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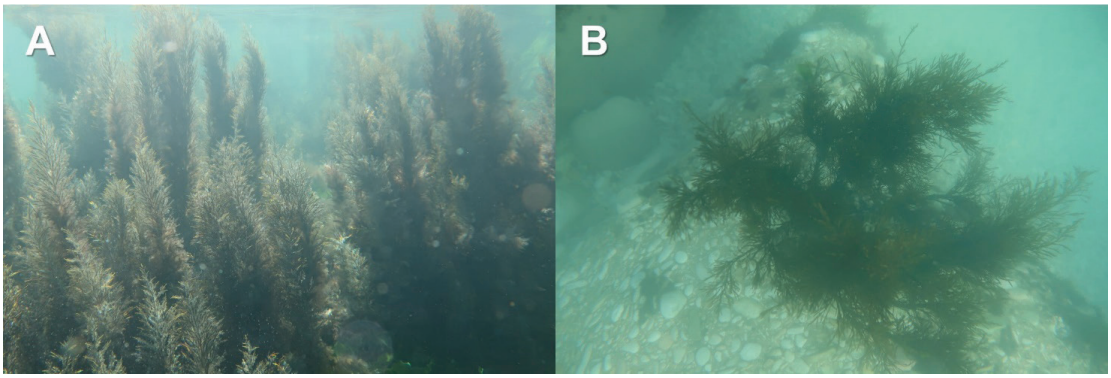

Fig. S1: (A) Detail of the population of *Gongolaria barbata* of the Piscinetta del Passetto. (B) Detail of a thallus of the *Gongolaria barbata* population of the Scalinata del Passetto.

