







Species Modeling Report

Red-tailed Hawk

Buteo jamaicensis

Taxa: Avian

Order: Falconiformes

Family: Accipitridae

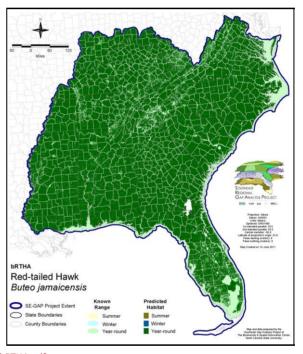
SE-GAP Spp Code: **bRTHA** ITIS Species Code: 175350

NatureServe Element Code: ABNKC19110

KNOWN RANGE:

Red-tailed Hawk Buteo jamaicensis

PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE Range bRTHA.pdf Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_bRTHA.pdf

http://www.gapserve.ncsu.edu/segap/segap/index2.php?species=bRTHA

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/bRTHA_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: ID (P), KY (N), NJ (INC/INC), NV (YES), NY (PB), RI (Not Listed), UT (None), BC (4 (2005)), ON (NAR), QC

(Non suivie)

GAP Online Tool Link:

NS Global Rank: G5

NS State Rank: AK (S4S5B), AL (S4B,S5N), AR (S5), AZ (S5), CA (S5), CO (S5B,S5N), CT (S5), DC (S3N), DE (S5), FL (SNR), GA (S5), IA (S5B,S5N), ID (S5B,S5N), IL (S5), IN (S4), KS (S5), KY (S4S5B,S4S5N), LA (S4B,S5N), MA (S5B,S5N), MD (S5B,S5N), ME (S3N,S5B), MI (S5), MN (SNRB,SNRN), MO (S5), MS (S5B), MS (S5B), MT (S5B), MT (S5B), NC (S5B,S5N), ND (SNRB,SNRN), NE (S4), NH (S5), NJ (S5B,S5N), NM (S5B,S5N), NV (S5), NY (S5), OH (S5), OK (S5), OR (S5), PA (S5B,S5N), RI (S5B,S5N), SC (SNRB,SNRN), SD (S5B), SD (S5B), TN (S5), TX (S5B), UT (S4S5), VA (S4), VT (S5B,S5N), WA (S5B,S5N), WI (S4N,S5B), WV (S5B,S5N), WY (S5B), WY (S5B), AB (S5), BC (S5B), LB (S3S4B), MB (S5B), MB (S5B), NB (S4B), NF (SNA), NS (S5B), NT (SNRB), NU (SNR), ON (S5), PE (S2B), QC (S5B), SK (S5B,S5M,S1N), YT (S4B)

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SUMMARY OF PREDICTED HABITAT BY MANAGMENT AND GAP PROTECTION STATUS:

	l	JS FWS	US Forest Service		Tenn. Valley Author.		US DOD/ACOE	
	ha	%	ha	%	ha	%	ha	%
Status 1	114,778.8	< 1	26,897.0	< 1	0.0	0	0.0	0
Status 2	254,221.8	< 1	287,513.4	< 1	0.0	0	6,060.0	< 1
Status 3	3,712.8	< 1	2,390,165.0	2	84,386.2	< 1	872,913.2	< 1
Status 4	112.1	< 1	< 0.1	< 1	0.0	0	327.3	< 1
Total	372,825.5	< 1	2,704,575.4	3	84,386.2	< 1	879,300.5	< 1
	US Dept. of	US Dept. of Energy		US Nat. Park Service		NOAA	Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	176,534.9	< 1	48.5	< 1	11,729.3	< 1
Status 2	0.0	0	15,957.1	< 1	11,337.8	< 1	81.5	< 1
Status 3	87,932.0	< 1	261,847.6	< 1	0.0	0	8,679.2	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	87,932.0	< 1	454,339.6	< 1	11,386.3	< 1	20,490.0	< 1
	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	1,620.0	< 1	81.6	< 1	0.0	0
Status 2	0.0	0	12,393.8	< 1	810,305.7	< 1	1,046.0	< 1
Status 3	23,940.0	< 1	724,474.0	< 1	262,439.9	< 1	451,599.2	< 1
Status 4	0.0	0	< 0.1	< 1	141,246.6	< 1	49.1	< 1
Total	23,940.0	< 1	738,487.9	< 1	1,214,073.9	1	452,694.2	< 1
	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	13,085.7	< 1	0.0	0	0.0	0
Status 2	14,189.9	< 1	88,207.5	< 1	7.0	< 1	3,845.4	< 1
Status 3	0.0	0	26,770.3	< 1	40,457.8	< 1	171,122.9	< 1
Status 4	0.0	0	1.0	< 1	5,758.4	< 1	< 0.1	< 1
Total	14,189.9	< 1	128,064.5	< 1	46,223.2	< 1	174,968.5	<1
	Private Land - I	No Res.		Water		,	Overa	ıll Total
	ha	%	ha	%			ha	rotai %
Status 1	0.0	0	0.0	0			344,775.8	< 1
Status 2	0.0	0	0.0	0			1,505,166.9	1
Status 3	534.2	< 1	1.1	< 1			5,410,975.4	8
Status 4	91,496,488.2	90	69,336.4	<1			91,854,453.9	90
Total	91,497,022.4	90	69,337.4	<1			99,115,372.0	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.

