



SOUTHEAST GAP ANALYSIS PROJECT



Species Modeling Report

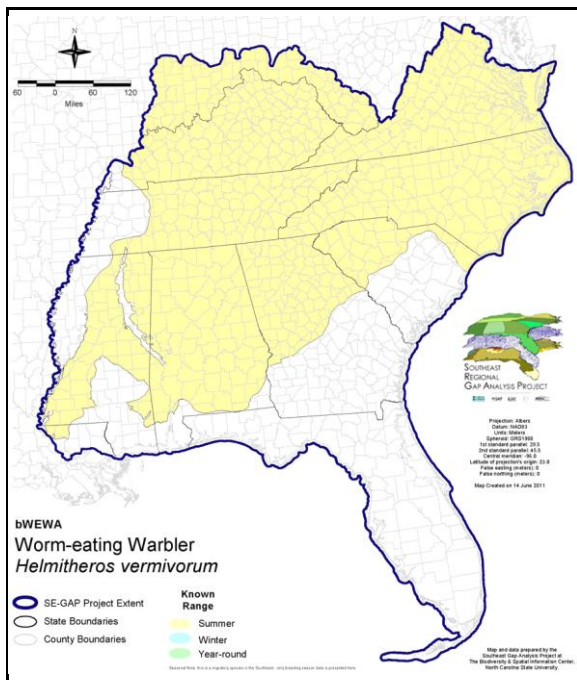
Worm-eating Warbler

Helmitheros vermivorum

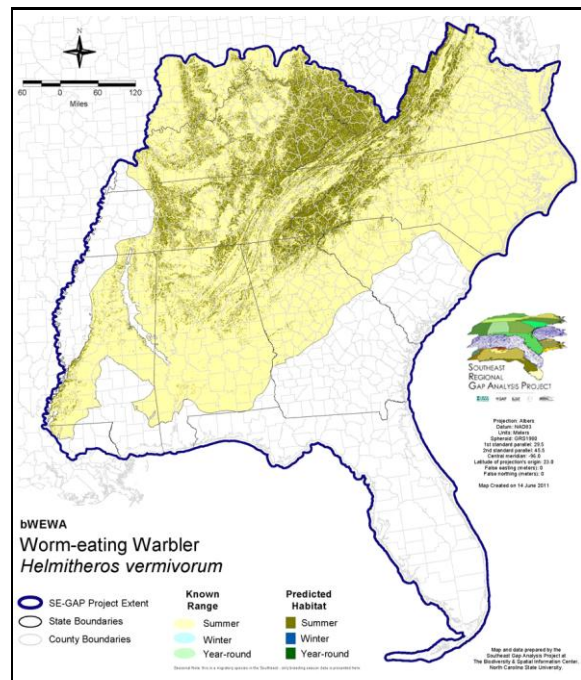
Taxa: Avian
 Order: Passeriformes
 Family: Parulidae

SE-GAP Spp Code: **bWEWA**
 ITIS Species Code: 178850
 NatureServe Element Code: ABPBX08010

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_bWEWA.pdf

Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_bWEWA.pdf

GAP Online Tool Link: <http://www.gapservice.ncsu.edu/segap/segap/index2.php?species=bWEWA>

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/bWEWA_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: IN (SSC), KY (N), NJ (S/S), NV (YES), NY (PB), RI (Concern), WI (END), WI (END), QC (Non suivie)

NS Global Rank: G5

NS State Rank: AL (S3B), AR (S4B), AZ (SNA), AZ (SNA), CA (SNA), CO (SNA), CT (S5B), CT (S5B), DC (S2N), DE (S3B), FL (S1), GA (S5), IA (S2B,S2N), IL (S4), IN (S3B), KS (SNA), KY (S4S5B), LA (S4B), MA (S2B), MD (S4B), ME (SNA), MI (SNA), MN (SNA), MO (SNRB), MS (S3B), MS (S3B), NC (S4B), NC (S4B), NE (SNRN), NH (SNA), NJ (S3B), NM (S4N), NV (SNA), NY (S4), OH (S3S4), OK (S1B), PA (S4B), RI (S2B), SC (S4), SD (SNA), TN (S4), TX (S3B), VA (S4), VT (SNA), WI (S1B), WI (S1B), WV (S5B), WY (SNA), NB (SNA), NF (SNA), NS (SNA), ON (SNA), PE (SNA), QC (SNA), SK (SNA)

SUMMARY OF PREDICTED HABITAT BY MANAGMENT AND GAP PROTECTION STATUS:

