

Supplementary material

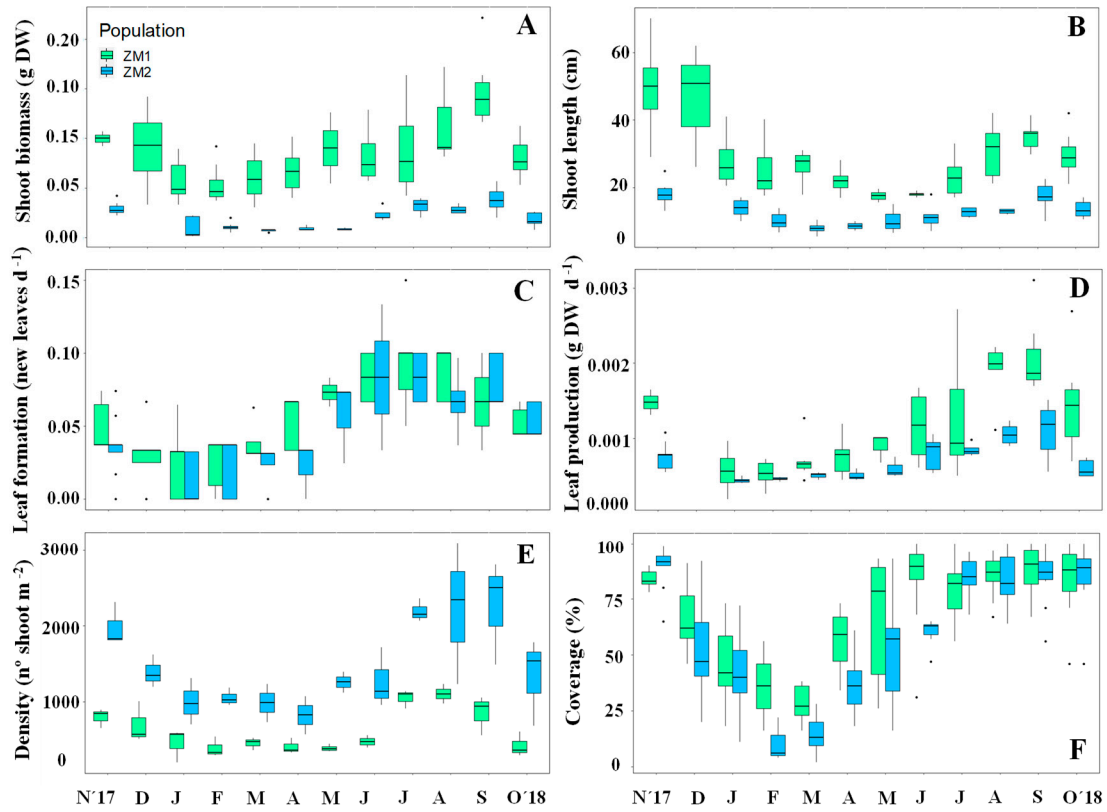


Figure S1: Seasonal trends of: (A) shoot biomass (g DW shoot⁻¹); (B) shoot length (cm); (C) leaf formation (new leaves d⁻¹); (D) leaf biomass production (g DW d⁻¹ shoot⁻¹); (E) shoot density (n° shoot m⁻²); and (F) coverage (%) of *Zostera marina* from Ireland. Data represented as mean \pm SD (n=3-13). For ZM1, data was extracted from Azcárate-García et al. (2022). Black points are considered outliers.

Table S1. Monthly results of mean shoot biomass, mean shoot length, mean leaf formation, mean leaf production, mean density and mean cover of two Irish ecotypes of *Zostera marina* (ZM1 and ZM2). Data represented as mean \pm SD (n=3-13). For ZM1, data was extracted from Azcárate-García et al. (2022).

