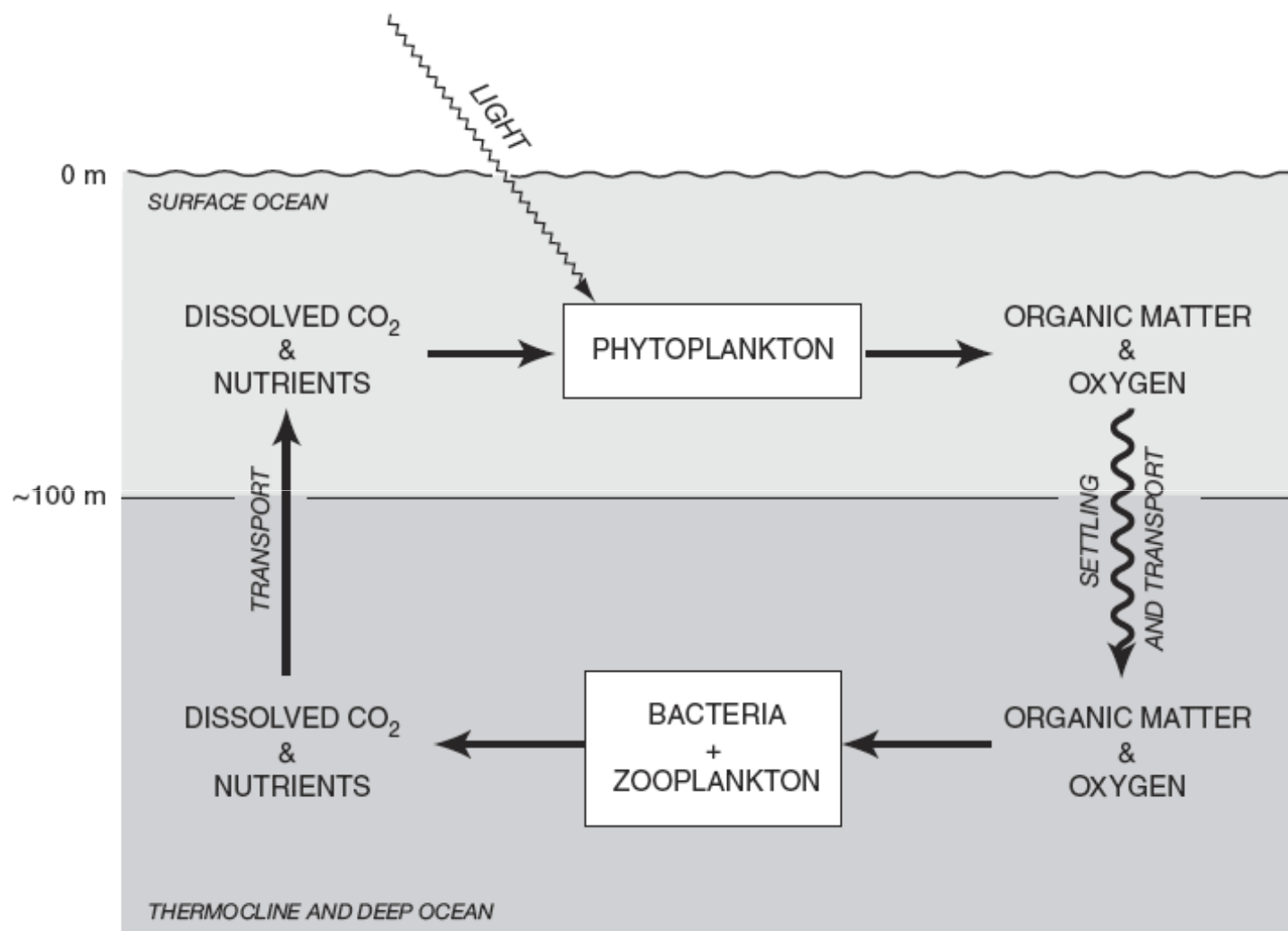
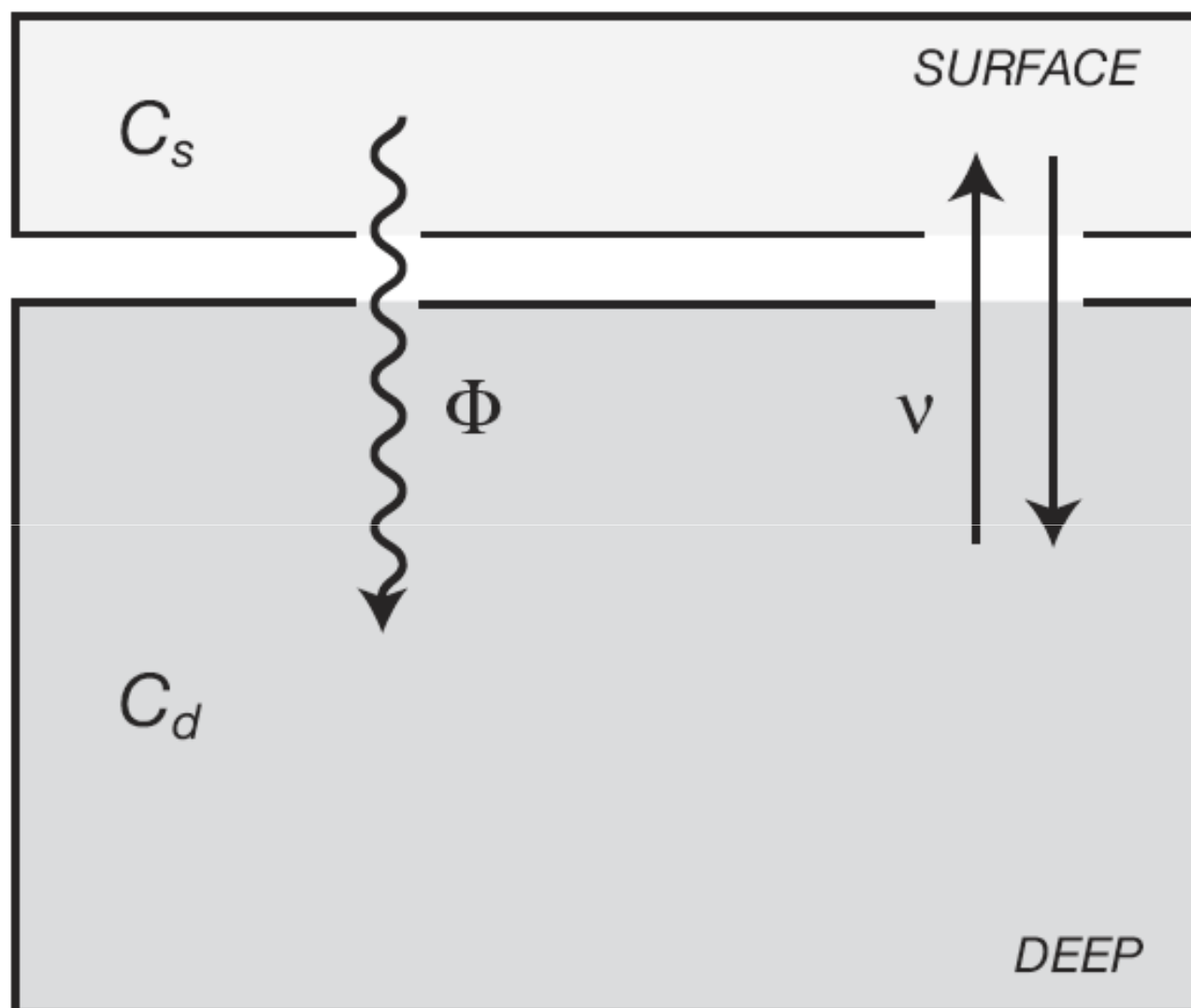


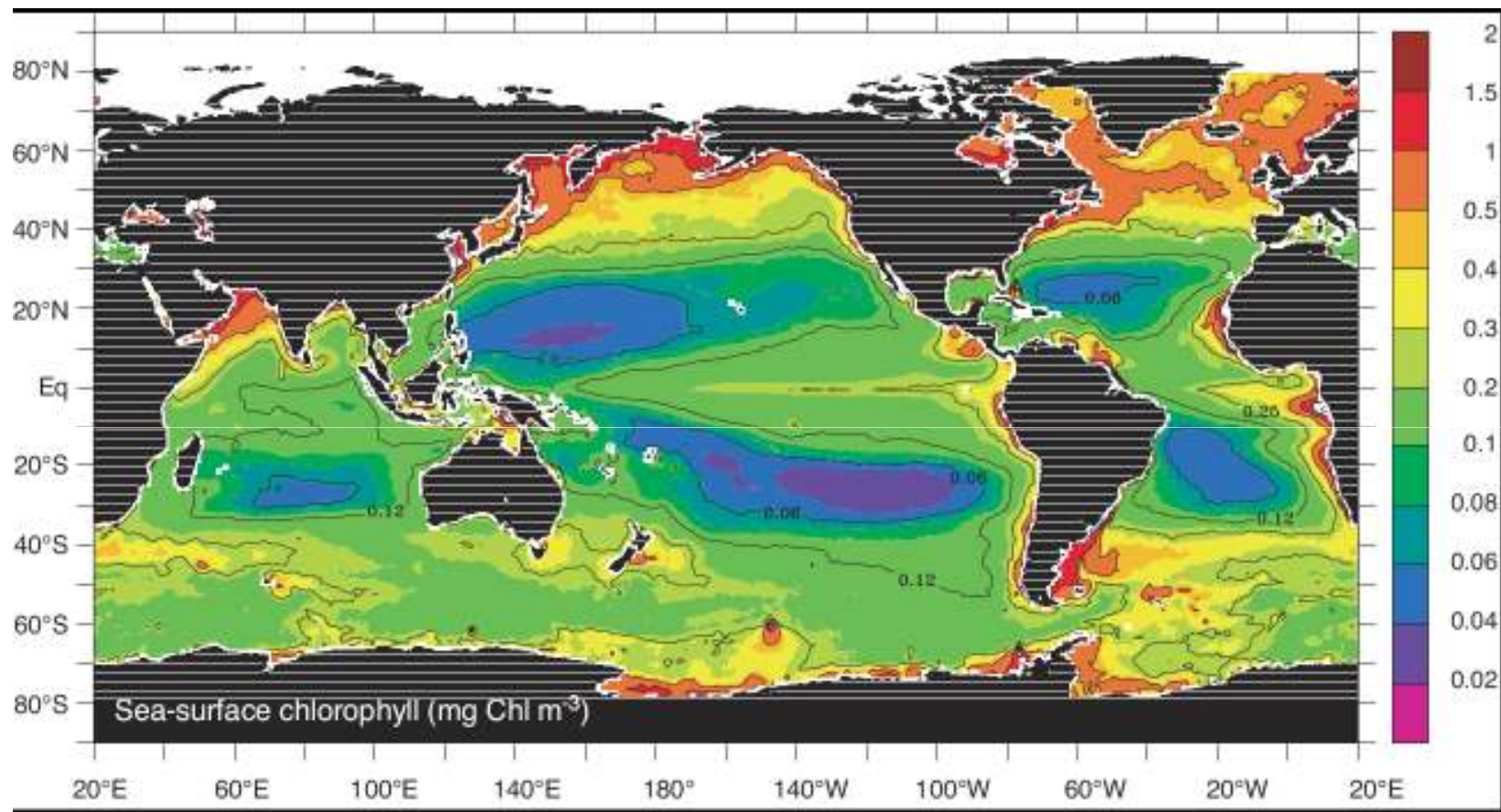
Biologia y CO₂

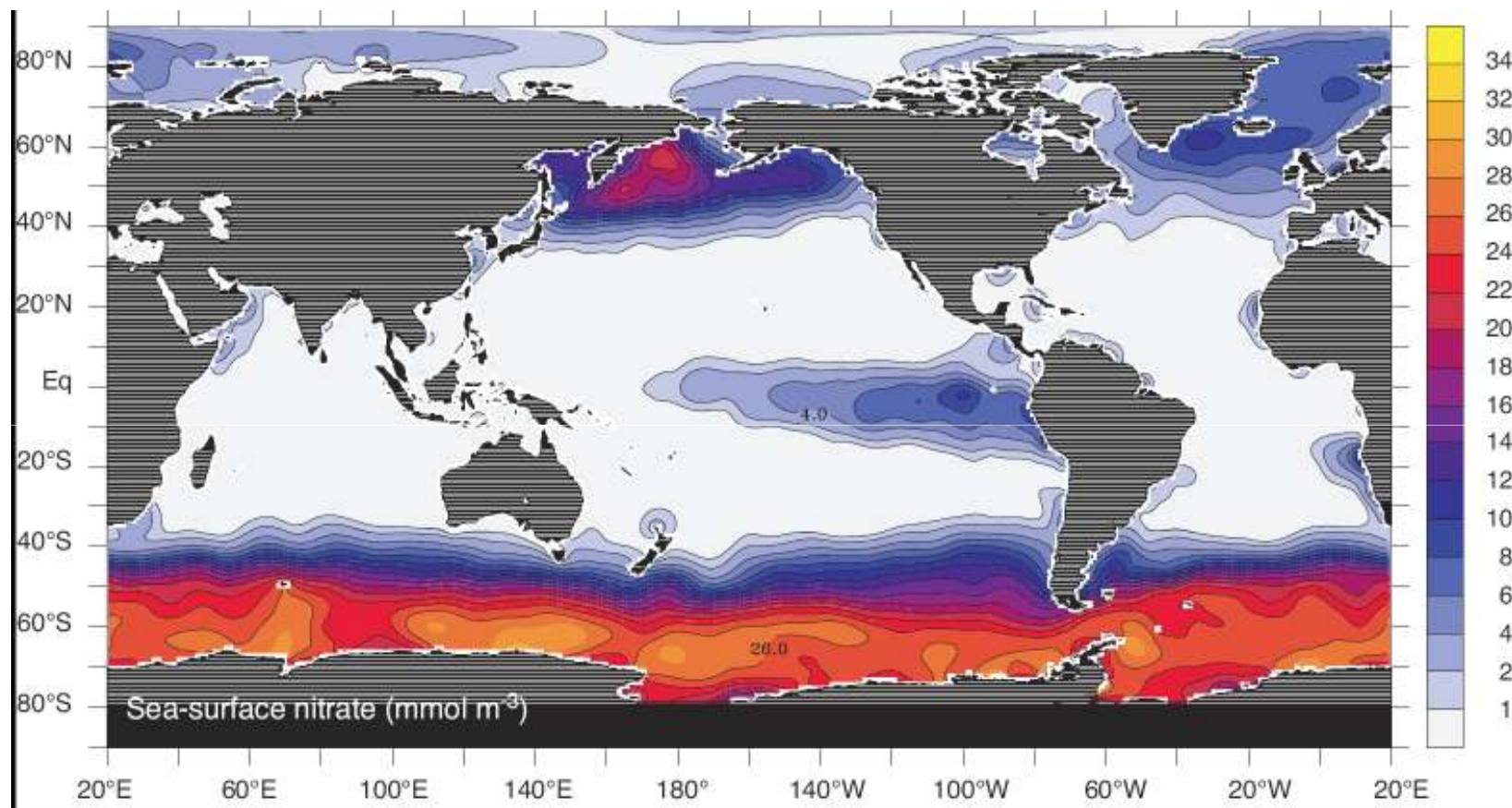
- Box model : Escala global
- Nutrientes y Biologia
- Tasas de Redfield
- Eficiencia de la Bomba Biologica
- PP, PN, PE, CaCO₃ y Opal Exportadas

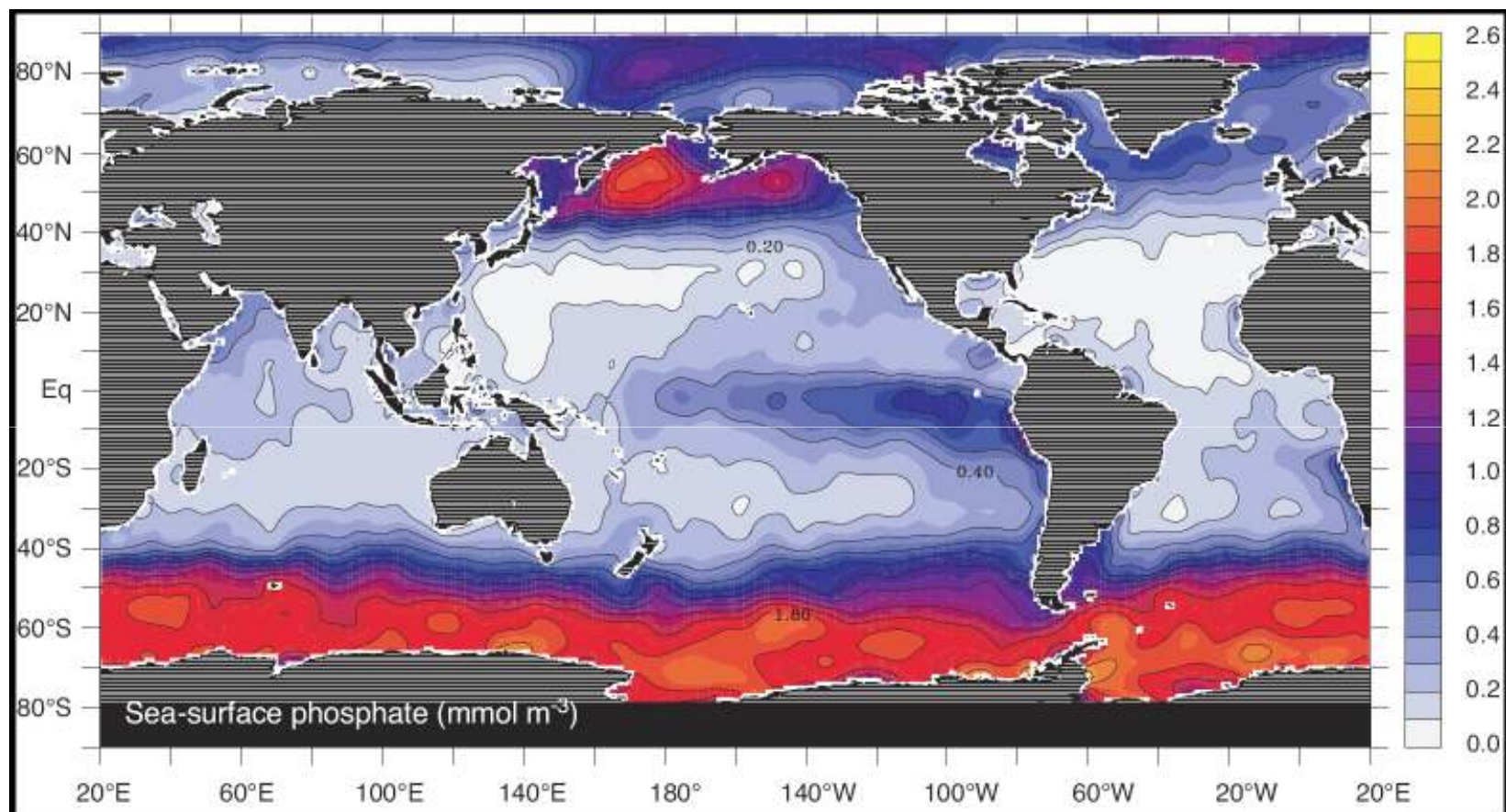
Importancia de la bomba biologica en el Weddell
Efecto de retroaccion de dos grupos de fitoplancton sobre el CO₂

