

South Carolina November 2009 update

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SC DNR

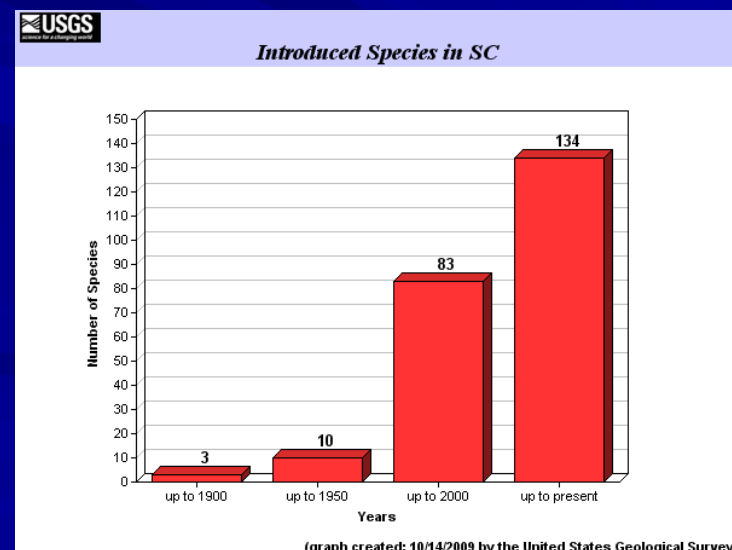


DNR

SC DNR checklist has 137 spp. of NAS, including one oyster pathogen and 4 eel parasites

	Marine/estuarine	Freshwater
42 fish	2	40
31 plants	5	26
62 invertebrates	50	12
2 reptiles	0	2

USGS Database



“What’s going on?”

