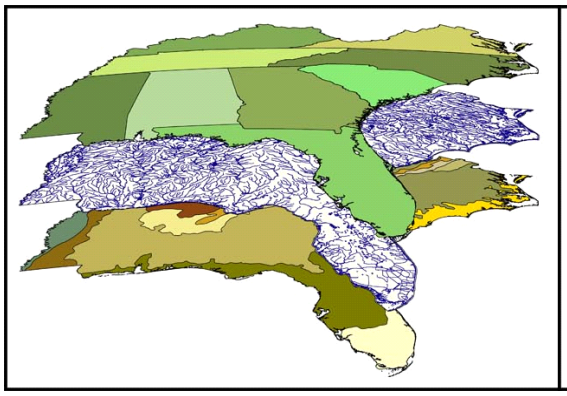


SOUTHEAST GAP ANALYSIS PROJECT

USGS science for a changing world | gap | BaSIC Biodiversity and Spatial Information Center | NARSAL

Species Modeling Report

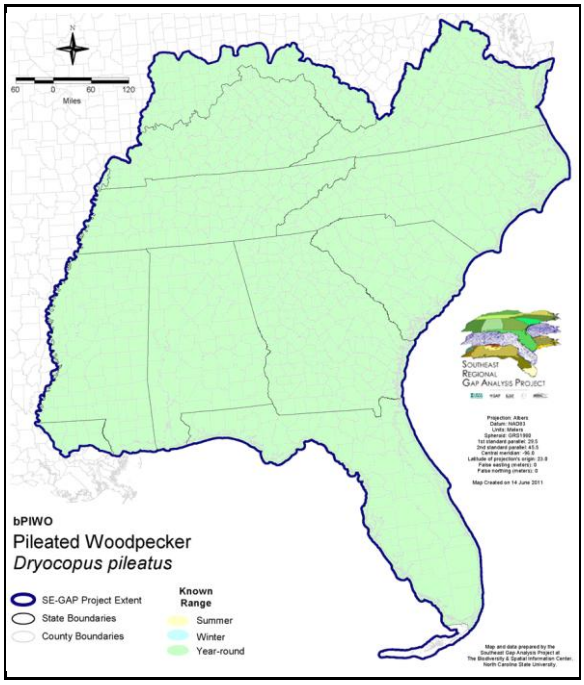
Pileated Woodpecker

Dryocopus pileatus

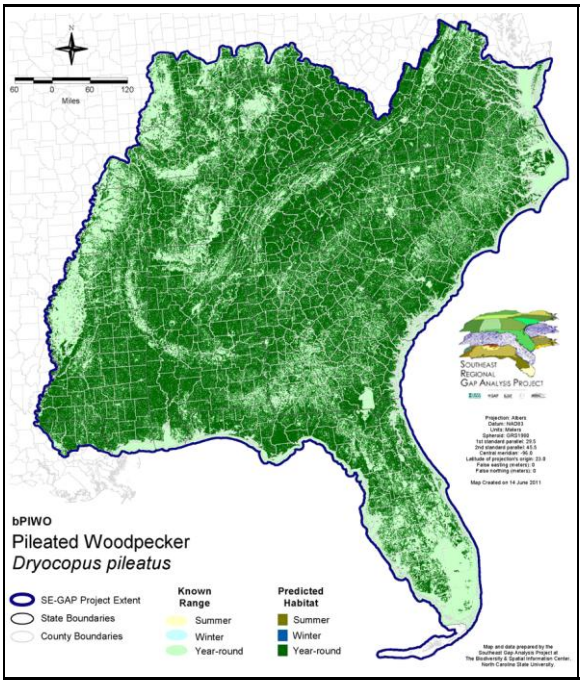
Taxa: Avian
Order: Piciformes
Family: Picidae

SE-GAP Spp Code: **bPIWO**
ITIS Species Code: 178166
NatureServe Element Code: ABNYF12020