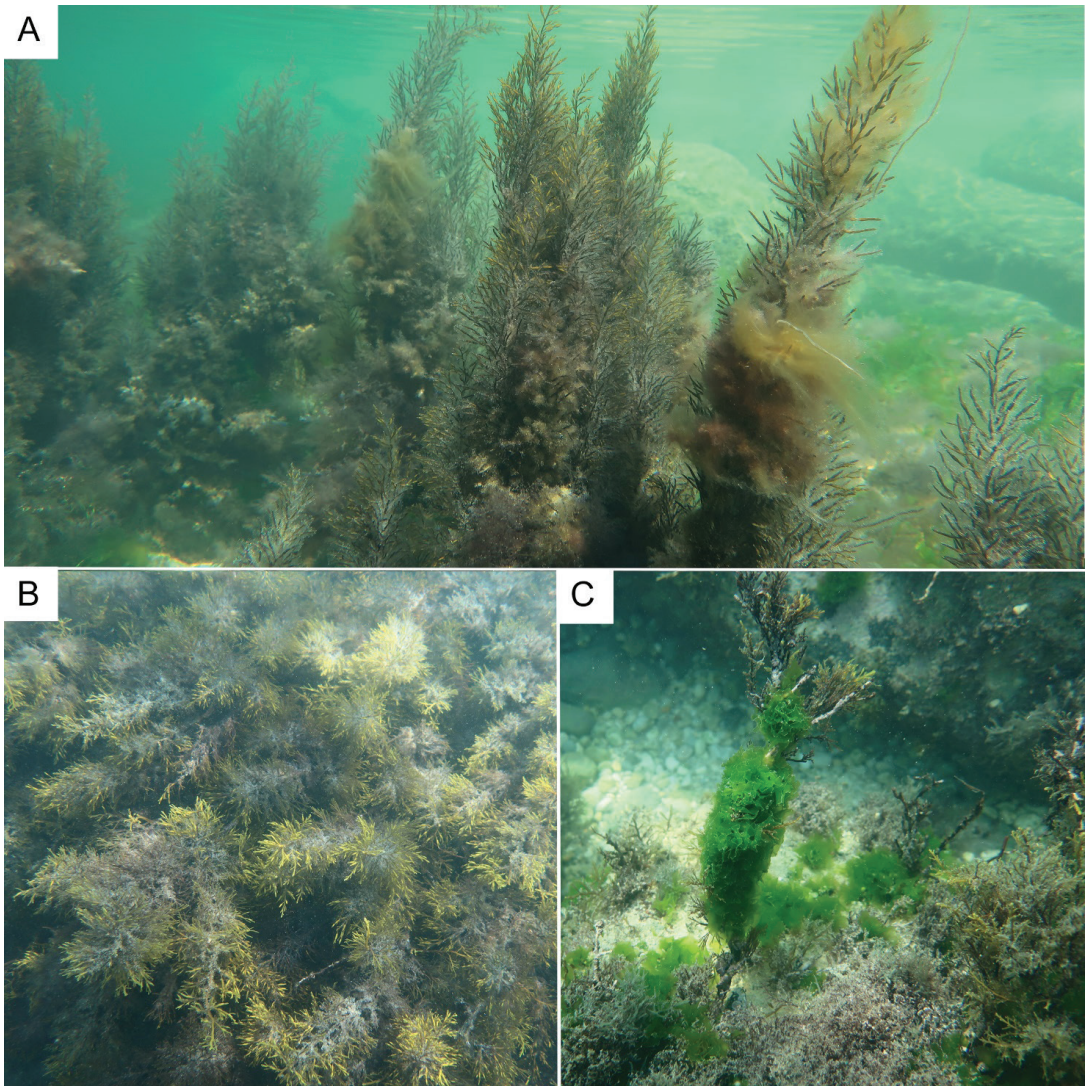

Fig. S2: Habit of thalli of *Gongolaria barbata* of the Conero Riviera densely covered by macroalgal epiphytes. (A) Thalli of the Piscinetta del Passetto (18 March 2023), covered by filamentous epiphytes (mainly *Vertebrata* spp., *Melanothamnus japonicus* and *Sphacelaria* cf. *cirrosa*). (B) Detail of population of Spiaggia delle Due Sorelle (03 September 2021); the branches of *Gongolaria barbata* are epiphytized mainly by *Vertebrata fruticulosa*. (C) Detail of the stipe of a thallus of the population of Spiaggia delle Due Sorelle densely epiphytized by *Ulva* cf. *lacinulata* (03 September 2021).

Table S1. Water volume in each replicate for the sampling of microalgal epiphytes of *Gongolaria barbata*.

Date	Sampling Site	Plant number	Replicate	Final sample volume
22/02/2017	Scalinata	1	R1	420 ml
22/02/2017	Scalinata	1	R2	420 ml
22/02/2017	Scalinata	2	R1	315 ml
22/02/2017	Scalinata	2	R2	315 ml
22/02/2017	Scalinata	3	R1	315 ml
22/02/2017	Scalinata	3	R2	420 ml
22/02/2017	Piscinetta	1	R1	315 ml
22/02/2017	Piscinetta	1	R2	315 ml
22/02/2017	Piscinetta	2	R1	525 ml
22/02/2017	Piscinetta	2	R2	420 ml
22/02/2017	Piscinetta	3	R1	420 ml
22/02/2017	Piscinetta	3	R2	420 ml
23/05/2017	Scalinata	1	R1	420 ml
23/05/2017	Scalinata	1	R2	500 ml
23/05/2017	Scalinata	2	R1	400 ml
23/05/2017	Scalinata	2	R2	315 ml
23/05/2017	Scalinata	3	R1	500 ml
23/05/2017	Scalinata	3	R2	500 ml
24/07/2017	Scalinata	1	R1	400 ml
24/07/2017	Scalinata	1	R2	500 ml
24/07/2017	Scalinata	2	R1	520ml
24/07/2017	Scalinata	2	R2	500 ml
24/07/2017	Scalinata	3	R1	400 ml
24/07/2017	Scalinata	3	R2	500 ml
23/11/2017	Scalinata	1	R1	500 ml
23/11/2017	Scalinata	1	R2	300 ml
23/11/2017	Scalinata	2	R1	400 ml
23/11/2017	Scalinata	2	R2	300 ml
23/11/2017	Scalinata	3	R1	300 ml
23/11/2017	Scalinata	3	R2	300 ml

Table S2. Microalgal epiphytes recorded on *Gongolaria barbata*. Algal nomenclature and classification follow AlgaeBase (Guiry & Guiry, 2023).

SPECIES/TAXA	Growth form	Piscinetta 22-02-2017	Scalinata 22-02-2017	Scalinata 23-05-2017	Scalinata 24-07-2017	Scalinata 23-11-2017
TOTAL		51	47	58	55	60
DIATOMS (Bacillariophyceae, Coscinodiscophyceae, Mediophyceae)						
Achnanthes adnata Bory	Erect			x	x	x
Achnanthes armillaris (O.F. Müller) Guiry	Erect	x		x	x	x
Achnanthes sp.	Erect			x	x	x
Amphora cf. *ovalis* (Kützing) Kützing	Adnate	x	x	x		x
Amphora spp. 1 < 20 µm	Adnate				x	
Amphora spp. 2 > 20 µm	Adnate					x
Amphora sp. 1	Adnate	x		x		
Amphora sp. 2	Adnate			x	x	x
Amphora sp. 3	Adnate				x	
Amphora sp. 4	Adnate				x	x
Amphora sp. *5*	Adnate			x	x	x
Asterionellopsis glacialis (Castracane) Round	Plankton	x				
Caloneis sp.	Motile	x		x	x	x
Campylodiscus sp.	Plocon			x		
Chaetoceros curvisetus Cleve	Plankton	x	x			
Chaetoceros lorenzianus Grunow	Plankton	x	x			
Chaetoceros sp.	Plankton	x	x			
Cocconeis cf. *costata* W. Gregory	Adnate	x				
Cocconeis cf. *pseudomarginata* W. Gregory	Adnate			x	x	x
Cocconeis scutellum Ehrenberg	Adnate	x	x	x	x	x
Cocconeis sp. 1	Adnate	x	x	x	x	x
Cocconeis sp. 2	Adnate	x	x	x	x	x
Coscinodiscus cf. *centralis Ehrenberg*	Plocon					x
Cyclotella sp.	Plocon	x	x			
Cylindrotheca closterium (Ehrenberg) Reimann & J. C. Lewin	Plankton	x	x	x	x	x
Diploneis cf. *crabro* var. *subelliptica* Cleve	Motile				x	x
Diploneis cf. *suborbicularis* (W. Gregory) Cleve	Motile				x	
Diploneis sp.	Motile			x		x
Ditylum brightwellii (T. West) Grunow	Plankton	x				
Entomoneis alata (Ehrenberg) Ehrenberg	Motile	x				
Entomoneis cf. *paludosa* (W. Smith) Reimer	Motile				x	
Entomoneis sp.	Motile				x	
Grammatophora marina (Lyngbye) Kützing	Erect	x	x	x	x	x
Gyrosigma cf. *acuminatum* (Kützing) Rabenhorst	Motile					x