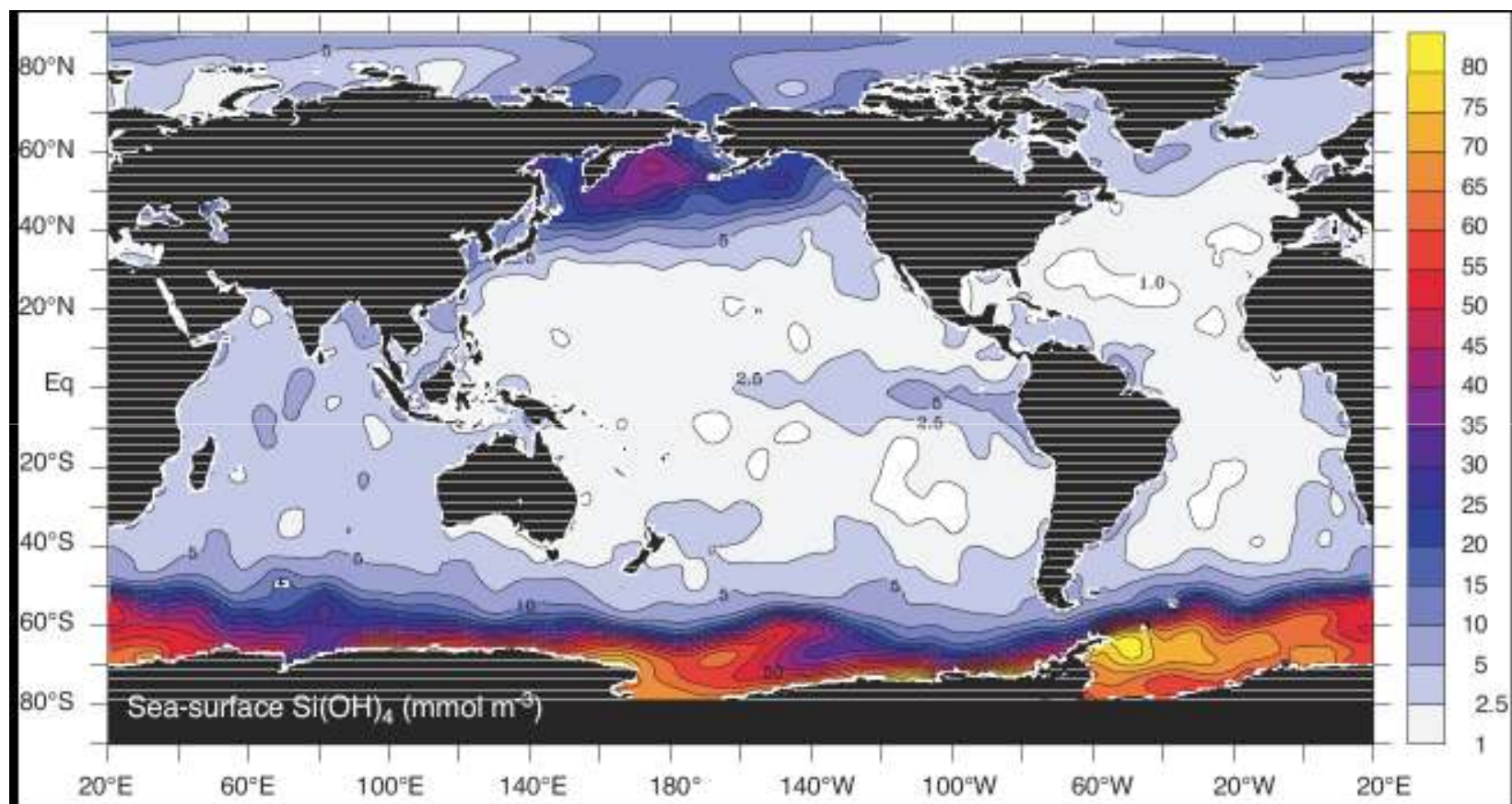


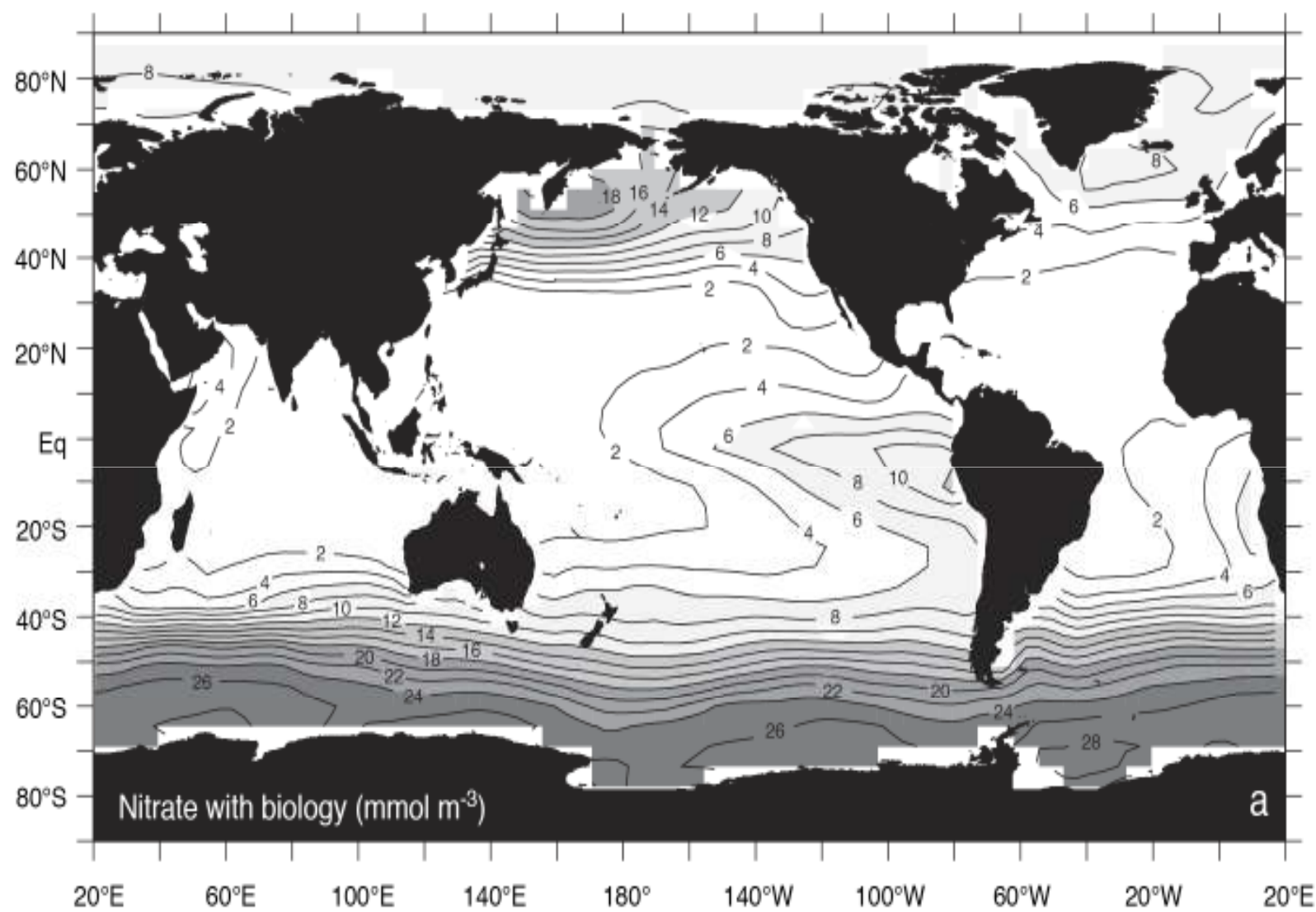


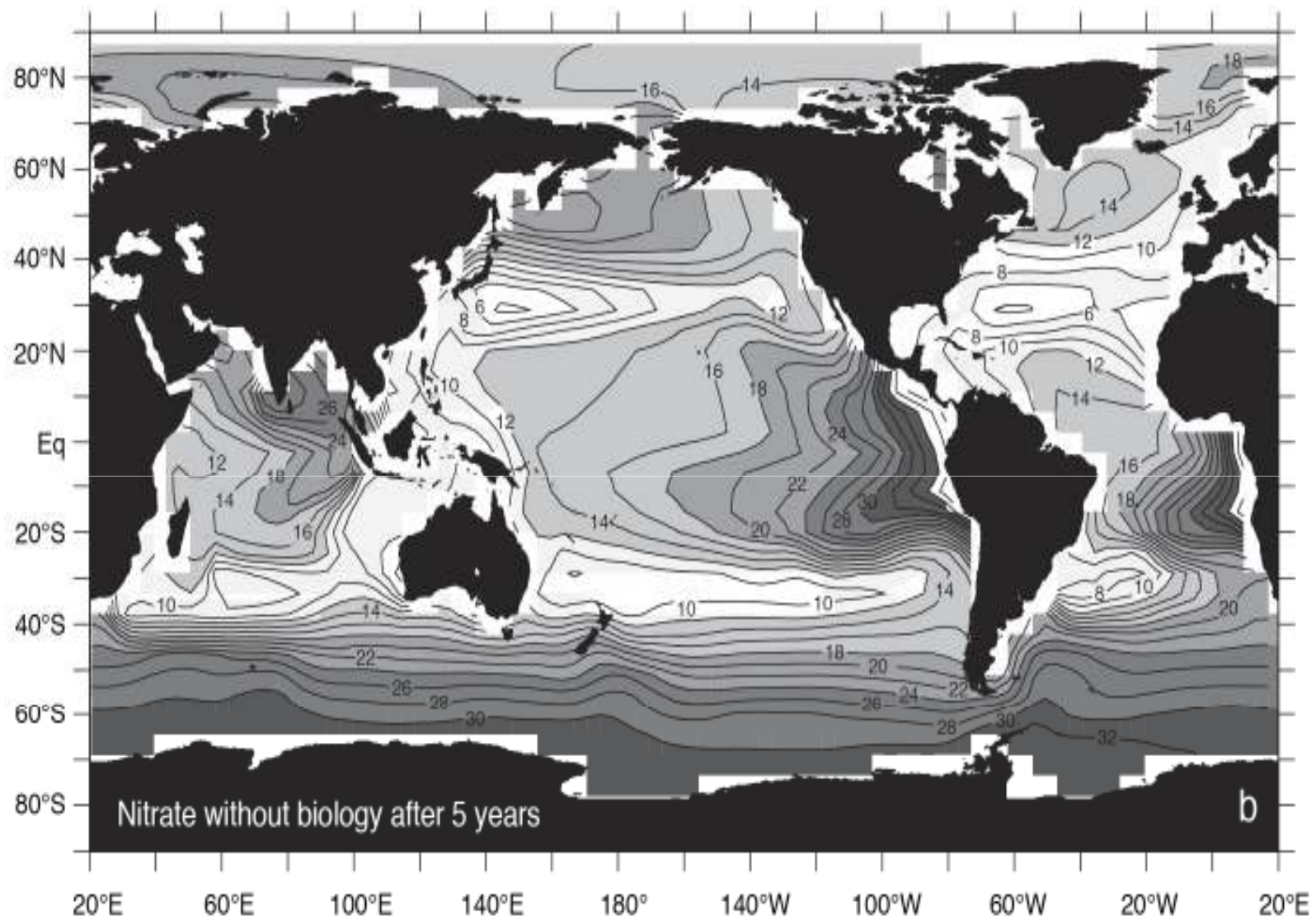


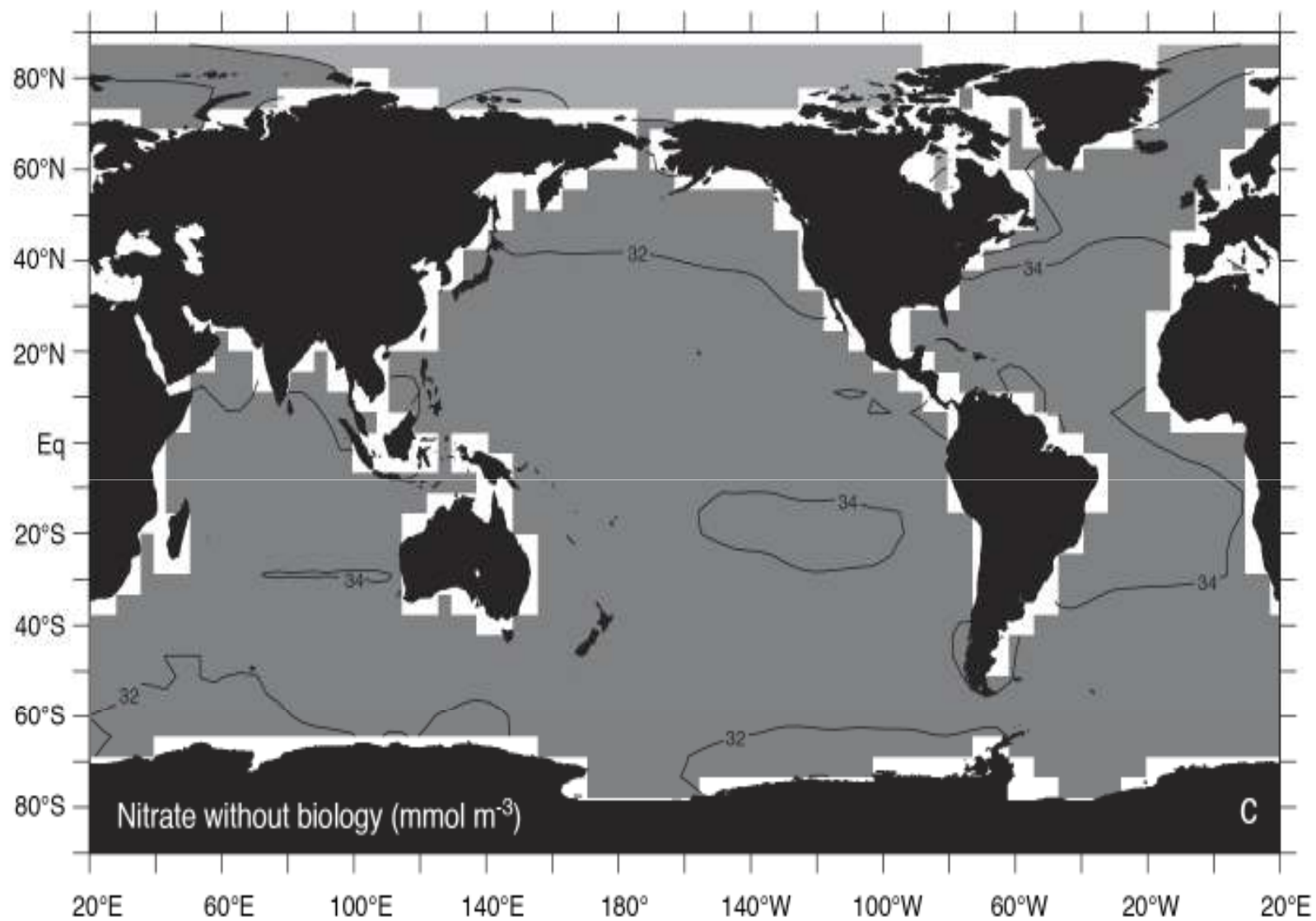




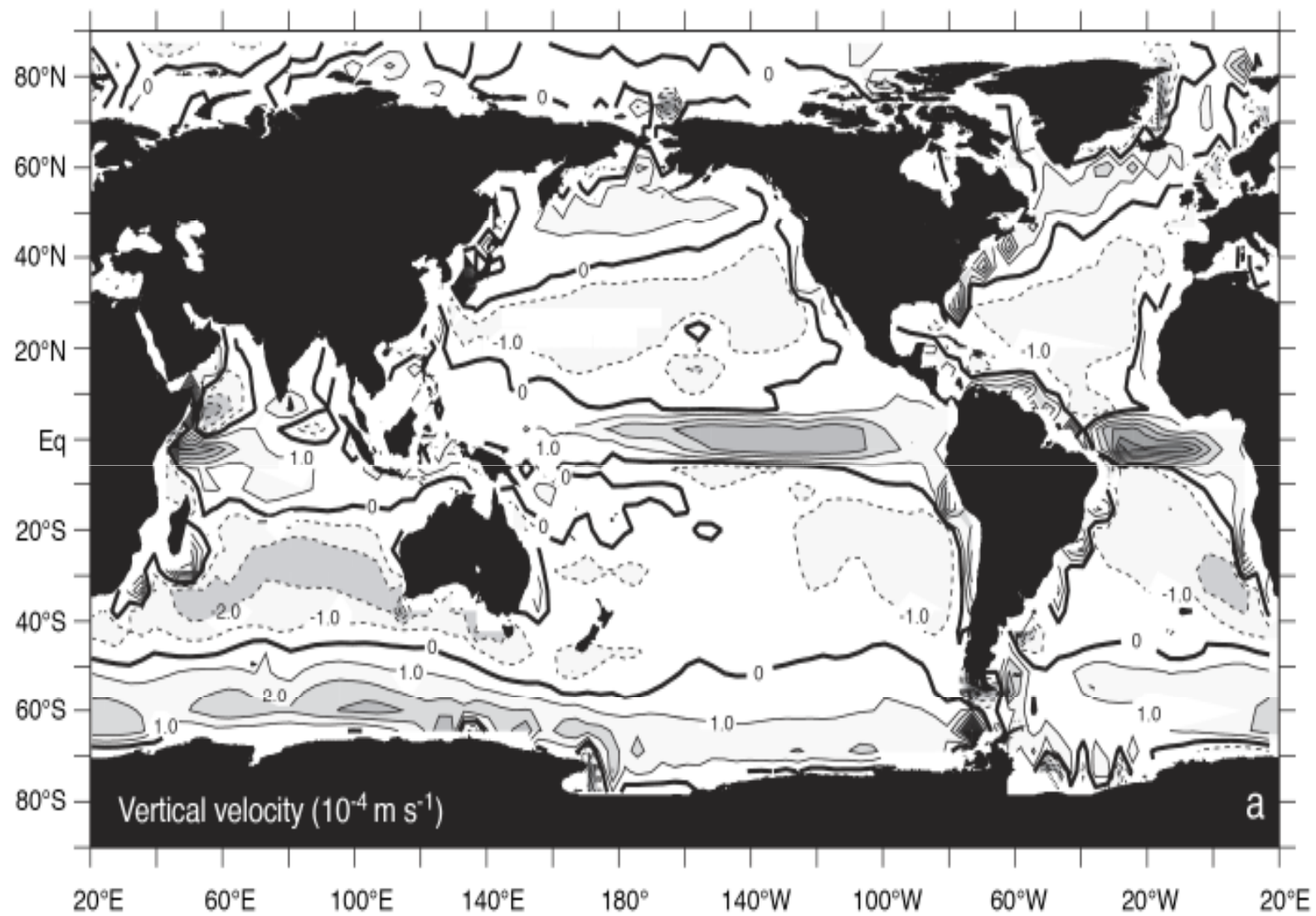


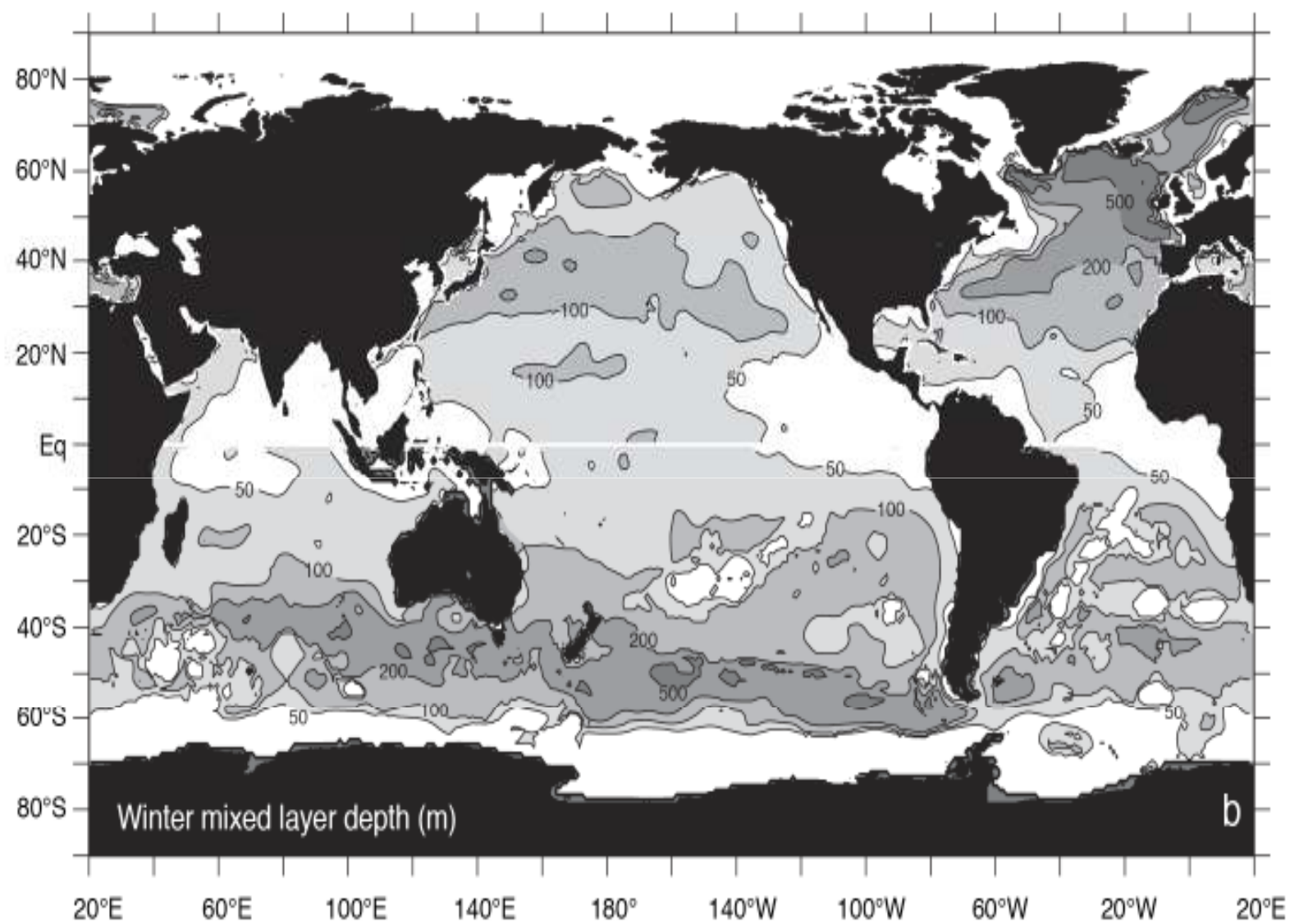


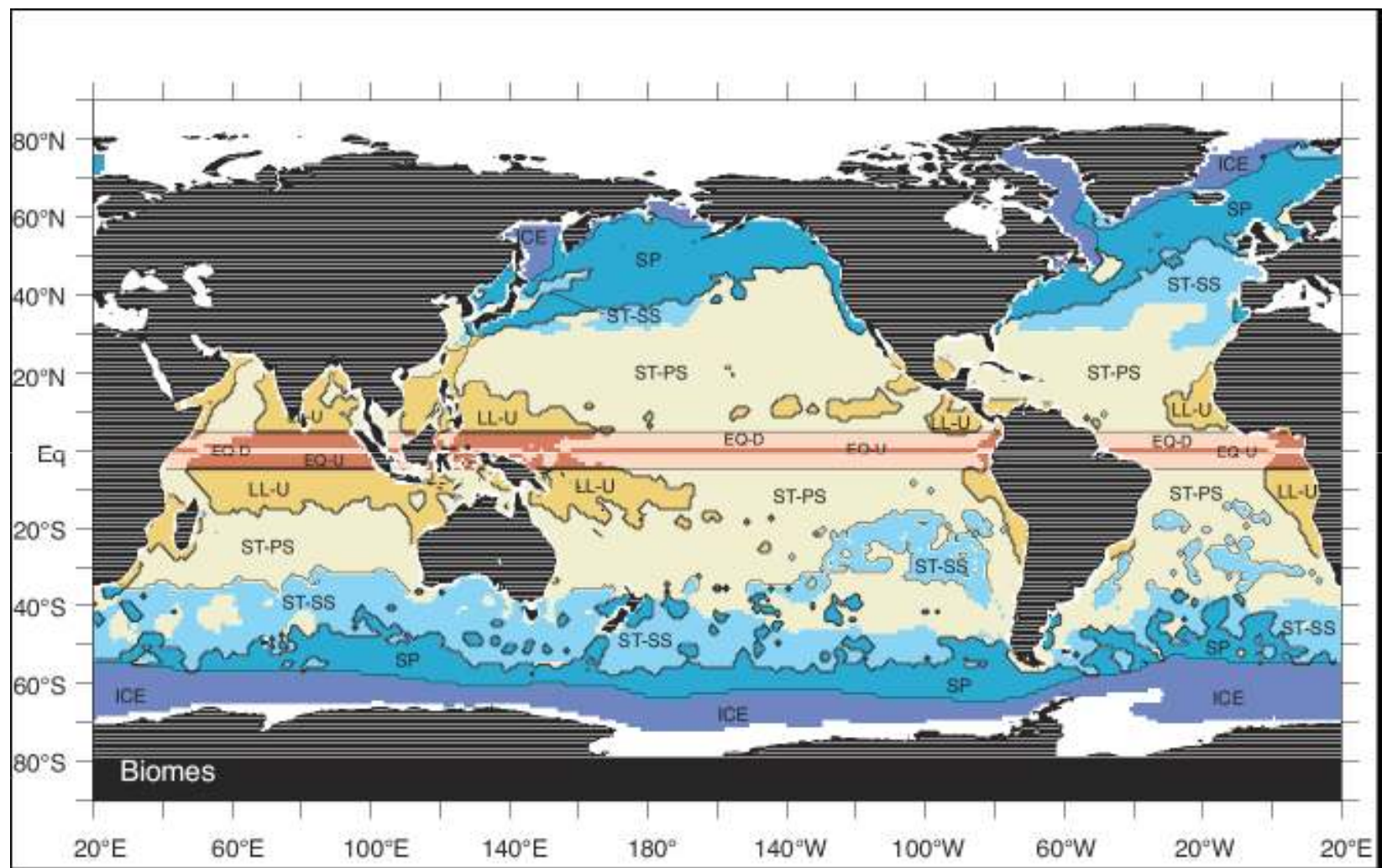


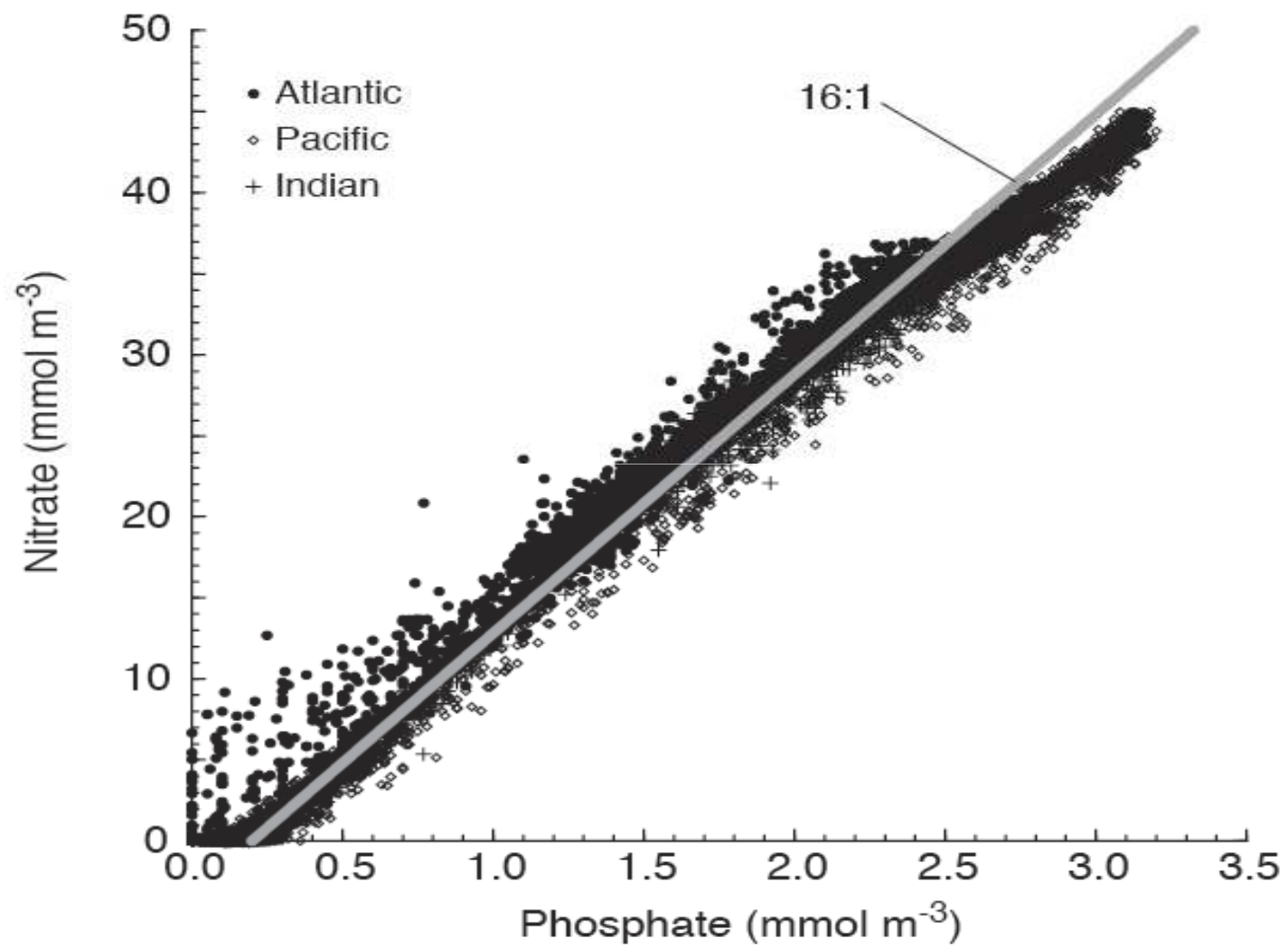


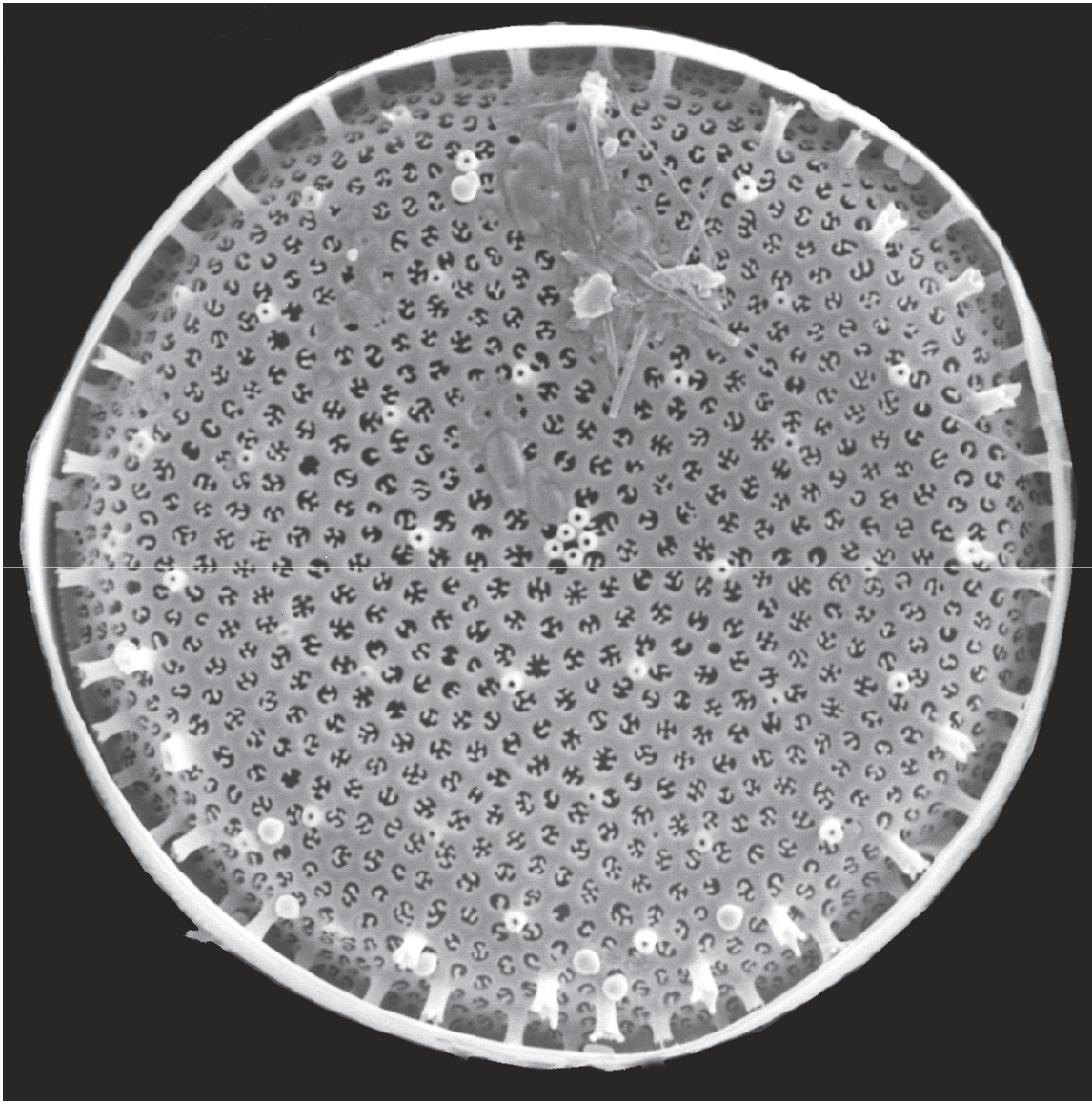
Station (location; dates of analysis)	Chlorophyll (mg m ⁻³)	Nitrate (μmol kg ⁻¹)	Phosphate (μmol kg ⁻¹)	Silicic Acid (μmol kg ⁻¹)
<i>Oligotrophic Regions</i>				
BATS (31°40'N 64°10'W – Subtropical Atlantic; October 1998-December 1999)	0.10 ± 0.08	0.04 ± 0.11	0.01 ± 0.02	0.8 ± 0.3
