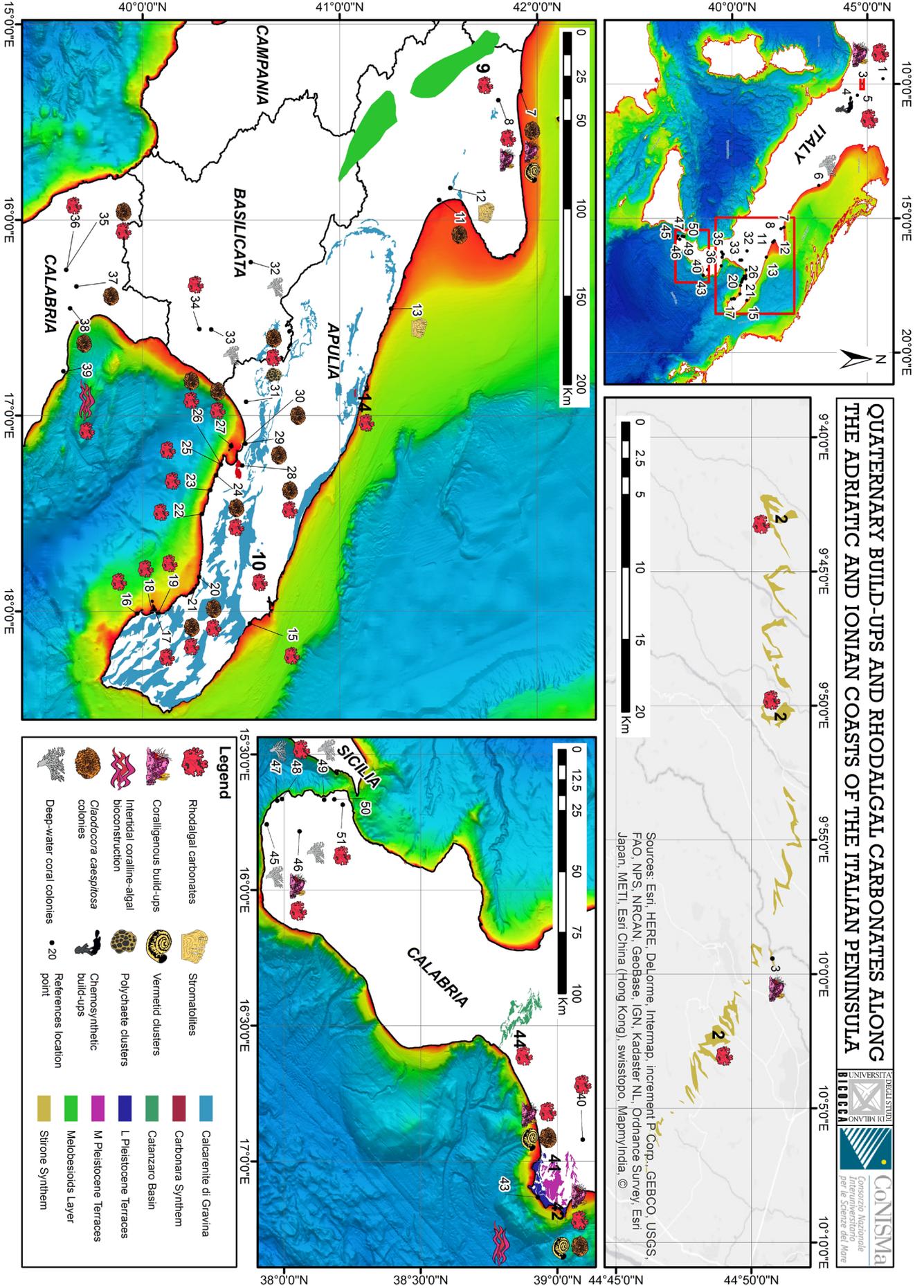


**QUATERNARY BUILD-UPS AND RHODALGAL CARBONATES ALONG THE ADRIATIC
AND IONIAN COASTS OF THE ITALIAN PENINSULA: A REVIEW**

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Supplementary information

Fig. S1: Georeferenced map including all the reports of build-ups and rhodalgal carbonates examined in this study.