Continued

Table S2 continued

SPECIES/TAXA	Growth form	Piscinetta 22-02-2017	Scalinata 22-02-2017	Scalinata 23-05-2017	Scalinata 24-07-2017	Scalinata 23-11-2017
Gyrosigma sp.	Motile					x
Halamphora cf. *coffeiformis* (C. Agardh) Mereschkowsky	Adnate				x	
Leptocylindrus danicus Cleve	Plankton		x			
Licmophora cf. *abbreviata* C. Agardh	Erect	x	x	x	x	x
Licmophora cf. *debilis* (Kützing) Grunow	Erect	x	x	x	x	x
Licmophora flabellata (Greville) C. Agardh	Erect	x		x	x	
Licmophora sp.	Erect				x	x
Melosira cf. *nummuloides* C. Agardh	Plocon	x				
Navicula sp. 1	Motile					x
Navicula sp. 2	Motile		x	x	x	x
Nitzschia cf. *sigma* (Kützing) W. Smith	Motile	x		x	x	x
Nitzschia longissima (Brébisson) Ralfs	Motile	x	x	x	x	x
Nitzschia sp. 1	Motile	x		x		
Nitzschia sp. 2	Motile	x		x		
Nitzschia sp. 3	Motile	x		x	x	
Nitzschia sp. 4	Motile	x				x
Nitzschia sp. 5	Motile			x		
Nitzschia sp. 6	Motile					x
Nitzschia sp. 7	Motile				x	
Nitzschia sp. 8	Motile					x
Nitzschia sp. 9	Motile		x	x	x	x
Pennate diatom sp. 1	Motile	x	x	x	x	x
Pennate diatom sp. 2	Motile		x	x		
Pennate diatom sp. 3	Motile		x			
Pennate diatom sp. 4	Motile	x	x			
Pennate diatom sp. 5	Motile		x			
Pennate diatom sp. 6	Motile	x	x	x		
Pennate diatom sp. 7	Motile	x	x	x		
Pennate diatom sp. 8	Motile	x	x	x	x	x
Pennate diatom sp. 9	Motile	x		x	x	x
Pennate diatom sp. 10	Motile		x			
Pennate diatom sp. 11	Motile	x		x		
Pennate diatom sp. 12	Motile	x		x	x	x
Pennate diatom sp. 13	Motile			x	x	
Pennate diatom sp. 14	Motile				x	x
Pennate diatom sp. 15	Motile				x	
Pennate diatom sp. 16	Motile					x
Pennate diatom sp. 17	Motile				x	
Plagiotropis cf. *lepidoptera* (W. Gregory) Kuntze	Motile				x	
Plagiotropis sp.	Motile			x		
Pleurosigma cf. *rigidum* W. Smith	Motile				x	

Continued

Table S2 continued

SPECIES/TAXA	Growth form	Piscinetta 22-02-2017	Scalinata 22-02-2017	Scalinata 23-05-2017	Scalinata 24-07-2017	Scalinata 23-11-2017
Pleurosigma sp.	Motile	x	x	x	x	x
Psammodictyon sp.	Motile			x		x
Pseudo-nitzschia multistriata (H. Takano) H. Takano	Plankton		x			
Rhabdonema adriaticum Kützing	Erect	x				
Rhoicosphenia cf. *abbreviata* (C. Agardh) Lange-Bertalot	Erect		x	x	x	x
Rhophalodia sp.	Adnate					x
Skeletonema marinoi Sarno & Zingone	Plankton	x	x	x		
Striatella unipunctata (Lyngbye) C. Agardh	Erect			x	x	
Surirella sp.	Plocon			x		
Synedra sp. 1	Erect	x	x	x	x	x
Synedra sp. 2	Erect	x	x			
Synedra sp. 3	Erect				x	x
Tabularia sp.	Erect	x	x	x	x	x
Tetramphora cf. *ostrearia* (Brébisson) Mereschkowsky	Adnate	x				
Thalassionema nitzschioides (Grunow) Mereschkowsky	Plankton		x	x		
Thalassiosira sp.	Plankton					x
Trachyneis cf. *aspera* (Ehrenberg) Cleve	Motile			x	x	x
Trachyneis sp.	Motile					x
Tropidoneis sp.	Motile					x
Tryblionella cf. *punctata* W. Smith	Motile					x
Tube forming sp. 1	Tube dwelling	x		x	x	x
Tube forming sp. 2	Tube dwelling	x				
Unidentified centric diatoms	Plocon	x	x	x	x	x
Unidentified pennate diatoms	Motile	x	x	x	x	x
DINOPHYCEAE						
Alexandrium sp.	Plankton		x			
Dinophysis caudata Kent	Plankton					x
Noctiluca scintillans (Macartney) Kofoid & Swezy	Plankton			x		
Prorocentrum cordatum (Ostenfeld) J. D. Dodge	Plankton		x			
Prorocentrum lima (Ehrenberg) F. Stein	Plocon	x	x	x	x	x
Prorocentrum micans Ehrenberg	Plankton		x	x		x
Prorocentrum triestinum J. Schiller	Plankton					x
Protopteridinium conicum (Gran) Balech	Plankton			x		
Protopteridinium oceanicum (Vanhöffen) Balech	Plankton	x				
Triops fusus (Ehrenberg) F. Gómez	Plankton		x			