HOT (22°45'N 158°W – Subtropical Pacific; October 1988-December 1998)	0.09 ± 0.04	0.00 ± 0.10	0.08 ± 0.03	1.3 ± 0.4
<i>Eutrophic Regions</i>				
OSI (59°N 19°W – Subpolar Atlantic; 1970-74, 1995)	0.8 ± 0.5	9 ± 6		
OSP (50°N 145°W – Subpolar Pacific ; 1959-1995)	0.4 ± 0.3	10 ± 5	1.0 ± 0.4	15 ± 8
KERFIX (50°40'S 68°25'E – South of Antarctic Polar Front; April 1990-March 1995)	0.3 ± 0.2	25 ± 2	1.8 ± 0.1	14 ± 4

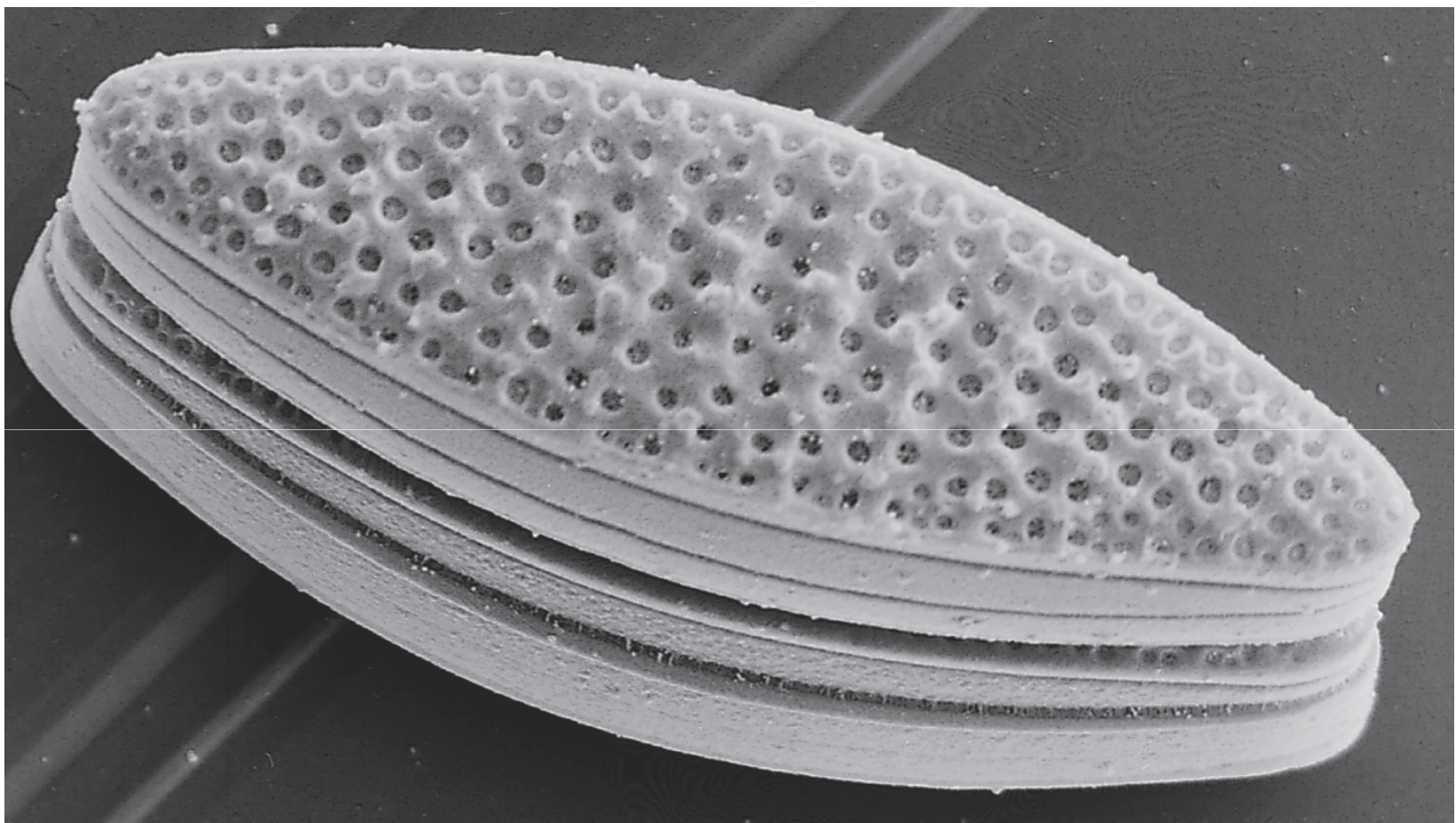


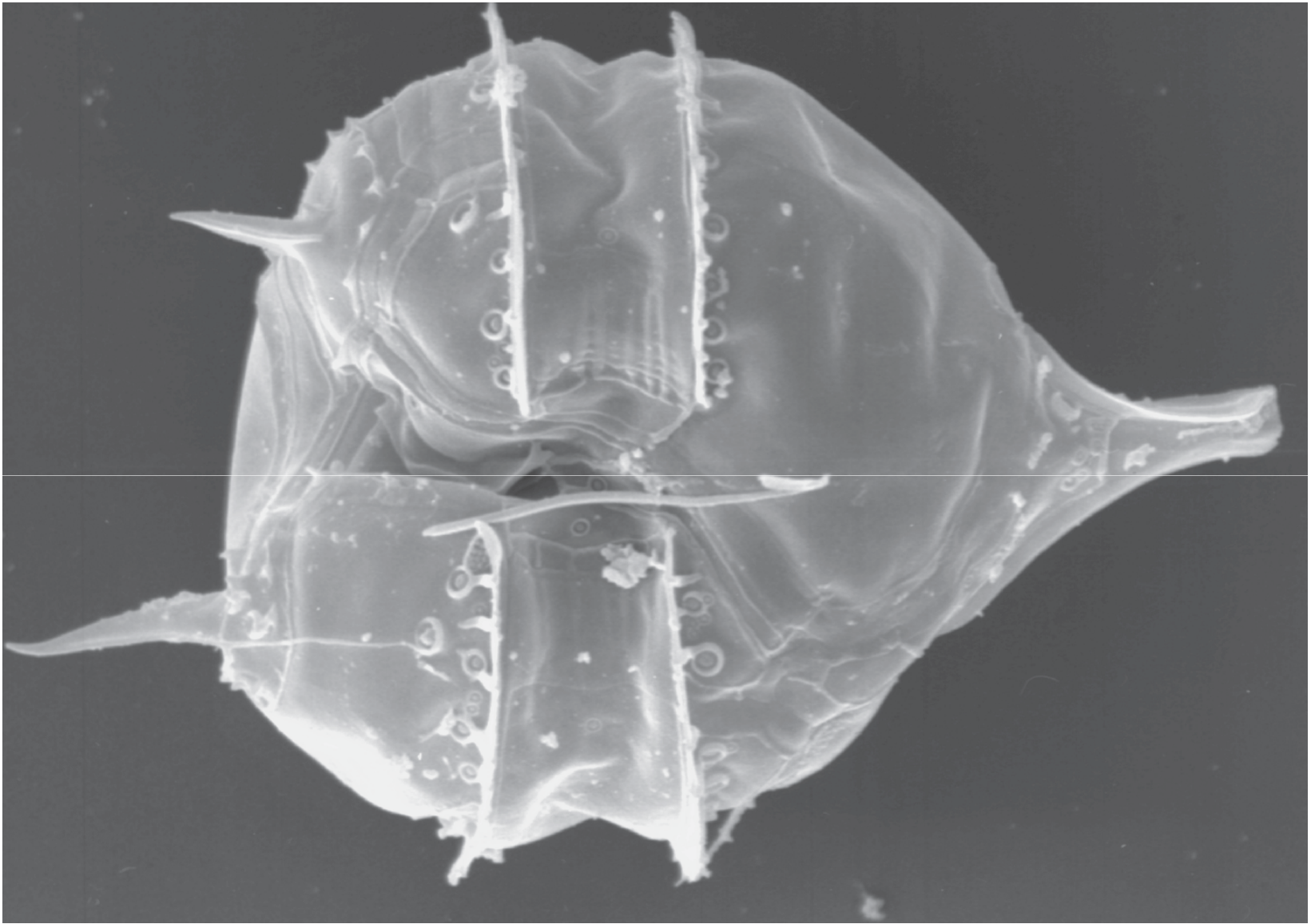


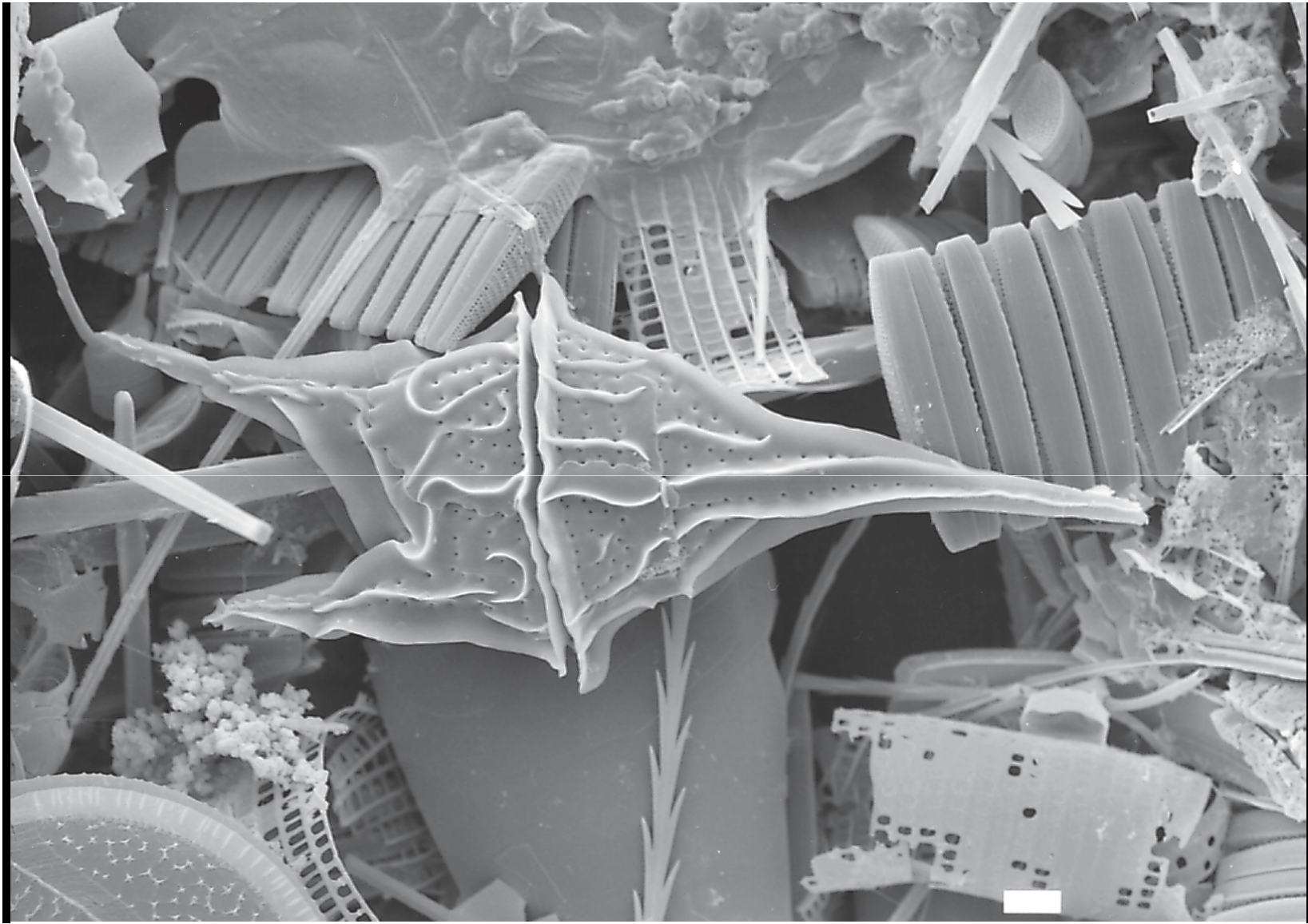












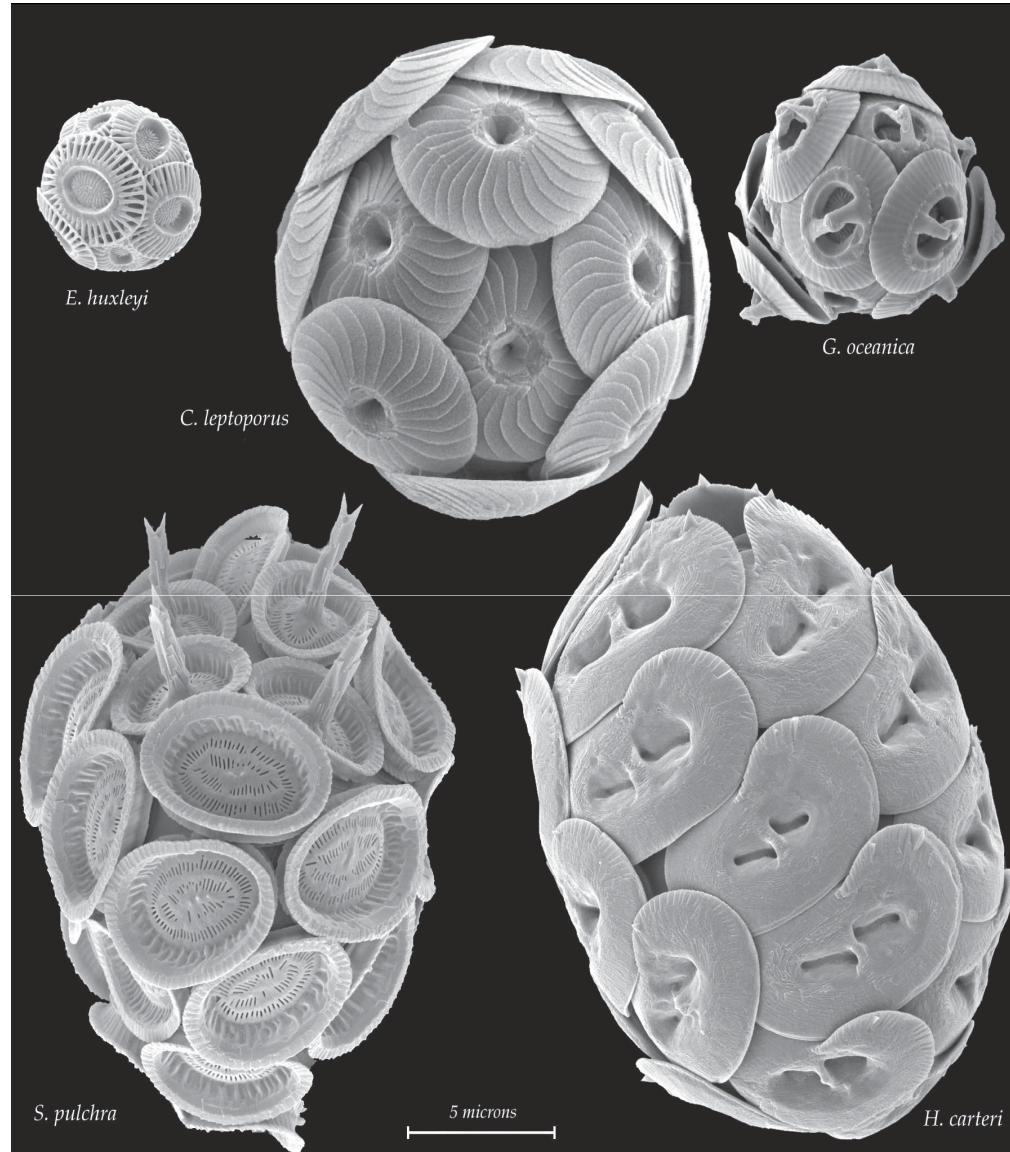
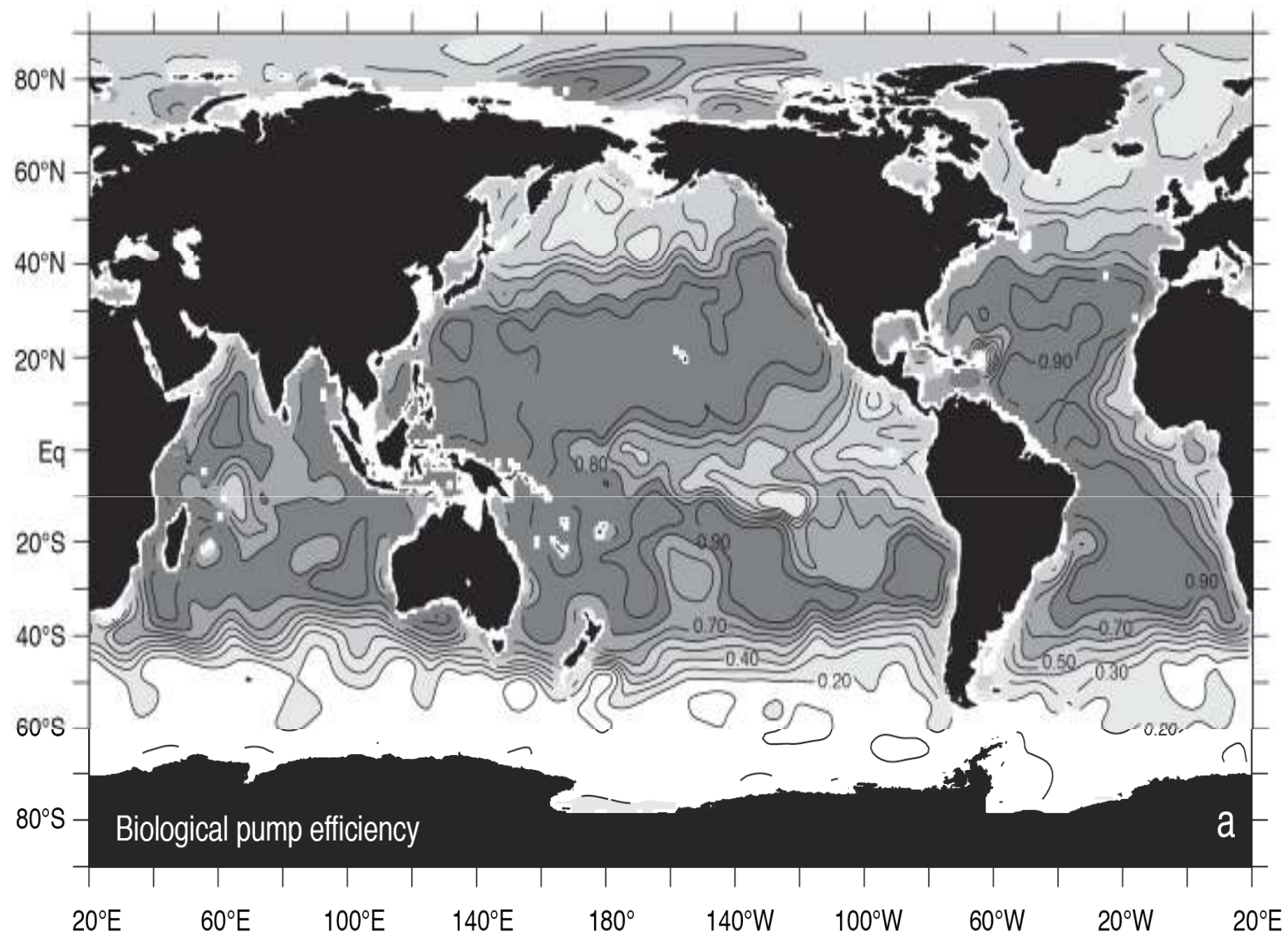