Marvin Gaye





Callinectes bocourti



Callinectes exasperatus



Gracilaria vermiculophylla

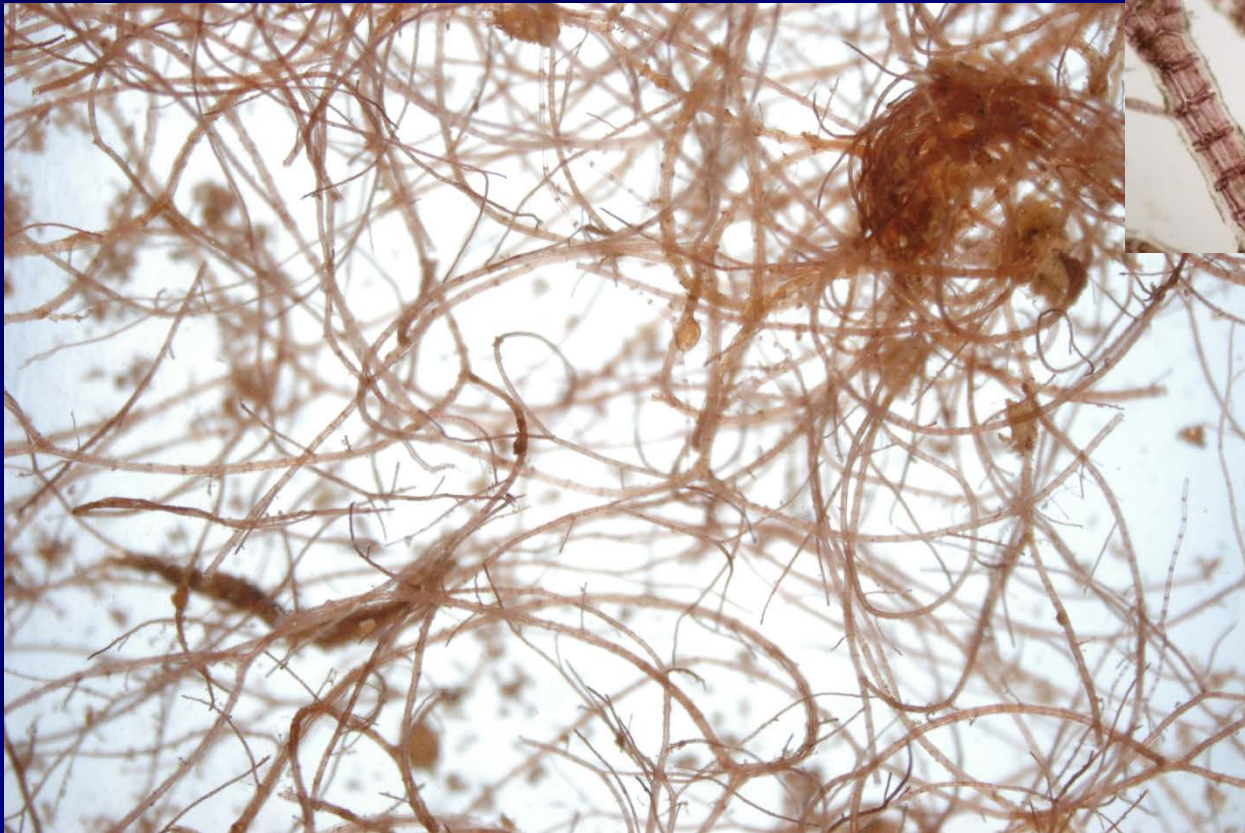


Figure 3. Genetic identification of *G. vermiculophylla*. A portion of the RUBISCO gene from nine South Carolina samples were aligned with four sequences produced by Freshwater et al. 2006 (accession numbers DQ018280-DQ018283).

	End of rbcL gene					
						
	245	255	265	275	285	295
Charleston Harbor	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Charleston Harbor	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Charleston Harbor	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Charleston Harbor	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Charleston Harbor	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Port Royal Sound	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
St. Helena Sound	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Calibogue Sound	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
North Edisto	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Gracilaria vermiculophylla	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Gracilaria vermiculophylla	AACAGCAAAT	GTATAATACA	TATCTATTCT	TT-----	ATCTTATGAT	CAAATTTATT
Gracilaria sp. Strain	AACAGCGAAT	GTATAGTATA	TATCTATTCT	TTTATCTTT	ATCTTGTGAT	TAGATTTATT
Gracilaria tikvahiae	AACAGCTAAT	GTATAGTATA	TATCTATTCT	TT-----	ATCTTGTGAT	CAGATTTATT
						
	305	315	325	335	345	355
Charleston Harbor	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Charleston Harbor	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Charleston Harbor	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Charleston Harbor	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Charleston Harbor	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Port Royal Sound	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
St. Helena Sound	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Calibogue Sound	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
North Edisto	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Gracilaria vermiculophylla	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Gracilaria vermiculophylla	TTTATATTG-	-----	-----AT	GAAAAATAAAA	TATTAATAAT	TTTAAACAGA
Gracilaria sp. strain	TTTCATAATAT	TTAATTTAAT	TAATTTGAAT	GAAAAATAAAA	TGTTAAT--T	TTTAAACAGA
Gracilaria tikvahiae	TGCATAATA-	-----	-----	-----	-----	-----
						
	365	375	385	395	405	415
Charleston Harbor	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Charleston Harbor	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Charleston Harbor	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Charleston Harbor	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Charleston Harbor	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Port Royal Sound	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
St. Helena Sound	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Calibogue Sound	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
North Edisto	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Gracilaria vermiculophylla	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Gracilaria vermiculophylla	TACAAAAATA	CCATAAGGAG	TGCTTAACAG			
Gracilaria sp. strain	CATAAAAAATA	TTATAAGGAG	TGTTTAACAG			
Gracilaria tikvahiae	-----TTA	T--TAAGGAG	TTTTTAATAG			
	Start of rbcS gene					