Continued

Table S2 continued

SPECIES/TAXA	Growth form	Piscinetta 22-02-2017	Scalinata 22-02-2017	Scalinata 23-05-2017	Scalinata 24-07-2017	Scalinata 23-11-2017
Undetermined harmored dinoflagellates	Plankton	x	x	x	x	x
CRYPTOPHYCEAE						
Unidentified Cryptophyceae	Plankton		x	x		x
DICTYOCHOPHYCEAE						
Dictyocha fibula Ehrenberg	Plankton		x			
EUGLENOPHYCEAE						
Euglena sp.	Plankton		x			
Unidentified Euglenophyceae	Plankton					x
PHYTOPHAGELLATES						
Unidentified phytoflagellates < 10 µm	Plankton	x	x			
CYANOBACTERIA						
Unidentified Oscillatoriales	Plocon		x		x	
Spirulina sp.	Plocon			x		
Unidentified unicellular Cyanobacteria	Plocon	x	x	x	x	x
Unidentified filamentous Cyanobacteria	Plocon				x	

Table S3. Percent contribution of microalgal groups to the total taxonomic diversity.

Microalgal group	Percent contribution to total diversity
Diatoms	83%
Dinoflagellates	9%
Phytoflagellates	4%
Cyanobacteria	3%

Table S4. Comparison between Piscinetta del Passetto and Scalinata del Passetto for the winter date (22 February 2017) in terms of alpha diversity and beta diversity of microalgal epiphytes (Jaccard Index).

Sampling site	α diversity	β diversity (Jaccard)
Piscinetta del Passetto	51 taxa	58%
Scalinata del Passetto	47 taxa	

Table S5. Abundances of epiphytic microalgae at the Piscinetta and Scalinata sites and results of the One-Way ANOVA testing for differences among sampling sites. Mean abundances (cells g dw^{-1}) ± standard error (SE). ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Piscinetta	Scalinata		
Avg ± SE (cells g dw^{-1})	Avg ± SE (cells g dw^{-1})	ANOVA p-level	Tukey test sampling sites
22,273,716 ± 4,385,052	2,676,863 ± 443,968	***	Piscinetta>Scalinata

Table S6. Biomasses of epiphytic microalgae at the Piscinetta and Scalinata sites and results of the One-Way ANOVA testing for differences among sampling sites. Mean abundances (µg C g dw^{-1}) ± standard error (SE). ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Piscinetta	Scalinata		
Avg ± SE (µg C g dw^{-1})	Avg ± SE (µg C g dw^{-1})	ANOVA p-level	Tukey test sampling sites
2,553.08 ± 428.20	224.11 ± 43.00	***	Piscinetta>Scalinata

Table S7. Abundances of epiphytic microalgae at the Scalinata site and results of the One-Way ANOVA testing for differences among sampling dates. Mean abundances (cells g dw^{-1}) ± standard error (SE). ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Winter	Spring	Summer	Autumn		
Avg ± SE (cells g dw^{-1})	Avg ± SE (cells g dw^{-1})	Avg ± SE (cells g dw^{-1})	Avg ± SE (cells g dw^{-1})	ANOVA p-level	Tukey test sampling dates
2,676,863 ± 443,968	2,300,815 ± 870,302	40,379,177 ± 8,899,975	926,167 ± 162,447	***	Winter=Spring
					Winter<Summer
					Winter=Autumn
					Spring<Summer
					Spring=Autumn
					Summer>Autumn

Table S8. Biomasses of epiphytic microalgae at the Scalinata site and results of the One-Way ANOVA testing for differences among sampling dates. Mean biomass (µg C g dw^{-1}) ± standard error (SE). ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Winter Avg ± SE (µg C g dw-1)	Spring Avg ± SE (µg C g dw-1)	Summer Avg ± SE (µg C g dw-1)	Autumn Avg ± SE (µg C g dw-1)	ANOVA p-level	Tukey test sampling dates
224.11 ± 43.00	144.55 ± 33.68	2,094.25 ± 640.23	15.61 ± 2.88	*	Winter=Spring Winter=Summer Winter=Autumn Spring=Autumn Spring=Summer Summer>Autumn

