(s):
NRCS Soil Con:	Evaluation Period:	Date:
Non-NRCS Biologist/NRCS Biologist:	Location:	
Notes:		

LANDSCAPE LEVEL HABITAT EVALUATION

FACTOR	VALUES	ACTUAL BEFORE SCORE	RECOMMENDED CONSERVATION PRACTICE CODE(S)	PROJECTED AFTER SCORE	POST IMPLEMENTATION MONITORING ¹
1. What percentage of the landscape within a 1.5 mile radius of the project area is forested?					
a) ≥ 80%	1.0		N/A*		
b) 70 – 79%	0.5				
c) 50 – 69%	0.25				
d) < 50%	0.0				

* The before and after scores for this factor may not be affected by installation of conservation practices.

2. What is the percentage of mature deciduous forest within a 1.5 mile radius of the project area?					
a) 70 – 100% mature deciduous forest	1.0		N/A*		
b) 50 – 69% mature deciduous forest	0.5				
c) < 50% mature deciduous forest	0.0				

* The before and after scores for this factor may not be affected by installation of conservation practices.

3. Is the project area located in close proximity to known or existing populations of Cerulean Warblers?					
a) ≤ 1.0 mi	1.0		N/A*		
b) 1.1 – 3.0 mi	0.75				
c) 3.1 – 5.0 mi	0.5				
d) 5.1 – 7.0 mi	0.25				
e) ≥ 7.0 mi	0.0				
If unknown, do not score this factor	N/A				

* The before and after scores for this factor may not be affected by installation of conservation practices.

4. Distance to infrastructure and/or significant human development from the project area (e.g. housing developments, interstates, towns, etc).					
a) ≥ 0.50 mi	1.0		N/A*		
b) 0.25 – 0.49 mi	0.5				
c) 0.01 – 0.25 mi	0.25				
d) 0 mi (e.g., in a housing development)	0.0				

* The before and after scores for this factor may not be affected by installation of conservation practices.

PROJECT/SITE SCALE HABITAT EVALUATION

5. What is the project area size?*					
a) ≥ 70 acres	1.0				
b) 40 – 69 acres	0.75				
c) 20 – 39 acres	0.50				
d) 10 – 19 acres	0.25				
e) < 10 acres	0				

* Application of conservation practices will likely have no effect on this factor.

FACTOR	VALUES	ACTUAL BEFORE SCORE	RECOMMENDED CONSERVATION PRACTICE CODE(S)	PROJECTED AFTER SCORE	POST IMPLEMENTATION MONITORING ¹
6. What is the northern red oak site index of the dominant soil type in the project area? *					
a) ≥ 80	1.0		N/A*		
b) 60 – 79	0.5				
c) < 60	0.0				

* We utilize northern red oak site index as an indicator of the suitability for silvicultural practices and regeneration potential for various soil types. Northern red oak is not a desired species for Cerulean Warbler. Application of conservation practices will likely have no effect on this factor.

7. What is the average stand diameter (DBH) of the project area?					
a) >14"	1.0				
b) 6" – 14"	0.5				
c) <6"	0.0				

8. What is the current basal area of the project area?					
a) ≤ 90 ft ² per acre	1.0				
b) > 90 ft ² per acre	0.0				

9. What is the percentage of the project area that is oak or northern hardwoods? (site level)					
a) ≥ 70%	1.0				
b) 50 – 69%	0.5				
c) < 50%	0.0				

10. What is the composition of non-native woody species within forest or shrub component in the project area?					
a) No non-native invasive woody species	1.0				
b) One non-native invasive woody species AND/OR <1% cover of non-native invasive woody species	0.75				
c) Two non-native invasive woody species AND/OR <3% cover of non-native woody species	0.5				
d) Three non-native invasive woody species AND/OR <10% cover of non-native woody invasive species	0.25				
e) >3 invasive plant species AND/OR ≥10% cover of non-native woody invasive species	0.0				

11. What is the vertical structure of the shrub/sapling understory in the project area?					
a) Diversity of shrub/sapling heights of both greater AND less than 6 feet in height	1.0				
b) Shrub/sapling heights are mostly uniform OR heights are less than 6 feet in height	0.5				
c) No shrub/sapling cover present	0.0				

FACTOR	VALUES	ACTUAL BEFORE SCORE	RECOMMENDED CONSERVATION PRACTICE CODE(S)	PROJECTED AFTER SCORE	POST IMPLEMENTATION MONITORING ¹
12. Are live wild grapevines (<i>Vitis</i> spp.) found within the project area?					
a) Grapevines present	1.0				
c) No grapevines present	0.0				

CERW WHEG SUMMARY TOTAL	BEFORE	AFTER
LANDSCAPE LEVEL HABITAT EVALUATION SUBTOTAL		
PROJECT/SITE SCALE HABITAT EVALUATION SUBTOTAL		
TOTALS		
NUMBER OF FACTORS CONSIDERED		
FINAL SCORE <i>(the total score divided by number of factors)</i> <i>The projected final score for AFTER must be ≥0.75 to meet the minimum requirements for the CERW RCPP</i>		
PLANNED IMPROVEMENT <i>(After Total – Before Total)</i>		

¹ **Post Implementation Monitoring** – this column may be utilized for post implementation monitoring by partner agencies or other entities and is not required to be completed by NRCS personnel unless otherwise specified.