Month	Ecotype	Shoot biomass (g DW shoot ⁻¹)	Shoot length (cm)	Leaf formation (N° of new leaves d ⁻¹)	Leaf biomass production (g DW d ⁻¹ shoot ⁻¹)	Density (shoot m ⁻²)	Cover (%)
Nov	ZM1	0.10 \pm 0.0061	29.75 \pm 0.61	0.048 \pm 0.017	0.0015 \pm 0.00014	800.00 \pm 103.6	84.25 \pm 3.54
	ZM2	0.029 \pm 0.0057	18.09 \pm 3.02	0.033 \pm 0.020	0.00075 \pm 0.00016	1978.67 \pm 230.1	89.75 \pm 8.74
Dec	ZM1	0.16 \pm 0.086	46.51 \pm 12.39	0.029 \pm 0.020	-	698.67 \pm 220.2	66.91 \pm 13.44
	ZM2	-	-	-	-	1386.67 \pm 172.4	51.27 \pm 18.38
Jan	ZM1	0.056 \pm 0.018	27.7 \pm 6.82	0.023 \pm 0.021	0.00057 \pm 0.00022	458.67 \pm 177.37	44.86 \pm 15.01
	ZM2	0.010 \pm 0.0097	13.91 \pm 2.54	0.014 \pm 0.016	0.00044 \pm 0.00003	997.33 \pm 248.67	41.13 \pm 18.95
Feb	ZM1	0.053 \pm 0.017	25.63 \pm 7.87	0.026 \pm 0.017	0.00054 \pm 0.00014	394.67 \pm 106.40	36.00 \pm 16.33
	ZM2	0.011 \pm 0.0043	10.10 \pm 2.52	0.021 \pm 0.018	0.00046 \pm 0.00002	1056.00 \pm 94.21	10.67 \pm 8.06
Mar	ZM1	0.061 \pm 0.021	26.49 \pm 4.09	0.039 \pm 0.014	0.00070 \pm 0.00023	458.67 \pm 67.04	28.22 \pm 7.39
	ZM2	0.007 \pm 0.0011	7.90 \pm 1.74	0.023 \pm 0.013	0.00050 \pm 0.00004	986.67 \pm 202.53	14.50 \pm 7.62
Apr	ZM1	0.067 \pm 0.020	21.98 \pm 3.44	0.052 \pm 0.017	0.00076 \pm 0.00023	410.67 \pm 83.99	57.00 \pm 11.75
	ZM2	0.009 \pm 0.0023	8.57 \pm 1.14	0.022 \pm 0.016	0.00051 \pm 0.00007	826.67 \pm 202.53	35.38 \pm 11.53
May	ZM1	0.090 \pm 0.029	17.50 \pm 1.63	0.073 \pm 0.000	0.00090 \pm 0.00016	394.67 \pm 39.91	66.10 \pm 25.05
	ZM2	0.008 \pm 0.0012	10.23 \pm 3.55	0.057 \pm 0.023	0.00060 \pm 0.00011	1258.67 \pm 111.11	51.10 \pm 22.53
Jun	ZM1	0.083 \pm 0.028	18.00 \pm 0.71	0.083 \pm 0.017	0.0012 \pm 0.00044	480.00 \pm 65.32	84.58 \pm 18.23
	ZM2	0.023 \pm 0.0061	11.50 \pm 3.66	0.083 \pm 0.037	0.00080 \pm 0.0002	1269.33 \pm 321.15	60.00 \pm 5.83
Jul	ZM1	0.089 \pm 0.042	23.25 \pm 5.64	0.094 \pm 0.012	0.0013 \pm 0.00077	1050.67 \pm 98.92	79.30 \pm 13.09
	ZM2	0.031 \pm 0.0077	12.63 \pm 1.38	0.083 \pm 0.017	0.00085 \pm 0.00008	2186.67 \pm 121.38	85.10 \pm 7.97
Aug	ZM1	0.11 \pm 0.034	30.92 \pm 7.76	0.087 \pm 0.016	0.0019 \pm 0.00039	1104.00 \pm 104.51	85.67 \pm 10.66
	ZM2	0.028 \pm 0.0041	12.90 \pm 0.70	0.067 \pm 0.000	0.0011 \pm 0.00014	2218.67 \pm 762.24	84.20 \pm 10.73
Sept	ZM1	0.15 \pm 0.034	34.94 \pm 3.76	0.067 \pm 0.025	0.0021 \pm 0.00047	853.33 \pm 212.40	88.75 \pm 9.55
	ZM2	0.038 \pm 0.011	17.47 \pm 3.67	0.080 \pm 0.016	0.0011 \pm 0.0003	2261.33 \pm 560.74	84.60 \pm 11.93
Oct	ZM1	0.080 \pm 0.018	29.60 \pm 5.70	0.051 \pm 0.010	0.0014 \pm 0.00054	426.67 \pm 130.86	84.64 \pm 15.32
	ZM2	0.018 \pm 0.0069	13.52 \pm 2.41	0.053 \pm 0.011	0.00060 \pm 0.0001	1333.33 \pm 466.72	84.80 \pm 14.34

Table S2. Monthly results of mean total leaf area, leaf production and leaf area index of two Irish ecotypes of *Zostera marina* (ZM1 and ZM2). Data represented as mean \pm SD (n=3-13).

	Ecotype	Total leaf area (cm ² shoot ⁻¹)	Leaf biomass production (g DW d ⁻¹ shoot ⁻¹)	Leaf area index
Nov	ZM1	12.71 \pm 2.68	0.0015 \pm 0.00014	10168.00 \pm 1317.92
	ZM2	2.07 \pm 0.9	0.00075 \pm 0.00016	4104.98 \pm 477.45
Dec	ZM1	7.55 \pm 1.22	-	5277.26 \pm 1663.90
	ZM2	-	-	-
Jan	ZM1	3.33 \pm 1.76	0.00057 \pm 0.00022	1099.27 \pm 425.09
	ZM2	0.39 \pm 0.06	0.00044 \pm 0.00003	392.52 \pm 97.87
Feb	ZM1	1.66 \pm 0.97	0.00054 \pm 0.00014	655.30 \pm 176.67
	ZM2	0.25 \pm 0.10	0.00046 \pm 0.00002	267.70 \pm 23.88
Mar	ZM1	2.73 \pm 1.61	0.00070 \pm 0.00023	1250.73 \pm 182.81
	ZM2	0.37 \pm 0.07	0.00050 \pm 0.00004	364.57 \pm 74.83
Apr	ZM1	3.68 \pm 1.29	0.00076 \pm 0.00023	1511.71 \pm 309.17
	ZM2	0.48 \pm 0.13	0.00051 \pm 0.00007	394.32 \pm 96.61
May	ZM1	5.90 \pm 0.88	0.00090 \pm 0.00016	2330.40 \pm 235.66
	ZM2	0.85 \pm 0.38	0.00060 \pm 0.00011	1065.67 \pm 94.07
Jun	ZM1	8.23 \pm 3.91	0.0012 \pm 0.00044	3952.03 \pm 537.80
	ZM2	2.06 \pm 0.65	0.00080 \pm 0.0002	2614.76 \pm 661.56
Jul	ZM1	11.93 \pm 1.28	0.0013 \pm 0.00077	12534.80 \pm 1180.13
	ZM2	3.15 \pm 1.24	0.00085 \pm 0.00008	6893.47 \pm 382.66
Aug	ZM1	11.60 \pm 3.06	0.0019 \pm 0.00039	12808.25 \pm 1212.51
	ZM2	3.31 \pm 0.59	0.0011 \pm 0.00014	7352.11 \pm 2525.86
Sept	ZM1	15.46 \pm 7.23	0.0021 \pm 0.00047	13194.73 \pm 3284.22
	ZM2	5.42 \pm 2.28	0.0011 \pm 0.0003	12259.82 \pm 3040.03
Oct	ZM1	14.78 \pm 1.91	0.0014 \pm 0.00054	6306.09 \pm 1934.05
	ZM2	2.87 \pm 1.40	0.00060 \pm 0.0001	3831.73 \pm 1341.26