Table S9. Abundances of diatoms, dinoflagellates, phytoflagellates and cyanobacteria at Scalinata site and results of the One-Way ANOVAs testing for differences among sampling dates. Mean abundances (cells g dw^{-1}) ± standard error (SE). ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Algal group	Winter Avg ± SE (cells g dw^{-1})	Spring Avg ± SE (cells g dw^{-1})	Summer Avg ± SE (cells g dw^{-1})	Autumn Avg ± SE (cells g dw^{-1})	ANOVA p-level	Tukey test sampling dates
Diatoms	2,429,008 ± 491,367	2,156,185 ± 821,317	35,496,073 ± 8,735,1655	891,254 ± 172,919	**	Winter<Summer Spring<Summer Summer>Autumn
Dinoflagellates	40,495 ± 15,190	16,709 ± 6,773	69,668 ± 17,195	483 ± 409		ns
Phytoflagellates	9,550 ± 5,705	26 ± 26	-	1,713 ± 1,285		ns
Cyanobacteria	197,810 ± 160,231	128,015 ± 51,975	4,813,435 ± 2,061,473	32,167 ± 30,897		Winter<Summer Spring<Summer Summer>Autumn

Table S10. Abundances of diatom growth forms at Scalinata site and results of the One-Way ANOVAs testing for differences among growth forms. Mean abundances (cells g dw^{-1}) ± standard error (SE). ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Motile Avg ± SE (cells g dw^{-1})	Erect Avg ± SE (cells g dw^{-1})	Adnate Avg ± SE (cells g dw^{-1})	Planktonic Avg ± SE (cells g dw^{-1})	Plocon Avg ± SE (cells g dw^{-1})	Tube-dwelling Avg ± SE (cells g dw^{-1})	ANOVA p-level	Tukey test Growth forms
7,433,988 ± 3,039,051	4,722,837 ± 18,642	68,853 ± 18,642	199,944 ± 80,375	8,495 ± 3,383	242 ± 69	**	motile > adnate, planktonic, plocon, tube-dwelling

Table S11. Abundances of diatom growth forms at Scalinata site and results of the One-Way ANOVAs testing for differences among sampling dates. Mean abundances (cells g dw^{-1}) ± standard error (SE). ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Growth forms	Winter Avg ± SE (cells g dw^{-1})	Spring Avg ± SE (cells g dw^{-1})	Summer Avg ± SE (cells g dw^{-1})	Autumn Avg ± SE (cells g dw^{-1})	ANOVA p-level	Tukey test sampling dates
Motile	307,992 ± 62,152	1,175,331 ± 430,238	26,838,732 ±8,315,649	1,413,938 ±230,491	***	Summer> Winter, Spring, Autumn
Erect	1,448,870 ±206,416	732,272 ±146,935	16,628,740 ±6,413,422	81,468 ±22066		Summer> Winter, Spring, Autumn
Adnate	42,189 ±14,490	68,509 ±34,921	139,341 ±58,559	25,373 ±4,644		ns
Planktonic	779,901 ±170,689	2,593 ±1,040	16,779 ±2,708	505 ±99		ns
Plocon	26,527 ±10,585	3,371 ±2,137	2,415 ±2,415	1,665 ±1,086		ns
Tube-dwelling	0±0	674±90	242 ±146	51 ±51		ns

Table S12. Detail of sampling dates of macroalgal epiphytes for each sampling site.

Year	Scalinata Passetto	Piscinetta Passetto	Scalaccia	Spiaggia delle Due Sorelle	Spiaggia dei Sassi Neri	Spiaggia Urbani	Spiaggia del Frate
2012	30 Jun 24 Aug 29 Aug	11 Jun 05 Jul 05 Aug 24 Aug 06 Oct					
2013		08 May 23 Jun 28 Jul					
2014	14 Jul	01 Mar 10 May					
2015		10 May 07 Jul					
2016		11 Sep					
2017	22 Feb 23 May 28 May 18 Jun 24 Jul 30 Jul 17 Sep 23 Nov	22 Feb 21 Jun					
2018		25 Jan 10 Mar 07 Apr 26 Apr 18 May 21 May 23 Jun 17 Jul 30 Aug 12 Sep 12 Oct					
2019							
2020		20 May 31 May 26 Jun	10 Jun				
2021		18 May 18 Jun		10 Jun 03 Sep 04 Sep		29 Sep	15 Sep
2022		15 Jan 20 May 14 Jun	31 May	16 May 30 Jun	09 May		30 Jun
2023		06 Jan 18 Mar					
Total number of sampling dates per site	12	36	2	5	1	1	2

Table S13. Macroalgal epiphytes recorded on *Gongolaria barbata*. Algal nomenclature and classification follow AlgaeBase (Guiry & Guiry, 2023).

