



SOUTHEAST GAP ANALYSIS PROJECT



Species Modeling Report

Diamondback Terrapin

Malaclemys terrapin

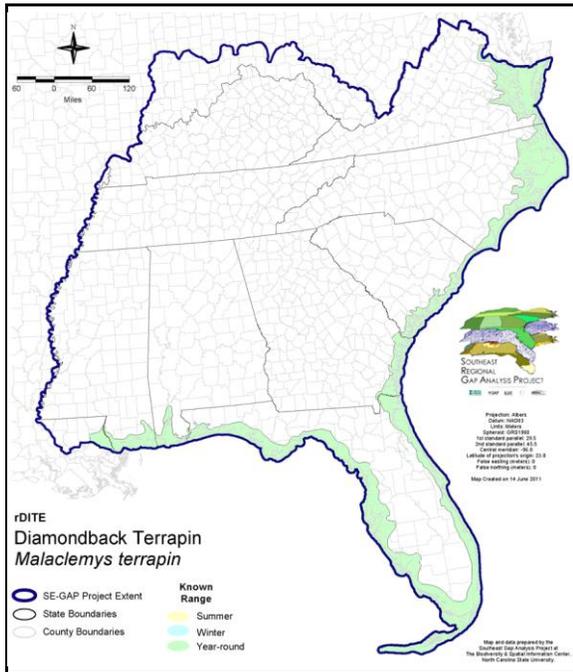
Taxa: Reptilian
 Order: Cryptodeira
 Family: Emydidae

SE-GAP Spp Code: **rDITE**

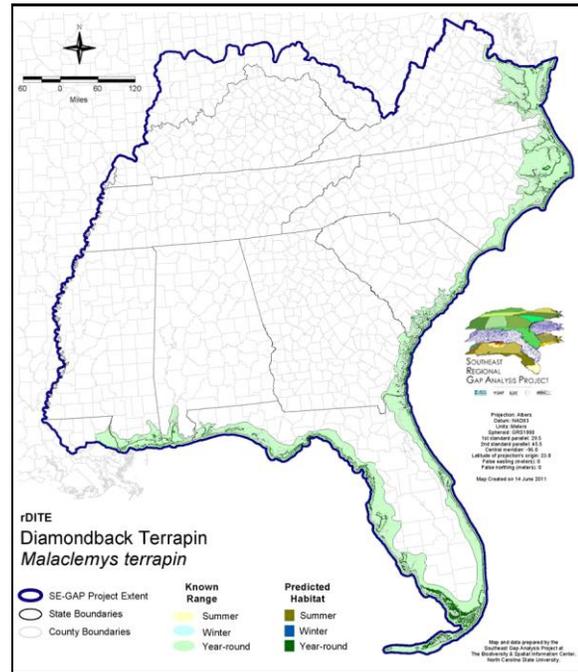
ITIS Species Code: 173780

NatureServe Element Code: ARAAD06010

KNOWN RANGE:



PREDICTED HABITAT:



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

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

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

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/rDITE_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: GA (U), LA (Restricted Harvest), MA (T), MS (Non-game species in need of management), NC (SC), NY (GS)

NS Global Rank: G4

NS State Rank: AL (S2), CT (S3), DC (SHB), DE (S4), FL (S4), GA (S3), LA (S2), MA (S2), MD (S4), MS (S2), NC (S3), NJ (SNR), NY (S3), PA (SNR), RI (SNR), SC (SNR), TX (S3), VA (S3)

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	58,651.4	6	0.0	0	0.0	0	0.0	0
Status 2	25,772.7	3	70.9	< 1	0.0	0	0.0	0
Status 3	777.8	< 1	534.3	< 1	0.0	0	16,317.9	2
Status 4	0.0	0	0.0	0	0.0	0	11.6	< 1
Total	85,201.8	9	605.3	< 1	0.0	0	16,329.5	2
	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	168,661.3	18	1,145.3	< 1	3,647.4	< 1
Status 2	0.0	0	30,570.6	3	35,969.3	4	20.7	< 1
Status 3	0.0	0	5,677.7	< 1	0.0	0	0.0	0
Status 4	0.0	0	3.0	0	0.0	0	0.0	0
Total	0.0	0	204,912.7	22	37,114.7	4	3,668.1	< 1
	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	23.1	< 1	0.0	0	0.0	0
Status 2	0.0	0	65.9	< 1	42,758.1	4	0.0	0
Status 3	0.0	0	52,619.8	6	4,464.6	< 1	1,237.3	< 1
Status 4	0.0	0	0.0	0	472.9	< 1	0.0	0
Total	0.0	0	52,708.8	6	47,695.6	5	1,237.3	< 1
	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	401.1	< 1	0.0	0	0.0	0
Status 2	24,380.8	3	18,486.3	2	0.0	0	0.0	0
Status 3	0.0	0	677.9	< 1	0.0	0	401.0	< 1
Status 4	0.0	0	0.0	0	0.8	< 1	0.0	0
Total	24,380.8	3	19,565.3	2	0.8	< 1	401.0	< 1
	Private Land - No Res.		Water		Overall Total			
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	< 1	0.0	0	232,529.9 24			
Status 2	0.8	< 1	0.0	< 1	178,096.2 19			
Status 3	125.4	< 1	< 0.1	< 1	82,833.8 9			
Status 4	427,021.3	45	29,723.7	3	457,706.3 48			
Total	427,147.7	45	29,723.9	3	951,166.2 100			