Table S3. Monthly results of carbohydrates (sucrose and starch) contents in leaves of two Irish ecotypes of *Zostera marina* (ZM1 and ZM2). Data represented as mean \pm SD (n=3).

Month	Ecotype	Sucrose (mg g ⁻¹ DW)	Starch (mg g ⁻¹ DW)
Nov	ZM1	60.79 \pm 24.67	33.36 \pm 12.10
	ZM2	69.71 \pm 21.59	18.10 \pm 4.26
Dec	ZM1	37.88 \pm 3.78	40.12 \pm 6.40
	ZM2	6.94 \pm 2.88	7.92 \pm 7.2
Jan	ZM1	49.60 \pm 2.11	55.64 \pm 17.57
	ZM2	85.61 \pm 8.90	28.99 \pm 3.36
Feb	ZM1	23.31 \pm 10.66	39.52 \pm 6.35
	ZM2	62.29 \pm 7.16	26.15 \pm 0.59
Mar	ZM1	52.56 \pm 8.19	54.93 \pm 5.92
	ZM2	54.18 \pm 7.69	42.01 \pm 5.48
Apr	ZM1	51.81 \pm 3.25	57.23 \pm 3.28
	ZM2	80.33 \pm 6.27	43.43 \pm 5.77
May	ZM1	122.16 \pm 5.80	59.13 \pm 1.20
	ZM2	150.78 \pm 7.35	31.74 \pm 12.56
Jun	ZM1	69.72 \pm 12.11	67.50 \pm 5.90
	ZM2	100.53 \pm 6.45	25.41 \pm 4.30
Jul	ZM1	115.48 \pm 3.16	66.82 \pm 2.43
	ZM2	140.63 \pm 6.48	26.80 \pm 9.12
Aug	ZM1	135.78 \pm 20.10	70.60 \pm 3.75
	ZM2	173.29 \pm 4.12	39.78 \pm 14.97
Sept	ZM1	118.01 \pm 7.10	72.10 \pm 3.50
	ZM2	123.01 \pm 15.23	31.05 \pm 6.82
Oct	ZM1	123.24 \pm 6.41	53.51 \pm 11.79
	ZM2	106.24 \pm 2.13	26.70 \pm 3.26

Table S4. Monthly results of total fatty acids (TFA), monounsaturated fatty acids (MUFA), polyunsaturated fatty acids (PUFA), saturated fatty acids (SFA) contents in leaves of two Irish ecotypes of *Zostera marina* (ZM1 and ZM2). Data represented as mean \pm SD (n=3-4).