SPECIES/TAXA	FUNCTIONAL GROUP	Piscinetta Passetto	Scalinata Passetto	Scalaccia	Due Sorelle	Sassi Neri	Spiaggia Urbani	Spiaggia del Frate
TOTAL		29	37	3	14	1	4	19
RHODOPHYTA								
Acrochaetium cf. *luxurians* (J. Agardh ex Kützing) Nägeli	Filamentous							x
Callithamnion corymbosum (Smith) Lyngbye	Filamentous	x						
Ceramium siliquosum (Kützing) Maggs & Hommersand	Filamentous	x	x					
Ceramium cf. *siliquosum* (Kützing) Maggs & Hommersand	Filamentous				x			x
Ceramium virgatum Roth	Filamentous	x	x		x			x
Chondria capillaris (Hudson) M. J. Wynne	Corticated							x
Chondria cf. *capillaris* (Hudson) M. J. Wynne	Corticated	x						
Chondria dasyphylla (Woodward) C. Agardh	Corticated		x		x			x
Encrusting coralline sp. 1	Crustose		x					
Encrusting coralline sp. 2	Crustose		x					
Erythrotrichia carnea (Dillwyn) J. Agardh	Filamentous	x	x					x
Gastroclonium clavatum (Roth) Ardissone	Corticated		x		x			x
Gayliella mazoyerae T. O. Cho, Fredricq & Hommersand	Filamentous				x		x	x
Gelidium spathulatum Kützing	Corticated	x	x					
Herposiphonia secunda (C. Agardh) Ambron	Filamentous						x	
Hypnea musciformis (Wulfen) J. V. Lamoroux	Corticated		x					x
Hypnea spinella (C. Agardh) Kützing	Corticated						x	
Hypnea sp.	Corticated		x					
Laurencia complex sp.	Corticated		x					
Melanothamnus japonicus (Harvey) Diaz-Tapia & Maggs	Filamentous	x	x	x				
Nitophyllum punctatum (Stackhouse) Greville	Foliose	x	x		x			x
Osmundea truncata (Kützing) K. W. Nam & Maggs	Corticated	x	x		x			x
Polysiphonia opaca (C. Agardh) Moris & De Notaris	Filamentous							x

Continued

Table S13 continued

SPECIES/TAXA	FUNCTIONAL GROUP	Piscinetta Passetto	Scalinata Passetto	Scalaccia	Due Sorelle	Sassi Neri	Spiaggia Urbani	Spiaggia del Frate
Polysiphonia sanguinea (C. Agardh) Zanardini	Filamentous	x						
Polysiphonia sp.	Filamentous	x						
Pterocladiella cf. *capillacea* (S. G. Gmelin) Santelices & Hommersand	Corticated		x					
Pterocladiella cf. *melanoidea* (Schousboe ex Bornet) Santelices & Hommersand	Corticated		x					
Pyropia cf. *elongata* (Kylin) Neefus & J. Brodie	Foliose		x					
Pyropia sp.	Foliose	x	x					
Rhodophyllis divaricata (Stackhouse) Papenfuss	Foliose	x	x					
Spyridia filamentosa (Wulfen) Harvey	Filamentous	x						
Stylonema alsidii (Zanardini) K. M. Drew	Filamentous							x
Titanoderma cf. *pustulatum* (J. V. Lamoroux) Nägeli	Crustose				x			x
Titanoderma sp.	Crustose		x					
Vertebrata fruticulosa (Wulfen) Kuntze	Filamentous	x	x	x	x	x		x
Vertebrata martensiana (Kützing) Piñeiro-Corbeira, Maggs & Diaz-Tapia	Filamentous	x					x	x
HETEROKONTOPHYTA / PHAEOPHYCEAE								
Dictyopteris polypodioides (De Candolle) J. V. Lamoroux	Corticated foliose		x					
Dictyota dichotoma (Hudson) J. V. Lamoroux	Corticated foliose	x	x		x			x
Unidentified Dictyotales	Corticated foliose		x					
Feldmannia cf. *mitchelliae* (Harvey) H.-S. Kim	Filamentous		x					
Feldmannia sp.	Filamentous				x			
Hincksia sp.	Filamentous	x						
Myriactula stellulata (Harvey) Levring	Filamentous		x					
Myriactula sp.	Filamentous		x					
Sphacelaria cirrosa (Roth) C. Agardh	Filamentous	x						
Sphacelaria cf. *cirrosa* (Roth) C. Agardh	Filamentous	x	x	x	x			
Sphacelaria tribuloides Menenghini	Filamentous	x						
Sphacelaria sp.	Filamentous	x						

