Supplementary Material

Table S1. *Posidonia oceanica* sampling stations, geographic location, time of sampling and replicate numbers.

Depth (m)	Number of Station	Coordinates		Time of Sampling	Total number of quadrat (0.16 m²) measurements	Total number of shoots analysed
		Latitude	Longitude			
5 ± 1	1	34° 42.237′N	33° 14.747′E	Autumn 2012, Summer 2013	20	20
	2	34° 42.288′N	33° 15.806′E		20	20
	3	34° 42.408′N	33° 16.385′E		20	20
	4	34° 42.793′N	33° 16.560′E		20	20
	5	34° 43.104′N	33° 16.722′E		20	20
	6	34° 43.261′N	33° 17.261′E		20	20
	7	34° 43.113′N	33° 18.050′E		20	20
	8	34° 43.181′N	33° 18.486′E		20	20
	9	34° 43.029′N	33° 19.387′E		20	20
	10	34° 43.249′N	33° 19.964′E		20	20
15 ± 1	1	34° 42.010′N	33° 14.290′E	Autumn 2012, Spring 2013	20	40
	2	34° 42.022′N	33° 14.951′E		20	40
	3	34° 42.030′N	33° 15.610′E		20	40
	4	34° 42.178′N	33° 16.263′E		20	40
	5	34° 42.479′N	33° 16.912′E		20	40
	6	34° 42.846′N	33° 17.583′E		20	40
	7	34° 42.870′N	33° 18.239′E		20	40
	8	34° 42.790′N	33° 18.898′E		20	40
	9	34° 42.730′N	33° 19.547′E		20	40
	10	34° 42.908′N	33° 20.140′E		20	40
25.2	1	34° 41.938′N	33° 14.291′E	Autumn 2012, Autumn 2013	10	10
27.2	2	34° 41.942′N	33° 14.945′E		10	10
27.8	3	34° 41.977′N	33° 15.607′E		10	10
32.4	4	34° 42.045′N	33° 16.279′E		10	10
26.1	5	34° 42.329′N	33° 16.970′E		10	10
27.2	6	34° 42.497′N	33° 17.560′E		10	10
32.5	7	34° 42.258′N	33° 18.341′E		10	10
22.3	8	34° 42.443′N	33° 18.948′E		10	10
23.5	9	34° 42.367′N	33° 19.558′E		10	10
30.3	10	34° 42.467′N	33° 20.401′E		10	10

Table S2. Reference condition values used for applying the biotic indices BiPo and PREI to assess the ecological water quality status of the coastal area studied. From the seasonal adapted reference conditions, only the leaf surface area was varied between the two seasons.

	BiPo		PREI	
	Reference conditions in western Mediterranean	Reference conditions adapted to study area	Reference conditions set by DFMR *Intercalibration exercise*	Reference conditions adapted to study area (Spring 2013)

		(Autumn 2012)		
Shoot density (shoots/m²)	599	581	731	581
Foliar surface per shoot (cm²/shoot)	310	325	176	309
Epiphyte/Leaf Dry Mass (E/L) (g/shoot)	Not applied	Not applied	0	0
Lower Limit of Meadow (m)	38	33	42	33
Type of Meadow (λ)	3 (Progressive)		3 (Progressive)	

Table S3. *Posidonia oceanica* descriptors determined at the 30 sampling stations. Mean values ± SE are presented.

Depth (m)	Station #	Shoot density (shoots m^{-2})	Leaf number (leaves shoot^{-1})	Foliar surface (cm^{2}shoot^{-1})	% of adult leaves with herbivory marks	Coefficient A (% of adult leaves with broken apex)	Leaf Area Index
5 ± 1	1	901 ± 46	6.8 ± 0.3	268 ± 17	28.7 ± 4.5	65.4 ± 7.0	24.15
	2	914 ± 38	6.1 ± 0.4	262 ± 14	34.7 ± 6.3	43.6 ± 7.2	23.98
	3	678 ± 26	6.4 ± 0.3	313 ± 16	47.9 ± 7.3	59.6 ± 6.9	21.24
	4	679 ± 31	5.8 ± 0.3	238 ± 18	30.4 ± 7.6	32.8 ± 4.4	16.18
	5	791 ± 48	5.4 ± 0.2	213 ± 18	18.3 ± 6.6	30.2 ± 8.8	16.88
	6	617 ± 31	5.4 ± 0.3	225 ± 20	15.8 ± 4.6	56.7 ± 6.6	13.86
	7	621 ± 28	7.3 ± 0.4	251 ± 13	18.3 ± 5.7	35.8 ± 5.9	15.59
	8	821 ± 39	5.6 ± 0.2	229 ± 12	24.2 ± 5.6	33.3 ± 7.6	18.82
	9	908 ± 35	6.1 ± 0.4	302 ± 23	19.7 ± 6.0	39.6 ± 7.4	27.39
	10	954 ± 88	5.5 ± 0.3	227 ± 19	12.7 ± 5.0	24.6 ± 5.8	21.63
15 ± 1	1	414 ± 18	6.4 ± 0.1	194 ± 9	17.7 ± 3.3	22.7 ± 4.0	8.04
	2	424 ± 11	5.5 ± 0.1	173 ± 9	13.7 ± 3.9	6.7 ± 2.5	7.36
	3	398 ± 19	5.6 ± 0.2	200 ± 10	29.8 ± 5.1	17.3 ± 3.6	7.96
	4	395 ± 13	5.6 ± 0.2	158 ± 8	13.1 ± 3.6	18.1 ± 4.1	6.24
	5	398 ± 17	5.5 ± 0.2	147 ± 8	17.7 ± 3.6	12.7 ± 3.6	5.86
	6	478 ± 11	6.4 ± 0.2	209 ± 8	14.5 ± 2.8	12.9 ± 3.1	10.01
	7	432 ± 17	6.4 ± 0.2	211 ± 9	12.8 ± 3.2	13.6 ± 3.2	9.12
	8	438 ± 12	6.3 ± 0.2	203 ± 10	7.5 ± 2.5	13.1 ± 2.3	8.90
	9	455 ± 18	6.6 ± 0.2	172 ± 9	23.0 ± 3.9	16.8 ± 3.3	7.85
	10	429 ± 14	6.5 ± 0.2	225 ± 9	15.9 ± 3.9	8.2 ± 2.7	9.67