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_bPIWO.pdf
Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_bPIWO.pdf
GAP Online Tool Link: http://www.gapserve.ncsu.edu/segap/segap/index2.php?species=bPIWO
Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/bPIWO_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: ID (P), KY (N), NJ (S/S), NY (PB), OR (SV), RI (Concern), UT (None), WA (C), BC (4 (2005)), QC (Non suivie)

NS Global Rank: G5

NS State Rank: AK (SNA), AL (S5), AR (S4), CA (S3), CT (S5), DC (S3), DE (S3), FL (SNR), GA (S4), IA (S3B), ID (S4), IL (S5), IN (S4), KS (S3), KY (S5), LA (S5), MA (S4), MD (S5), ME (S5), MI (S5), MN (SNR), MO (SNR), MS (S5), MT (S4), NC (S4), ND (S3), NE (S1), NH (S5), NJ (S4B,S4N), NM (SNA), NV (S1), NY (S5), OH (S5), OK (S3), OR (S4), PA (S5), RI (S1B,S1N), SC (SNR), SD (S1), TN (S4), TX (S4B), UT (SNA), VA (S5), VT (S5B,S5N), WA (S4), WI (S3B), WI (S3B), WV (S5B,S5N), WY (SNA), AB (S4), BC (S5), MB (S5), MB (S5), NB (S5), NS (S5), NT (SNR), ON (S5), PE (S2), QC (S5B), SK (S4B,S3N), YT (S2B)

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	112,998.1	< 1	39,110.6	< 1	0.0	0	0.0	0
Status 2	230,708.1	< 1	432,582.4	< 1	0.0	0	5,884.8	< 1
Status 3	3,756.2	< 1	3,055,271.2	4	64,699.9	< 1	754,413.2	< 1
Status 4	106.4	< 1	< 0.1	< 1	0.0	0	0.0	0
Total	347,568.8	< 1	3,526,964.3	5	64,699.9	< 1	760,298.0	< 1

	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	303,629.1	< 1	0.0	0	9,501.4	< 1
Status 2	0.0	0	15,237.2	< 1	3,754.6	< 1	0.0	0
Status 3	89,646.4	< 1	257,608.1	< 1	0.0	0	5,165.2	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	89,646.4	< 1	576,474.4	< 1	3,754.6	< 1	14,666.6	< 1

	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	1,698.4	< 1	78.3	< 1	0.0	0
Status 2	0.0	0	20,617.0	< 1	831,365.6	1	1,470.9	< 1
Status 3	27,735.2	< 1	630,714.3	< 1	264,099.5	< 1	431,469.3	< 1
Status 4	0.0	0	< 0.1	< 1	147,282.7	< 1	49.0	< 1
Total	27,735.2	< 1	653,029.8	< 1	1,242,826.0	2	432,989.1	< 1

	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	15,984.5	< 1	0.0	0	0.0	0
Status 2	11,600.7	< 1	101,344.1	< 1	6.5	< 1	3,596.0	< 1
Status 3	0.0	0	25,819.8	< 1	30,806.9	< 1	123,005.9	< 1
Status 4	0.0	0	2.1	< 1	4,101.2	< 1	< 0.1	< 1
Total	11,600.7	< 1	143,150.6	< 1	34,914.6	< 1	126,602.0	< 1

	Private Land - No Res.		Water		Overall Total	
	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	483,000.4	< 1
Status 2	0.0	0	0.0	0	1,658,167.9	2
Status 3	909.1	< 1	< 0.1	< 1	5,765,120.4	11
Status 4	66,071,123.2	85	35,539.3	< 1	66,405,380.3	86
Total	66,072,032.3	85	35,539.4	< 1	74,311,669.0	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):

Year-round Model:

Habitat Description: Breed primarily in mature bottomland hardwoods and has adapted to use mature second growth timberlands (Anderson et al 1981). Prefers old-growth timber with mixed deciduous & coniferous trees (B84BUC01AL). Found in dense deciduous or mixed forest, open woodland, second growth, and (locally) parks and wooded residential areas of towns. Will tolerate fragmented forests as long as some large trees are present (Kaufman 1996). Pileated woodpeckers breed throughout Georgia in mature coniferous, deciduous or mixed forest, from swampy areas to uplands. They require a large number of dead trees, and are more common on larger tracts of wooded land (GA). Pileateds are uncommon in the piedmont (Potter et al 1980), uncommon to locally common in the mountains (Simpson 1992), locally common in the coastal plain (Fussell 1994), and occasional on the barrier islands (Fussell and Lyons 1990). In Florida breeding habitats are pine flatwoods, mixed hardwood swamps, live oak hammocks, cypress swamps, and cabbage palm hammocks (Layne et al. 1977), and mangroves (Robertson and Kushlan 1984). In Missouri, abundance increased with area covered with bottomland forest, density of trees at least 30 cm dbh, and density of snags at least 54 cm dbh (Renken and Wiggers 1993). In West Virginia found in all forest types, at all elevations, but less common in spruce-northern hardwoods forest and most common in mixed hardwood forest (Hall 1983).
Dense deciduous (favored in southeast), coniferous (favored in north, northwest and west), or mixed forest, open woodland, second growth, and (locally) parks and wooded residential areas of towns. Prefers woods with a tall closed canopy and a high basal area. Most often in areas of extensive forest or minimal isolation from extensive forest (NATURE SERVE). Prefer forest vegetation and deciduous riparian habitats for foraging and other diurnal activities older than 40 years. Nesting and roosting occurred only in forest stands older than 70 years (Mellen et al. 1992).

Forages by gleaning bark (Ehrlich et al. 1988).

Pairs share a territory year round (Bull and Jackson 1995) and uses a minimum of 4 cavities per year (only one for raising brood) (NATURE SERVE). Nests are in cavities excavated by both sexes usually in dead stubs in shaded places; cavity entrance averages about 14 m above ground (see photos and descriptions in Harrison 1975, 1979). Usually digs a new hole for each year's brood, but the same cavity may be used for several years (NATURE SERVE). Most studies report nests 5-17 m above ground in wood softened by fungal rot, in trees usually 100-180 years old, over 51 cm DBH, 12-21 m tall, and often near permanent water (Bushman and Therres 1988).

In Oregon, minimum convex polygon home range mean is 478 ha, with a range of 267 - 1056 ha (Mellen et al. 1992). Foraging territory in Georgia, reported a density of 1 pair per 70 ha (Kilham 1976). Home range ranges in size from 43-70 ha in southern deciduous-coniferous forests (Cite?). In Missouri, home ranges were 52.9 to 160.1 ha, using 95% HM estimator (Renken and Wiggers 1989). Foraging habitat within the home ranges averaged 310 ha, whereas the amount of nesting and roosting habitat averaged 225 ha. Wintering home ranges in Georgia were 70 ha, and spring and summer territories in Missouri were 53-160 ha (Mellen et al. 1992).

Quoted directly from existing state habitat notes - K. Cook, 17Feb05

Elevation Mask: < 1524m

Contiguous Patch Minimum Size (hectares): 165

Selected Map Units:

Functional Group	Map Unit Name
Anthropogenic	Deciduous Plantations
Anthropogenic	Evergreen Plantations
Forest/Woodland	Alabama Ketona Glade and Woodland
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland - Hardwood Modifier
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland - Pine Modifier
Forest/Woodland	Appalachian Hemlock-Hardwood Forest
Forest/Woodland	Appalachian Serpentine Woodland
Forest/Woodland	Appalachian Shale Barrens