Continued

Table S13 continued

SPECIES/TAXA	FUNCTIONAL GROUP	Piscinetta Passetto	Scalinata Passetto	Scalaccia	Due Sorelle	Sassi Neri	Spiaggia Urbani	Spiaggia del Frate
CHLOROPHYTA								
Chaetomorpha aerea (Dillwyn) Kützing	Filamentous		x					
Chaetomorpha gracilis Kützing	Filamentous	x						
Chaetomorpha ligustica (Kützing) Kützing	Filamentous	x	x					
Chaetomorpha cf. *pachynema* (Montagne) Kützing	Filamentous							x
Chaetomorpha sp.	Filamentous		x					
Cladophora laetevirens (Dillwyn) Kützing	Filamentous	x	x					
Cladophora cf. *vagabunda* (Linnaeus) Hoek	Filamentous		x					
Cladophora sp.	Filamentous		x		x			x
Syncoryne reinkei R. Nielsen & P. M. Pedersen	Filamentous	x						
Ulva cf. *intestinalis* Linnaeus	Tubular	x	x					
Ulva cf. *lacinulata* (Kützing) Wittrock	Foliose	x	x		x			
Ulva sp.	Foliose	x	x					

Table S14. Number of species/taxa and percentage contribution of taxonomic macroalgal groups to the total taxonomic diversity.

MACROALGAL GROUP	N° SPECIES/TAXA	CONTRIBUTION TO THE TOTAL DIVERSITY
Rhodophyta	36	60%
Chlorophyta	12	20%
Phaeophyceae	12	20%

Table S15. Number of species/taxa of macroalgal functional groups and percentage contribution of taxonomic macroalgal groups to each functional category.

FUNCTIONAL GROUP	N° SPECIES/TAXA	MACROALGAL GROUP CONTRIBUTION
Filamentous	34	48% Rhodophyta 26% Chlorophyta 26% Phaeophyceae
Corticated	12	100% Rhodophyta
Foliose	6	66% Rhodophyta 34% Chlorophyta
Corticated foliose	3	100% Phaeophyceae
Crustose	4	100% Rhodophyta
Tubular	1	100% Chlorophyta

Table S16. Microalgal diversity at the Piscinetta site: comparison of the results of the present study with those of Lenzo et al. (2022, 2023).

MICROEPIPHYTIC TAXA	2017 *Gongolaria barbata* Present study	2018 *Cystoseira compressa* Lenzo *et al.* 2022	2021 *Cystoseira compressa* Lenzo *et al.* 2023
DIATOMS (Bacillariophyceae, Coscinodiscophyceae, Mediophyceae)			
Achnanthes adnata Bory	x		
Achnanthes armillaris (O.F. Müller) Guiry	x		
Achnanthes sp.	x	x	
Amphora cf. *ovalis* (Kützing) Kützing	x		
Amphora spp.	x	x	x
Asterionellopsis glacialis (Castracane) Round	x		
Ardissonea spp.		x	x
Bacillaria spp.		x	
Biddulphia spp.		x	
Caloneis sp.	x		
Campylodiscus sp.	x		
Chaetoceros curvisetus Cleve	x		
Chaetoceros lorenzianus Grunow	x		
Chaetoceros spp.	x	x	
Cocconeis cf. *costata* W. Gregory	x		
Cocconeis cf. *pseudomarginata* W. Gregory	x		
Cocconeis scutellum Ehrenberg	x		
Cocconeis spp.	x	x	x
Coscinodiscus cf. *centralis* Ehrenberg	x		
Coscinodiscus spp.			
Cyclotella sp.	x		
Cylindrotheca closterium (Ehrenberg) Reimann & J. C. Lewin	x		
Cylindrotheca spp.		x	x
Diploneis cf. *suborbicularis* (W. Gregory) Cleve	x		
Diploneis spp.	x	x	
Ditylum brightwellii (T. West) Grunow	x		
Entomoneis alata (Ehrenberg) Ehrenberg	x		
Entomoneis ornata (Bailey) Reimer		x	
Entomoneis cf. *paludosa* (W. Smith) Reimer		x	
Entomoneis spp.	x	x	x
Grammatophora marina (Lyngbye) Kützing	x		
Guinardia spp.		x	

Continued

Table S16 continued

MICROEPIPHYTIC TAXA	2017 *Gongolaria barbata* Present study	2018 *Cystoseira compressa* Lenzo *et al.* 2022	2021 *Cystoseira compressa* Lenzo *et al.* 2023
Gyrosigma cf. *acuminatum* (Kützing) Rabenhorst	x		
Gyrosigma spp.	x	x	
Halamphora cf. *coffeiformis* (C. Agardh) Mereschkowsky	x		
Leptocylindrus danicus Cleve	x		
Leptocylindrus spp.			x
Licmophora cf. *abbreviata* C. Agardh	x		
Licmophora cf. *debilis* (Kützing) Grunow	x		
Licmophora flabellata (Greville) C. Agardh	x		
Licmophora spp.	x	x	x
Lyrella spp.		x	
Melosira cf. *nummuloides* C. Agardh	x		
Meuniera membranacea (Cleve) P.C. Silva			x
Navicula spp.	x	x	x
Nitzschia cf. *sigma* (Kützing) W. Smith	x		
Nitzschia longissima (Brébisson) Ralfs	x	x	
Nitzschia palea (Kützing) W. Smith		x	
Nitzschia spp.	x	x	x
Pennate diatom spp.	x		
Plagiotropis cf. *lepidoptera* (W. Gregory) Kuntze	x		
Plagiotropis spp.	x	x	
Pleurosigma cf. *rigidum* W. Smith	x		
Pleurosigma spp.	x		x
Psammodictyon sp.	x		
Pseudo-nitzschia multistriata (H. Takano) H. Takano	x		
Pseudo-nitzschia spp.		x	
Rhabdonema adriaticum Kützing	x		
Rhizosolenia spp.		x	
Rhoicosphenia cf. *abbreviata* (C. Agardh) Lange-Bertalot	x		
Rhophalodia sp.	x		
Skeletonema marinoi Sarno & Zingone	x		
Striatella unipunctata (Lyngbye) C. Agardh	x	x	x
Surirella sp.	x		
Synedra sp.	x		