	US FWS		US Forest Service		Tenn. Valley Author.		US DOD/ACOE	
	ha	%	ha	%	ha	%	ha	%
Status 1	3,106.0	< 1	28,002.2	< 1	0.0	0	0.0	0
Status 2	4,263.1	< 1	297,768.6	2	0.0	0	255.5	< 1
Status 3	1,239.6	< 1	1,450,488.5	10	19,985.4	< 1	36,030.6	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	8,608.7	< 1	1,776,259.3	12	19,985.4	< 1	36,286.1	< 1
	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	251,327.0	2	0.0	0	0.0	0
Status 2	0.0	0	9,901.9	< 1	0.0	0	0.0	0
Status 3	6,402.4	< 1	61,341.0	< 1	0.0	0	0.0	0
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	6,402.4	< 1	322,569.9	2	0.0	0	0.0	0
	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	805.2	< 1	67.8	< 1	0.0	0
Status 2	0.0	0	13,486.0	< 1	212,955.7	1	1,282.1	< 1
Status 3	16,354.5	< 1	64,769.0	< 1	66,900.8	< 1	15,905.6	< 1
Status 4	0.0	0	0.0	0	27,846.9	< 1	0.0	0
Total	16,354.5	< 1	79,060.2	< 1	307,771.1	2	17,187.7	< 1
	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	9,166.9	< 1	0.0	0	0.0	0
Status 2	0.0	0	29,470.1	< 1	< 0.1	< 1	682.9	< 1
Status 3	0.0	0	1,357.9	< 1	938.6	< 1	680.0	< 1
Status 4	0.0	0	2.1	< 1	177.2	< 1	0.0	0
Total	0.0	0	39,996.9	< 1	1,115.9	< 1	1,363.0	< 1
	Private Land - No Res.		Water		Overall Total			
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	292,475.0 2			
Status 2	0.0	0	0.0	0	570,065.9 4			
Status 3	8.3	< 1	0.0	0	1,742,402.3 22			
Status 4	10,654,048.9	72	2,286.6	< 1	10,712,208.6 73			
Total	10,654,057.2	72	2,286.6	< 1	13,317,151.8 100			

GAP Status 1: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, and intensity) are allowed to proceed without interference or are mimicked through management.

GAP Status 2: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive use or management practices that degrade the quality of existing natural communities.

GAP Status 3: An area having permanent protection from conversion of natural land cover for the majority of the area, but subject to extractive uses of either a broad, low-intensity type or localized intense type. It also confers protection to federally listed endangered and threatened species throughout the area.

GAP Status 4: Lack of irrevocable easement or mandate to prevent conversion of natural habitat types to anthropogenic habitat types. Allows for intensive use throughout the tract. Also includes those tracts for which the existence of such restrictions or sufficient information to establish a higher status is unknown.

PREDICTED HABITAT MODEL(S):

Summer Model:

Habitat Description: Worm-eating warblers occur regularly in large tracts of mature deciduous or mixed forest types typically encompassing oak-hickory, beech-maple, and eastern hemlock and rarely found in pine forests (BNA367). They prefer ravines and hillsides, especially those with a dense scrub understory of moutian laurel and rhododendron. In coastal Plain, this species breeds in bottomland oak habitats, with a dense understory and will nest on any available slope regardless of its area (BNA367, NatureServe 2005, Hamel 1992). Eggs are laid in May, will lay replacement clutches through June. Clutch size is 5-6 for first clutches; replacement clutch size is usually 4. Single-brooded. Incubation lasts 13 days, by females only. Young are brooded by the female and fed by both parents. Mean nestling duration is 8.5 days but young may fledge as early as day 5 if disturbed (Patton and Hanners, unpub. data). Nest is generally built under a shrub or exposed root, at the base of a sapling, or in the cavity of a bank (Griscom and Sprunt 1957) and hidden on the forest floor under dead leaves. It is constructed from old leaf skeletons and mycelia of hair fungi. (Ehrlich et al. 1988). Forages on the ground and on limbs (Potter et al. 1980) of low or intermediate heights (Dunn and Garrett 1997). Amy Silvano 21apr05

***Brood & Nest Notes directly from NatureServe (2005)

Ecosystem Classifiers: Mixed, Hardwood, Mesic, Cove & Montane Forests (Excluding upland hardwoods in ACP & Southern EGCP, however I did include Southern Loess Bluff Forest in Southern EGCP), Floodplain/Riparian (Only Brownwater Systems of the ACP & EGCP) Amy Silvano 21ap05

Contiguous Patch Minimum Size (hectares): 21

Selected Map Units:

Functional Group	Map Unit Name
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland - Hardwood Modifier
Forest/Woodland	Appalachian Hemlock-Hardwood Forest
Forest/Woodland	Atlantic Coastal Plain Dry and Dry-Mesic Oak Forest
Forest/Woodland	Atlantic Coastal Plain Mesic Hardwood and Mixed Forest
Forest/Woodland	Atlantic Coastal Plain Northern Mixed Oak-Heath Forest
Forest/Woodland	Central and Southern Appalachian Montane Oak Forest
Forest/Woodland	Central and Southern Appalachian Northern Hardwood Forest
Forest/Woodland	Central Appalachian Oak and Pine Forest
Forest/Woodland	East Gulf Coastal Plain Interior Shortleaf Pine-Oak Forest - Hardwood Modifier
Forest/Woodland	East Gulf Coastal Plain Interior Shortleaf Pine-Oak Forest - Mixed Modifier
Forest/Woodland	East Gulf Coastal Plain Limestone Forest
Forest/Woodland	East Gulf Coastal Plain Northern Dry Upland Hardwood Forest
Forest/Woodland	East Gulf Coastal Plain Northern Loess Bluff Forest
Forest/Woodland	East Gulf Coastal Plain Northern Loess Plain Oak-Hickory Upland - Hardwood Modifier
Forest/Woodland	East Gulf Coastal Plain Northern Mesic Hardwood Forest
Forest/Woodland	East Gulf Coastal Plain Southern Loess Bluff Forest
Forest/Woodland	East Gulf Coastal Plain Southern Mesic Slope Forest
Forest/Woodland	Northeastern Interior Dry Oak Forest - Mixed Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest-Hardwood Modifier
Forest/Woodland	Northern Atlantic Coastal Plain Dry Hardwood Forest
Forest/Woodland	South-Central Interior Mesophytic Forest
Forest/Woodland	Southern and Central Appalachian Cove Forest
Forest/Woodland	Southern and Central Appalachian Oak Forest
Forest/Woodland	Southern and Central Appalachian Oak Forest - Xeric
Forest/Woodland	Southern Appalachian Montane Pine Forest and Woodland
Forest/Woodland	Southern Coastal Plain Dry Upland Hardwood Forest
Forest/Woodland	Southern Interior Low Plateau Dry-Mesic Oak Forest
Forest/Woodland	Southern Interior Low Plateau Dry-Mesic Oak Forest - Evergreen Modifier
Forest/Woodland	Southern Piedmont Dry Oak-(Pine) Forest - Hardwood Modifier
Forest/Woodland	Southern Piedmont Dry Oak-(Pine) Forest - Mixed Modifier

Forest/Woodland	Southern Piedmont Dry Oak-Heath Forest - Hardwood Modifier
Forest/Woodland	Southern Piedmont Dry Oak-Heath Forest - Mixed Modifier
Forest/Woodland	Southern Piedmont Dry Oak-Heath Forest - Virginia/Pitch Pine Modifier
Forest/Woodland	Southern Piedmont Mesic Forest
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest - Hardwood Modifier
Wetlands	Atlantic Coastal Plain Brownwater Stream Floodplain Forest
Wetlands	Atlantic Coastal Plain Small Brownwater River Floodplain Forest
Wetlands	Central Appalachian Riparian - Forest Modifier
Wetlands	East Gulf Coastal Plain Large River Floodplain Forest - Forest Modifier
Wetlands	East Gulf Coastal Plain Small Stream and River Floodplain Forest
Wetlands	South-Central Interior Small Stream and Riparian
Wetlands	Southern Piedmont Small Floodplain and Riparian Forest

CITATIONS: Alsop FJ III. 1991. Birds of the Smokies. Gatlinburg: Great Smoky Mountains Natural History Association.

American Ornithologists' Union (AOU), Committee on Classification and Nomenclature. 1983. Check-list of North American Birds. Sixth Edition. American Ornithologists' Union, Allen Press, Inc., Lawrence, Kansas.

Banks, R. C., and M. R. Browning. 1995. Comments on the status of revived old names for some North American birds. *Auk* 112:633-648.

Bent, A.C. 1953. Life histories of North American wood warblers. U.S. Natl. Mus. Bull. 203. Washington, D.C.

Bushman, E.S., and G.D. Therres. 1988. Habitat management guidelines for forest interior breeding birds of coastal Maryland. Maryland Department of Natural Resources, Wildlife Tech. Publ. 88-1. 50 pp.

Dunn, J.L., and K.L. Garrett. 1997. A field guide to warblers of North America. Houghton Mifflin Company, Boston.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. The birder's handbook: a field guide to the natural history of North American birds. Simon and Schuster, Inc., New York. xxx + 785 pp.