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: Diamondback Terrapins inhabit coastal marshes, estuaries, and lagoons (Ernst et al. 1994). In particular this species is commonly associated with spartina marshes and those with open moving channels and they can not tolerate freshwater for a long duration (Nelson & Marion 2004). Eggs are laid in a nest dug in sandy marsh edge, offshore island, or dune (vegetated or unvegetated), above high tide mark. Nests of different females may be dispersed or aggregated (natureserve global)." Intolerant of long-term exposure to freshwater or 100% salt water" (NatureServe, not sure of original source). Amy Silvano 7jul05

Ecosystem Classifiers: Open Brackish water, Brackish Tidal Marsh and Wetland, and Dunes and beaches for nesting, & young dispersal. Amy Silvano 7jul05

Hydrography Mask:

Brackish/Saltwater Only

Utilizes flowing water features with buffers of 120m from and 2000m into selected water features.

Utilizes open water features with buffers of 120m from and 2000m into selected water features.

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

Selected Map Units:

Functional Group	Map Unit Name
Beach	Atlantic Coastal Plain Northern Sandy Beach
Beach	Atlantic Coastal Plain Sea Island Beach
Beach	Atlantic Coastal Plain Southern Beach
Beach	Florida Panhandle Beach Vegetation
Beach	Southeast Florida Beach
Beach	Southwest Florida Beach
Beach	Unconsolidated Shore (Beach/Dune)
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Central Salt and Brackish Tidal Marsh
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Embayed Region Tidal Salt and Brackish Marsh
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Indian River Lagoon Tidal Marsh
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Northern Sea-Level Fen
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Northern Tidal Salt Marsh
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
Brackish Tidal Marsh & Wetland	Florida Big Bend Salt-Brackish Tidal Marsh
Brackish Tidal Marsh & Wetland	Mississippi Sound Salt and Brackish Tidal Marsh
Brackish Tidal Marsh & Wetland	South Florida Everglades Sawgrass Marsh
Brackish Tidal Marsh & Wetland	South Florida Mangrove Swamp
Brackish Tidal Marsh & Wetland	Southwest Florida Perched Barriers Salt Swamp and Lagoon - Mangrove Modifier
Brackish Tidal Marsh & Wetland	Southwest Florida Perched Barriers Salt Swamp and Lagoon - Marsh Modifier
Coastal Dune & Freshwater Wetland	Atlantic Coastal Plain Northern Dune and Maritime Grassland
Coastal Dune & Freshwater Wetland	Atlantic Coastal Plain Southern Dune and Maritime Grassland
Coastal Dune & Freshwater Wetland	East Gulf Coastal Plain Dune and Coastal Grassland
Coastal Dune & Freshwater Wetland	Southwest Florida Dune and Coastal Grassland
Water	Open Water (Brackish/Salt)

CITATIONS: Ashton, R. E., Jr., and P. S. Ashton. 1985. Handbook of reptiles and amphibians of Florida. Part two. Lizards, turtles & crocodylians. Windward Pub., Inc., Miami. 191 pp.

Auger, P. J., and P. Giovannone. 1979. On the fringe of existence. Diamondback terrapins at Sandy Neck. The Cape Naturalist 8:44-58.

Behler, J. L., and F. W. King. 1979. The Audubon Society field guide to North American reptiles and amphibians. Alfred A. Knopf, New York. 719 pp.

Burger, J. 1976. Behavior of hatchling diamondback terrapins (MALACLEMYS TERRAPIN) in the field. Copeia 1976:742-748.