Continued

Table S16 continued

MICROEPIPHYTIC TAXA	2017 *Gongolaria barbata* Present study	2018 *Cystoseira compressa* Lenzo *et al.* 2022	2021 *Cystoseira compressa* Lenzo *et al.* 2023
Tabularia sp.	x		
Tetramphora cf. *ostrearia* (Brébisson) Mereschkowsky	x		
Thalassionema nitzschioides (Grunow) Mereschkowsky	x		
Thalassionema spp.			x
Thalassiosira sp.	x		
Toxarium spp.		x	
Trachyneis cf. *aspera* (Ehrenberg) Cleve	x		
Trachyneis sp.	x		
Tropidoneis sp.	x		
Tryblionella cf. *punctata* W. Smith	x		
Tube forming spp.	x		
Unidentified centric diatoms	x	x	x
Unidentified pennate diatoms	x	x	x
DINOPHYCEAE			
Alexandrium spp.	x		x
Amphidinium spp.			x
Dinophysis caudata Kent	x		
cf. *Heterocapsa*			x
Noctiluca scintillans (Macartney) Kofoid & Swezy	x		
Ostreopsis cf. *ovata* Y. Fukuyo		x	
Prorocentrum cordatum (Ostenfeld) J. D. Dodge	x		
Prorocentrum lima (Ehrenberg) F. Stein	x	x	x
Prorocentrum micans Ehrenberg	x	x	x
Prorocentrum minimum (Pavillard) J. Schiller		x	
Prorocentrum triestinum J. Schiller	x		
Prorocentrum spp.		x	
Protopteridinium conicum (Gran) Balech	x		
Protopteridinium oceanicum (Vanhöffen) Balech	x		
Triops fusus (Ehrenberg) F. Gómez	x		
Unidentified dinoflagellates	x	x	
CRYPTOPHYCEAE			
Unidentified Cryptophyceae	x		
DICTYOCHOPHYCEAE			
Dictyocha fibula Ehrenberg	x		
EUGLENOPHYCEAE			
Euglena sp.	x		

Continued

Table S16 continued

MICROEPIPHYTIC TAXA	2017 *Gongolaria barbata* Present study	2018 *Cystoseira compressa* Lenzo *et al.* 2022	2021 *Cystoseira compressa* Lenzo *et al.* 2023
Unidentified Euglenophyceae	x		
PHYTOFLAGELLATES			
Unidentified Phytoflagellates < 10 µm	x		
CYANOBACTERIA			
Unidentified Oscillatoriales	x		
Spirulina sp.	x		
Unidentified unicellular Cyanobacteria	x		
Unidentified filamentous Cyanobacteria	x		
XANTHOPHYCEAE			
Meringosphaera spp.		x	x

Table S17. Comparison of the epiphytic macroalgal vegetation recorded in the present study with the results of Deyanova et al. (2010) and Mačic & Svirčev (2014); "spp." was added when same genera but different species were present in different studies. Only macroalgal taxa common to at least two of the considered studies are included in the list.

MACROALGAL TAXA	Riviera del Conero (present study)	Black Sea (Deyanova *et al.*, 2010)	Montenegro (Mačic & Svircev, 2014)
RHODOPHYTA			
Acrochaetium spp.	x	x	
Callithamnion corymbosum (Smith) Lyngbye	x	x	x
Ceramium siliquosum (Kützing) Maggs & Hommersand	x	x	
Ceramium virgatum Roth	x	x	
Ceramium spp.	x		x
Gelidium spp.	x		
Hypnea musciformis (Wulfen) J. V. Lamoroux	x		x
Laurencia sp.	x		x
Polysiphonia opaca (C. Agardh) Moris & De Notaris	x	x	
Pterocladiella capillacea (S. G. Gmelin) Santelices & Hommersand	x	x	
Vertebrata spp.	x	x	
HETEROKONTOPHYTA / PHAEOPHYCEAE			
Dictyota spp.	x		x
Feldmannia spp.	x	x	
Myriactula spp.	x	x	
Sphacelaria cirrosa (Roth) C. Agardh	x	x	x
CHLOROPHYTA			
Chaetomorpha aerea (Dillwyn) Kützing	x	x	x
Chaetomorpha spp.	x		
Cladophora spp.	x	x	x
Ulva intestinalis Linnaeus	x		x
Ulva spp.	x	x	x