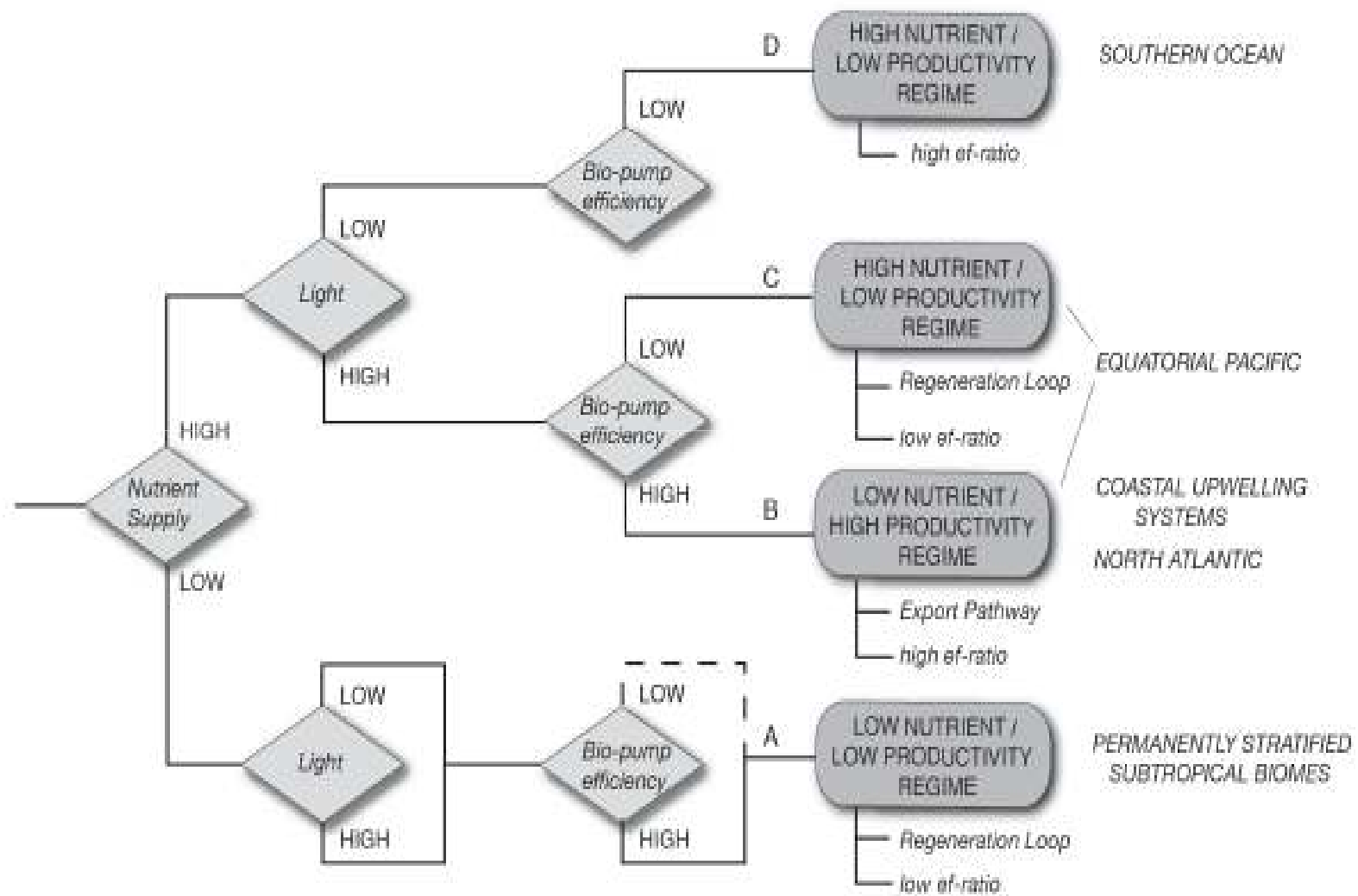
Table 4.2.1

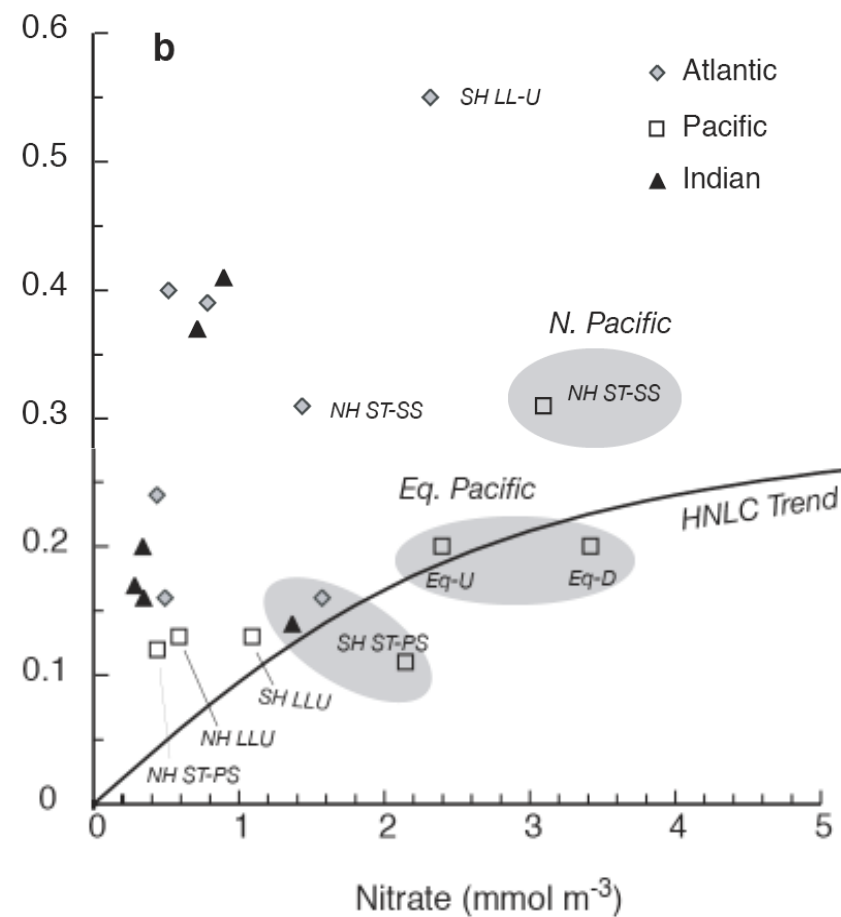
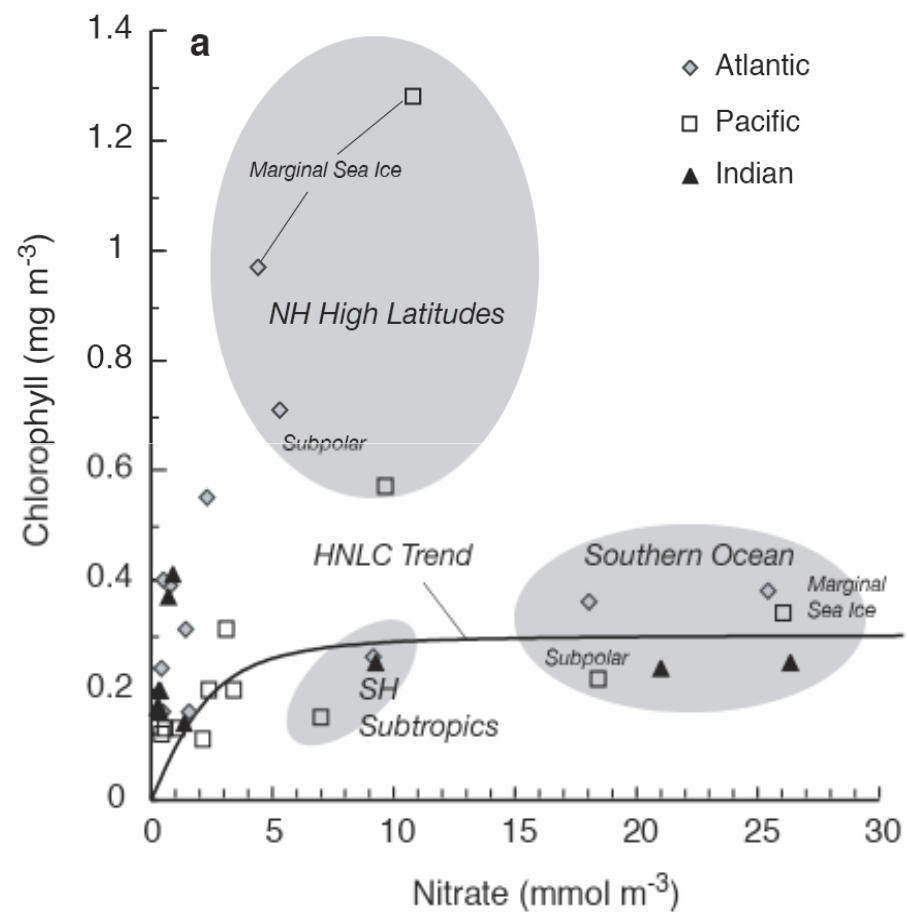
	Organic matter					Oxygen
	C	H	O	N	P	O ₂
<i>Redfield et al.</i> [1963]	106	263	110	16	1	138
<i>Anderson</i> [1995]	106	164-186	26-59	16	1	141-161
<i>Anderson and Sarmiento</i> [1994]	117±14	-	-	16±1	1	170±10

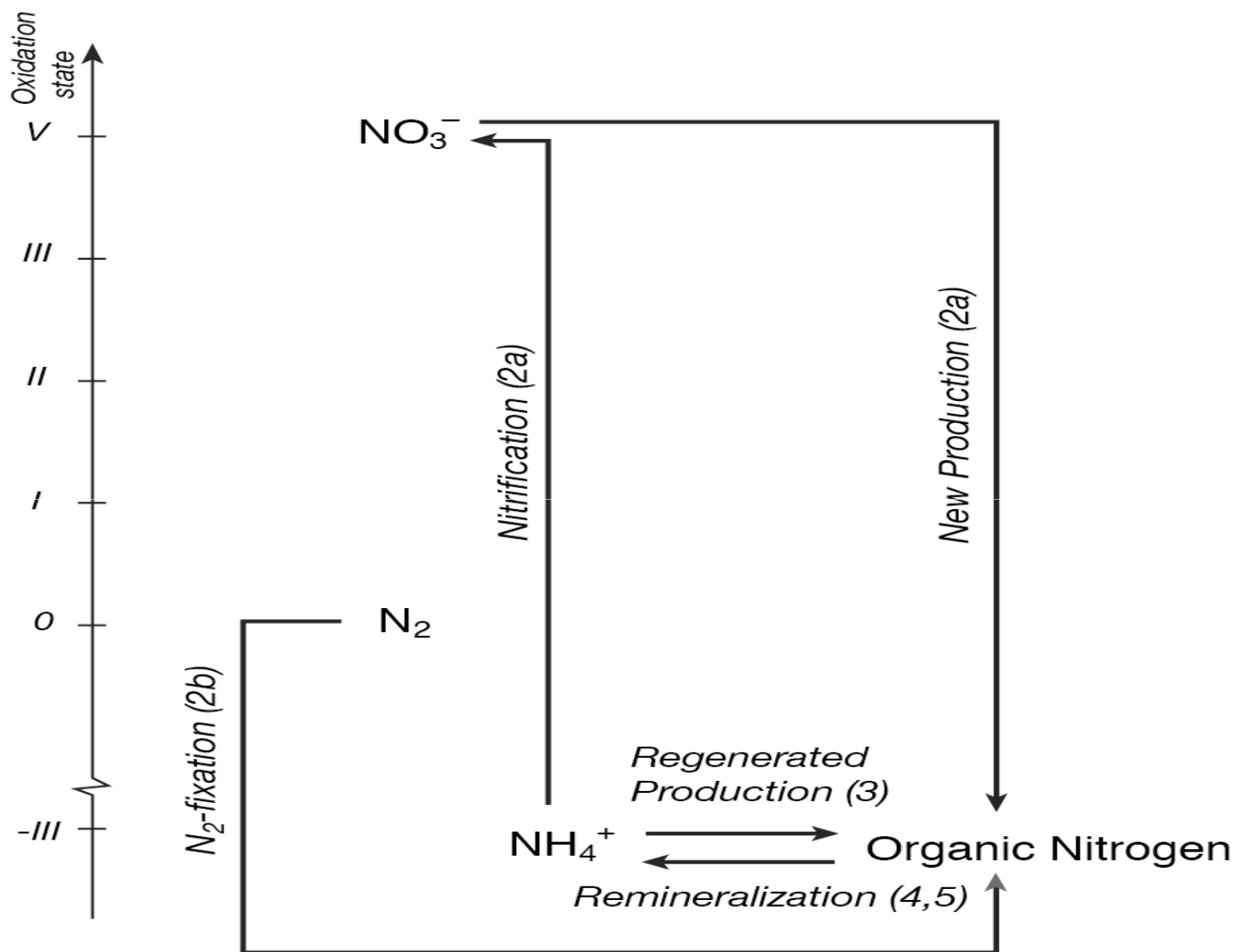
Table 4.2.2

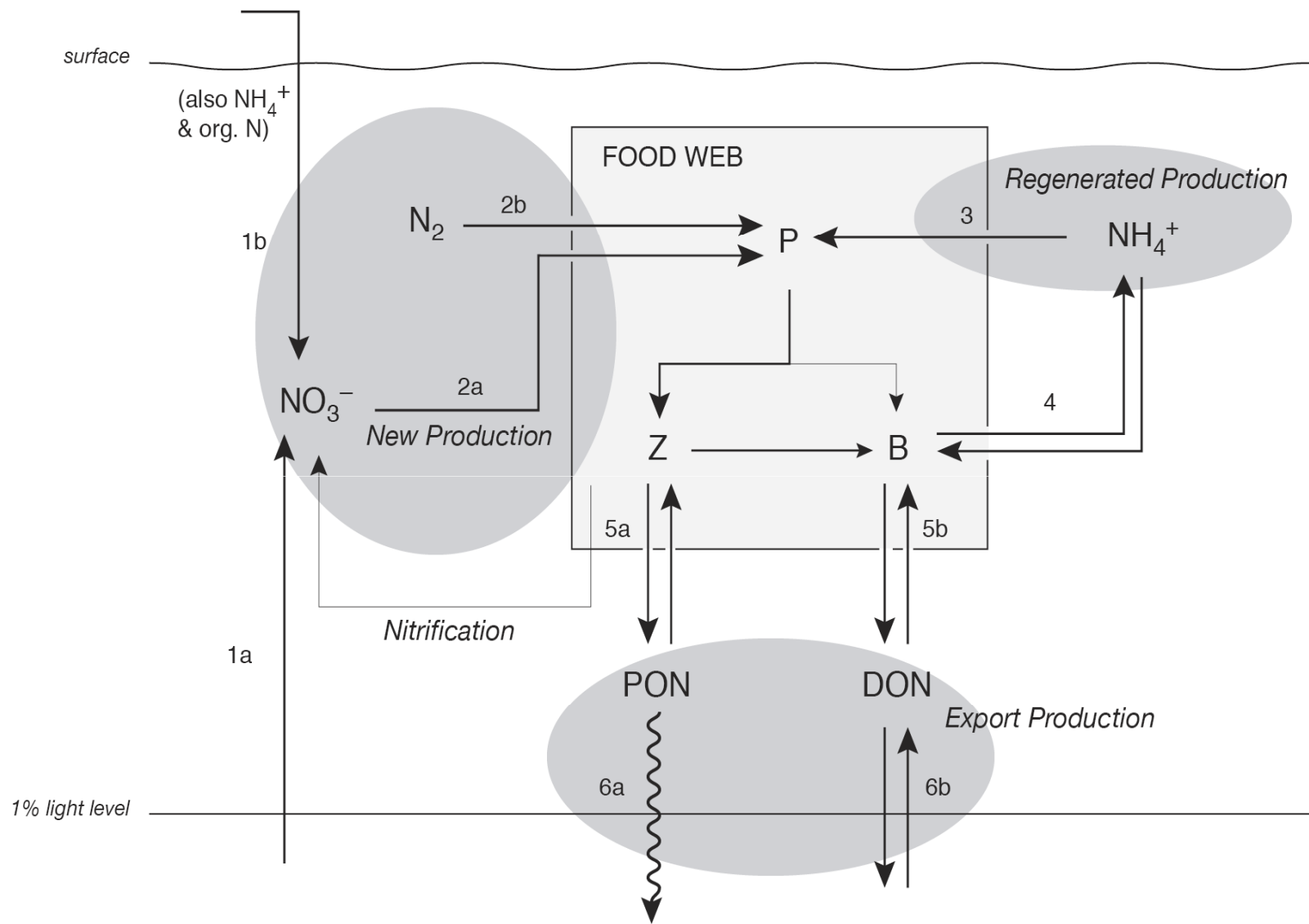
Organic matter component	Composition	H/C _{org} ratio	C _{org} /O ratio
Carbohydrate	C ₆ H ₁₀ O ₅	1.67	1.2
Lipid	C ₄₀ H ₇₄ O ₅ (C ₁₈ H ₃₄ O ₂)	1.85	8.0
Protein	C _{3.83} H _{6.05} O _{1.25} N (C ₁₀₆ H ₁₆₈ O ₃₄ N ₂₈ S)	1.58	3.1
Nucleic Acid	C _{9.625} H ₁₂ O _{6.5} N _{3.75} P	1.25	1.5

