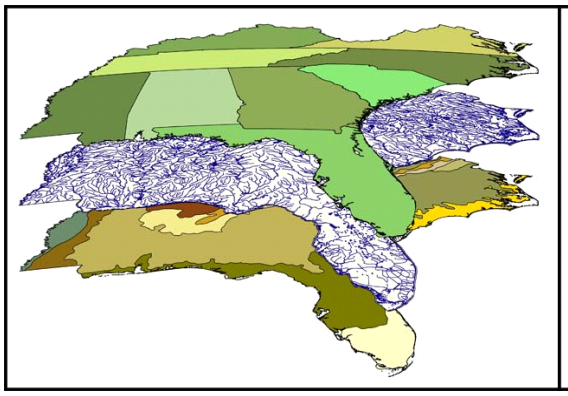


SOUTHEAST GAP ANALYSIS PROJECT

Species Modeling Report

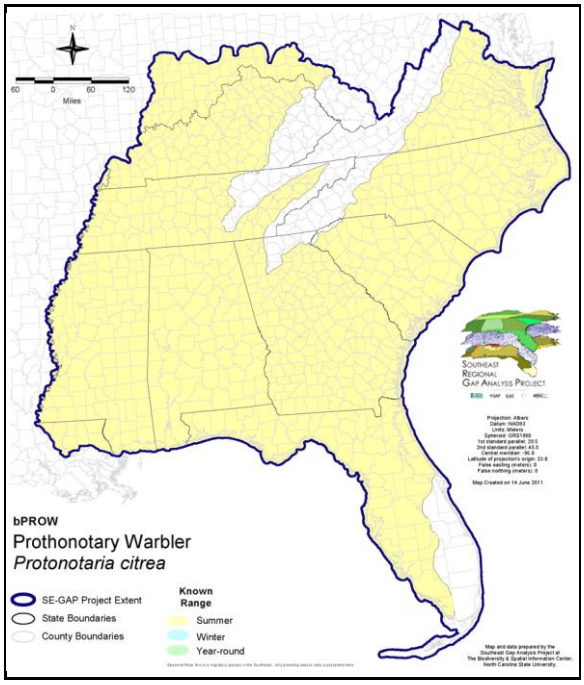
Prothonotary Warbler

Protonotaria citrea

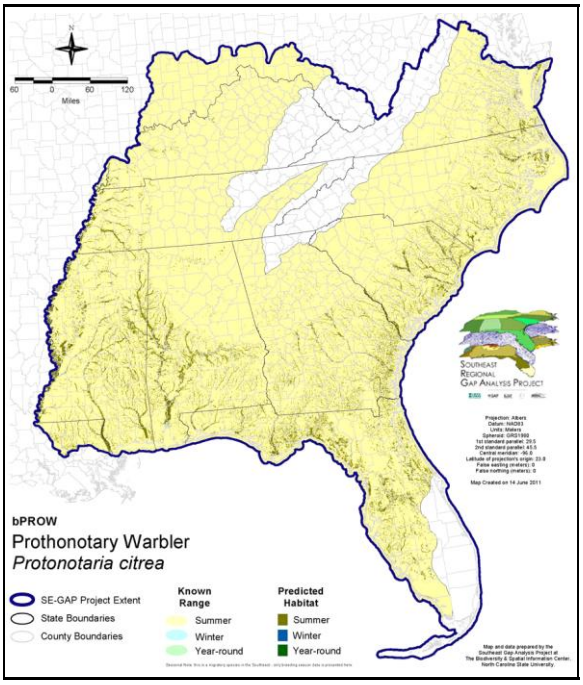
Taxa: Avian
Order: Passeriformes
Family: Parulidae

SE-GAP Spp Code: **bPROW**
ITIS Species Code: 178846
NatureServe Element Code: ABPBX07010

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_bPROW.pdf
Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_bPROW.pdf
GAP Online Tool Link: http://www.gapserve.ncsu.edu/segap/segap/index2.php?species=bPROW
Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/bPROW_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: KY (N), MI (SC), NJ (INC/S), NV (YES), NY (PB), OH (SC), RI (Concern), WI (SC/M), WI (SC/M), BC (8 (2005)), ON (END), QC (Non suivie)

NS Global Rank: G5

NS State Rank: AL (S5B), AR (S4B), AZ (S1M), CA (SNA), CO (SNA), CT (SNA), DC (S1B), DE (S4B), FL (SNRB), GA (S5), IA (S3B,S3N), IL (S5), IN (S4B), KS (S3B), KY (S5B), LA (S5B), MA (S1B,S2N), MD (S4B), ME (SNA), MI (S3), MN (SNRB), MO (S4), MS (S5B), MS (S5B), MT (SNA), NC (S5B), NC (S5B), NE (S2), NJ (S4B), NM (S4N), NV (SNA), NY (S2), OH (S3), OK (S4B), OR (SNA), PA (S2S3B), RI (S1B,S1N), SC (S3B), SD (SNA), TN (S4), TX (S3B), VA (S4), WA (SNA), WI (S3B), WI (S3B), WV (S2B), WY (SNA), BC (SNA), LB (SNA), NB (SNA), NF (SNA), NS (SNA), ON (S1B), 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	50,959.5	< 1	4,693.9	< 1	0.0	0	0.0	0
Status 2	110,459.3	2	24,616.3	< 1	0.0	0	1,594.3	< 1
Status 3	583.7	< 1	172,888.9	2	3,044.4	< 1	76,978.0	1
Status 4	21.1	< 1	< 0.1	< 1	0.0	0	0.0	0
Total	162,023.6	2	202,199.1	3	3,044.4	< 1	78,572.3	1