%FA	Ecotype	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
SFA	ZM1	19.2 \pm 0.5	19.3 \pm 1.4	14.5 \pm 0.4	16.8 \pm 0.5	15.7 \pm 0.7	16.2 \pm 0.4	20.6 \pm 1.0	19.7 \pm 0.8	24.3 \pm 1.3	21.6 \pm 1.5	25.8 \pm 2.1	18.8 \pm 2.1
16:0	ZM1	18.3 \pm 0.5	18.4 \pm 1.3	13.9 \pm 0.4	16.0 \pm 0.5	14.9 \pm 0.6	15.5 \pm 0.4	19.5 \pm 0.9	18.6 \pm 0.8	22.9 \pm 1.2	20.3 \pm 1.4	24.5 \pm 2.0	17.8 \pm 1.3
18:0	ZM1	0.9 \pm 0.0	0.8 \pm 0.1	0.5 \pm 0.0	0.8 \pm 0.0	0.8 \pm 0.1	0.7 \pm 0.0	1.1 \pm 0.1	1.1 \pm 0.1	1.4 \pm 0.1	1.3 \pm 0.1	1.3 \pm 0.1	1.0 \pm 0.1
MUFA	ZM1	3.2 \pm 0.1	3.9 \pm 0.6	2.7 \pm 0.1	3.3 \pm 0.1	4.1 \pm 0.1	4.4 \pm 0.1	5.3 \pm 0.2	4.1 \pm 0.5	3.7 \pm 0.6	4.4 \pm 0.3	4.1 \pm 0.6	3.8 \pm 0.6
14:1	ZM1	0.7 \pm 0.1	0.7 \pm 0.1	0.7 \pm 0.1	0.7 \pm 0.1	0.6 \pm 0.0	0.7 \pm 0.1	0.7 \pm 0.0	0.7 \pm 0.0	0.8 \pm 0.1	0.7 \pm 0.1	0.9 \pm 0.1	0.9 \pm 0.1
16:1 n-7	ZM1	1.1 \pm 0.1	2.1 \pm 0.4	1.3 \pm 0.1	1.7 \pm 0.1	2.6 \pm 0.1	2.6 \pm 0.1	3.2 \pm 0.2	2.0 \pm 0.6	1.3 \pm 0.4	1.8 \pm 0.2	1.4 \pm 0.4	1.6 \pm 0.2
18:1 n-7	ZM1	0.4 \pm 0.0	0.5 \pm 0.1	0.3 \pm 0.0	0.3 \pm 0.0	0.4 \pm 0.0	0.5 \pm 0.0	0.6 \pm 0.0	0.6 \pm 0.0	0.5 \pm 0.1	0.6 \pm 0.1	0.6 \pm 0.1	0.5 \pm 0.0
18:1 n-9	ZM1	0.9 \pm 0.0	0.6 \pm 0.1	0.5 \pm 0.0	0.5 \pm 0.0	0.5 \pm 0.1	0.6 \pm 0.0	0.8 \pm 0.1	0.8 \pm 0.1	1.1 \pm 0.1	1.2 \pm 0.2	1.2 \pm 0.1	0.8 \pm 0.1
PUFA	ZM1	72.3 \pm 0.6	71.5 \pm 2.5	79.4 \pm 0.7	75.9 \pm 0.7	76.4 \pm 0.6	74.6 \pm 0.6	70.2 \pm 1.4	72.1 \pm 0.3	68.8 \pm 2.2	68.5 \pm 1.9	64.6 \pm 3.4	72.6 \pm 3.4
16:3 n-3	ZM1	9.0 \pm 0.3	8.5 \pm 0.9	11.3 \pm 0.3	10.0 \pm 0.4	10.0 \pm 0.7	9.8 \pm 0.5	7.1 \pm 0.5	7.4 \pm 0.4	5.2 \pm 0.6	6.5 \pm 0.7	5.1 \pm 1.1	8.4 \pm 0.6
16:3 n-4	ZM1	0.3 \pm 0.0	0.2 \pm 0.0	0.2 \pm 0.0	0.2 \pm 0.0	0.2 \pm 0.0	0.3 \pm 0.0	0.3 \pm 0.0	0.6 \pm 0.0	0.6 \pm 0.0	0.4 \pm 0.1	0.4 \pm 0.0	0.3 \pm 0.0
18:2 n-6	ZM1	15.0 \pm 0.3	13.8 \pm 0.6	11.4 \pm 0.3	10.8 \pm 0.1	11.0 \pm 0.6	10.0 \pm 0.5	13.7 \pm 0.2	14.9 \pm 1.7	20.0 \pm 0.7	15.3 \pm 0.9	16.8 \pm 0.5	14.6 \pm 0.6
18:3 n-3	ZM1	48.1 \pm 0.3	49.0 \pm 2.2	56.6 \pm 0.4	55.0 \pm 0.6	55.3 \pm 0.7	54.5 \pm 0.4	49.1 \pm 0.9	49.1 \pm 1.2	42.9 \pm 1.1	46.3 \pm 2.0	42.3 \pm 2.3	49.3 \pm 1.9
Others	ZM1	5.3 \pm 0.3	5.4 \pm 0.7	3.4 \pm 0.3	4.0 \pm 0.2	3.7 \pm 0.1	4.8 \pm 0.5	3.9 \pm 0.3	4.1 \pm 0.3	3.2 \pm 0.4	5.5 \pm 0.7	5.5 \pm 1.0	4.8 \pm 0.5
TFA	ZM1	2.6 \pm 0.1	2.7 \pm 0.2	2.9 \pm 0.0	2.7 \pm 0.1	2.8 \pm 0.2	2.8 \pm 0.2	1.8 \pm 0.2	2.4 \pm 0.1	1.5 \pm 0.1	1.8 \pm 0.1	1.5 \pm 0.2	2.3 \pm 0.1
PUFA/SFA	ZM1	3.8 \pm 0.1	3.7 \pm 0.4	5.5 \pm 0.2	4.5 \pm 0.2	4.9 \pm 0.3	4.6 \pm 0.1	3.4 \pm 0.2	3.7 \pm 0.2	2.8 \pm 0.2	3.2 \pm 0.3	2.5 \pm 0.4	3.9 \pm 0.4
Omega 3/6	ZM1	3.8 \pm 0.1	4.2 \pm 0.4	6.0 \pm 0.2	6.0 \pm 0.1	5.9 \pm 0.5	6.4 \pm 0.3	4.1 \pm 0.1	3.9 \pm 0.6	2.4 \pm 0.1	3.5 \pm 0.4	2.8 \pm 0.2	4.0 \pm 0.3
18:3 n-3/16:0	ZM1	2.6 \pm 0.1	2.7 \pm 0.3	4.1 \pm 0.1	3.4 \pm 0.1	3.7 \pm 0.2	3.5 \pm 0.1	2.5 \pm 0.2	2.6 \pm 0.2	1.9 \pm 0.1	2.3 \pm 0.3	1.7 \pm 0.3	2.8 \pm 0.3