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PREDICTED HABITAT MODEL(S):

Year-round Model:

Habitat Description: LIKELY MORE DATA EXISTS ON SPATIAL REQUIREMENTS

Red-tailed hawks breed in mature woodlands, often extensive forests, woodlots, groves, or a clump of trees on farmland (Hamel 1992, Palmer 1988). However, AOU (1983) reports that they rarely use dense forest. Open habitats, such as prairies or plains with some high perches are preferred for foraging areas (Kaufman 1996), although red-tails forage in a mixture of forests and open country (Hamel 1992). They nest in deciduous or mixed forests, primarily uplands (Hamel 1992), in areas with large trees, forest edges, and an open canopy structure (Santana et al. 1986). Red tails forage in open areas with scattered, elevated perches including scrub, plains, pastures, agricultural fields, urban parks, and broken woodlands (Preston and Beane 1992)

Nests are usually in tall trees, those taller than the surrounding forest and often on a slope or hillside (Palmer 1988). An open canopy is favored for both easy aerial access and for a commanding view (Palmer 1988). Generally the nest is placed in the crotch, 20 to 90 feet above the ground (Ehrlich et al 1980, Harrison 1975, Potter et al 1980).

They are not found in the Florida Keys (Robertson and Kushlan 1984).

Average home range size was 4.24 squre km (Schoener 1968). Using the 95% ellipse, the home range for females was between 18.67-23.43 square km, and for males it was between 10.67-24.65 square km (Andersen & Rongstad 1989).

Quoted directly from existing state habitat notes - K. Cook, 13Feb05

Mask of Forest Interior Avoidance: Exclude forest interiors with 500m buffer into them.

Functional Group	Map Unit Name	
Anthropogenic	Deciduous Plantations	
Anthropogenic	Developed Open Space	
Anthropogenic	Evergreen Plantations	
Anthropogenic	Low Intensity Developed	
Anthropogenic	Medium Intensity Developed	
Anthropogenic	Pasture/Hay	
Anthropogenic	Row Crop	
Anthropogenic	Successional Grassland/Herbaceous	
Anthropogenic	Successional Grassland/Herbaceous (Other)	
Anthropogenic	Successional Grassland/Herbaceous (Utility Swath)	
Anthropogenic	Successional Shrub/Scrub (Clear Cut)	
Anthropogenic	Successional Shrub/Scrub (Other)	
Anthropogenic	Successional Shrub/Scrub (Utility Swath)	
Bald	Southern Appalachian Grass and Shrub Bald - Herbaceous Modifier	
Bald	Southern Appalachian Grass and Shrub Bald - Shrub Modifier	
Coastal Dune & Freshwater Wetland	Atlantic and Gulf Coastal Plain Interdunal Wetland	
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 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	

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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 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 Black Belt Calcareous Prairie and Woodland - Woodland Modifier