	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	10,106.5	< 1	38.8	< 1	744.7	< 1
Status 2	0.0	0	1,088.4	< 1	1,586.3	< 1	0.0	0
Status 3	13,608.5	< 1	2,520.5	< 1	0.0	0	800.4	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	13,608.5	< 1	13,715.3	< 1	1,625.1	< 1	1,545.0	< 1

	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	141.4	< 1	0.0	0	0.0	0
Status 2	0.0	0	609.8	< 1	222,199.8	3	13.9	< 1
Status 3	1,553.4	< 1	218,403.1	3	69,593.5	< 1	70,047.5	< 1
Status 4	0.0	0	< 0.1	< 1	6,199.9	< 1	3.4	< 1
Total	1,553.4	< 1	219,154.3	3	297,993.2	4	70,064.7	< 1

	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	1,526.9	< 1	0.0	0	0.0	0
Status 2	6,392.5	< 1	30,589.8	< 1	0.0	0	967.4	< 1
Status 3	0.0	0	6,135.2	< 1	3,543.7	< 1	44,051.5	< 1
Status 4	0.0	0	0.0	0	750.5	< 1	0.0	0
Total	6,392.5	< 1	38,251.9	< 1	4,294.2	< 1	45,018.9	< 1

	Private Land - No Res.		Water		Overall Total	
	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	68,211.5	< 1
Status 2	0.0	0	0.0	0	400,117.8	5
Status 3	399.5	< 1	0.0	0	684,151.6	12
Status 4	5,952,953.2	81	27,330.8	< 1	5,993,437.9	82
Total	5,953,352.7	81	27,330.8	< 1	7,145,918.7	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: Found in flat topographical areas (Nicholson 1997) with moist to wet woods (Fussell 1994), in swamps (especially cypress) and along heavily wooded streams (Potter et al. 1980). Water is almost always present in the form of pools, ponds, lakes, or other slow-moving bodies (Dunn and Garrett 1997). They prefer the presence of cypress however, other common overstory habitat includes willows, tupelo, gums, elms, and maples (Petit 1999, Turcott & Watts 1999). Builds nest inside a cavity of a tree, inside a stump, in the hollowed top of a broken tree (Pearson 1959), or in a cypress knee (Nicholson 1997). Will do some excavation in rotten stumps (Ehrlich et al. 1988). Often uses old woodpecker holes, particularly those of the Downy Woodpecker (Griscom and Sprunt 1957). Will also use nest boxes (Ehrlich et al. 1988) and bird houses, or occasionally nest in sheltered places such as under bridges or in boat houses (Griscom and Sprunt 1957). The nest cavity is often located over water (Ehrlich et al. 1988), but may be far from it (Dunn and Garrett 1997), although those far from water may be in easily flooded areas (Griscom and Sprunt 1957). The cavity is usually less than 6 feet from the ground but may be over 25 feet (Dunn and Garrett 1997). Gleans the foliage of reeds, bushes, limbs overhanging streams (Pearson 1959), rotten logs, and around the edges of water (Dunn and Garrett 1997). Amy Silvano 16may05

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Ecosystem Classifiers: Brackish Tidal marsh (Tidal Wooded Swamps only), Hardwood dominated Flatwoods, Swamps, Depressional (Swamp only or treed), Floodplain/Riparian (excluding herbaceous modifiers). Amy Silvano 16may05

Customized Model: Nesting generally occurs in forest tracts of at least 70-100 ha (Robbins 1979, 1980, Whitcomb et al. 1981 in NatureServe 2005, Petit 1999). Also, permanently uncut buffer zones should be created on both sides of streams to provide thick and shady vegetation along stream banks; these buffer zones are recommended to be at least 90 m wide (Bushman and Therres 1988 in NatureServe 2005). Petit (1999) identified minimum waterway borders of wooded areas <30m wide. I went with liberal with the hydrobuffer so as not to be too restrictive. Do not restrict wet vegetation with buffer. Flow accumulation- Nest usually placed over or near large bodies of standing or slow-moving water (Petit 1999). Amy Silvano 16may05 Nest site almost always over or within 5 m of standing water or in low-lying, easily flooded areas Petit 1999).