SFA	ZM2	20.0 \pm 0.5	19.5 \pm 0.6	15.0 \pm 0.3	17.8 \pm 0.8	16.3 \pm 0.2	16.5 \pm 0.5	16.4 \pm 0.2	19.8 \pm 0.9	21.4 \pm 0.4	24.9 \pm 1.1	21.6 \pm 1.7	17.0 \pm 0.0
16:0	ZM2	19.0 \pm 0.5	18.7 \pm 0.6	14.4 \pm 0.2	17.0 \pm 0.8	15.5 \pm 0.2	15.7 \pm 0.5	15.6 \pm 0.2	18.6 \pm 0.9	20.1 \pm 0.4	23.4 \pm 1.1	20.5 \pm 1.6	16.2 \pm 0.1
18:0	ZM2	1.0 \pm 0.0	0.9 \pm 0.0	0.6 \pm 0.0	0.8 \pm 0.0	0.7 \pm 0.0	0.8 \pm 0.0	0.9 \pm 0.0	1.3 \pm 0.1	1.3 \pm 0.0	1.5 \pm 0.0	1.1 \pm 0.1	0.8 \pm 0.1
MUFA	ZM2	4.1 \pm 0.2	4.3 \pm 0.3	2.6 \pm 0.1	2.5 \pm 0.4	2.7 \pm 0.2	2.8 \pm 0.2	2.4 \pm 0.2	2.3 \pm 0.2	2.5 \pm 0.2	3.9 \pm 0.2	3.8 \pm 0.3	1.9 \pm 0.2
14:1	ZM2	1.1 \pm 0.0	0.8 \pm 0.1	0.8 \pm 0.1	0.8 \pm 0.0	0.7 \pm 0.0	0.6 \pm 0.2	0.4 \pm 0.0	0.5 \pm 0.0	0.4 \pm 0.1	0.5 \pm 0.1	0.5 \pm 0.1	0.4 \pm 0.1
16:1 n-7	ZM2	1.7 \pm 0.3	2.2 \pm 0.2	0.8 \pm 0.1	0.7 \pm 0.4	0.9 \pm 0.1	1.1 \pm 0.2	0.8 \pm 0.2	0.4 \pm 0.1	0.7 \pm 0.2	1.4 \pm 0.1	1.7 \pm 0.2	0.6 \pm 0.1
18:1 n-7	ZM2	0.5 \pm 0.0	0.5 \pm 0.0	0.3 \pm 0.0	0.4 \pm 0.0	0.4 \pm 0.0	0.4 \pm 0.0	0.5 \pm 0.0	0.5 \pm 0.0	0.5 \pm 0.1	0.7 \pm 0.0	0.6 \pm 0.0	0.4 \pm 0.0
18:1 n-9	ZM2	1.0 \pm 0.1	0.8 \pm 0.0	0.6 \pm 0.0	0.8 \pm 0.2	0.6 \pm 0.0	0.8 \pm 0.1	0.6 \pm 0.1	0.9 \pm 0.1	0.8 \pm 0.1	1.3 \pm 0.1	0.9 \pm 0.1	0.5 \pm 0.0
PUFA	ZM2	72.9 \pm 1.0	72.7 \pm 0.9	80.0 \pm 0.5	76.6 \pm 1.1	78.4 \pm 0.4	78.4 \pm 1.0	79.2 \pm 0.1	75.5 \pm 1.0	73.8 \pm 0.5	68.2 \pm 1.4	71.4 \pm 2.2	78.5 \pm 0.3
16:3 n-3	ZM2	8.5 \pm 0.5	8.1 \pm 0.2	10.5 \pm 0.2	9.7 \pm 0.6	10.0 \pm 0.1	9.9 \pm 0.2	9.0 \pm 0.2	8.0 \pm 0.4	6.9 \pm 0.2	5.4 \pm 0.4	7.2 \pm 0.6	9.9 \pm 0.1
16:3 n-4	ZM2	1.6 \pm 0.2	2.1 \pm 0.0	1.6 \pm 0.1	2.1 \pm 0.2	2.9 \pm 0.1	2.6 \pm 0.2	1.9 \pm 0.1	1.7 \pm 0.4	1.5 \pm 0.1	2.2 \pm 0.2	1.5 \pm 0.1	1.3 \pm 0.1
18:2 n-6	ZM2	14.9 \pm 0.3	14.2 \pm 0.3	12.1 \pm 0.1	11.7 \pm 0.5	10.7 \pm 0.2	11.1 \pm 0.4	12.2 \pm 0.3	15.2 \pm 0.9	16.9 \pm 0.4	15.9 \pm 0.5	14.6 \pm 0.4	14.4 \pm 0.2
18:3 n-3	ZM2	47.9 \pm 0.6	48.3 \pm 0.7	55.8 \pm 0.5	53.2 \pm 1.2	54.8 \pm 0.3	54.8 \pm 1.2	56.2 \pm 0.1	50.6 \pm 1.1	48.5 \pm 0.7	44.7 \pm 1.6	48.0 \pm 1.9	52.8 \pm 0.4
Others	ZM2	3.0 \pm 0.3	3.5 \pm 0.1	2.4 \pm 0.2	3.0 \pm 0.2	2.7 \pm 0.1	2.3 \pm 0.4	2.0 \pm 0.1	2.3 \pm 0.1	2.3 \pm 0.2	3.0 \pm 0.1	3.2 \pm 0.2	2.6 \pm 0.1
TFA	ZM2	2.6 \pm 0.1	2.5 \pm 0.1	2.7 \pm 0.1	2.4 \pm 0.5	2.7 \pm 0.1	2.7 \pm 0.1	2.1 \pm 0.1	2.4 \pm 0.2	1.8 \pm 0.1	1.6 \pm 0.1	2.1 \pm 0.2	2.8 \pm 0.2
PUFA/SFA	ZM2	3.7 \pm 0.1	3.7 \pm 0.2	5.3 \pm 0.1	4.3 \pm 0.2	4.8 \pm 0.1	4.8 \pm 0.2	4.8 \pm 0.1	3.8 \pm 0.2	3.5 \pm 0.1	2.8 \pm 0.2	3.3 \pm 0.4	4.6 \pm 0.0
Omega 3/6	ZM2	3.8 \pm 0.0	4.0 \pm 0.1	5.5 \pm 0.1	5.4 \pm 0.4	6.1 \pm 0.1	5.8 \pm 0.3	5.3 \pm 0.1	3.9 \pm 0.3	3.3 \pm 0.1	3.2 \pm 0.2	3.8 \pm 0.2	4.3 \pm 0.1
18:3 n-3/16:0	ZM2	2.5 \pm 0.1	2.6 \pm 0.1	3.9 \pm 0.1	3.1 \pm 0.2	3.5 \pm 0.1	3.5 \pm 0.2	3.6 \pm 0.0	2.7 \pm 0.2	2.4 \pm 0.1	1.9 \pm 0.2	2.4 \pm 0.2	3.3 \pm 0.0