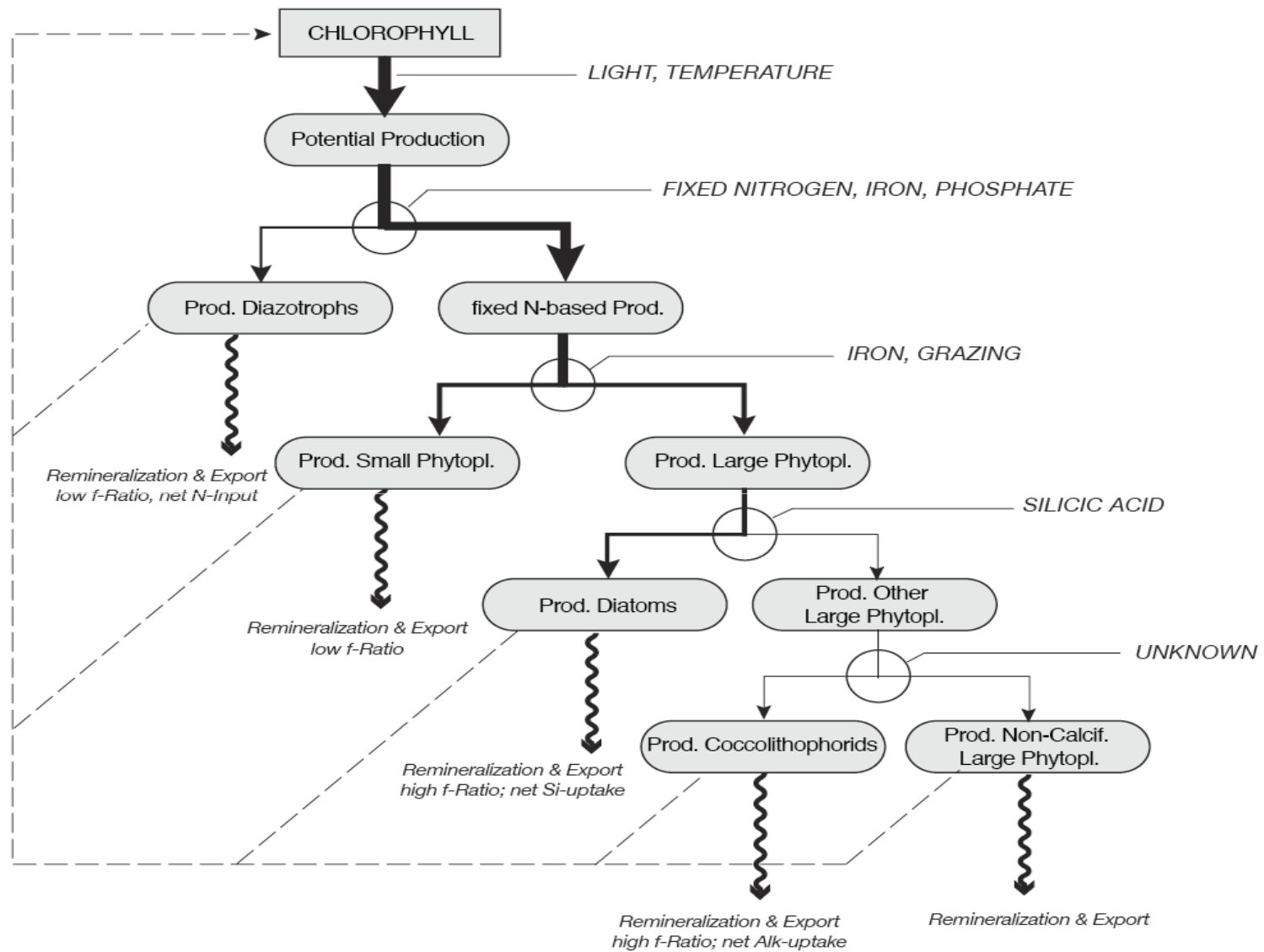


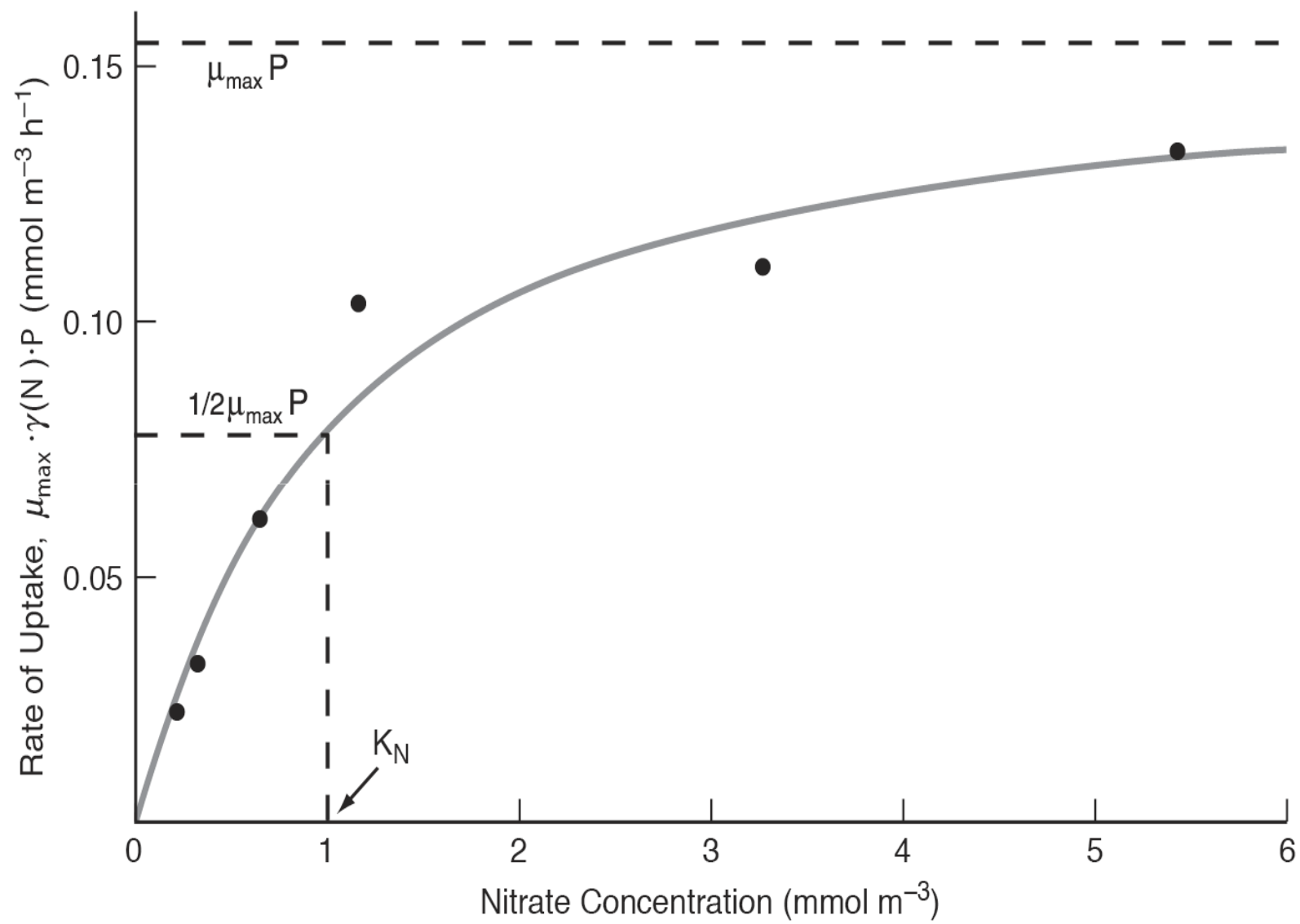


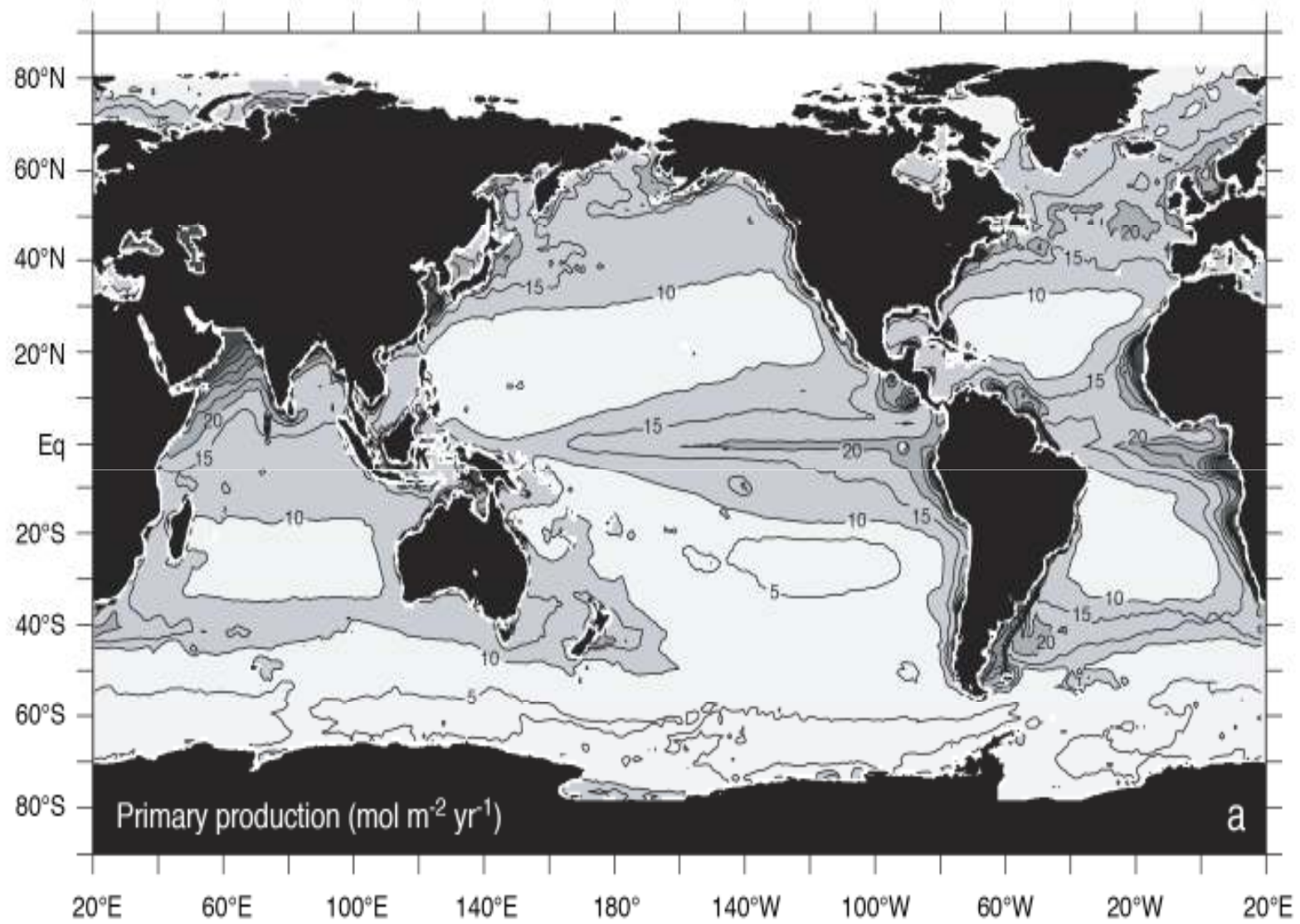


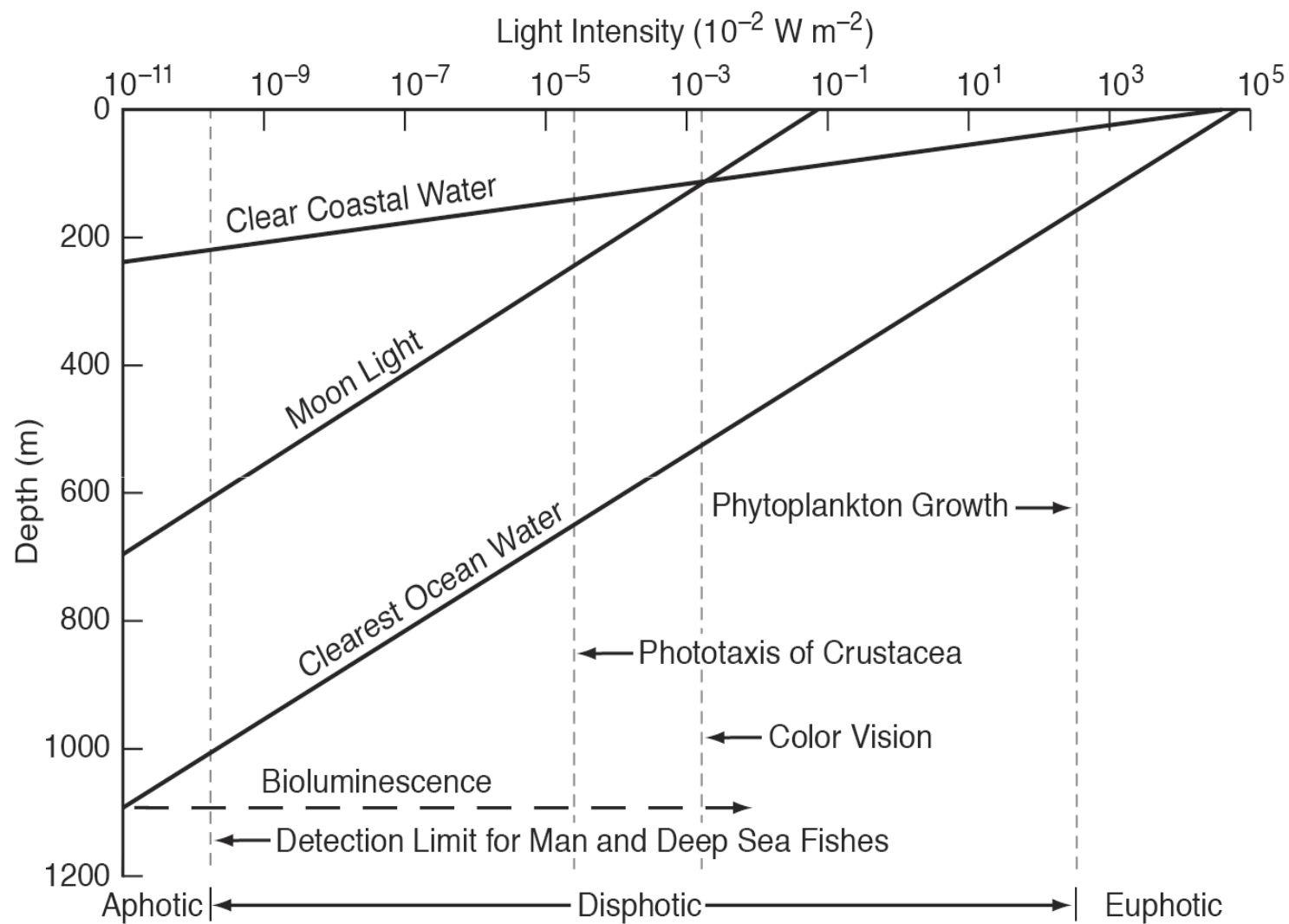


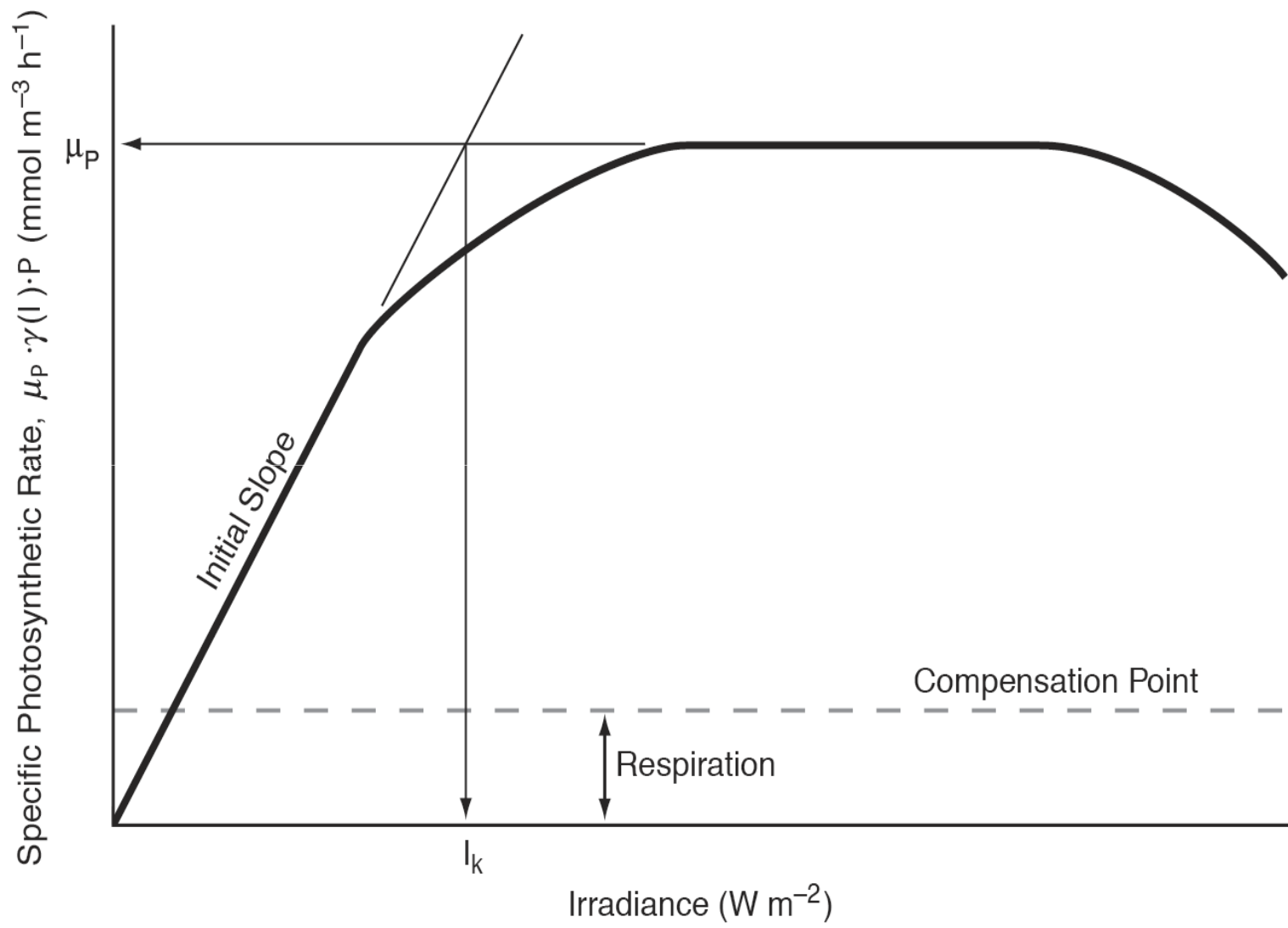


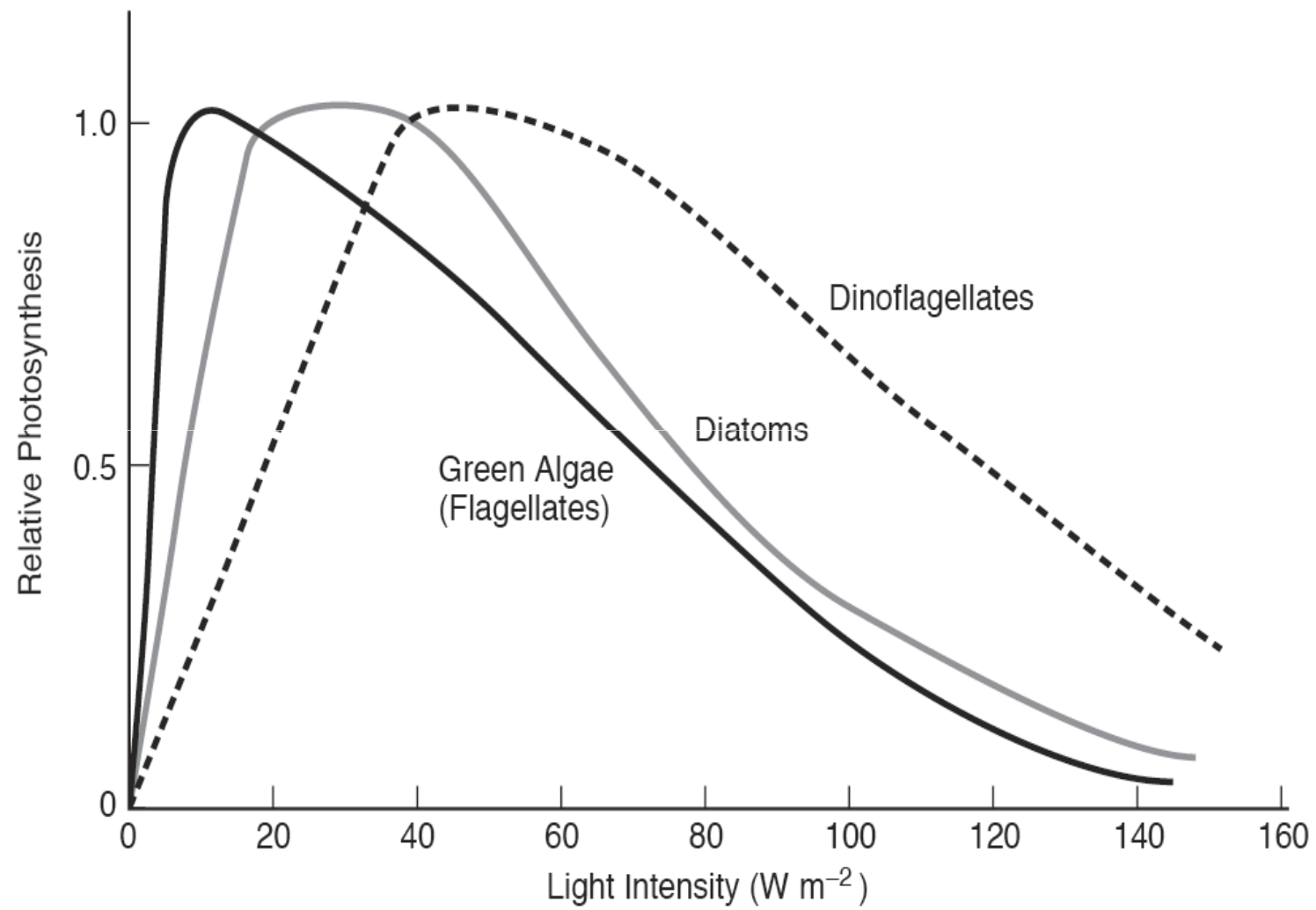


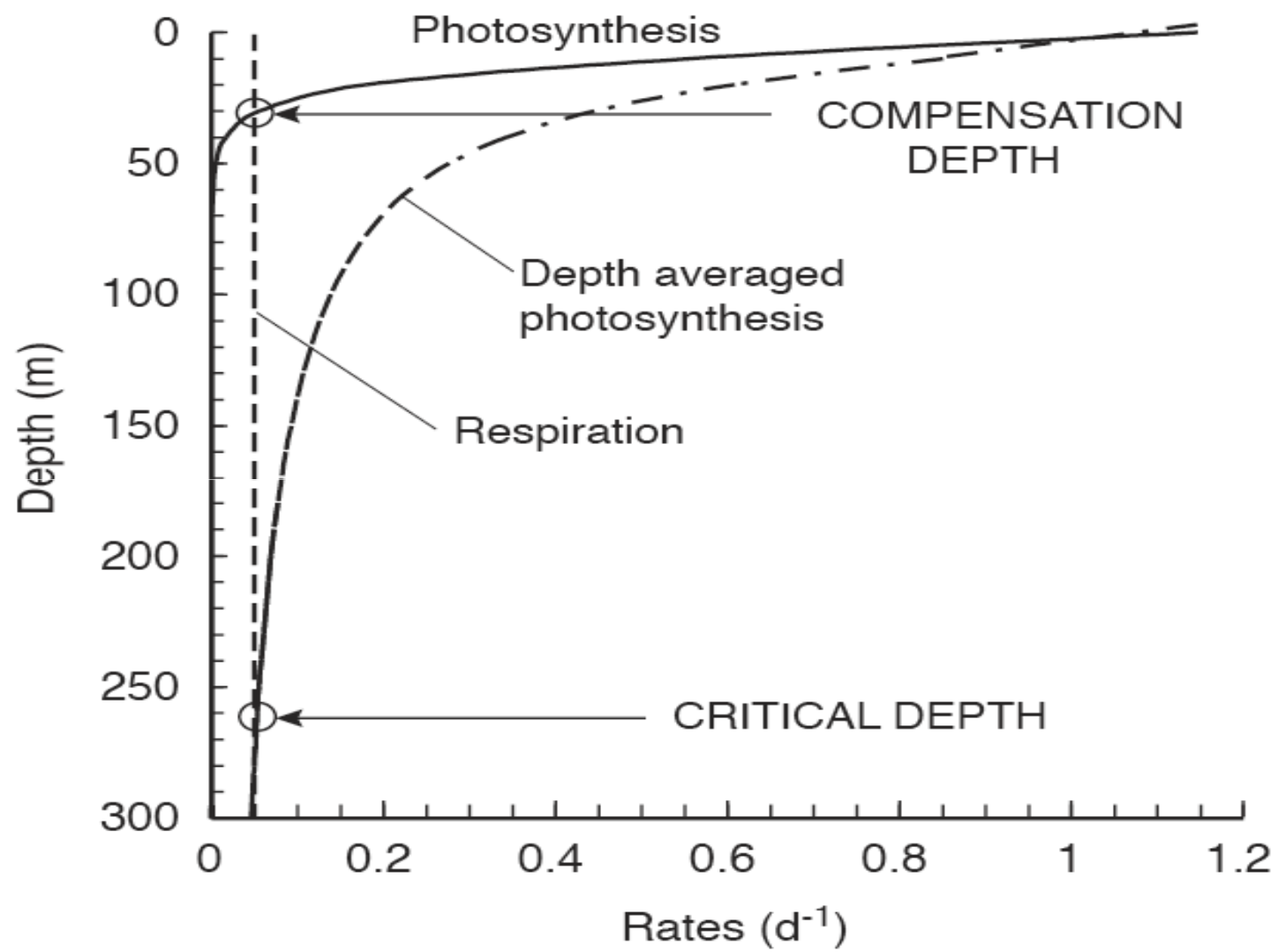


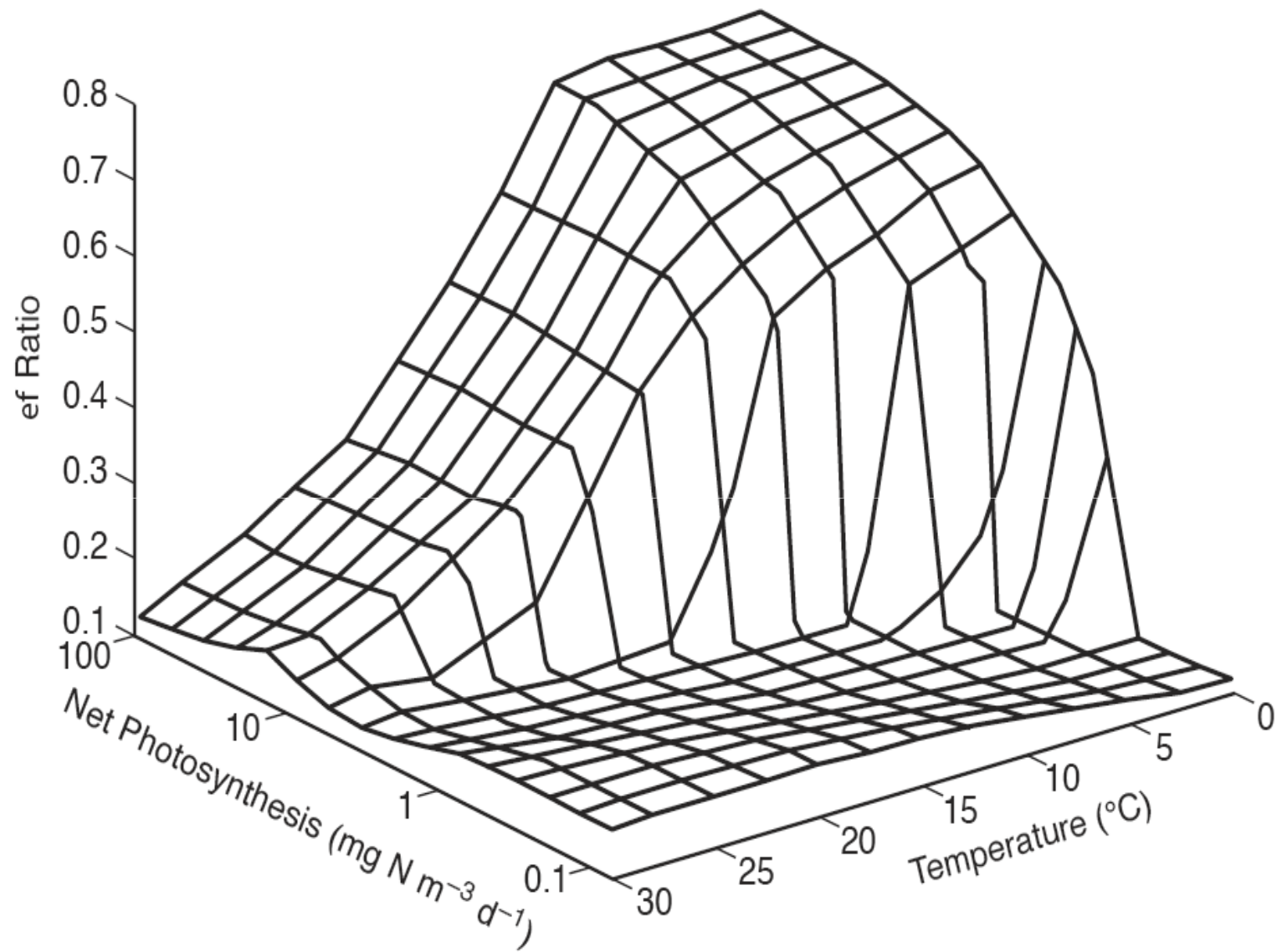


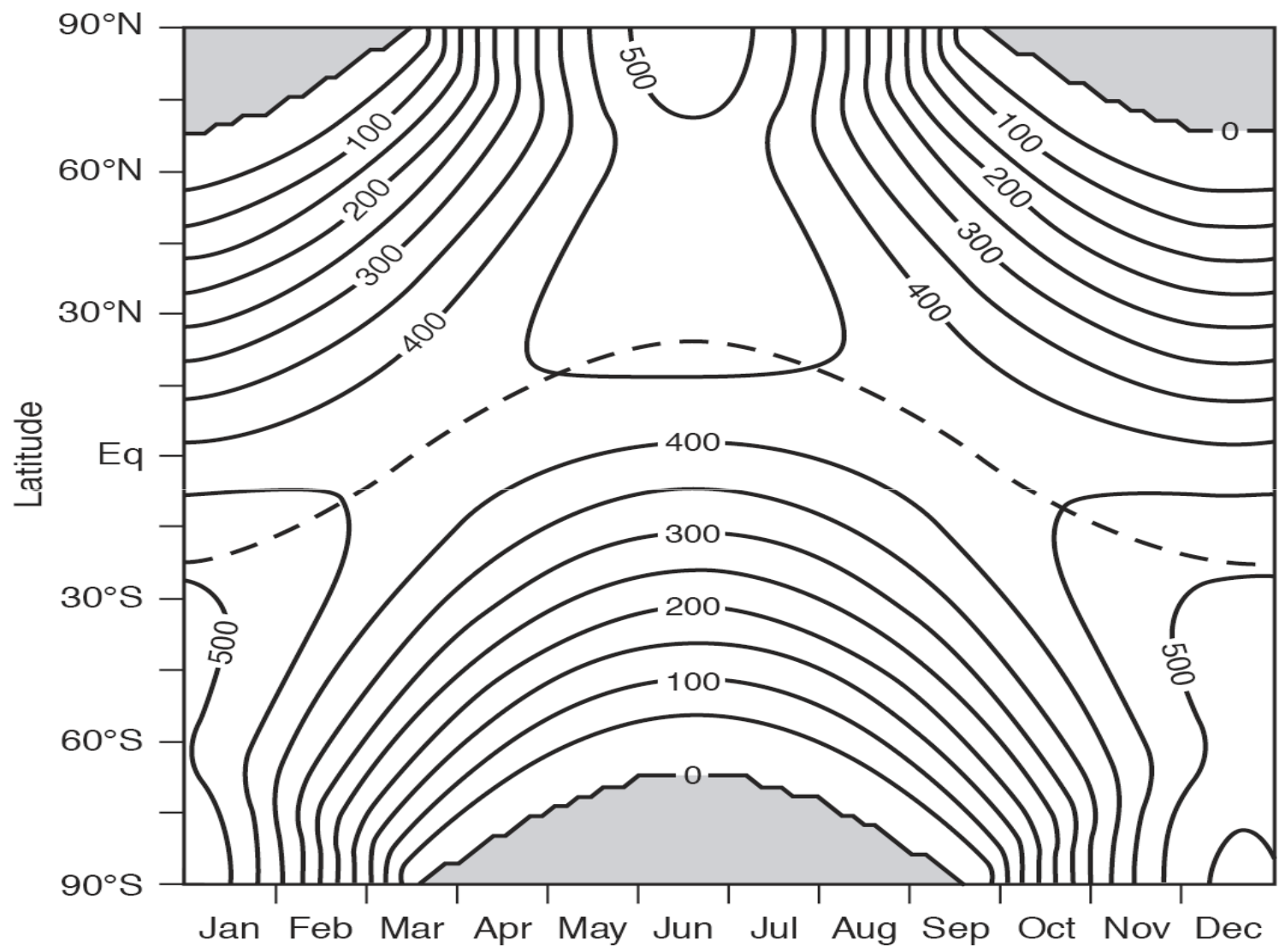