Forest/Woodland	Atlantic Coastal Plain Dry and Dry-Mesic Oak Forest
Forest/Woodland	Atlantic Coastal Plain Fall-Line Sandhills Longleaf Pine Woodland - Loblolly Modifier
Forest/Woodland	Atlantic Coastal Plain Fall-line Sandhills Longleaf Pine Woodland - Offsite Hardwood Modifier
Forest/Woodland	Atlantic Coastal Plain Fall-line Sandhills Longleaf Pine Woodland - Open Understory Modifier
Forest/Woodland	Atlantic Coastal Plain Fall-line Sandhills Longleaf Pine Woodland - Scrub/Shrub Understory Modifier
Forest/Woodland	Atlantic Coastal Plain Mesic Hardwood and Mixed Forest
Forest/Woodland	Atlantic Coastal Plain Northern Mixed Oak-Heath Forest
Forest/Woodland	Atlantic Coastal Plain Upland Longleaf Pine Woodland
Forest/Woodland	Central and Southern Appalachian Montane Oak Forest
Forest/Woodland	Central and Southern Appalachian Northern Hardwood Forest
Forest/Woodland	Central and Southern Appalachian Spruce-Fir Forest
Forest/Woodland	Central Appalachian Alkaline Glade and Woodland
Forest/Woodland	Central Appalachian Oak and Pine Forest
Forest/Woodland	Central Appalachian Pine-Oak Rocky Woodland
Forest/Woodland	Central Interior Highlands Calcareous Glade and Barrens
Forest/Woodland	Central Interior Highlands Dry Acidic Glade and Barrens
Forest/Woodland	Cumberland Sandstone Glade and Barrens
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 Interior Shortleaf Pine-Oak Forest - Pine Modifier
Forest/Woodland	East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland - Loblolly Modifier
Forest/Woodland	East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland - Offsite Hardwood Modifier
Forest/Woodland	East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland - Open Understory Modifier
Forest/Woodland	East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland - Scrub/Shrub 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 Dry Upland Hardwood Forest - Offsite Pine Modifier
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	Florida Longleaf Pine Sandhill - Open Understory Modifier
Forest/Woodland	Florida Longleaf Pine Sandhill - Scrub/Shrub Understory Modifier
Forest/Woodland	Florida Peninsula Inland Scrub
Forest/Woodland	Nashville Basin Limestone Glade
Forest/Woodland	Northeastern Interior Dry Oak Forest - Mixed Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest - Virginia/Pitch Pine Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest-Hardwood Modifier
Forest/Woodland	Northern Atlantic Coastal Plain Dry Hardwood Forest
Forest/Woodland	Ridge and Valley Calcareous Valley Bottom Glade and Woodland
Forest/Woodland	South Florida Pine Rockland
Forest/Woodland	South-Central Interior Mesophytic Forest
Forest/Woodland	Southeastern Interior Longleaf Pine Woodland
Forest/Woodland	Southern and Central Appalachian Cove Forest
Forest/Woodland	Southern and Central Appalachian Mafic Glade and Barrens
Forest/Woodland	Southern and Central Appalachian Oak Forest
Forest/Woodland	Southern and Central Appalachian Oak Forest - Xeric
Forest/Woodland	Southern Appalachian Low Mountain Pine Forest
Forest/Woodland	Southern Appalachian Montane Pine Forest and Woodland
Forest/Woodland	Southern Coastal Plain Dry Upland Hardwood Forest
Forest/Woodland	Southern Coastal Plain Oak Dome and Hammock
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 - Loblolly Pine 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 Glade and Barrens
Forest/Woodland	Southern Piedmont Mafic Hardpan Woodland
Forest/Woodland	Southern Piedmont Mesic Forest
Forest/Woodland	Southern Piedmont Northern Triassic Basin Dry Forest
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest - Hardwood Modifier
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest - Pine Modifier
Wetlands	Atlantic Coastal Plain Blackwater Stream Floodplain Forest - Forest Modifier
Wetlands	Atlantic Coastal Plain Brownwater Stream Floodplain Forest
Wetlands	Atlantic Coastal Plain Clay-Based Carolina Bay Forested Wetland
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 Northern Wet Longleaf Pine Savanna and Flatwoods
Wetlands	Atlantic Coastal Plain Peatland Pocosin
Wetlands	Atlantic Coastal Plain Sandhill Seep
Wetlands	Atlantic Coastal Plain Small Blackwater River Floodplain Forest
Wetlands	Atlantic Coastal Plain Small Brownwater River Floodplain Forest
Wetlands	Atlantic Coastal Plain Southern Wet Pine Savanna and Flatwoods
Wetlands	Atlantic Coastal Plain Streamhead Seepage Swamp, Pocosin, and Baygall
Wetlands	Atlantic Coastal Plain Xeric River Dune
Wetlands	Central Appalachian Floodplain - Forest Modifier
Wetlands	Central Appalachian Riparian - Forest Modifier
Wetlands	Central Florida Pine Flatwoods
Wetlands	East Gulf Coastal Plain Jackson Plain Dry Flatwoods - Open Understory Modifier
Wetlands	East Gulf Coastal Plain Jackson Plain Dry Flatwoods - Scrub/Shrub Understory Modifier
Wetlands	East Gulf Coastal Plain Large River Floodplain Forest - Forest Modifier
Wetlands	East Gulf Coastal Plain Near-Coast Pine Flatwoods - Offsite Hardwood Modifier
Wetlands	East Gulf Coastal Plain Near-Coast Pine Flatwoods - Open Understory Modifier
Wetlands	East Gulf Coastal Plain Near-Coast Pine Flatwoods - Scrub/Shrub Understory Modifier
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	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 Cypress Dome
Wetlands	South Florida Dwarf Cypress Savanna
Wetlands	South Florida Hardwood Hammock
Wetlands	South Florida Pine Flatwoods
Wetlands	South-Central Interior Large Floodplain - Forest Modifier
Wetlands	South-Central Interior Small Stream and Riparian
Wetlands	South-Central Interior/Upper Coastal Plain Wet Flatwoods
Wetlands	Southern Appalachian Seepage Wetland
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 Piedmont Large Floodplain Forest - Forest Modifier
Wetlands	Southern Piedmont Seepage Wetland
Wetlands	Southern Piedmont Small Floodplain and Riparian Forest
Wetlands	Southern Piedmont/Ridge and Valley Upland Depression Swamp
Wetlands	Western Highland Rim Seepage Fen