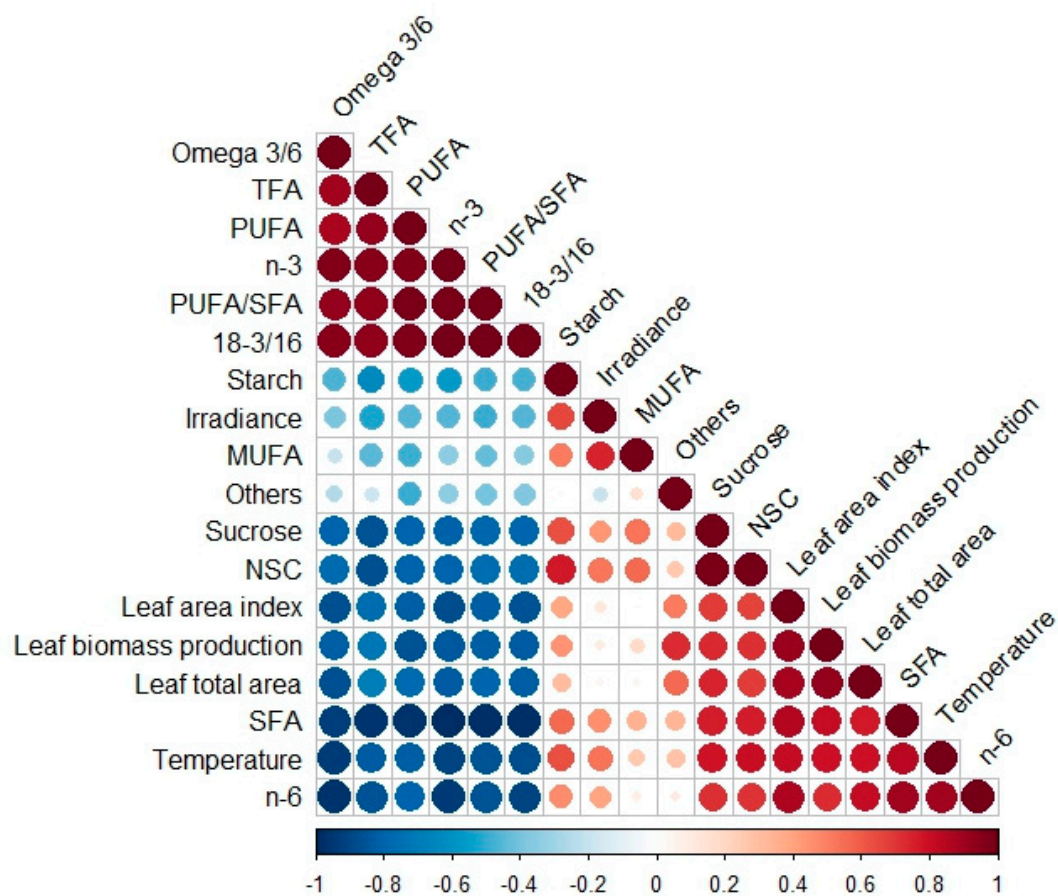


Figure S2. *Z. marina* ecotype (ZM1) in Galway Bay. Correlation matrix based on person Pearson's coefficient correlating seagrass descriptors, irradiance and SST. Positive correlations are represented in red and negative in blue. The higher size of the circles indicates a higher correlation between the compared variables (n=12).