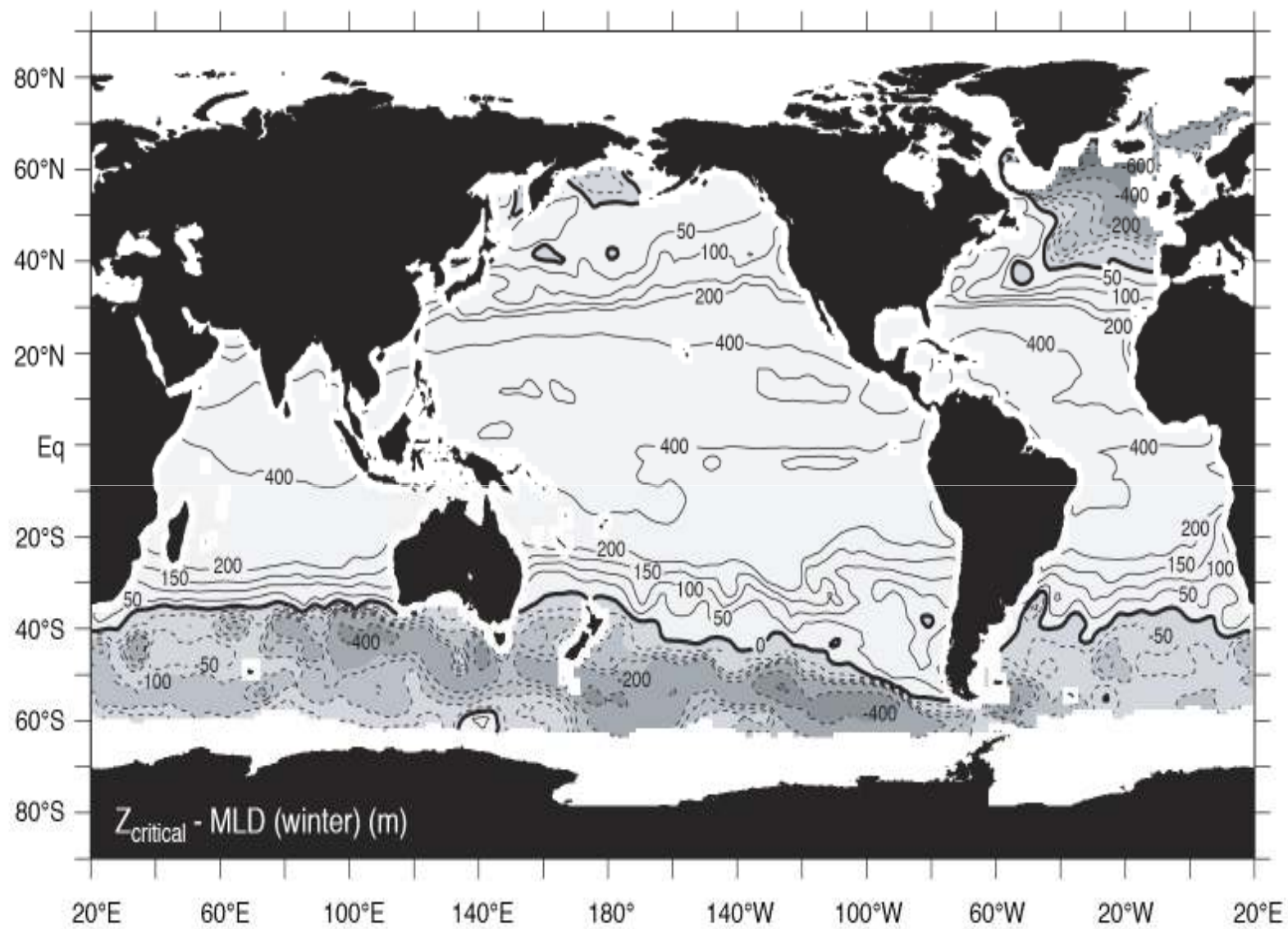




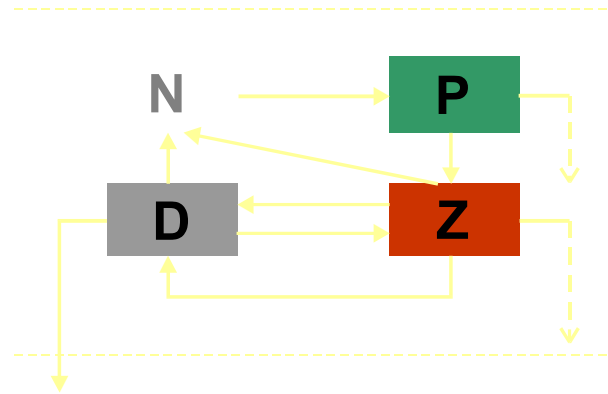




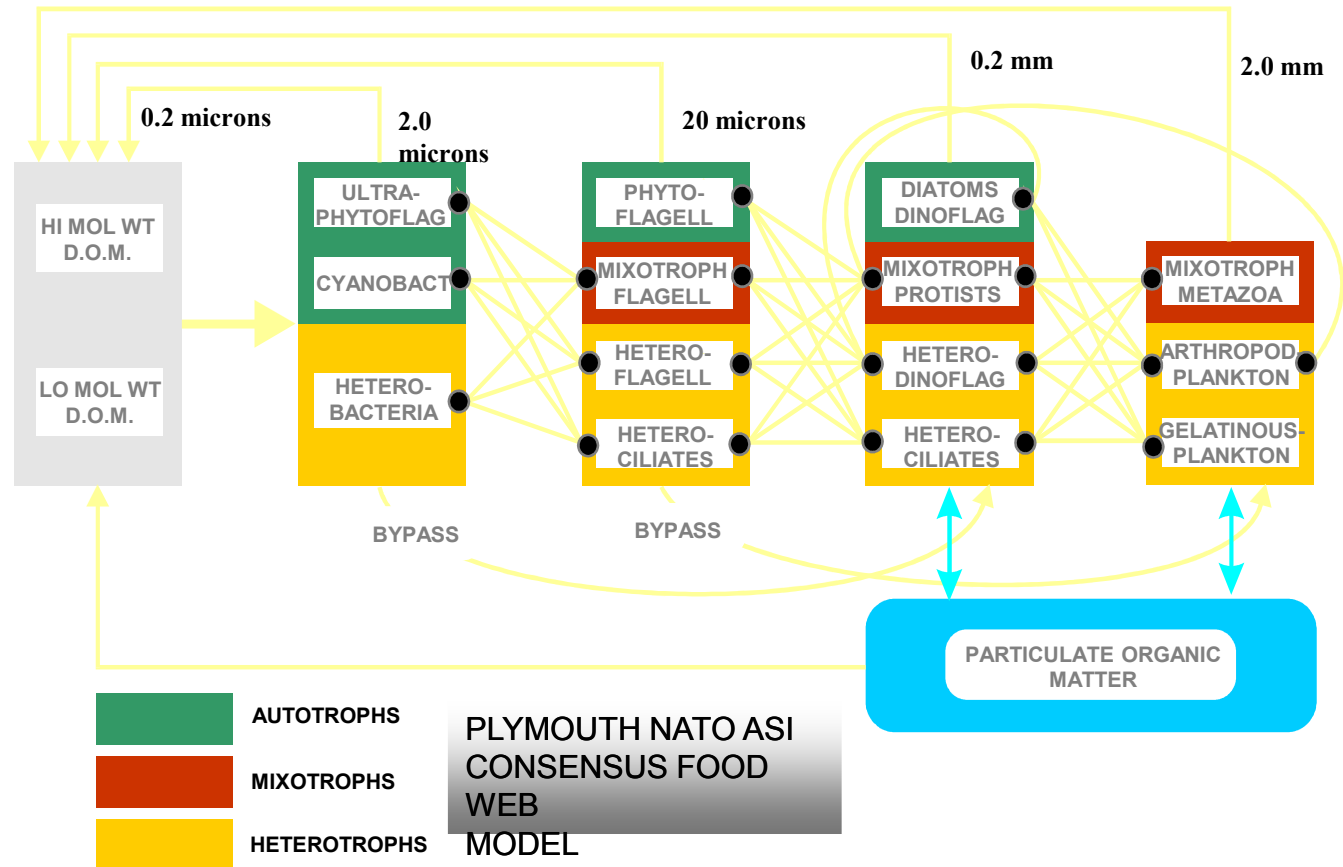




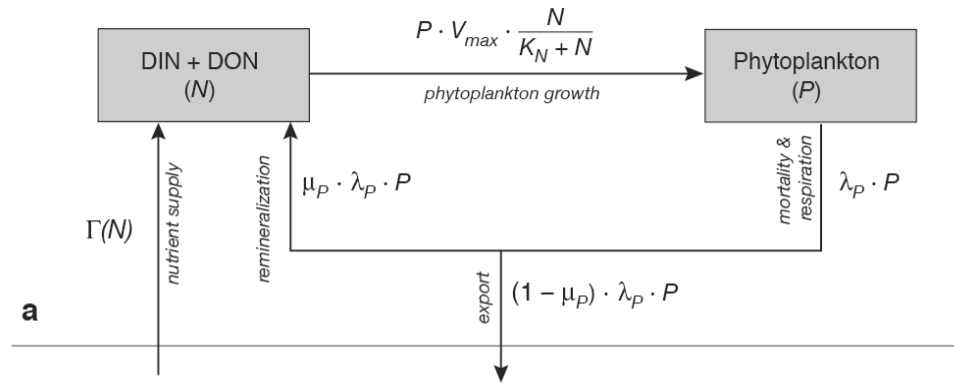
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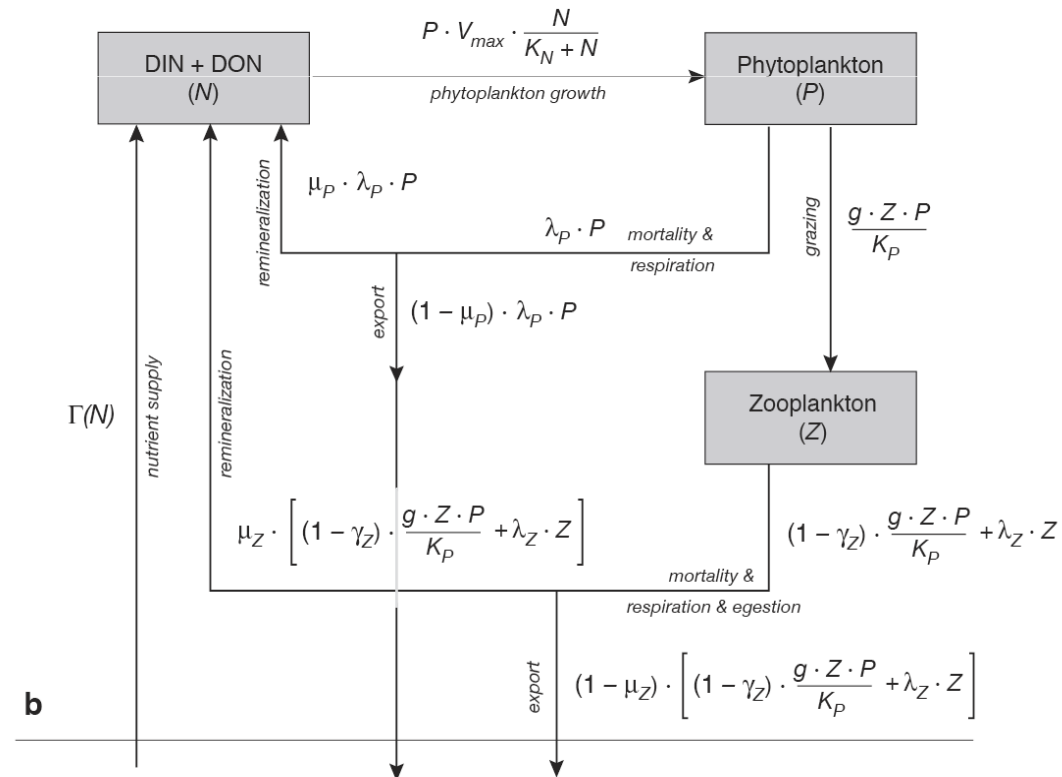
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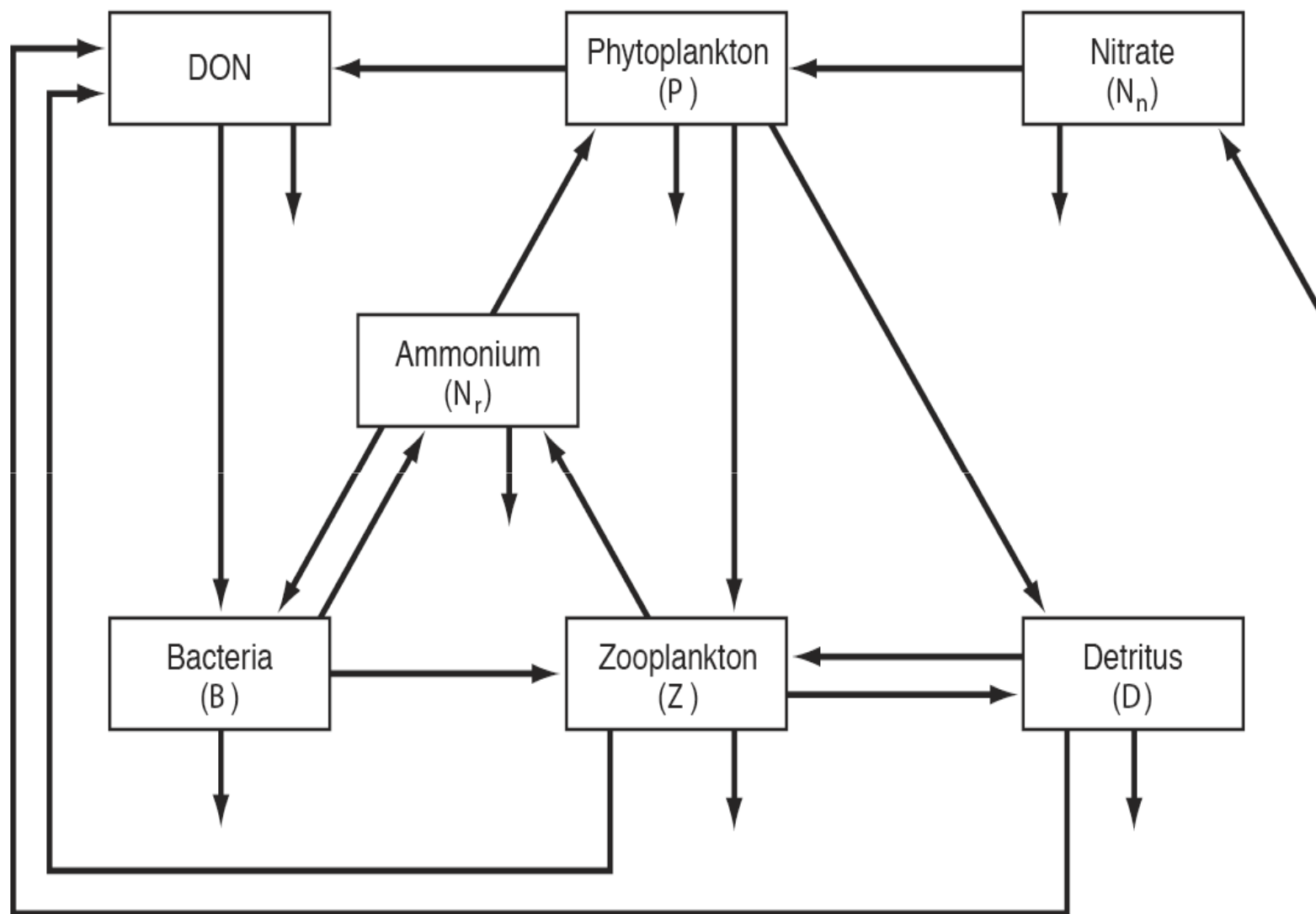