Factor(s)	<p align="center">Conservation Practices for Resource Concerns ² <i>Projects rating 0.5 or less, consider the following conservation practices</i></p>
<p>(8) (9) (10) (11)</p> <p>Establishment, enhancement, or maintenance of vertical structure</p>	<p>Conservation Cover (327): Establish native herbaceous species to diversify habitat and create desirable stand densities and compositions.</p> <p>Early Successional Habitat Development (647): Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.</p> <p>Forest Stand Improvement (666): Manipulate species composition, stand structure, and stocking by cutting or killing selected trees and understory vegetation. <i>Note: this practice may require facilitating practices such as Forest Harvest Trails and Landings (655) and/or Access Roads (560).</i></p> <p>Tree and Shrub Establishment (612): Establish desirable trees and shrubs in target areas lacking a shrub or young forest component. <i>Note this practice may require facilitating practices such as Tree and Shrub Site Preparation (490), Mulching (484), etc.</i></p>
<p>(8) (9) (10) (11)</p> <p>The creation or maintenance of shrub lands and/or young forest areas</p>	<p>Early Successional Habitat Development (647): Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.</p> <p>Field Borders (386): Utilize cut back borders in and around clear-cuts to create a meandering, softer edge effect.</p> <p>Forest Stand Improvement (666): Harvest stands in specific manners to facilitate appropriate residual basal areas and structural diversity. <i>Note: this practice may require facilitating practices such as Forest Harvest Trails and Landings (655) and/or Access Roads (560).</i></p> <p>Restoration & Management of Rare & Declining Habitats (643): Restore, conserve, and manage unique or diminishing native terrestrial and aquatic ecosystems.</p> <p>Tree and Shrub Establishment (612): Establish desirable trees and shrubs in target areas lacking a shrub or young forest component. <i>Note this practice may require facilitating practices such as Tree and Shrub Site Preparation (490), Mulching (484), etc.</i></p>
<p>(8) (9) (10) (11)</p> <p>Quality of woody species and/or herbaceous species</p>	<p>Critical Area Planting (342): Establish permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices such as reclaimed mine sites.</p> <p>Forest Stand Improvement (666): Manipulate species composition, stand structure, and stocking by cutting, harvesting or killing selected trees and understory vegetation. <i>Note: this practice may require facilitating practices such as Forest Harvest Trails and Landings (655) and/or Access Roads (560).</i></p> <p>Restoration and Management of Rare or Declining Habitats (643): Return terrestrial ecosystems to their original or usable and functioning condition and/or improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.</p> <p>Tree and Shrub Establishment (612): Establish desirable trees and shrubs in target areas lacking a shrub or young forest component. <i>Note this practice may require facilitating practices such as Tree and Shrub Site Preparation (490), Mulching (484), etc.</i></p> <p>Upland Wildlife Habitat Management (645): Provide and manage upland habitats and connectivity within the landscape for wildlife.</p>

² Conservation practices not identified above must be approved prior to use in the CERW RCPP.

Factor(s)	<p align="center">Conservation Practices for Resource Concerns ² <i>Projects rating 0.5 or less, consider the following conservation practices</i></p>
<p>(10) (11) (12) Control or manipulation of noxious or invasive plant species</p>	<p>Brush Management (314): Plan brush management to control woody species and provide for an early succession habitat designed to meet landowner's goals.</p> <p>Herbaceous Weed Control (315): Removal or control of herbaceous weeds including invasive, noxious and prohibited plants that interfere with desired targeted communities.</p>
<p>(9) (10) The manipulation of woody plant species composition adequate to support the desired ecological function</p>	<p>Brush Management (314): Plan brush management to control woody species and provide for an early succession habitat designed to meet landowner's goals.</p> <p>Forest Stand Improvement (666): Manipulate species composition, stand structure, and stocking by cutting, harvesting or killing selected trees and understory vegetation. <i>Note: this practice may require facilitating practices such as Forest Harvest Trails and Landings (655) and/or Access Roads (560).</i></p>
<p>(11) The creation or maintenance of patchiness and creation of habitat diversity</p>	<p>Access Control (472): Manage access to habitat by livestock. <i>Note: this may require the use of other facilitating practices such as fence (382).</i></p> <p>Conservation Cover (327): Establish native herbaceous species to diversify habitat and create desirable stand densities and compositions.</p> <p>Critical Area Planting (342): Establish permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.</p> <p>Field Borders (386): Utilize cut back borders in and around clear-cuts to create a meandering, softer edge effect.</p> <p>Tree and Shrub Establishment (612): Establish desirable trees and shrubs in target areas lacking a shrub or young forest component. <i>Note this practice may require facilitating practices such as Tree and Shrub Site Preparation (490), Mulching (484), etc.</i></p>

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