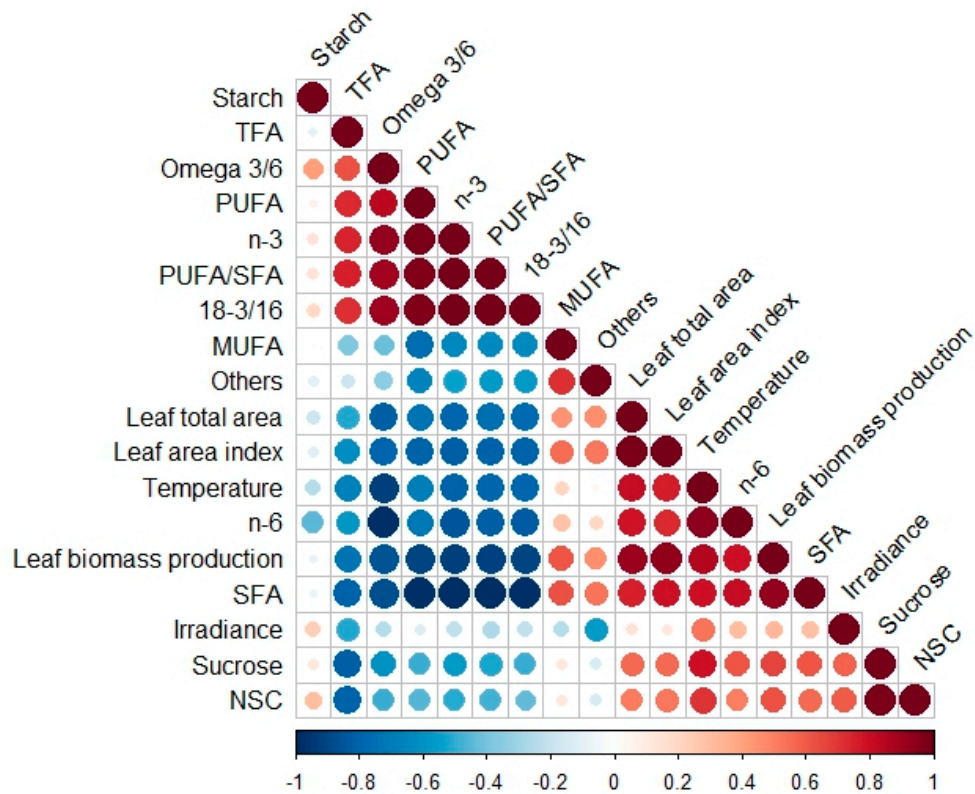


Figure S3. *Z. marina* ecotype (ZM2) in Galway Bay. Correlation matrix based on Pearson's coefficient correlating seagrass descriptors, irradiance and SST. Positive correlations are represented in red and negative in blue. The higher size of the circles indicates a higher correlation between the compared variables (n=12).