Selected Secondary Map Units within 60m of Primary Map Units:

Functional Group	Map Unit Name
Anthropogenic	Developed Open Space
Anthropogenic	Low Intensity Developed
Anthropogenic	Medium Intensity Developed
Anthropogenic	High Intensity Developed
Anthropogenic	Successional Shrub/Scrub (Clear Cut)
Anthropogenic	Successional Shrub/Scrub (Utility Swath)
Anthropogenic	Successional Shrub/Scrub (Other)
Anthropogenic	Successional Grassland/Herbaceous
Anthropogenic	Successional Grassland/Herbaceous (Other)
Anthropogenic	Successional Grassland/Herbaceous (Utility Swath)
Anthropogenic	Pasture/Hay

CITATIONS:

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.

Anderson, S.H., C.S. Robbins, and J.R. Partelow. 1981. Habitat Management for Birds of Alabama. Technical Report Number FWS/OBS-81/39.3, Eastern Energy and Land Use Team, US Fish and Wildlife Service, Laurel, MD

Bent, A.C. 1939. Life histories of North American woodpeckers, U.S. Nat'l. Mus. Bull. 174. Washington, D.C.

Bull, E. L. 1987. Capture techniques for owls. Pages 291-293 in Nero, R. W., et al., eds. Biology and conservation of northern forest owls. USDA Forest Service, Gen. Tech. Rep. RM-142.