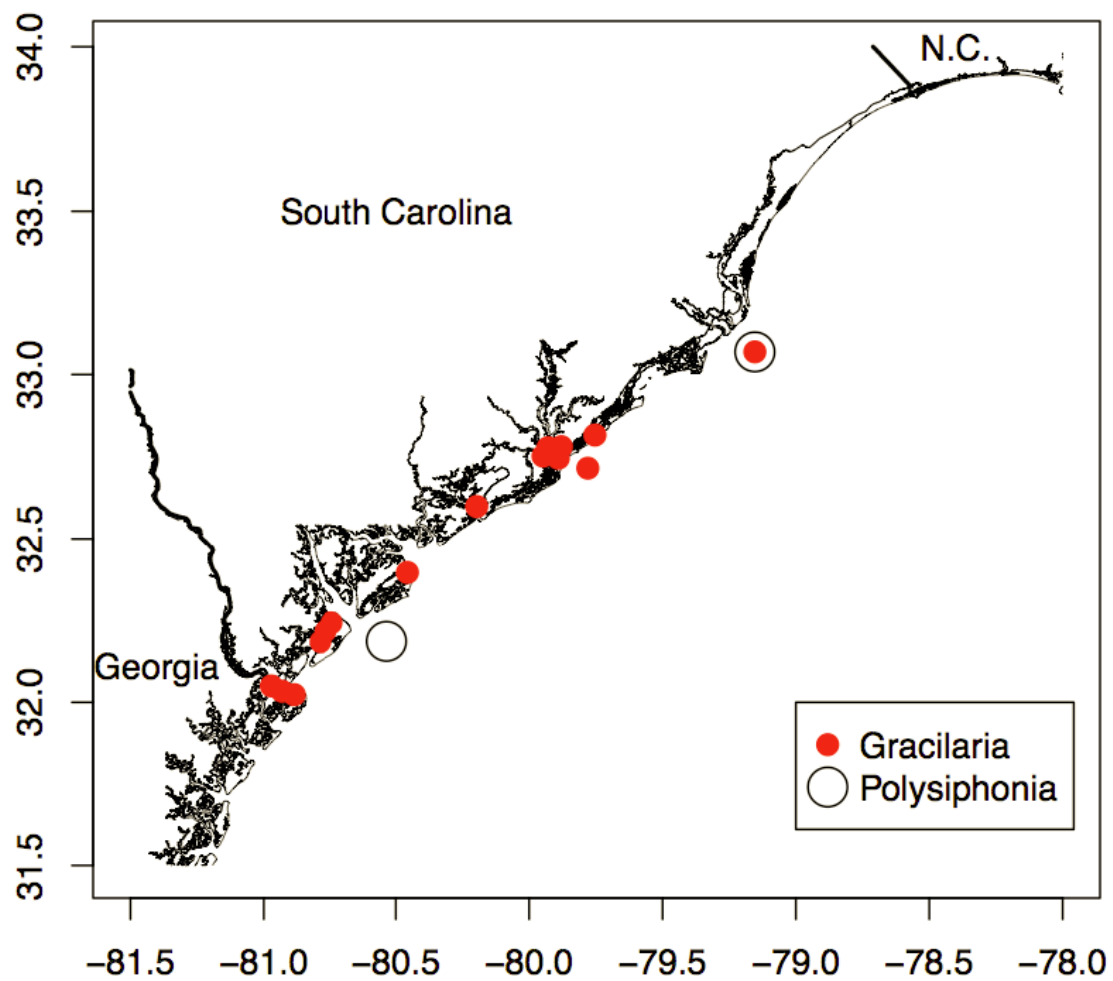
stitution for space?
 web alterations?
 on commercial
 s?

