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Supplement of

Early life stages of fish under ocean alkalinity enhancement in coastal plankton communities

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by Goldenberg et al.

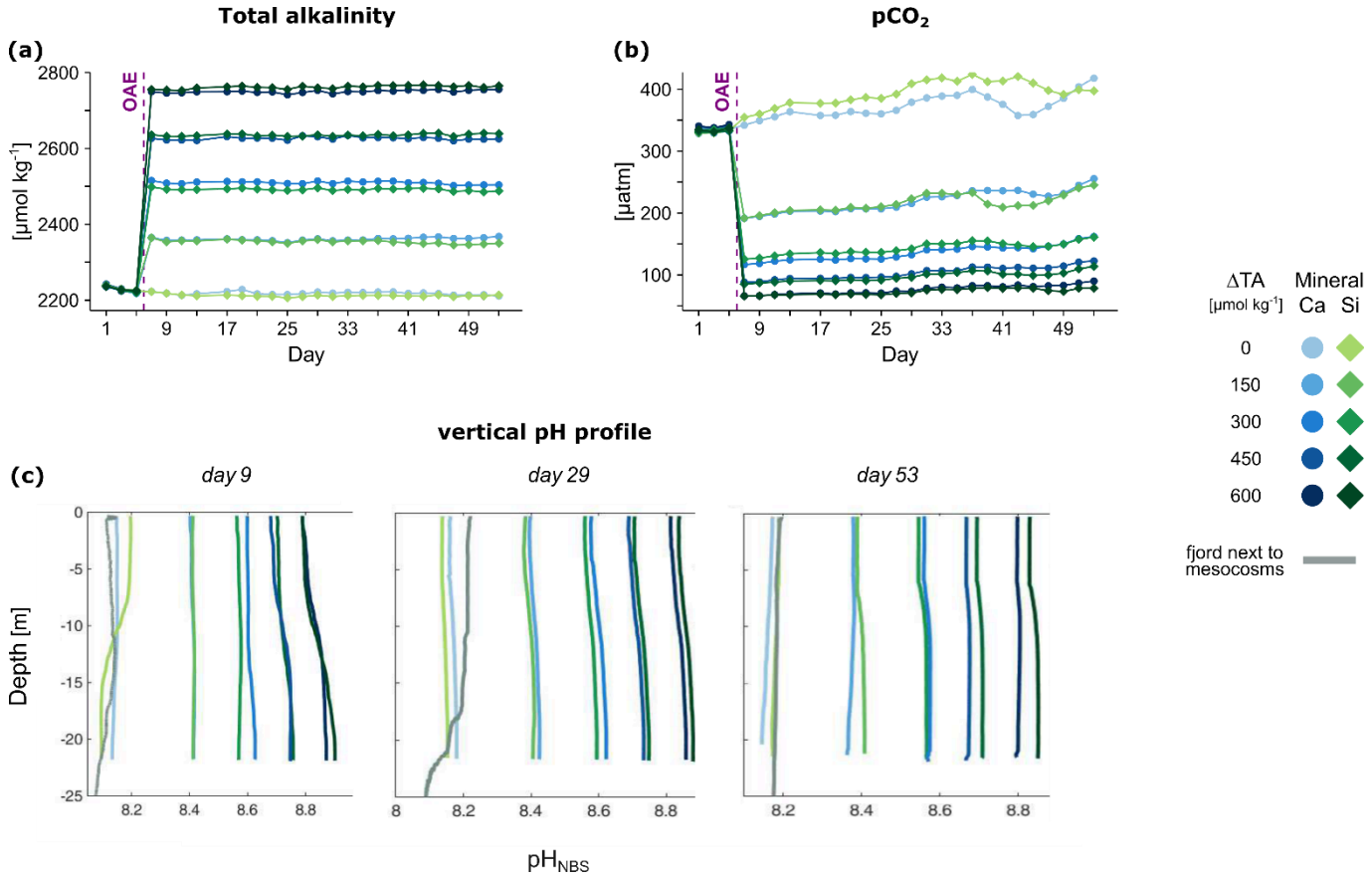

Figure S1: Further assessment of carbonate chemistry. Development of **a)** total alkalinity (TA) and **b)** pCO2 in each mesocosm unit. **c)** Depth-dependent variability in pH. Sampling days at the beginning, middle and end of the treatment period serve as examples. These pH measures were taken in situ via CTD with a potentiometric pH sensor (NBS scale) and are hence slightly higher than the spectrometric measures (total scale) shown in figure 1c.

Table S1: Linear models for the responses of fish to OAE, to accompany figure 2 and 3. *ΔTA* is employed as continuous and *Mineral* as categorical explanatory variable.

Response variable	Source of variation	MS	df	F-ratio	p-value
a) Mortality longer-term (all taxa days 7-53)	ΔTA	12	1	0.06	0.818
	Mineral	192	1	0.93	0.373
	ΔTA × Mineral	0	1	0.00	0.976
	Residuals	207	6		
b) Mortality shorter-term (herring only, days 7-15)	ΔTA	5.0	1	0.09	0.776
	Mineral	9.6	1	0.17	0.693
	ΔTA × Mineral	20.0	1	0.36	0.573
	Residuals	56.2	6		
c) Abundance (all taxa day 54)	ΔTA	2	1	0.00	0.949
	Mineral	333	1	0.82	0.401
	ΔTA × Mineral	180	1	0.44	0.532
	Residuals	409	6		
d) Per capita size (all taxa day 54) *log 10 transformed*	ΔTA	0.270	1	5.00	0.067
	Mineral	0.038	1	0.69	0.437
	ΔTA × Mineral	0.063	1	1.17	0.321
	Residuals	0.054	6		
e) Biomass (all taxa day 54)	ΔTA	11.9	1	10.92	0.016
	Mineral	0.0	1	0.00	0.994
	ΔTA × Mineral	0.8	1	0.78	0.412
	Residuals	0.8	6		