Fussell, J.O. III. 1994. A birder's guide to coastal North Carolina. Chapel Hill and London: The University of North Carolina Press.

Gale, G.A. 1995. Habitat selection in the Worm-eating Warbler (*HELMITHEROS VERMIVORUS*): testing different spatial scales. University of Connecticut, Storrs, Connecticut. Ph.D. dissertation.

Greenberg, R. 1987. Seasonal foraging specialization in the worm-eating warbler. *Condor* 89:158-168.

Griscom, L and A. Sprunt Jr. 1957. The warblers of America. New York: Devin-Adair Company. 356 p.

Griscom, L., and A. Sprunt, Jr. 1979. The warblers of America. Doubleday and Co., Garden City, New York. 302 pp.

Hagan, J.M., III, and D.W. Johnston, editors. 1992. Ecology and conservation of neotropical migrant landbirds. Smithsonian Institution Press, Washington, D.C. xiii + 609 pp.

Hamel, P. B. 1992. The land manager's guide to the birds of the south. The Nature Conservancy, Chapel Hill, North Carolina. 367 pp + several appendices.

Hammerson, G. 2004. Worm-eating Warbler (*Helmitheros vermivorus*), Management Summary, Stewardship Overview, in NatureServe Explorer website: <http://www.natureserve.org/explorer/>

Hanners, L.E. and S.R. Patton. 1998. Worm-eating warbler (*Helmitheros vermivorus*). In A. Poole and F. Gill, eds., *The Birds of North America*, No. 367. The Academy of Natural Sciences, Philadelphia and The American Ornithologists' Union, Washington, D.C.

Harrison, C. 1978. A field guide to the nests, eggs and nestlings of North American birds. Collins, Cleveland, Ohio.

Harrison, H.H. 1979. A field guide to western birds' nests. Houghton Mifflin Company, Boston. 279 pp.

Harrison, H.H. 1984. Wood warblers' world. Simon and Schuster, New York. 335 pp.

Hunter, W. C. 1990. Handbook for nongame bird management and monitoring in the Southeast Region. U.S. Fish and Wildlife Service, Atlanta, Georgia. 198 pp.

Keast, A., and E. S. Morton. 1980. Migrant birds in the Neotropics; ecology, distribution, and conservation. Smithsonian Inst. Press, Washington, D.C.

Potter, E. F., J. F. Parnell, and R. P. Teulings. 1980. Birds of the Carolinas. Univ. North Carolina Press, Chapel Hill. 408 pp.

- Raffaele, H.A. 1983. A guide to the birds of Puerto Rico and the Virgin Islands. Fondo Educativo Interamericano, San Juan, Puerto Rico. 255 pp.
- Rappole, J.H., and D.W. Warner. 1980. Ecological aspects of migrant bird behavior in Veracruz, Mexico. Pages 353-393 in A. Keast and E.S. Morton, editors. Migrant birds in the neotropics:ecology, behavior, distribution, and conservation. Smithsonian Insti
- Rappole, J.H., E.S. Morton, T.E. Lovejoy III, and J.S. Ruos. 1983. Nearctic avian migrants in the Neotropics. U.S. Fish and Wildlife Service, Washington, DC. vi + 646 pp.
- Sauer, J.R., and S. Droege. 1992. Geographical patterns in population trends of neotropical migrants in North America. Pages 26-42 in J.M. Hagan III and D.W. Johnston, editors. Ecology and conservation of neotropical migrant landbirds. Smithsonian Institu
- Simpson MB Jr. 1992. Birds of the Blue Ridge Mountains. Chapel Hill and London: University of North Carolina Press.
- Stasz, J.L. 1996. Worm-eating Warbler (HELMITHEROS VERMIVORUS). Pages 352-353 in C.S. Robbins and E.A.T. Blom, editors. Atlas of the breeding birds of Maryland and the District of Columbia. University of Pittsburgh Press, Pittsburgh.
- Stiles, F.G., and A.F. Skutch. 1989. A guide to the birds of Costa Rica. Comstock Publ. Associates, Cornell University Press, Ithaca, New York. 511 pp.
- Terres, J.K. 1980. The Audubon Society encyclopedia of North American birds. Alfred A. Knopf, New York.
- Wenny, D.G., R.L. Clawson, J. Faaborg, and S.L. Sheriff. 1993. Population density, habitat selection, and minimum area requirements of three forest interior warblers in central Missouri. Condor 95:968-979.
- Wunderle, J.M., Jr., and R.B. Waide. 1993. Distribution of overwintering Nearctic migrants in the Bahamas and Greater Antilles. Condor 95:904-933.

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This data was compiled and/or developed
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