N°	Location	Type	Notes	Time-slice	Accurate Age	Essential references
1	45°34'42"N 9°47'46"E*; Palosco	Rhodalgal carbonates	Prálines rhodoliths	Early Pleistocene	Gelasian	Gianolla et al. 2010
2	Northwestern Italy; Parma	Rhodalgal carbonates	Synthem of Strone River of the Geological Map of Italy (1:50000; ISPRA)	Early Pleistocene	Late Gelasian – early Calabrian	Di Dio et al. 1997; Dominici 2001; Pervesler et al. 2011
3	44°50'46.3"N 9°59'25.4"E; Strone River	Coralligenous build-up	Small coralligenous mound developed over mollusks shells	Early Pleistocene	Middle Calabrian	D.B., this paper
4	44°37'46.3"N 10°24'52.3"E; Enza River	Chemosynthetic build-up	Crusts and chimneys of chemosynthetic carbonates	Early Pleistocene	Calabrian; 1.65-1.4 Ma	Gunderson et al. 2014; Oppo et al. 2015
5	44°37'46.3"N 10°24'52.3"E; Enza River	Rhodalgal carbonates	Rhodalgal sediments developing above the chemosynthetic carbonates	Early Pleistocene	Calabrian; 1.65-1.4 Ma	Gunderson et al. 2014; Oppo et al. 2015
6	43°12'3"N 13°46'33"E*; Porto San Giorgio	Deep-water coral colonies	The colonies of white corals are associated with mollusks of the genus <i>Lucina</i>	Early Pleistocene	Early Calabrian	Cantalamessa et al. 1987, 1997
7	41°54'58.4"N 15°20'28.7"E; Lesina	<i>C. caespitosa</i> colonies; coralligenous build-up; vermetid clusters	The mound formed at circalittoral depth and was then moved upward by coseismic uplift	Holocene	6000-7000 yr B.P.	Mastronuzzi & Sansò 2002a
8	41°48'12.9"N 15°23'16.7"E; Apricena	Coralligenous build-up; rhodalgal carbonates	Small coralligenous build-up developed over rhodoliths and pebbles	Early Pleistocene	Late Gelasian	Pavia et al. 2010
9	"Intermediate Predominantly Clayey Interval" of the Apulian Basin	Rhodalgal carbonates	The coralline-rich horizon is known from borehole data	Early Pleistocene	Early Gelasian	Balduzzi et al. 1982
10	Calcarenite di Gravina Fm. and coeval formations	Rhodalgal carbonates	Calcarenite di Gravina Fm., Calcareniti del Salento Fm., Uggiano la Chiesa Fm., of the Geological Map of Italy	Early Pleistocene	Gelasian to Calabrian	Tropeano & Sabato 2000; Pomar & Tropeano 2001; Tropeano et al. 2004; Spalluto et al. 2010
11	41°30'14.0"N 15°53'54.4"E; Manfredonia	<i>C. caespitosa</i> colonies	A large, buried, bank of <i>C. caespitosa</i> associated with fine-grained (clay to sand) sediment	Late Pleistocene	Tarantian; MIS 5.5	De Santis et al. 2010
12	41°33'34.8"N 15°50'13.2"E; Manfredonia	Stromatolites	The stromatolites formed in a euryhaline lagoon	Middle Pleistocene	Ionian; MIS 11	De Santis et al. 2010, 2014
13	41°15'35"N 16°27'14"E; Trani	Stromatolites	The stromatolites formed in a lagoon with conditions ranging from hypersaline to brackish	Middle Pleistocene	Ionian; MIS 9	Caldara et al. 2013; De Santis et al. 2014
14	Apulia; Bari	Rhodalgal carbonates	Carbonara Synthem, part of the Murge Supersynthem of the Geological Map of Italy (1:50000; ISPRA)	Middle Pleistocene	Late Ionian	Spalluto et al. 2010
15	40°32'36"N 18°34'49"E*; Campo di Mare	Rhodalgal carbonates	Rare rhodoliths in clayey sands	Middle Pleistocene	Early Ionian	Coppa et al. 2001
16	39°58'19"N 18°04'46"E*; Marina di Mancaversa	Rhodalgal carbonates		Middle Pleistocene	Ionian; MIS 9	Hearty & Dai Pra 1992
17	40°25'1"N 18°0'11"E*; Gallipoli	Rhodalgal assemblage		Middle Pleistocene	Late Ionian; MIS 9	Hearty & Dai Pra 1992
18	40°3'40"N 17°59'37"E*; Gallipoli	Rhodalgal carbonates		Middle Pleistocene	Late Ionian; MIS 9	Hearty & Dai Pra 1992

