This appendix accompanies the article

Alkaline phosphatase activities in the central Atlantic Ocean indicate large areas with phosphorus deficiency

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Appendix 1. Alkaline phosphatase activity (APA), the specific activity per unit of chlorophyll *a* (chl *a*), particulate carbon (POC) or phosphorus (POP), and the concentrations of chlorophyll *a*, total phosphorus (TP) and phosphate in aquatic ecosystems. APA and specific APA were measured fluorometrically using various substrates. Mean ± SEM are shown in parentheses. MF-P = 3-0-methyl fluorescein phosphate, MUF = 4-methyl umbelliferyl phosphate, PNP = p-nitrophenyl phosphate

Location Sampling date	Sampling depth (m)	APA (nM h^{-1})	Specific APA nmol (µg chl)$^{-1}$ h^{-1}	 nmol (µmol POC)$^{-1}$ h^{-1}	 nmol (nmol POP)$^{-1}$ h^{-1}	Chl *a* (µg l^{-1})	TP (µmol l^{-1})	PO_4 (µmol l^{-1})	Method	Source
Central N Pacific										
Nov 71	Surface	1.1–7.8 (3.7 ± 1.00)	29.4–107.4					0.00–0.09 (0.02 ± 0.018)	MF-P	Perry (1972)
Nov 71	30–150	0.0– 2.8 (1.7 ± 0.93)	0.0–120.6					0.00–0.14 (0.05 ± 0.027)	MF-P	Perry (1972)
Tokyo Bay										
Jul 73	0–20	4.0–20.0	0.01–0.04			250–1750	2.5–9		MF-P	Kobori & Taga (1979)
Sagami Bay										
Jul 73	0–200 200–1000	0.3–2.0 0.0–0.3					<0.05–0.20 0.20–0.30		MF-P	Kobori & Taga (1979)
Suruga Bay										
Jul 73	0–200 200–1000	0.3–4.3 0–1.6					<0.05–0.20 0.20–0.30		MF-P	Kobori & Taga (1979)
North Australia										
Nov 99	0–20	1.5–107 (40.4 ± 8.21)	6–955 (280 ± 75.2)			0.03–0.82 (0.18 ± 0.036)		0.04–0.33 (0.16 ± 0.013)	MUF	Mulholland et al. (2002)

Location Sampling date	Sampling depth (m)	APA (nM h^{-1})	Specific APA nmol (µg chl)$^{-1}$ h^{-1}	nmol (µmol POC)$^{-1}$ h^{-1}	nmol (nmol POP)$^{-1}$ h^{-1}	Chl *a* (µg l^{-1})	TP (µmol l^{-1})	PO_4 (µmol l^{-1})	Method	Source
Indian Ocean (Equatorial)										
Jun–Jul 96	0–100	0.0–1.0						0.00	MUF	Hoppe & Ullrich (1999)
	100–800	1.0–2.0						1.0–2.5		
Indian Ocean (Central)										
Jun–Jul 96	0–100	0.0–3.5						0.0–0.3	MUF	Hoppe & Ullrich (1999)
	100–800	1.0–4.0						0.3–3.0		
Indian Ocean (Coastal)										
Jun–Jul 96	0–100	1.0–7.0						0.3–4.0	MUF	Hoppe & Ullrich (1999)
	100–800	0.5–4.0						1.0–5.5		
Indian Ocean (oligotrophic)										
Jun–Jul 97	0–50	0.2–0.6	0.1–3.0			0.2–2.0		0.2	MUF	Hoppe & Ullrich (1999)
	50–140	0.2–2.5				0.0–1.5		0.2–2.0		
Indian Ocean (upwelling rich)										
Jun–Jul 97	0–50	2.0–3.0	2.0–10.0			0.3–1.5		1.5	MUF	Hoppe & Ullrich (1999)
	50–3000	2.5–3.5				0.0–0.2		1.5–3.0		
Gulf of Aqaba (Red Sea)										
Jun 96	0–200	0.0–250	0.0–1800			0.0–0.2			PNP	Li et al. (1998)
Mediterranean (E)										
Jan 95	≈ 50	0.0–0.24 (0.05 ± 0.07)	0.0–2.1 (0.4 ± 0.63)			0.1–0.4 (0.2 ± 0.08)		0.02–0.21 (0.06 ± 0.057)	MUF	Zohary & Robarts (1998)
Mediterranean (NW)										
Jun–Jul 93	5	(28.5 ± 5)			0.60	0.2–0.9			MUF	Thingstad et al. (1998)
Pomerian Bight (Baltic Sea)										
93–95 summer	0–10	0.0–500	4.7–65.5			0.0–40		0.00–0.02	MUF	Nausch (1993)
93–95 autumn	0–10	0.0–100	0.4–2.1			0.0–100		0.28–2.66	MUF	Nausch (1993)
Sargasso Sea										
Aug 92	0– 80	(1.4 ± 0.08)		0.70	0.35				MUF	Cotner et al. (1997)
Mar 93	0– 80	(2.7 ± 0.16)		1.24	0.30				MUF	Cotner et al. (1997)
W subtropical N Atlantic										
May 94			30–240 (111 ± 25.4)					<0.03	MUF	Mulholland et al. (2002)
E subtropical N Atlantic (23–28° N)										
Mar–Apr 95	5	11.5–24.6 (17.9 ± 2.06)	123–521 (313 ± 60.8)	3.0–5.2 (4.3 ± 0.36)	0.5–1.1 (0.8 ± 0.11)	0.02–0.12 (0.07 ± 0.016)	0.06–0.24 (0.18 ± 0.026)	0.02–0.12 (0.06 ± 0.014)	MF-P	This study
Off NW African coast (4–20° N)										
Oct–Nov 95	5	4.8–14.7 (8.9 ± 1.29)	14–99 (44 ± 11.1)	0.3–1.8 (0.9 ± 0.21)	0.1–1.2 (0.4 ± 0.17)	0.10–0.42 (0.25 ± 0.045)	0.26–0.48 (0.35 ± 0.042)	0.09–0.23 (0.13 ± 0.025)	MF--P	This study
W subtropical S Atlantic (22– 25° S)										
Mar–Apr 95	5	11.6–12.9 (12.3 ± 0.62)	111–142 (127 ± 21.9)	1.8–2.7 (2.2 ± 0.45)	0.5–0.6 (0.5 ± 0.02)	0.08–0.12 (0.10 ± 0.017)	0.33–0.36 (0.35 ± 0.020)	0.14–0.17 (0.16 ± 0.015)	MF-P	This study
W subtropical S Atlantic (13–24° S)										
Oct–Nov 95	5	7.2–48.4 (18.8 ± 7.57)	236–1787 (561 ± 307)	1.3–7.1 (3.2 ± 1.3)	0.3–2.1 (0.9 ± 0.40)	0.03–0.06 (0.04 ± 0.007)	0.18–0.31 (0.23 ± 0.040)	0.05–0.26 (0.13 ± 0.065)	MF-P	This study