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 Loess Plain Oak-Hickory Upland - Juniper 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-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 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

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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
Freshwater Tidal Marsh & Wetland
Atlantic Coastal Plain Central Fresh-Oligohaline Tidal Marsh
Freshwater Tidal Marsh & Wetland
Atlantic Coastal Plain Embayed Region Tidal Freshwater Marsh
Freshwater Tidal Marsh & Wetland
Atlantic Coastal Plain Northern Fresh and Oligohaline Tidal Marsh

Freshwater Tidal Marsh & Wetland Florida Big Bend Fresh-Oligohaline Tidal Marsh
Prairie Bluegrass Basin Savanna and Woodland

Prairie East Gulf Coastal Plain Black Belt Calcareous Prairie and Woodland

Prairie East Gulf Coastal Plain Black Belt Calcareous Prairie and Woodland - Herbaceous Modifier

Prairie East Gulf Coastal Plain Jackson Plain Prairie and Barrens
Prairie East Gulf Coastal Plain Jackson Prairie and Woodland

Prairie Eastern Highland Rim Prairie and Barrens

Prairie Eastern Highland Rim Prairie and Barrens - Dry Modifier

Prairie Florida Dry Prairie

Prairie Panhandle Florida Limestone Glade
Prairie Pennyroyal Karst Plain Prairie and Barrens
Prairie Southern Ridge and Valley Patch Prairie
Prairie Western Highland Rim Prairie and Barrens

Rock Outcrop Allegheny-Cumberland Sandstone Box Canyon and Rockhouse

Rock Outcrop Central Interior Acidic Cliff and Talus

Rock Outcrop Central Interior Calcareous Cliff and Talus

Rock Outcrop East Gulf Coastal Plain Dry Chalk Bluff

Rock Outcrop North-Central Appalachian Acidic Cliff and Talus

Rock Outcrop North-Central Appalachian Circumneutral Cliff and Talus

Rock Outcrop

Rock Outcrop

Southern Appalachian Granitic Dome

Southern Appalachian Montane Cliff

Rock Outcrop

Southern Appalachian Rocky Summit

Rock Outcrop

Southern Appalachian Spray Cliff

Rock Outcrop

Southern Interior Acid Cliff

Rock Outcrop

Southern Interior Calcareous Cliff

Rock Outcrop Southern Piedmont Cliff

Rock Outcrop Southern Piedmont Granite Flatrock

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 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 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 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 Pine Flatwoods

Wetlands Central Interior Highlands and Appalachian Sinkhole and Depression Pond

Wetlands Cumberland Riverscour

Wetlands East Gulf Coastal Plain Interior Shrub Bog 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 Large River Floodplain Forest - Herbaceous 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 East Gulf Coastal Plain Near-Coast Pine Flatwoods - Scrub/Shrub Understory Modifier Wetlands 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 Fast Gulf Coastal Plain Treeless Savanna and Wet Prairie 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 Appalachian Seepage Fen North-Central Interior and Appalachian Rich Swamp Wetlands Wetlands South Florida Cypress Dome Wetlands South Florida Dwarf Cypress Savanna Wetlands South Florida Hardwood Hammock Wetlands South Florida Pine Flatwoods Wetlands South Florida Pond-Apple/Popash Slough Wetlands South Florida Wet Marl Prairie 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 and Central Appalachian Bog and Fen 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 Large Floodplain Forest - Herbaceous Modifier Wetlands Southern Piedmont Seepage Wetland Wetlands Southern Piedmont Small Floodplain and Riparian Forest

CITATIONS:

Wetlands

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.

Southern Piedmont/Ridge and Valley Upland Depression Swamp

Anderson, D. E. and O. J. Rongstad. 1989. Home-range estimates of red-tailed hawk based on random and systematic relocations. Journal of Wildlife Management. 53:802-807.

Austing, G.R. 1964. The world of the red-tailed hawk. Phil- adelphia: J.B. Lippincott Company.

Balding, T., and E. Dibble. 1984. Responses of red-tailed, red-shouldered and broad-winged hawks to high volume playback recordings. Passenger Pigeon 46:71-75.