25.2	1	250 ± 22	6.3 ± 0.2	106 ± 9	20.8 ± 7.8	47.5 ± 5.6	2.66
27.2	2	284 ± 22	6.4 ± 0.3	134 ± 29	30.0 ± 10.7	39.2 ± 8.1	3.81
27.8	3	244 ± 11	6.4 ± 0.3	121 ± 11	41.7 ± 6.8	55.8 ± 5.7	2.95
32.4	4	177 ± 12	6.6 ± 0.3	131 ± 11	62.5 ± 6.2	48.3 ± 7.9	2.31
26.1	5	138 ± 15	6.6 ± 0.2	162 ± 11	22.5 ± 9.0	48.3 ± 9.4	2.23
27.2	6	304 ± 12	6.5 ± 0.2	133 ± 12	40.8 ± 12.2	54.2 ± 11.3	4.03
32.5	7	197 ± 15	5.6 ± 0.3	130 ± 11	66.7 ± 9.6	50.1 ± 12.4	2.56
22.3	8	345 ± 22	5.5 ± 0.3	102 ± 11	66.7 ± 10.5	63.3 ± 11.1	3.51
23.5	9	333 ± 15	6 ± 0.2	147 ± 13	40.0 ± 13.0	50.0 ± 5.6	4.90
30.3	10	116 ± 15	5.4 ± 0.3	125 ± 12	36.7 ± 10.2	60.0 ± 6.2	1.46

Table S4. Dry weight of *P. oceanica* leaves and epiphytes, and E/L. Mean values ± SE are presented. Stations varied between them (Kruskal-Wallis, $\chi2 = 228.86$, df = 9, $p < 0.05$) and those that do not share a letter are significant different at $p < 0.05$. Pairwise comparisons are generated by Dunn's post-hoc test with Bonferroni correction.

Station #	Foliar dry weight (g shoot^{-1})	Epiphytic dry weight (g shoot^{-1})	Epiphyte : Leaf (E/L)
1	1.012 ± 0.046	0.187 ± 0.021	0.186 ± 0.018^{a}
2	0.787 ± 0.048	0.148 ± 0.021	0.192 ± 0.025^{a}
3	0.869 ± 0.048	0.146 ± 0.014	0.167 ± 0.014^{a}
4	0.715 ± 0.045	0.116 ± 0.014	0.152 ± 0.011 ^{a}
5	0.656 ± 0.037	0.105 ± 0.013	0.166 ± 0.019 ^{a}
6	1.039 ± 0.049	0.049 ± 0.008	0.048 ± 0.007^{b}
7	1.007 ± 0.047	0.036 ± 0.003	0.036 ± 0.002 ^{b}
8	1.018 ± 0.057	0.041 ± 0.002	0.043 ± 0.003 ^{b}
9	0.858 ± 0.037	0.067 ± 0.012	0.081 ± 0.017 ^{b}
10	1.275 ± 0.086	0.042 ± 0.005	0.038 ± 0.005 ^{b}

Table S5. Data collected from the sampling stations and used for the application of the WFD biotic indices BiPo and PREI.

Station Code	Shoot density m^{-2} (Summer 2012, 10 repl. within 0.16 m^2)	Shoot density m^{-2} / (Spring 2013, 10 repl. within 0.16 m^2)	Mean shoot density m^{-2} (20 repl. within 0.16 m^2 quadrat)	Mean foliar surface ($cm^2 shoot^{-1}$) / Summer 2012 (20 shoots)	Mean foliar surface ($cm^2 shoot^{-1}$) / Spring 2013 (20 shoots)	Dry mass ratio E/L / Summer 2012 (20 shoots)	Dry mass ratio E/L / Spring 2013 (20 shoots)	Depth (m) of meadow's lower limits	Type of Meadow
1	417	411	414	189	199	0.120	0.245	25.2	Regressive
2	406	443	424	176	171	0.125	0.244	27.2	Stable
3	339	456	398	190	210	0.158	0.177	27.8	Regressive
4	397	393	395	126	190	0.121	0.180	32.4	Regressive
5	404	393	398	160	135	0.079	0.242	26.1	Regressive
6	479	478	478	215	204	0.036	0.062	27.2	Regressive
7	433	432	432	194	228	0.036	0.037	32.5	Regressive
8	439	436	438	197	210	0.038	0.046	22.3	Regressive
9	455	-	455	204	138	0.017	0.113	23.5	Regressive
10	434	424	429	248	203	0.012	0.054	30.3	Regressive