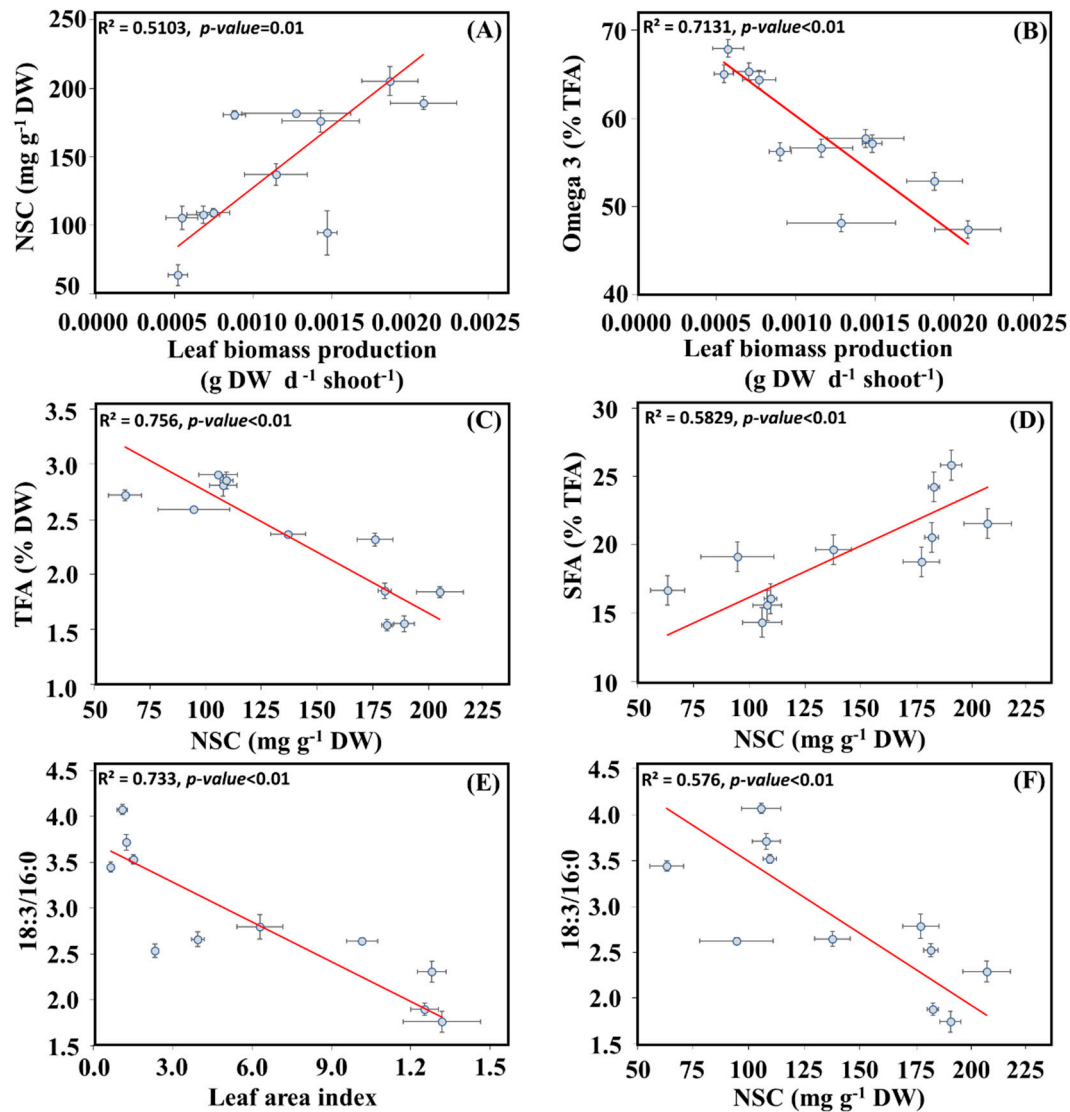


Figure S4. *Z. marina* ecotype (ZM1) in Galway Bay. Deming correlation of non-structural carbohydrates (NSC) *versus* leaf biomass production (Panel A); omega 3 (n-3 PUFA) *versus* leaf biomass production (Panel B); total fatty acids (TFA) *versus* non-structural carbohydrates (NSC) (Panel C); saturated fatty acids (SFAs) *versus* non-structural carbohydrates (NSC) (Panel D); 18:3/16:0 ratio *versus* leaf area index (Panel E); 18:3/16:0 ratio *versus* non-structural carbohydrates (NSC) (Panel F). Red lines represent the Deming regression line (n=12).

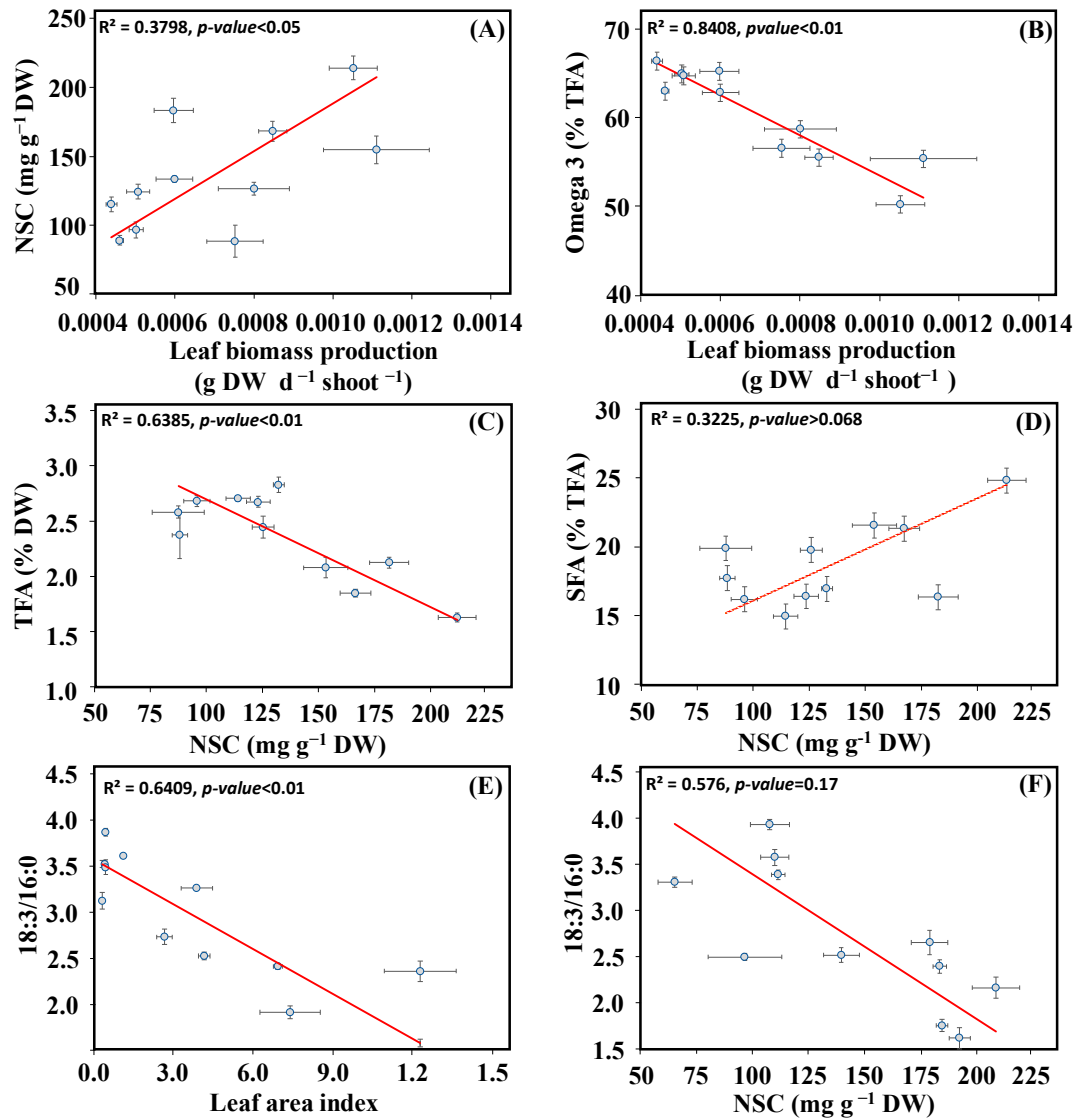


Figure S5. *Z. marina* ecotype (ZM2) in Galway Bay. Deming correlation of non-structural carbohydrates (NSC) *versus* leaf biomass production (Panel A); omega 3 (n-3 PUFA) *versus* leaf biomass production (Panel B); total fatty acids (TFA) *versus* non-structural carbohydrates (NSC) (Panel C); saturated fatty acids (SFAs) *versus* non-structural carbohydrates (NSC) (Panel D); 18:3/16:0 ratio *versus* leaf area index (Panel E); 18:3/16:0 ratio *versus* non-structural carbohydrates (NSC) (Panel F). Red lines represent the Deming regression line (n=12).