Bull, E.L., and J.A. Jackson. 1995. Pileated Woodpecker (DRYOCOPUS PILEATUS). In A. Poole and F. Gill, editors, The Birds of North America, No. 148. Academy of Natural Sciences, Philadelphia, and American Ornithologists' Union, Washington, DC. 24 pp.

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.

Conner, R.N., R.G. Hooper, H.S. Crawford, and H.S. Mosby. 1975. Woodpecker nesting habitat in cut and uncut woodlands in Virginia. Journal of Wildlife Management 39:144-150.

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 Shuster, Inc., New York. xxx + 785 pp.

Fussell, J. III and M. Lyons. 1990. Birds of the Outer Banks [pamphlet]. Eastern National Parks and Monument Association Coastal Wildlife Refuge Society.

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

Hall, G.A. 1983. West Virginia birds:distribution and ecology. Spec. Publ. Carnegie Mus. Nat. Hist. No. 7, Pittsburgh. 180 pp.

Harestad, A. S., and D. G. Keisker. 1989. Nest tree use by primary cavity-nesting birds in south central British Columbia. Can. J. Zool. 67:1067-1073.

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

Harrison, H.H. 1975. A field guide to bird's nests in the U.S. east of the Mississippi River. Houghton Mifflin Company, Boston, Massachusetts. 257 p.

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

Kaufman K. 1996. Lives of North American Birds. Boston, New York: Houghton Mifflin Company.

Kilham, L. 1983. Life history studies of woodpeckers of eastern North America. Nuttall Ornithol. Club Pub. No. 20. vii + 240 pp.

Kilham, L.. 1976. Winter foraging and associated behavior of Pileated Woodpeckers in Georgia and Florida. Auk 93: 15–24.

Layne, J.N.; Stallcup, J.A.; Woolfenden, G.E.; McCauley, M.N.; Worley, D.J. 1977. Fish and Wildlife Inventory of the Seven-County Region Included in the Central Florida Phosphate Industry Area-Wide Environmental Impact Study. Volumes I and II. Also avai

McClelland, B.R. 1979. The pileated woodpecker in forests of the northern Rocky Mountains. Pages 283-299 in J.G. Dickson, R.N. Conner, R.R. Fleet, J.A. Jackson, and J.C. Kroll, editors. The role of insectivorous birds in forest ecosystems. Academic Press,

Mellen, T.K., E.C. Meslow, and R.W. Mannan. 1992. Summer time home range and habitat use of pileated woodpeckers in western Oregon. Journal of Wildlife Management 56:96-103.

Mitchell, W.A. 1988. Songbird nest boxes. Section 5.1.8, U.S. Army Corps of Engineers, Wildlife Resources Management Manual. Tech. Rep. EL-88-19. Waterways Experiment Station, Vicksburg, Mississippi. 48 pp.

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

Renken, R. B., and E. P. Wiggers. 1989. Forest characteristics related to pileated woodpecker territory size in Missouri. Condor 91:642-652.

Renken, R. B., and E. P. Wiggers. 1993. Habitat characteristics related to pileated woodpecker densities in Missouri. Wilson Bull. 105:77-83.

Robertson, W. B. Jr. and J. A. Kushlan. 1984. The Southern Florida Avifauna. Environments of South Florida Prsent and Past II. P. J. Gleason ed. Coral Gables, Florida: Miami Geological Society; pp. 219-257. 551 pages.

Simpson MB Jr. 1992. Birds of the Blue Ridge Mountains. Chapel Hill and London: University of North Carolina Press.

Terres, J.K. 1980. The Audubon Society encyclopedia of North American birds. Alfred A. Knopf, New York.

For more information:: SE-GAP Analysis Project / BaSIC
127 David Clark Labs
Dept. of Biology, NCSU
Raleigh, NC 27695-7617
(919) 513-2853
www.basic.ncsu.edu/segap

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.