I altered this model to be less restrictive. Flowing and open water interior buffers were changed to 0m from 30m. Water was changed from a primary map unit to an auxiliary map unit with a 30m buffer. However, the water used must be derived from the water buffer layers and NOT the water in the land cover since land cover does not have streams. Also, I removed the following previously checked landforms: Dry Flats, Moist Flats, Wet Flats, and Slope Bottoms. I reduced the patch size from 100 to 70 hectares. MJR 19 March 2008.

Hydrography Mask:

Slow Current Only

Utilizes flowing water features with buffer of 120m from selected water features.

Utilizes open water features with buffer of 120m from selected water features.

Utilizes wet vegetation features with buffer of unlimited into selected vegetation features.

Contiguous Patch Vegetation Size (Hectares): 70

Selected Map Units:

Functional Group	Map Unit Name
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Northern Tidal Wooded Swamp
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Southern Tidal Wooded Swamp
Brackish Tidal Marsh & Wetland	East Gulf Coastal Plain Tidal Wooded Swamp
Wetlands	Atlantic Coastal Plain Blackwater Stream Floodplain Forest - Forest Modifier
Wetlands	Atlantic Coastal Plain Blackwater Stream Floodplain Forest - Herbaceous Modifier
Wetlands	Atlantic Coastal Plain Brownwater Stream Floodplain Forest
Wetlands	Atlantic Coastal Plain Clay-Based Carolina Bay Forested Wetland
Wetlands	Atlantic Coastal Plain Large Natural Lakeshore
Wetlands	Atlantic Coastal Plain Nonriverine Swamp and Wet Hardwood Forest - Taxodium/Nyssa Modifier
Wetlands	Atlantic Coastal Plain Nonriverine Swamp and Wet Hardwood Forest - Oak Dominated Modifier
Wetlands	Atlantic Coastal Plain Northern Basin Peat Swamp

Wetlands	Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest
Wetlands	Atlantic Coastal Plain Small Blackwater River Floodplain Forest
Wetlands	Atlantic Coastal Plain Small Brownwater River Floodplain Forest
Wetlands	Atlantic Coastal Plain Streamhead Seepage Swamp, Pocosin, and Baygall
Wetlands	Central Appalachian Floodplain - Forest Modifier
Wetlands	Central Appalachian Floodplain - Herbaceous Modifier
Wetlands	Central Appalachian Riparian - Forest Modifier
Wetlands	Central Appalachian Riparian - Herbaceous Modifier
Wetlands	Central Florida Herbaceous Pondshore
Wetlands	East Gulf Coastal Plain Large River Floodplain Forest - Forest Modifier
Wetlands	East Gulf Coastal Plain Large River Floodplain Forest - Herbaceous Modifier
Wetlands	East Gulf Coastal Plain Near-Coast Pine Flatwoods - Offsite Hardwood Modifier
Wetlands	East Gulf Coastal Plain Northern Depression Pondshore
Wetlands	East Gulf Coastal Plain Northern Seepage Swamp
Wetlands	East Gulf Coastal Plain Small Stream and River Floodplain Forest
Wetlands	East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods
Wetlands	Lower Mississippi River Bottomland and Floodplain Forest
Wetlands	Lower Mississippi River Bottomland Depressions - Forest Modifier
Wetlands	Lower Mississippi River Bottomland Depressions - Herbaceous Modifier
Wetlands	Mississippi River Low Floodplain (Bottomland) Forest
Wetlands	Mississippi River Riparian Forest
Wetlands	North-Central Appalachian Acidic Swamp
Wetlands	North-Central Interior and Appalachian Rich Swamp
Wetlands	South Florida Pond-Apple/Popash Slough
Wetlands	South Florida Willow Head
Wetlands	South-Central Interior Large Floodplain - Forest Modifier
Wetlands	South-Central Interior Large Floodplain - Herbaceous Modifier
Wetlands	South-Central Interior Small Stream and Riparian
Wetlands	South-Central Interior/Upper Coastal Plain Wet Flatwoods
Wetlands	Southern Coastal Plain Blackwater River Floodplain Forest
Wetlands	Southern Coastal Plain Hydric Hammock
Wetlands	Southern Coastal Plain Nonriverine Basin Swamp
Wetlands	Southern Coastal Plain Nonriverine Cypress Dome
Wetlands	Southern Coastal Plain Seepage Swamp and Baygall
Wetlands	Southern Coastal Plain Spring-run Stream Aquatic Vegetation
Wetlands	Southern Piedmont Large Floodplain Forest - Forest Modifier
Wetlands	Southern Piedmont Large Floodplain Forest - Herbaceous Modifier
Wetlands	Southern Piedmont Small Floodplain and Riparian Forest
Wetlands	Southern Piedmont/Ridge and Valley Upland Depression Swamp

Selected Secondary Map Units within 30m of Primary Map Units:

Functional Group	Map Unit Name
Water	Open Water (Fresh)

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Compiled: 15 September 2011

This data was compiled and/or developed by the Southeast GAP Analysis Project at The Biodiversity and Spatial Information Center, North Carolina State University.