- Burger, J. 1977. Determinants of hatching success in the diamondback terrapin *Malaclemys terrapin*. *Am. Midl. Nat.* 97:444-446.
- Burger, J., and W. A. Montevecchi. 1975. Nest site selection in the terrapin *MALACLEMYS TERRAPIN*. *Copeia* 1975:113-119.
- Carr, A. 1952. *Handbook of Turtles*. Cornell University Press, Ithaca, NY. 542 pp.
- Conant, R. and J. T. Collins. 1991. *A field guide to reptiles and amphibians: eastern and central North America*. Third edition. Houghton Mifflin Co., Boston, Massachusetts. 450 pp.
- Dobie, J. L. 1981. The taxonomic relationship between *MALACLEMYS* Gray, 1844 and *GRAPTEMYS* Agassiz, 1857 (Testudines: Emydidae). *Tulane Stud. Zool. Bot.* 23:85-102.
- Duellman, W. E., and A. Schwartz. 1958. Amphibians and reptiles of southern Florida. *Florida State Mus. Bull. Biol. Sci.* 3:181-324.
- Ernst, C. H., and R. B. Bury. 1982. *Malaclemys, M. terrapin*. *Cat. Am. Amph. Rep.* 299.1-299.4.
- Ernst, C. H., and R. W. Barbour. 1972. *Turtles of the United States*. Univ. Press of Kentucky, Lexington. x + 347 pp.
- Ernst, C. H., R. W. Barbour, and J. E. Lovich. 1994. *Turtles of the United States and Canada*. Smithsonian Institution Press, Washington, D.C. xxxviii + 578 pp.
- Goodwin, C. C. 1994. Aspects of the nesting ecology of the diamondback terrapin (*MALACLEMYS TERRAPIN*) in Rhode Island. M.S. thesis, University of Rhode Island. vii + 84 pp.
- Hurd, L. E., G. W. Smedes, and T. A. Dean. 1979. An ecological study of a natural population of diamondback terrapins (*MALACLEMYS TERRAPIN TERRAPIN*) in a Delaware salt marsh. *Estuaries* 2:28-33.
- Lamb, T., and M. F. Osentoski. 1997. On the paraphyly of *MALACLEMYS*: a molecular genetic assessment. *Journal of Herpetology* 31:258-265.
- Lazell, J. D., Jr. 1989. *Wildlife of the Florida Keys: a Natural History*. Island Press, Washington, D.C.
- Lovich, J. E., and J. W. Gibbons. 1990. Age at maturity influences adult sex ratio in the turtle *MALACLEMYS TERRAPIN*. *Oikos* 59:126-134.
- Lovich, J. E., et al. 1991. Behavior of hatchling diamondback terrapins (*MALACLEMYS TERRAPIN*) released in a South Carolina salt marsh. *Herpetol. Rev.* 22:81-83.
- Martof, B. S., W. M. Palmer, J. R. Bailey, and J. R. Harrison, III. 1980. *Amphibians and reptiles of the Carolinas and Virginia*. University of North Carolina Press, Chapel Hill, North Carolina. 264 pp.
- Montevecchi, W. A., and J. Burger. 1975. Aspects of the reproductive biology of the northern diamondback terrapin *Malaclemys terrapin*. *Am. Midl. Nat.* 94:166-178.
- Morreale, S. J. 1992. The status and population ecology of the diamondback terrapin, *MALACLEMYS TERRAPIN*, in New York. Okeanos Ocean Research Foundation, Inc., Hampton Bays, New York. 76 pp.
- Nelson, D.H., and Marion, K.R., 2004. Mississippi Diamondback Terrapin. *Malaclemys terrapin pileata*. in R.E. Mirarchi, M.A. Bailey, T.M. Haggerty, and T.L. Best, eds. *Alabama Wildlife. Volume 3. Imperiled amphibians, reptiles, birds, and mammals*. The Univer
- Palmer, W. M., and A. L. Braswell. 1995. *Reptiles of North Carolina*. North Carolina State Museum of Natural Sciences, University of North Carolina Press, Chapel Hill, North Carolina.
- Seigel, R. A. 1980. Nesting habits of diamondback terrapins (*MALACLEMYS TERRAPIN*) on the Atlantic coast of Florida. *Trans. Kansas Acad. Sci.* 83:239-246.
- Seigel, R. A. 1983. Occurrence and effects of barnacle infestations on diamondback terrapins (*MALACLEMYS TERRAPIN*). *American Midland Naturalist* 109:34-39.
- Seigel, R. A. 1984. Parameters of two populations of diamondback terrapins (*MALACLEMYS TERRAPIN*) on the Atlantic coast of Florida. Pages 77-87 in R. A. Seigel et al., editors. *Vertebrate ecology and systematics--a tribute to Henry S. Fitch*. *Mus. Nat. His*
- Seigel, R. A. 1993. Apparent long-term decline in diamondback terrapin populations at the Kennedy Space Center, Florida. *Herpetol. Rev.* 24:102-103.
- Seigel, R. A., and J. W. Gibbons (compilers). 1995. Workshop on the ecology, status, and management of the diamondback terrapin (*MALACLEMYS TERRAPIN*), Savannah River Ecology Laboratory, 2 August 1994: Final results and recommendations. *Chelonian Conservati*
- Semlitsch, Raymond D. & Bodie, J. Russell. 2003. Biological Criteria for Buffer Zones around Wetlands and Riparian Habitats for Amphibians and Reptiles. *Conservation Biology* 17 (5), 1219-1228.
- Tucker, A. D., N. N. FitzSimmons, and J. W. Gibbons. 1995. Resource partitioning by the estuarine turtle *MALACLEMYS TERRAPIN*: trophic, spatial, and temporal foraging constraints. *Herpetologica* 51:167-181.
- Wilson, L. A. 1995. *The Land Manager's Guide to the amphibians and reptiles of the South*. Chapel Hill, NC: The Nature Conservancy.