Bechard, M. J., R. L. Knight, D. G. Smith, and R. E. Fitzner. 1990. Nest sites and habitats of sympatric hawks (BUTEO spp.) in Washington. J. Field Ornithol. 61:159-170.

Bednarz, J. C., D. Klem Jr., L. J. Goodrich, and S. E. Senner. 1990. Migration counts of raptors at Hawk Mountain, Pennsylvania, as indicators of population trends, 1934-1986. The Auk 107:96-109.

Bent, A.C. 1937. Life histories of North American birds of prey. Part 1. Bull. U.S. Natl. Mus. 137. 409 pp.

brtha Page 6 of 8

Droege, S., and J.R. Sauer. 1990. North American Breeding Bird Survey, annual summary, 1989. U.S. Fish and Wildlife Service, Biological Report 90(8). 22 pp.

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.

Fisher, A.K. 1893. The hawks and owls of the United States in their relation to agriculture. Washington U.S. Dept. of Agriculture Bull. no. 6. 210 pp.

Fuller, M. R., and J. A. Mosher. 1987. Raptor survey techniques. Pages 37-65 in B. A. Giron Pendleton, et al., eds. Raptor management techniques manual. National Wildlife Federation, Washington, D.C.

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.

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 nn.

Johnsgard, P.A. 1990. Hawks, eagles, and falcons of North America. Smithsonian Inst. Press, Washington, D.C. xvi + 403 pp.

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

Kirk, D.A., D. Hussell, and E. Dunn. 1994/95. Raptor population status and trends in Canada. Bird Trends (Canadian Wildlife Service) 4:2-9

Luttich, S., et al. 1970. Ecology of red-tailed hawk predation in Alberta. Ecology 51:190-

Mader, W. J. 1978. A comparative nesting study of red-tailed hawks and Harris' hawks in southern Arizona. Auk 95:327-337

Mindell, D. P. 1983. Harlan's hawk (BUTEO JAMAICENSIS HARLANI):a valid subspecies. Auk 100:161-169.

Palmer, R. S., ed. 1988. Handbook of North American birds. Vol. 5. Yale Univ. Press, New Haven. 465

Pendleton, B. A. Giron, et al. 1987. Raptor management techniques manual. National Wildlife Federation, Sci. and Tech. Ser. No. 10. 420 pp.

Peterjohn, B.G., J.R. Sauer, and W.A. Link. 1994. The 1992 and 1993 summary of the North American Breeding Bird Survey. Bird Populations 2:46-61.

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

Preston, C.R. and R.D. Beane. 1993. Red-tailed hawk (Buteo jamaicensis). In A. Poole and F. Gill, eds., The Birds of North America, No. 52. The Academy of Natural Sciences, Philadelphia and The American Ornithologists' Union, Washington, DC.

Price, J., S. Droege, and A. Price. 1995. The summer atlas of North American birds. Academic Press, New York. x + 364 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.

Recher, H. F., and J. T. Recher. 1966. A contribution to the knowledge of the avifauna of the Sierra de Luquillo, Puerto Rico. Caribbean J. Sci. 6(3-4):151-161.

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.

Root, T. 1988. Atlas of wintering North American birds: An analysis of Christmas Bird Count data. University of Chicago Press. 336 pp.

Rothfels, M., and M. R. Lein. 1983. Territoriality in sympatric populations of red-tailed and Swainson's hawks. Can. J. Zool. 61:60-64.

Santana C., E. 1988. Breeding biology and diet of red-tailed hawks in Puerto Rico. Biotropica 20:151-160.

Santana, Eduardo et. al. 1986. Red-tailed hawk nest sites in Puerto Rico. Wilson Bulletin. 1986; 98(4):561-570.

Schoener, T. W. 1968. Sizes of feeding territories among birds. Ecology. 49 (1):123-141.

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

Titus, K., and M. R. Fuller. 1990. Recent trends in counts of migrant hawks from northeastern North America. Journal of Wildlife Management 54:463-470.

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For more information:: SE-GAP Analysis Project / BaSIC

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

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