Table S1: List of all the reports of build-ups and rhodalgal carbonates along the Adriatic and Ionian coasts of the Italian Peninsula. The table includes references to the original papers, locations and general information on all the reports analyzed in this work. The exact geographic position of the locations tagged with an asterisk was not included in the original paper. In these cases the coordinates were deduced on the basis of the available information.

N°	Location	Type	Notes	Time-slice	Accurate Age	Essential references
19	40°44'6"N 18°03'1"E*; Gallipoli	Rhodalgial carbonates		Middle Pleistocene	Late Ionian; MIS 9	Hearty & Dai Pra 1992
20	40°17'11"N 17°49'32"E*; Torre Castiglione	Rhodalgial carbonates; colonies of <i>C. caespitosa</i>		Middle Pleistocene	Late Ionian; MIS 9	Hearty & Dai Pra 1992
21	40°17'11"N 17°49'32"E*; Torre Castiglione	Rhodalgial carbonates; colonies of <i>C. caespitosa</i>		Late Pleistocene	Tarantian; MIS 5	Dai Pra & Hearty 1988; Hearty & Dai Pra 1992
22	40°18'1"N 17°30'15"E*; Torre Ovo	Rhodalgial carbonates		Middle Pleistocene	Late Ionian; MIS 9	Hearty & Dai Pra 1992
23	40°20'34"N 17°22'52"E*; Pulsano	Rhodalgial carbonates		Middle Pleistocene	Late Ionian; MIS 9	Hearty & Dai Pra 1992
24	40°22'18"N 17°18'21"E*; Leporano	Rhodalgial carbonates; colonies of <i>C. caespitosa</i>		Late Pleistocene	Tarantian; MIS 5	Belluomini et al. 2002
25	40°23'48"N 17°15'4"E*; Carrelli	Rhodalgial carbonates		Middle Pleistocene	Late Ionian; MIS 9	Hearty & Dai Pra 1992
26	40°23'48"N 17°15'4"E*; Carrelli	Rhodalgial carbonates; colonies of <i>C. caespitosa</i>		Late Pleistocene	Tarantian; MIS 5	Belluomini et al. 2002
27	40°26'53"N 17°9'20"E*; Cheradi Islands	Rhodalgial carbonates; colonies of <i>C. caespitosa</i>		Late Pleistocene	Tarantian; MIS 5	Belluomini et al. 2002
28	40°30'16"N 17°15'18"E*; Taranto	Rhodalgial carbonates; colonies of <i>C. caespitosa</i>	Locally large banks of <i>C. caespitosa</i> , in fine-grained sediments, are present.	Late Pleistocene	Tarantian; MIS 5	Gignoux 1913; Dai Pra & Hearty 1988; Belluomini et al. 2002
29	40°31'15"N 17°8'40"E*; Lido Azzurro	<i>C. caespitosa</i> colonies		Middle Pleistocene	Late Ionian; MIS 7	Mastroruzzi & Sansò 2002b
30	40°31'15"N 17°8'40"E*; Lido Azzurro	<i>C. caespitosa</i> colonies		Late Pleistocene	Tarantian; MIS 5	Mastroruzzi & Sansò 2002b
31	40°31'29.0"N 16°55'46.7"E*; Castellanea Marina	Rhodalgial carbonates; colonies of <i>C. caespitosa</i> ; polychaete clusters	The observed polychaetes belong to the genus <i>Subellaria</i>	Late Pleistocene	Tarantian; MIS 5	Caldera 1986
32	40°32'52"N 16°12'58"E*; Garaguso	Deep-water coral colonies	Only fragments are described, therefore, it is possible that this material has been reworked from older or nearby build-ups, the presence of which is not clearly reported	Early Pleistocene	Late Gelasian – early Calabrian	Caldera et al. 1993
33	40°20'50"N 16°33'38"E*; Pisticci	Deep-water coral colonies	Only fragments are described, therefore, it is possible that this material has been reworked from older or nearby build-ups, the presence of which is not clearly reported	Early Pleistocene	Middle to late Calabrian	Piacella 1980
34	40°17'13"N 16°33'31"E*; Montalbano Jonico	Rhodalgial carbonates	Encrusted mollusks shells and small rhodoliths	Early Pleistocene	Late Calabrian	D'Alessandro et al. 2003
35	39°36'42"N 16°15'19"E*; Tarsia	Colonies of <i>C. caespitosa</i> ; Rhodalgial carbonates	The large <i>Cladocora</i> reefs are embedded in fine-grained sediments	Early Pleistocene	Late Calabrian	Bernasconi et al. 1997; Carobene et al. 1997
36	39°36'42"N 16°15'19"E*; Tarsia	Rhodalgial assemblage	Described as "Algal Limestone" in the original publication	Middle Pleistocene	Ionian	Carobene et al. 1997