Polysiphonia breviarticulata



Neosiphonia harveyi

images from Encyclopedia of Life
www.eol.org/pages/912778

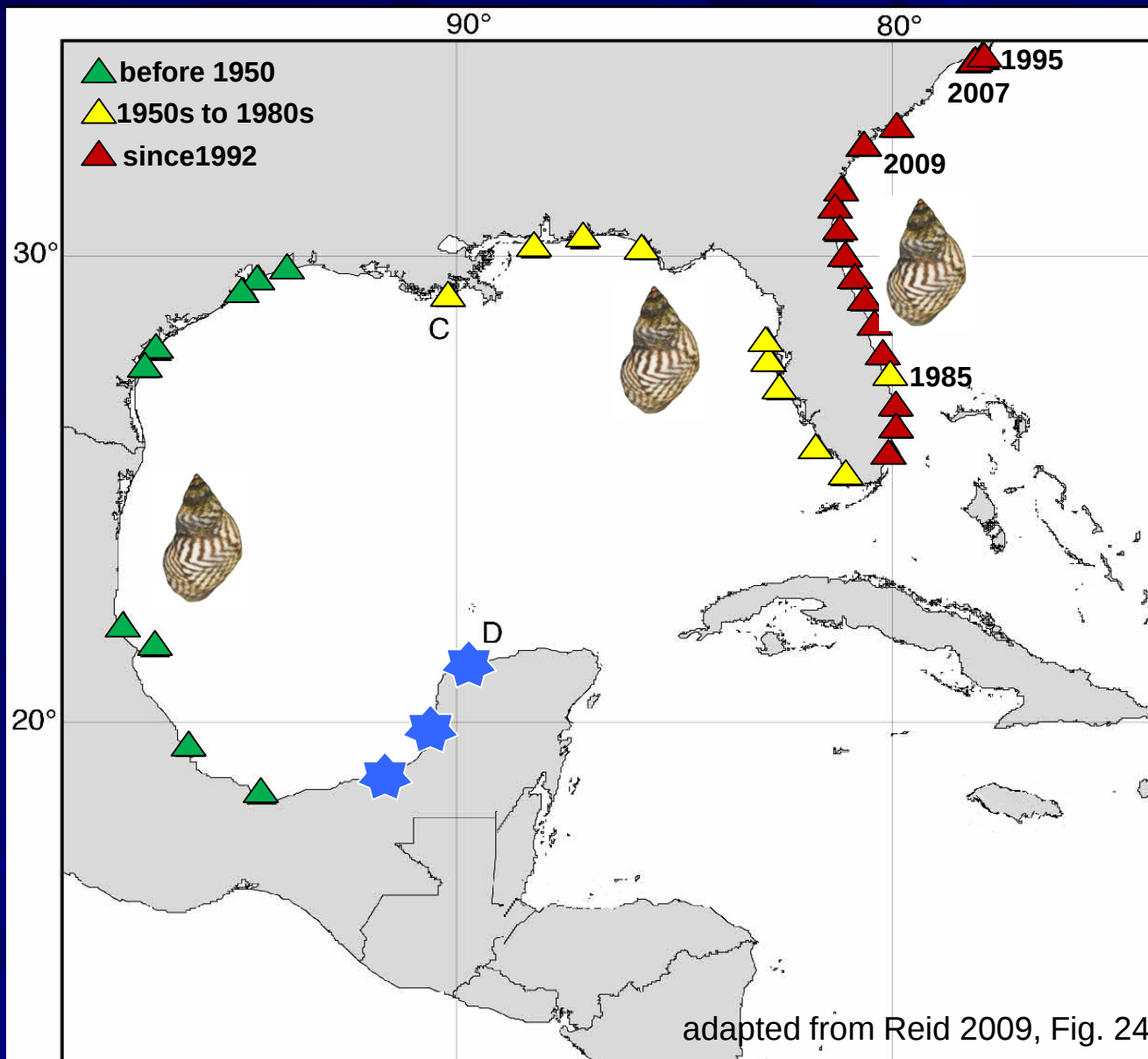


Echinolittorina placida Reid, 2009 interrupted periwinkle

snail photos from
www.jaxshells.org



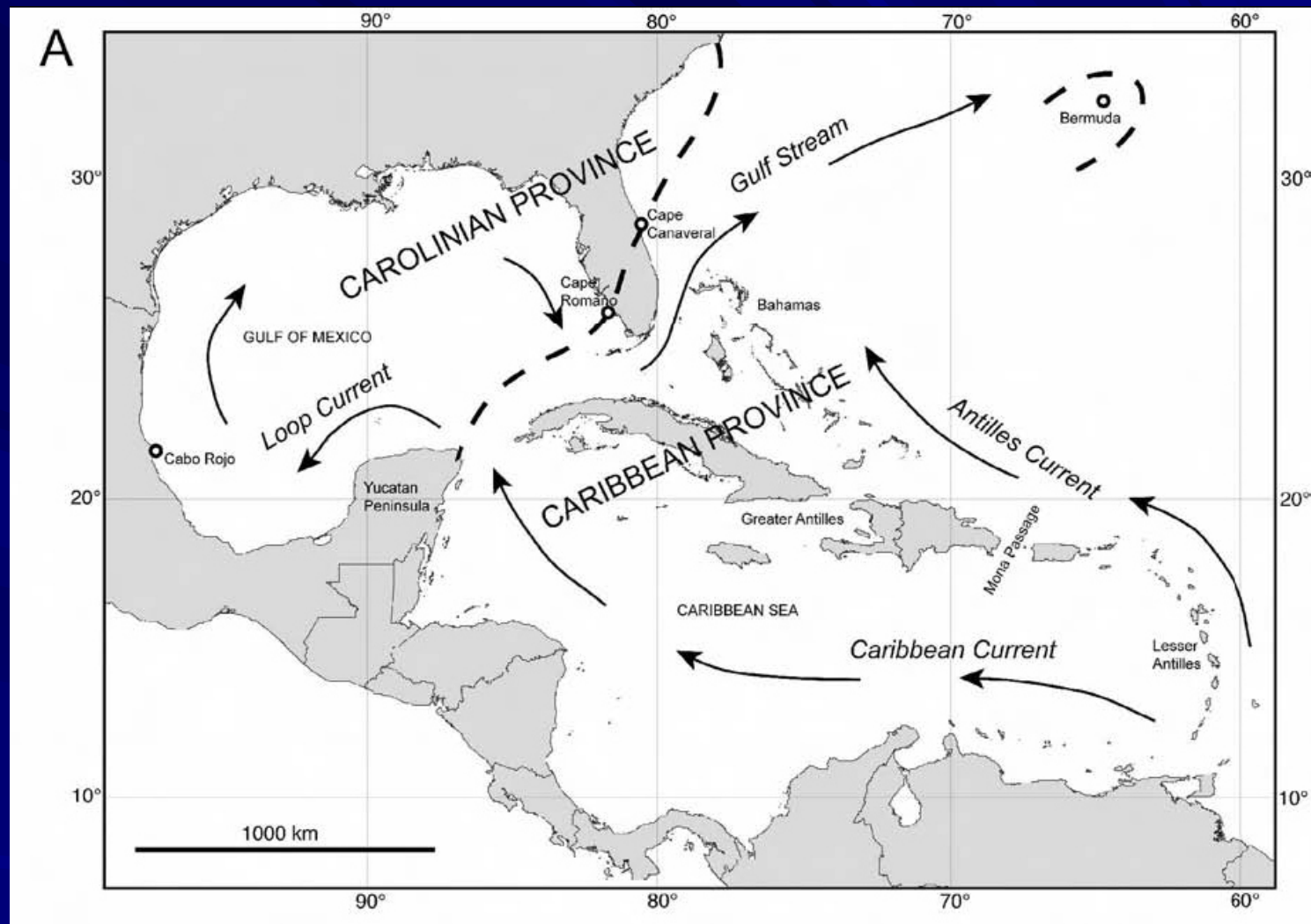
Reid, D. G., 2009. The genus *Echinolittorina* Habe, 1956 (Gastropoda: Littorinidae) in the western Atlantic Ocean. *Zootaxa* 2184: 1103. Aug. 6.



100-yr
pilgrimage
from
Yucatan to
Cape Fear
??



photos from www.jaxshells.org



Reid, 2009 Figure 38a.