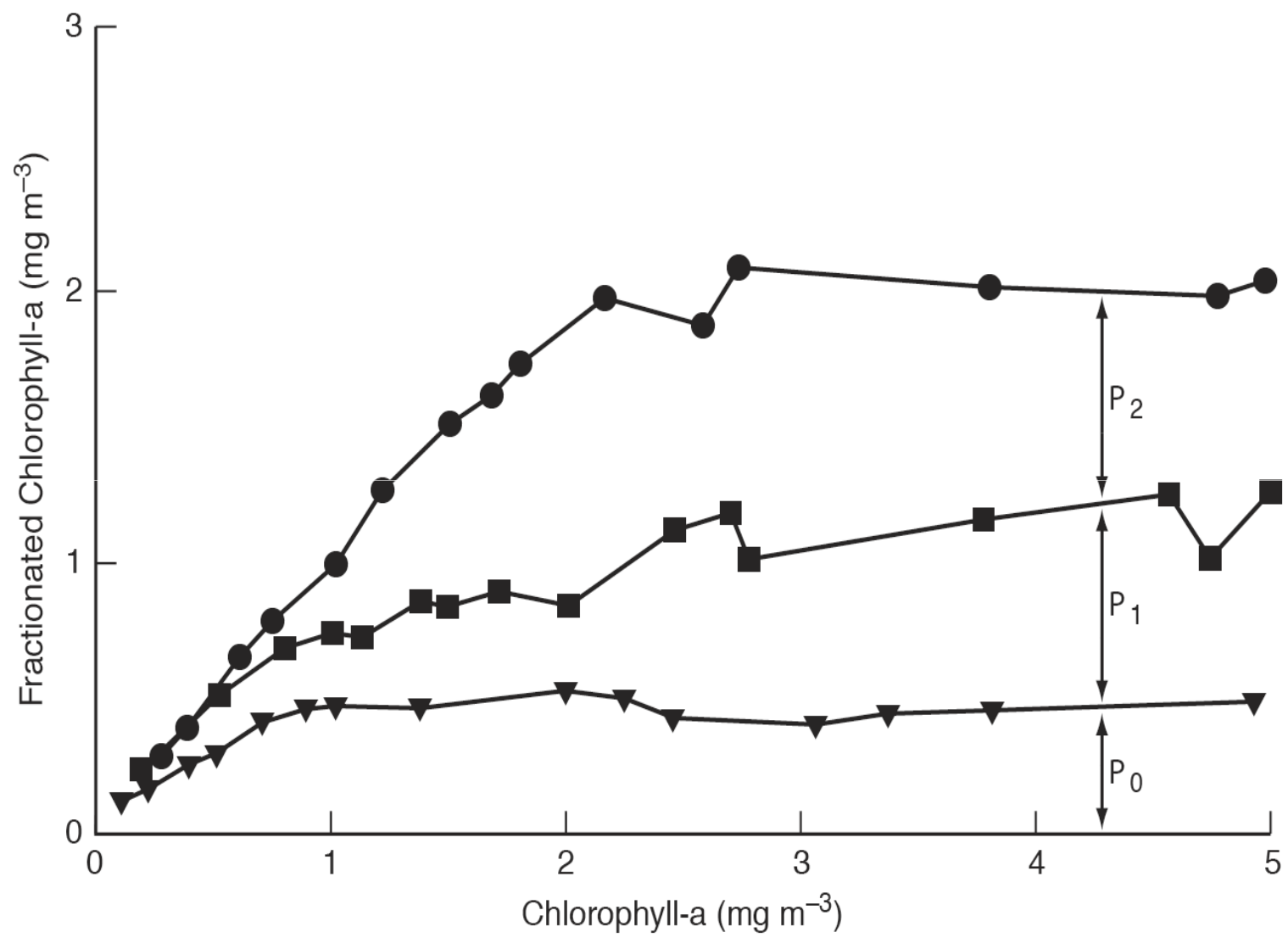
N-P MODEL

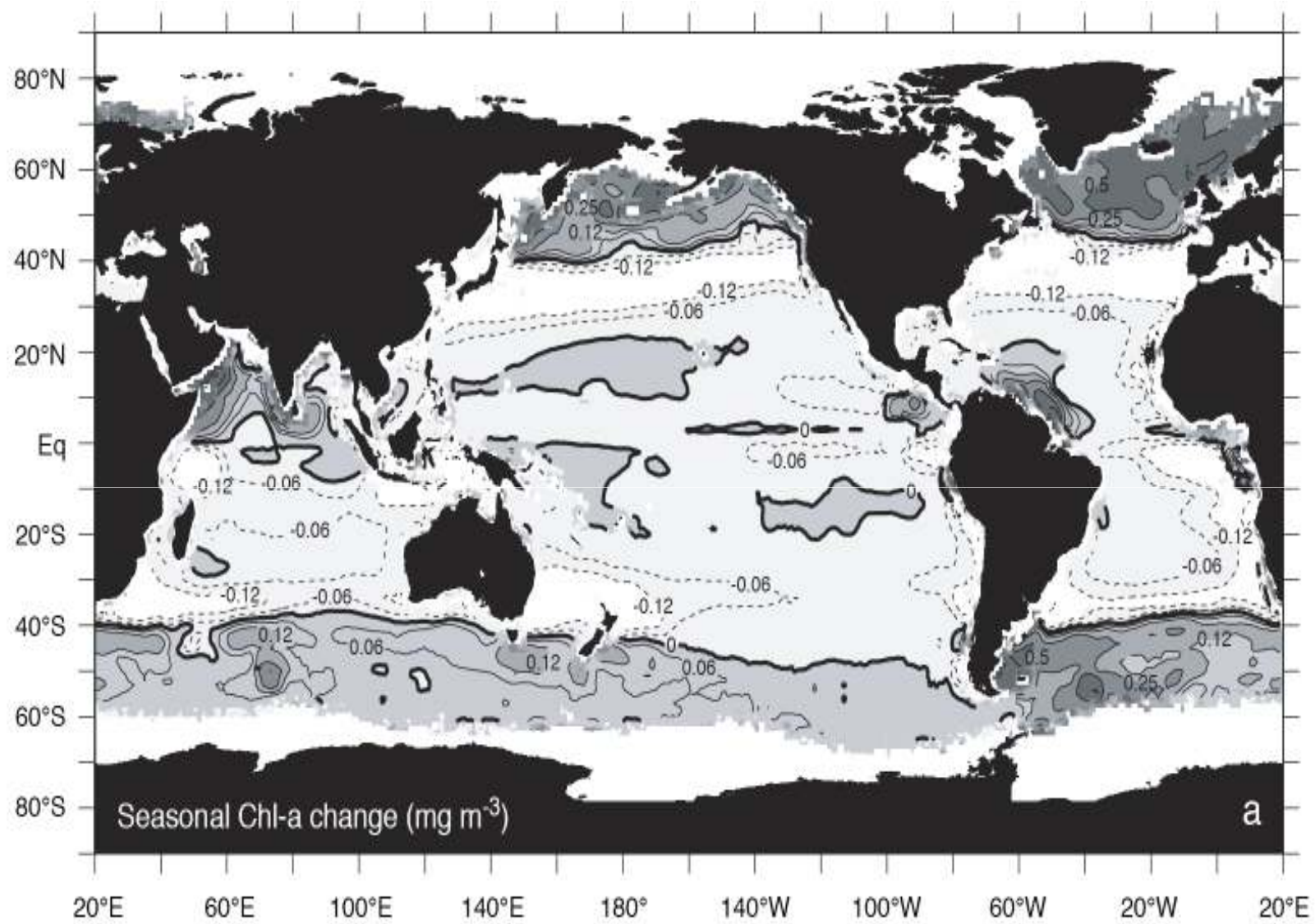


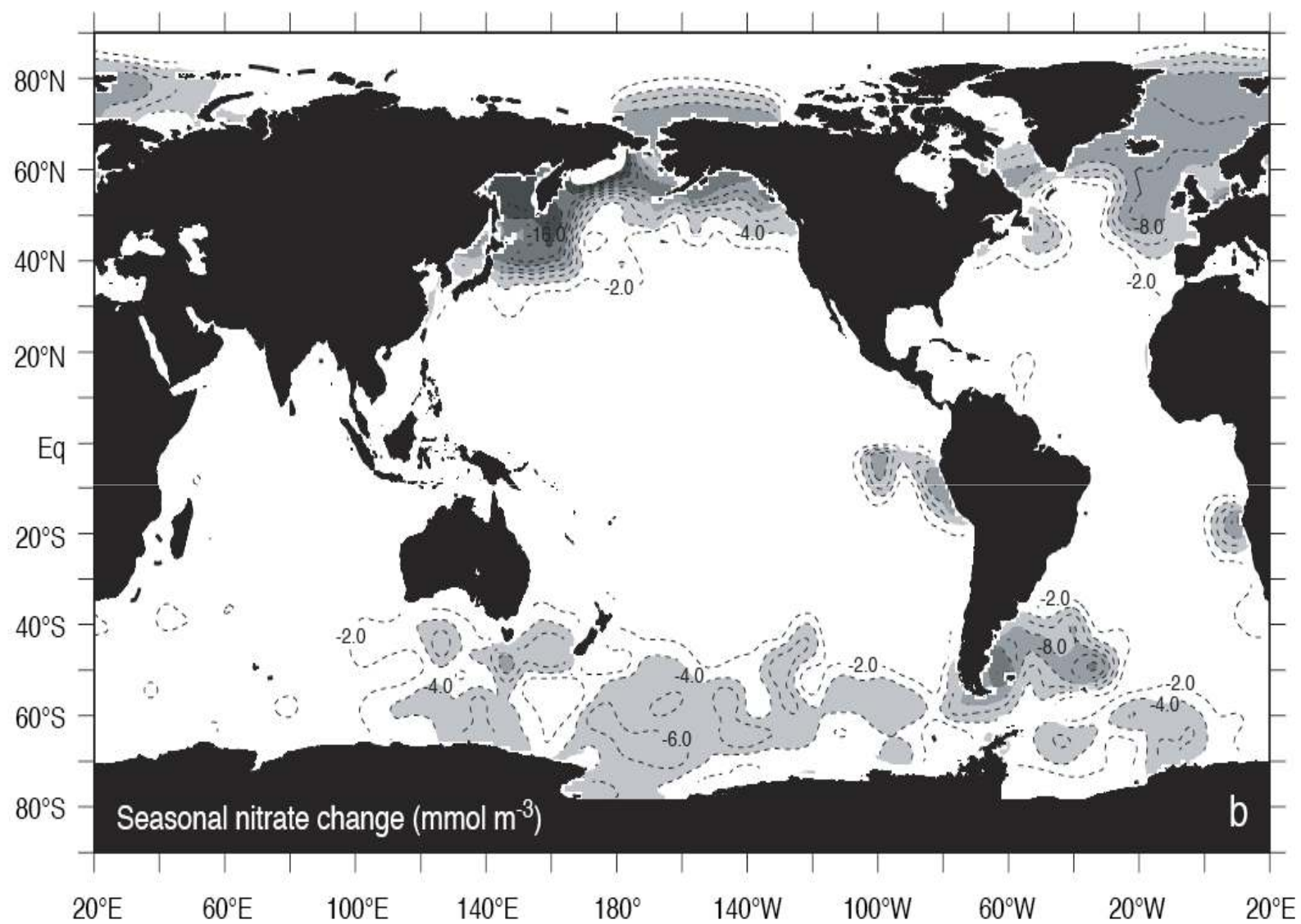
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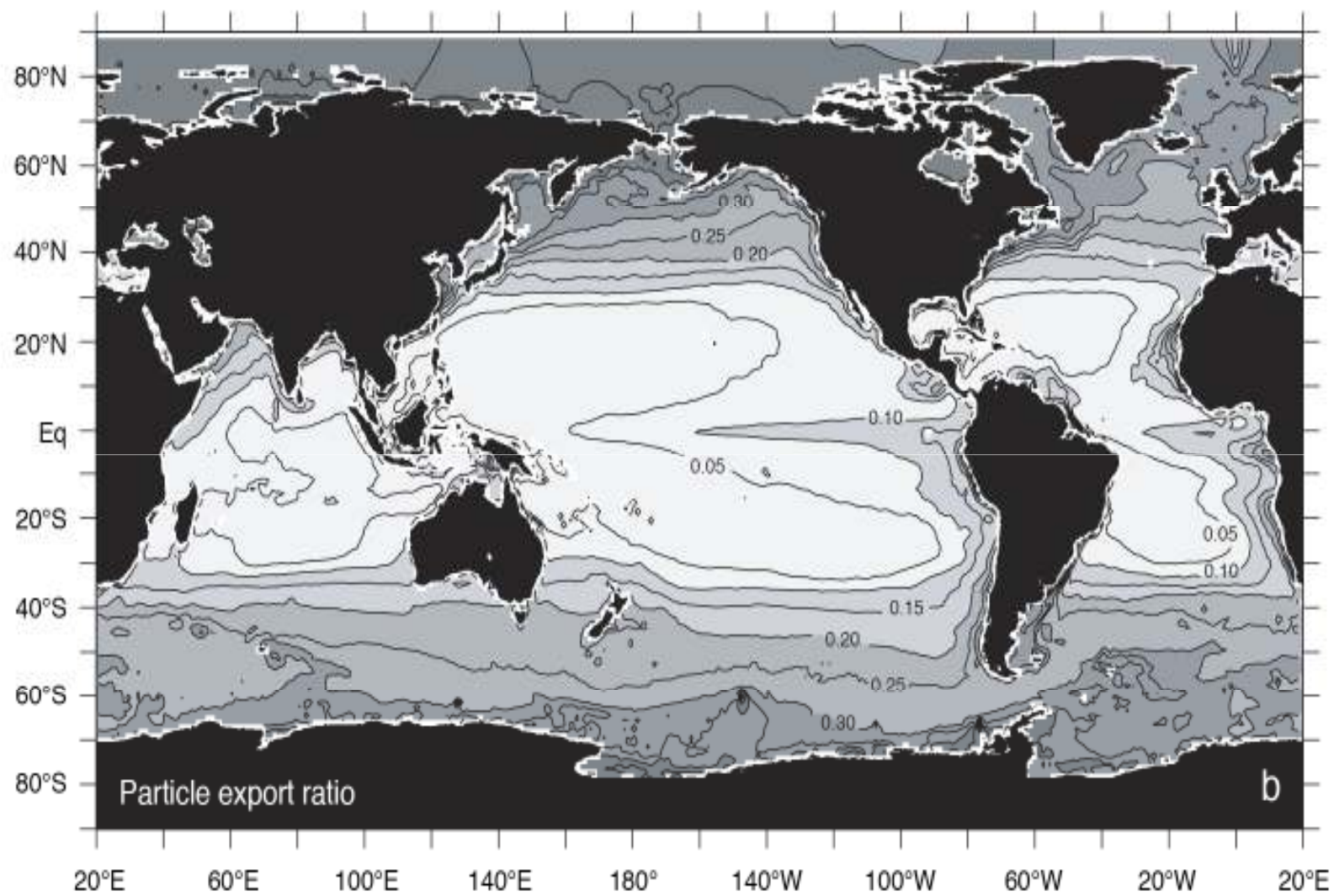


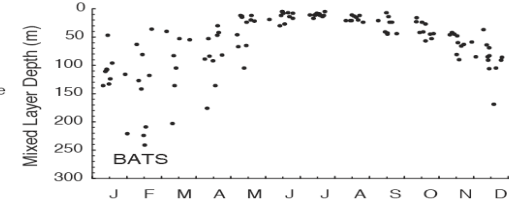
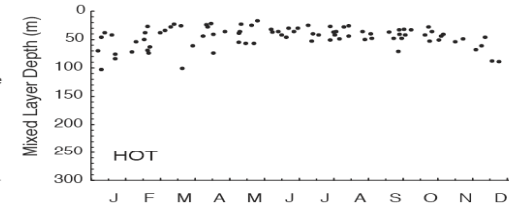
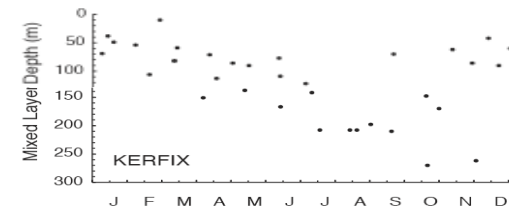
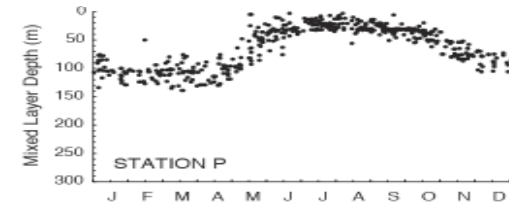
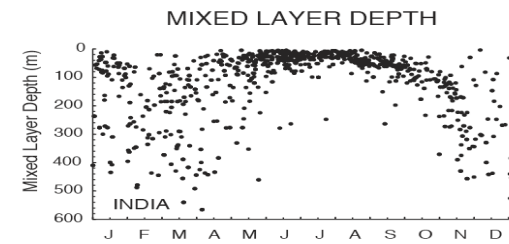
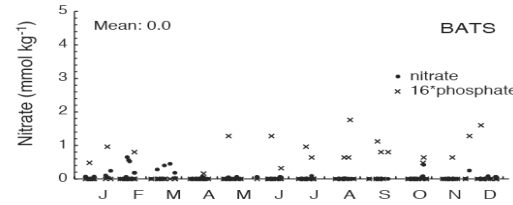
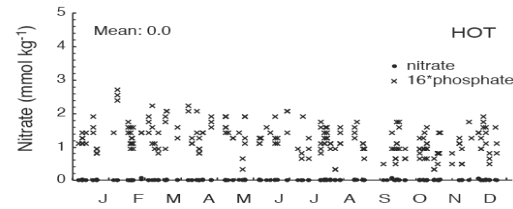
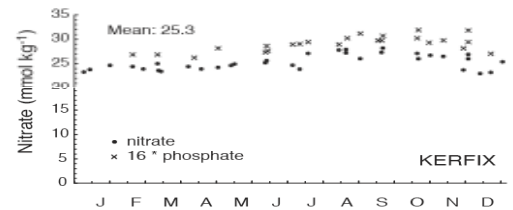
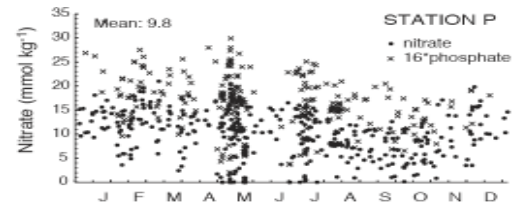
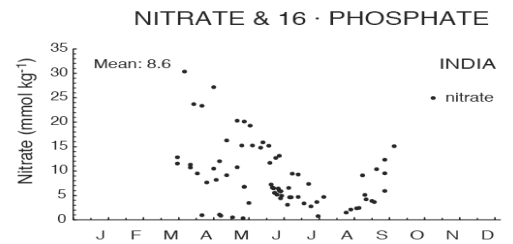
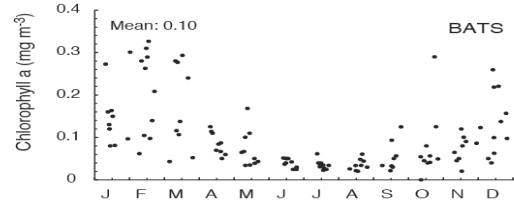
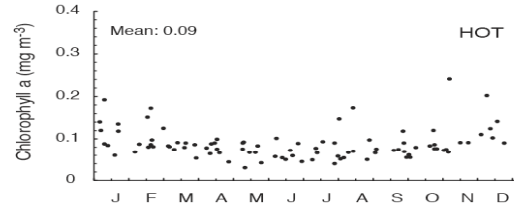
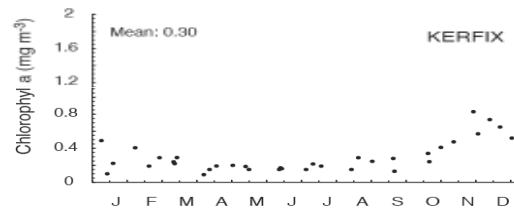
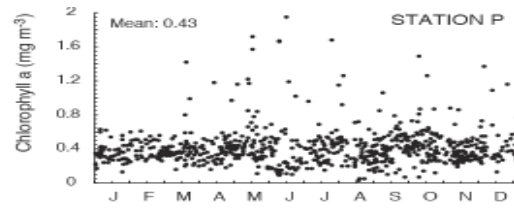
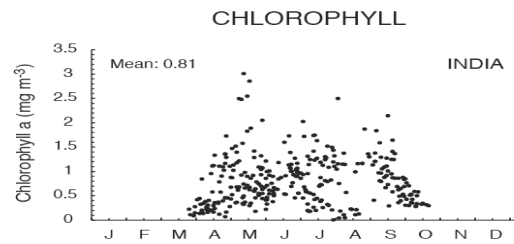


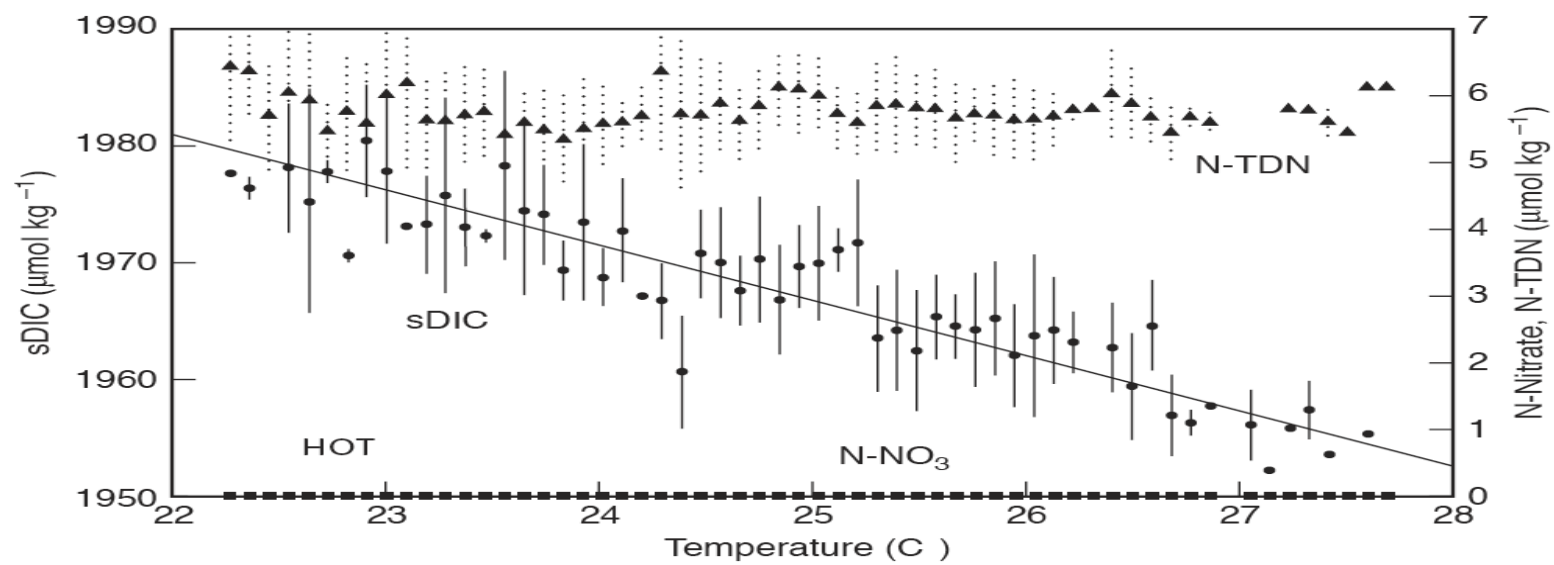
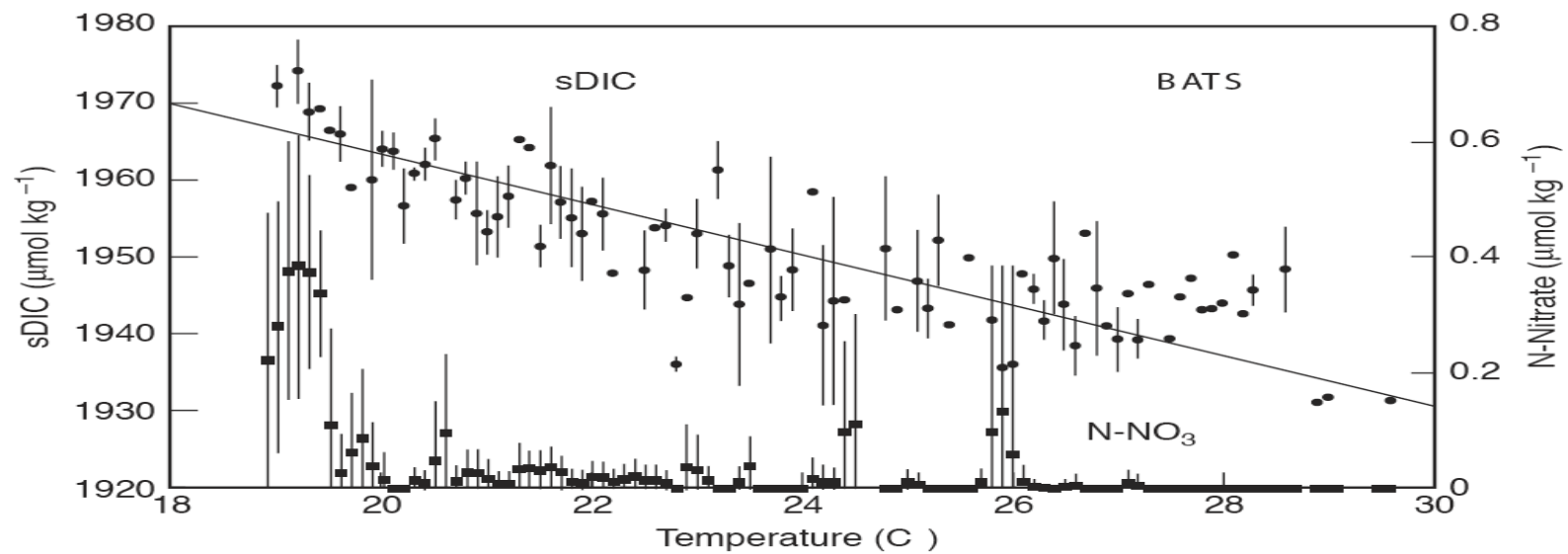


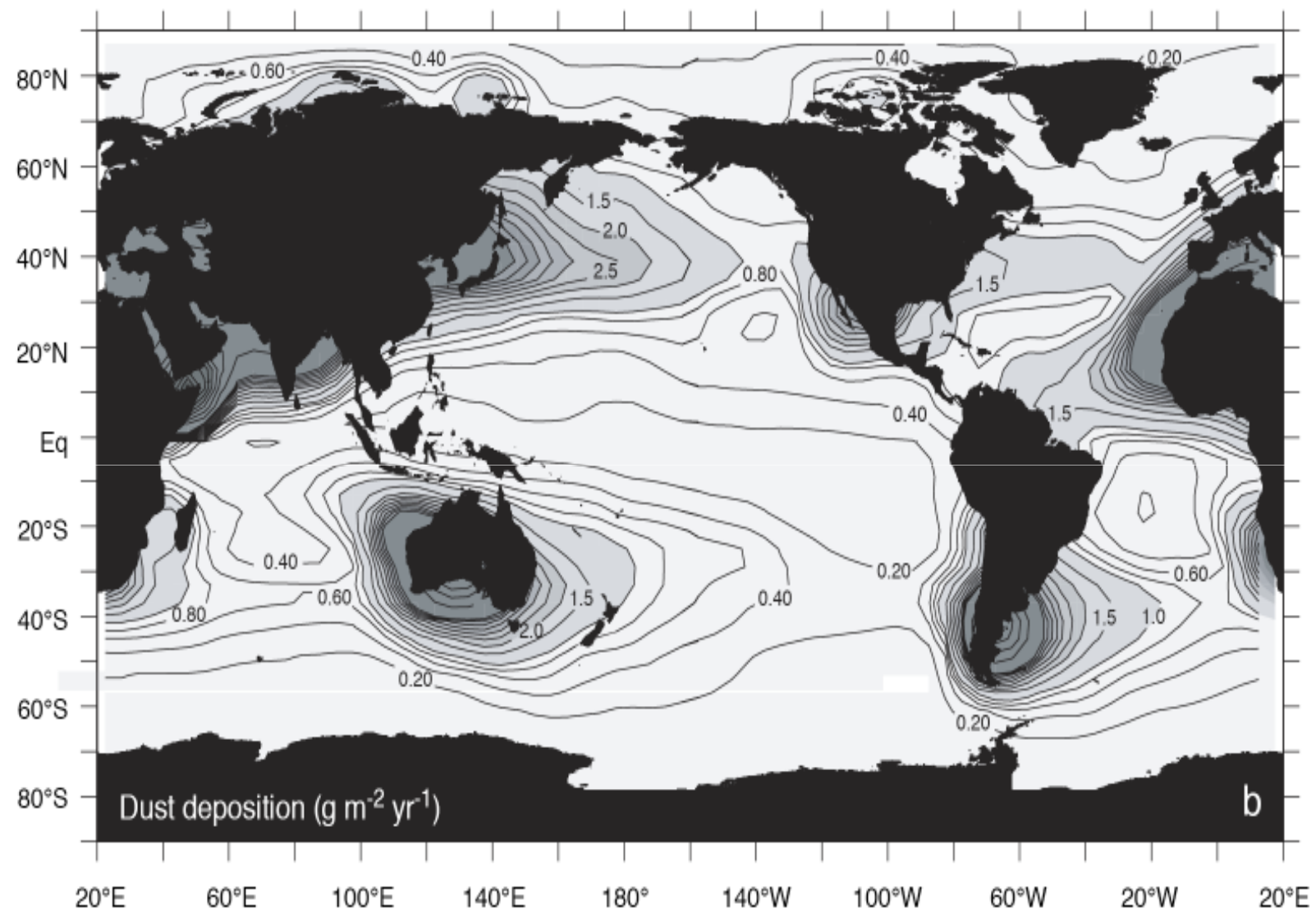


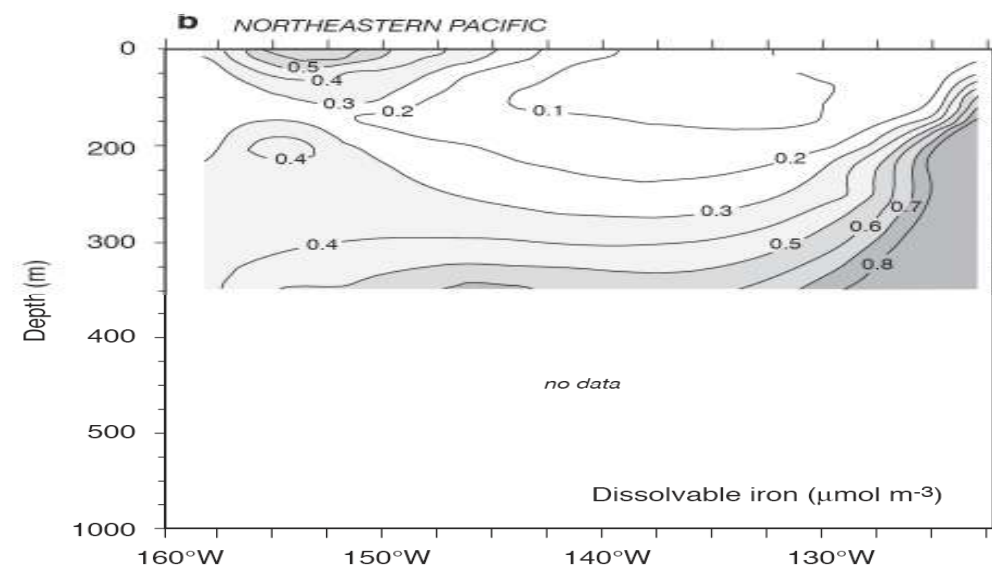
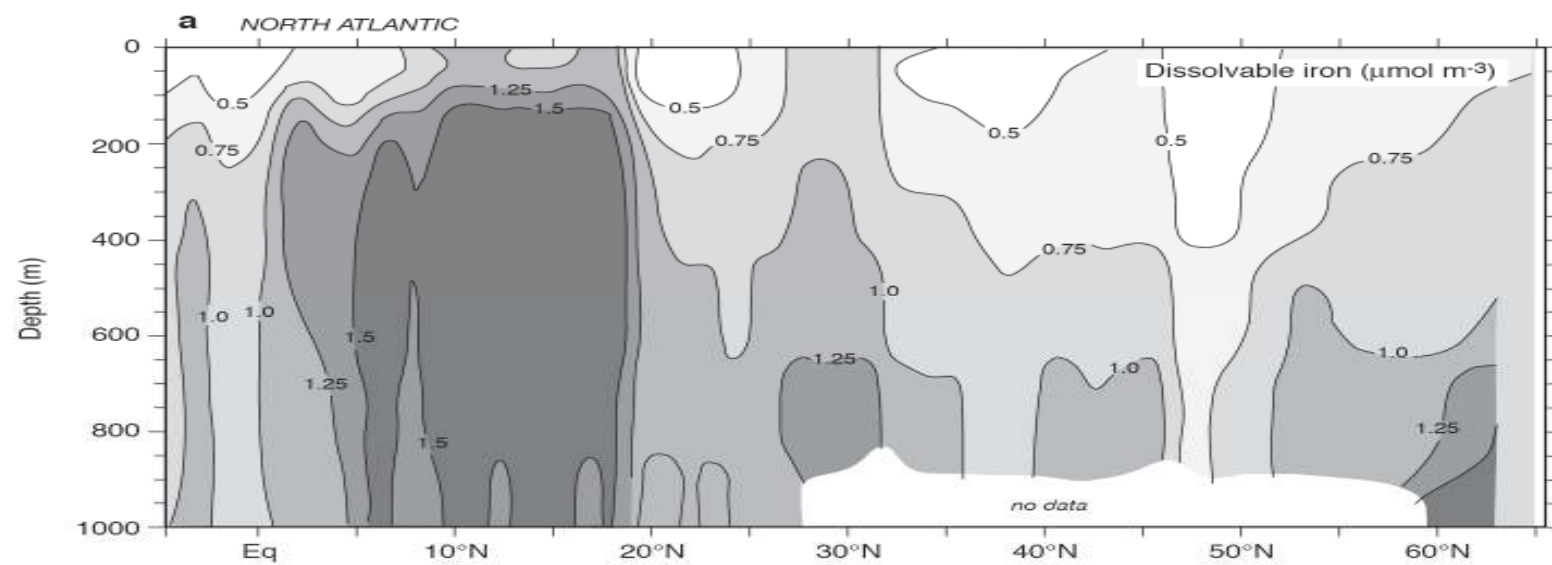