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N°	Location	Type	Notes	Time-slice	Accurate Age	Essential references
37	39°39'49"N 16°20'26"E*; Terranova di Sibari	Colonies of <i>C. caespitosa</i>		Middle Pleistocene	Ionian; MIS 9	Santoro et al. 2009
38	39°37'53"N 16°27'7"E*; Muzzari	Colonies of <i>C. caespitosa</i>		Late Pleistocene	Tarantian; MIS 5.5	Santoro et al. 2009
39	39°35'51"N 16°46'27"E*; Crosia	Rhodalgal carbonates; intertidal coralline-algal bioconstruction	The crusts of the bioconstruction are thin, composed of shallow-water species and associated with shallow-water material, therefore it may have developed in very shallow-water.	Middle Pleistocene	Late Ionian	Carobene et al. 2003
40	39°05'32.4"N 16°55'11.1"E; San Mauro Marchesato	Rhodalgal carbonates		Middle Pleistocene	Ionian	Massari et al. 2002
41	Crotone peninsula	Coralligenous build-up; Rhodalgal carbonates; colonies of <i>C. caespitosa</i> ; vermetid clusters		Middle Pleistocene	Ionian; MIS 7	Giozzi 1987; Zecchin et al. 2004; Nalin et al. 2006; Basso et al. 2007
42	Crotone peninsula	Coralligenous build-up; Rhodalgal carbonates; colonies of <i>C. caespitosa</i> ; vermetid clusters		Late Pleistocene	Tarantian	Giozzi 1987; Zecchin et al. 2004; Bracchi et al. 2014, 2016
43	38°55'40"N 17°7'58"E; Le Cannella intertidal coralline-algal bioconstruction	Intertidal coralline-algal bioconstruction		Holocene	3000 yr B.P.	Pirazzoli et al., 1997
44	Catanzaro	Rhodalgal carbonates	Infill of the Catanzaro paleo-strait	Early Pleistocene	Early Calabrian	Chiarella et al. 2012; Longhitano et al. 2014
45	37°56'11"N 15°45'30"E*; Melito di Porto Salvo	Deep-water coral colonies		Early Pleistocene	Middle to late Calabrian	Barrier et al. 1986
46	38°3'23"N 15°47'1"E*; Embrisi	Coralligenous build-up; Rhodalgal carbonates		Early Pleistocene	Calabrian	Barrier et al. 1986
47	37°58'30"N 15°40'14"E*; Lazzaro	Deep-water coral colonies		Early Pleistocene	Calabrian	Barrier et al. 1996
48	37°59'32.9"N 15°39'52.6"E; Motta San Giovanni	Rhodalgal carbonates	The coated grains are composed of thin crusts of coralline algae encrusting pebbles and cobbles	Early Pleistocene	Late Calabrian	Di Geronimo et al. 1995
49	38°08'48.0"N 15°40'01.7"E; Archi	Deep-water coral colonies		Early Pleistocene	Late Calabrian	Taviani et al. 1990; Di Geronimo et al. 1997
50	38°11'03.3"N 15°39'56.7"E; Archi	Deep-water coral colonies		Early Pleistocene	Late Calabrian	Piacella 1978
51	38°12'53"N 15°41'7"E*; Caltana	Rhodalgal carbonates		Early Pleistocene	Calabrian	Barrier et al. 1986

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