MS = mean squares; df = degrees of freedom

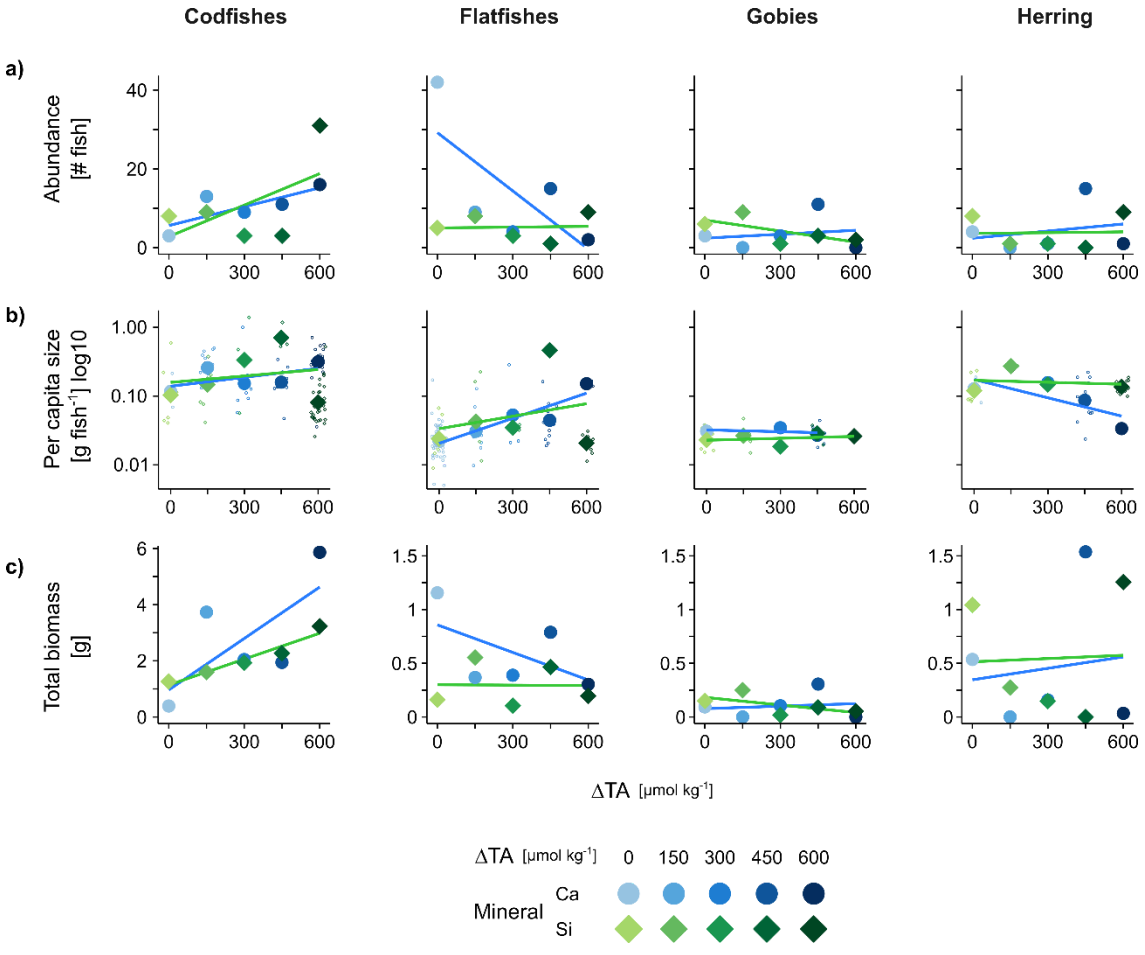

Figure S2: Responses of individual fish taxa to OAE, assessed at the end of the experiment. Count **(a)**, individual size **(b)** and total biomass **(c)** of live fish. Larger points represent mesocosms and smaller points in b single individuals.

Table S2: Linear models for the response of other functional groups (a-c) and predation on herring (d) under OAE, to accompany figure 4. *ΔTA* is employed as continuous and *Mineral* as categorical explanatory variable.

Response variable	Source of variation	MS	df	F-ratio	p-value
a) Chlorophyll a (days 7-53)	ΔTA	0.0034	1	0.28	0.613
	Mineral	0.0122	1	1.01	0.353
	ΔTA × Mineral	0.0088	1	0.73	0.426
	Residuals	0.0121	6		
b) Copepods (days 7-53)	ΔTA	0.5	1	0.05	0.838
	Mineral	11.2	1	1.03	0.349
	ΔTA × Mineral	1.6	1	0.14	0.719
	Residuals	10.9	6		
c) Hydrozoa (days 7-53)	ΔTA	16.0	1	0.39	0.554
	Mineral	15.2	1	0.37	0.563
	ΔTA × Mineral	26.9	1	0.66	0.446
	Residuals	40.5	6		
d) Fish missing (days 7-54)	ΔTA	51	1	0.37	0.563
	Mineral	97	1	0.71	0.431
	ΔTA × Mineral	88	1	0.65	0.452
	Residuals	137	6		

MS = mean squares; df = degrees of freedom