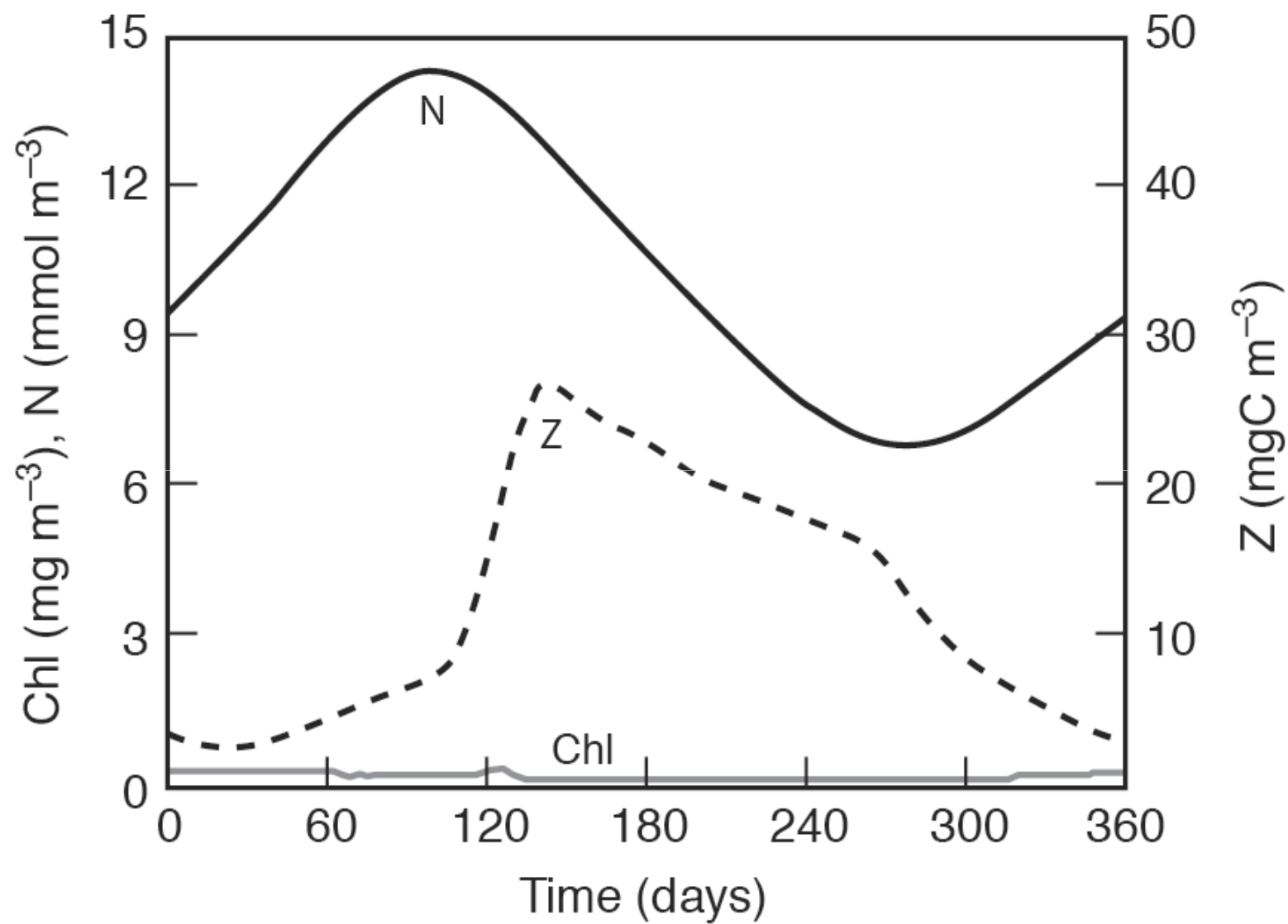


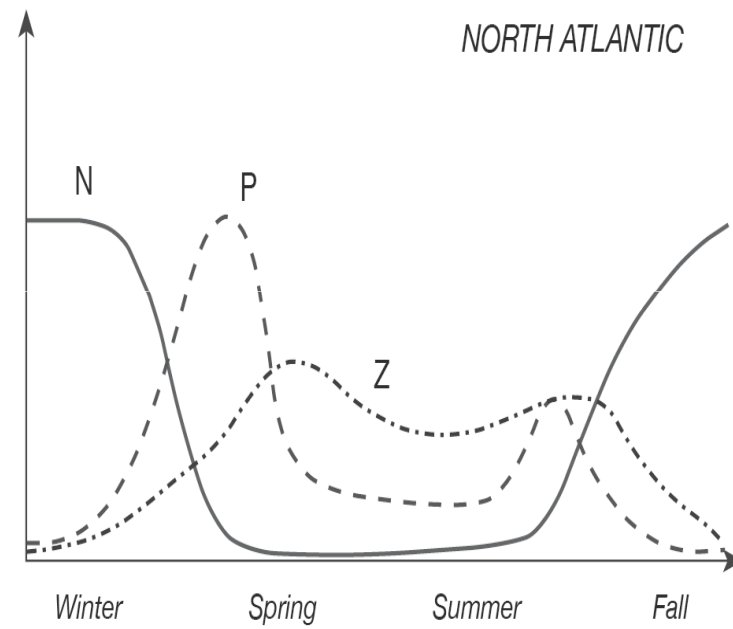
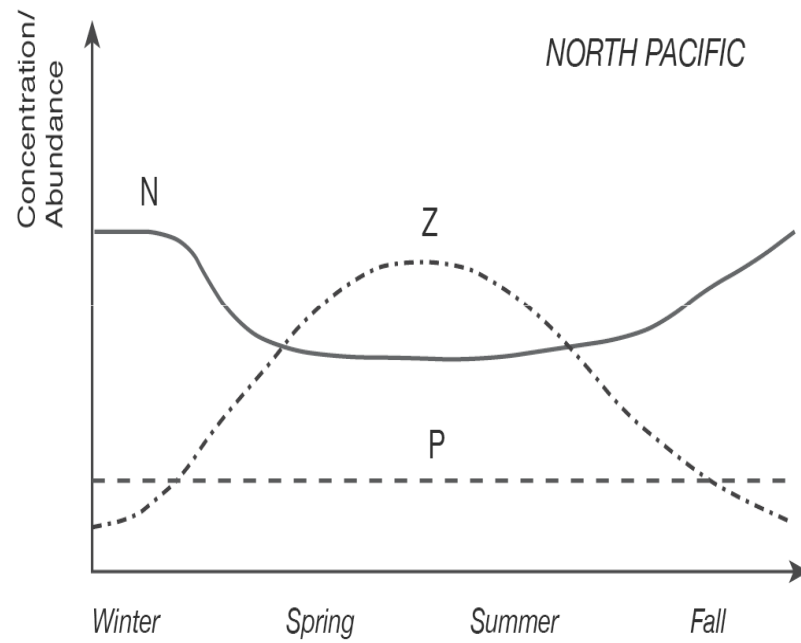


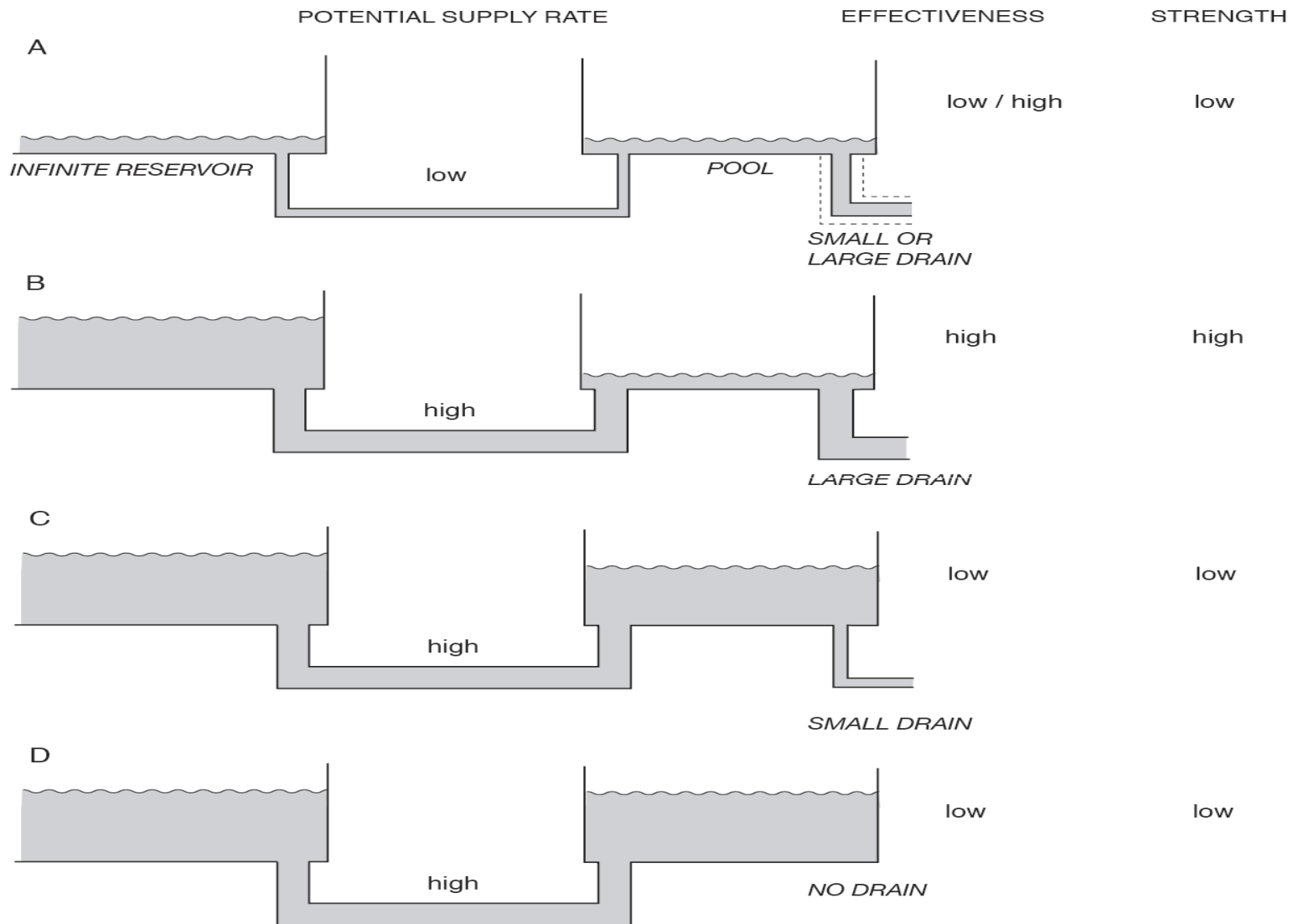






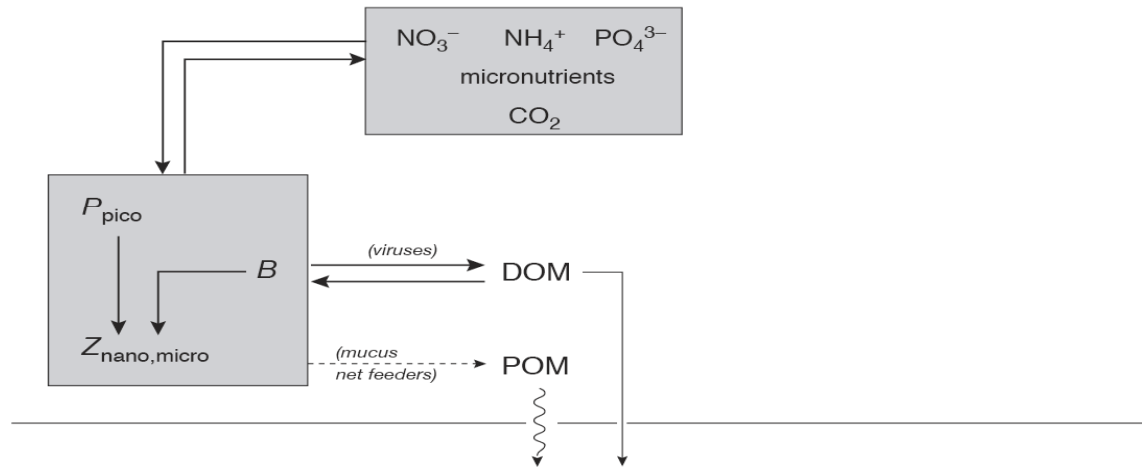




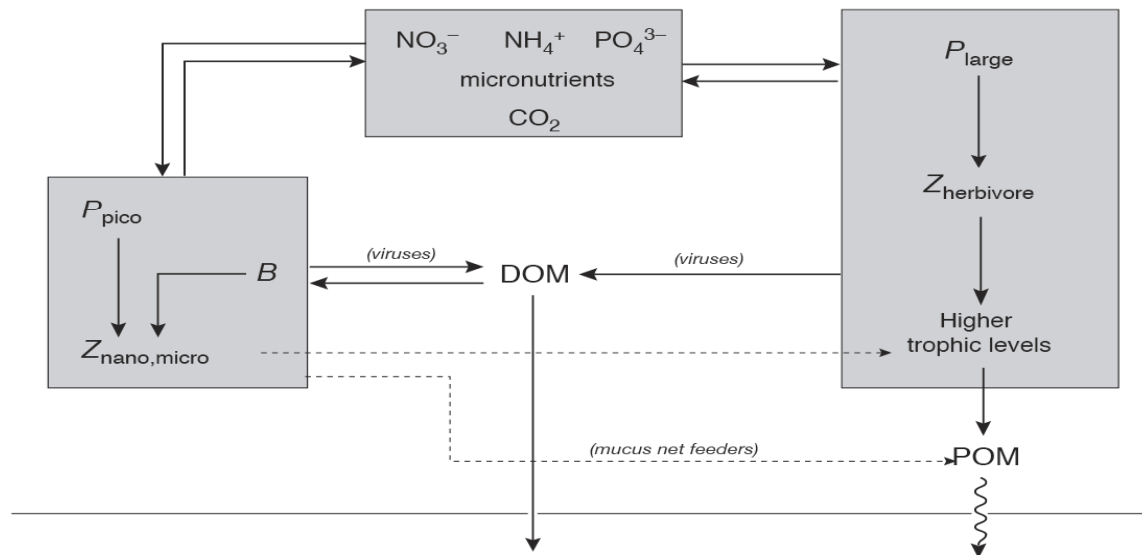


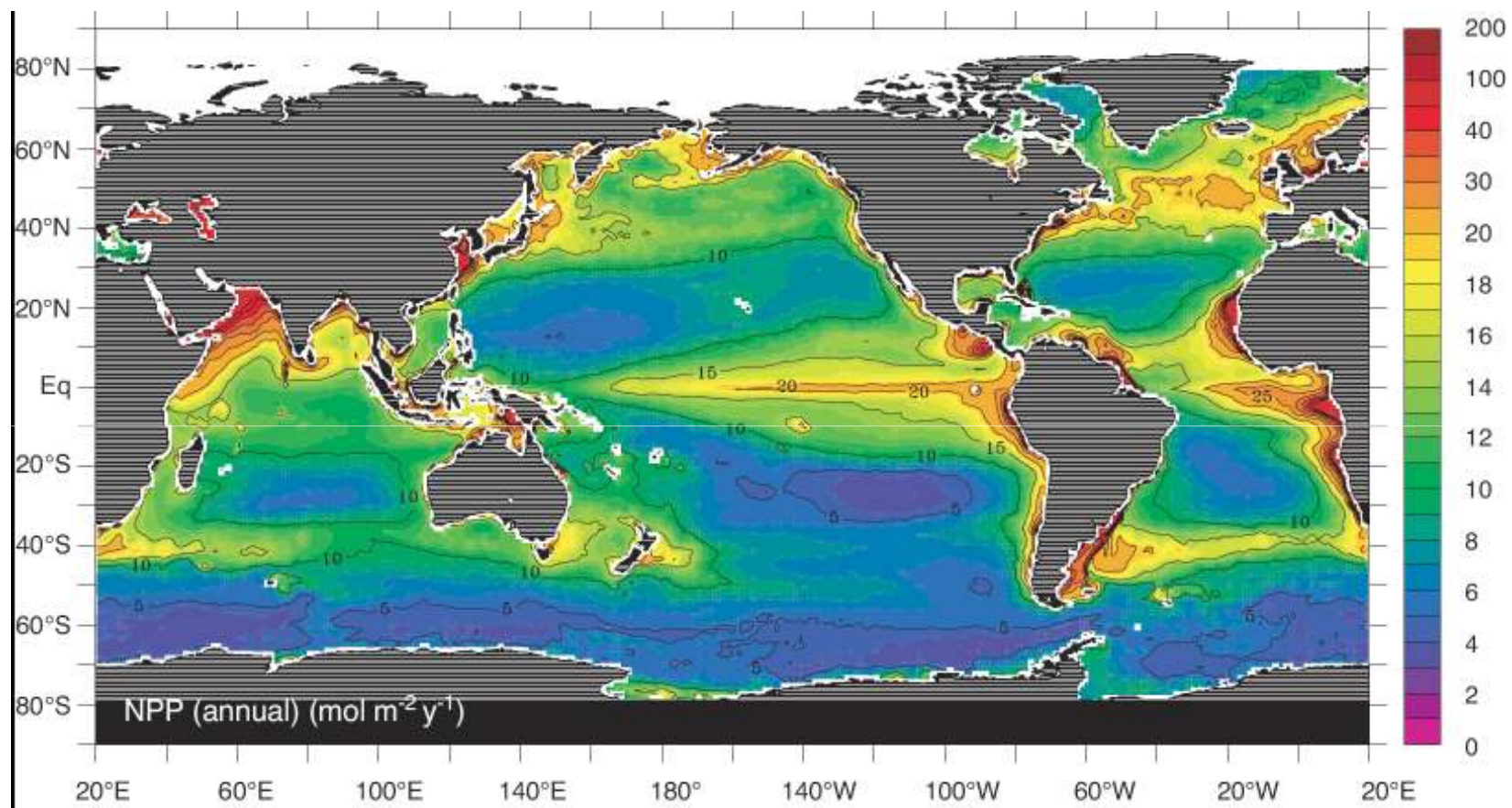
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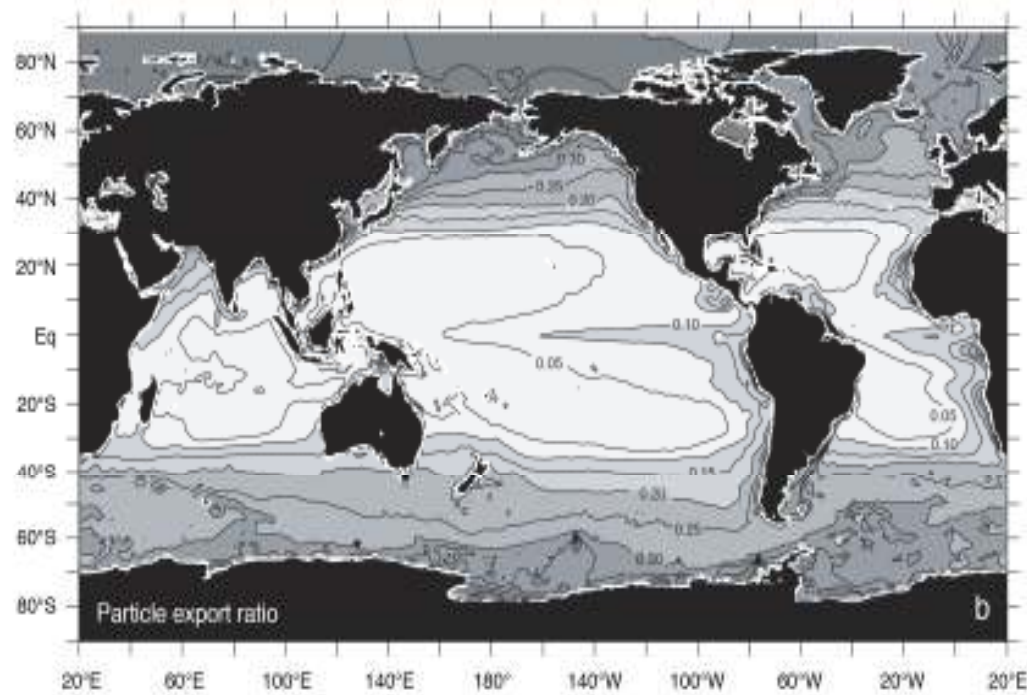
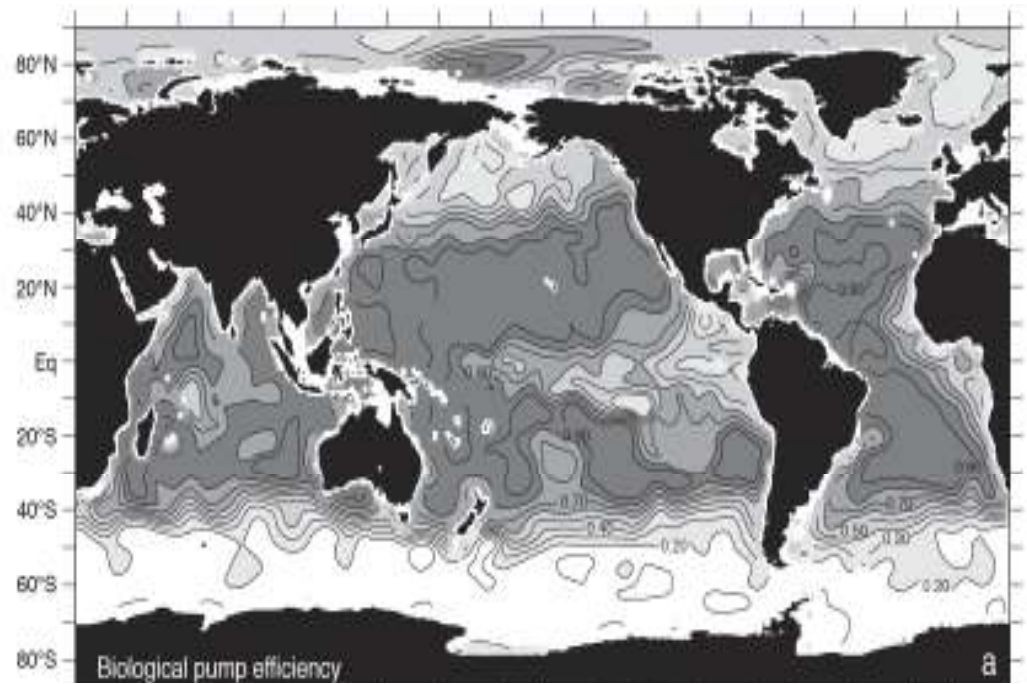
REGENERATION LOOP
(*Prochlorococcus*, Microbial Loop)

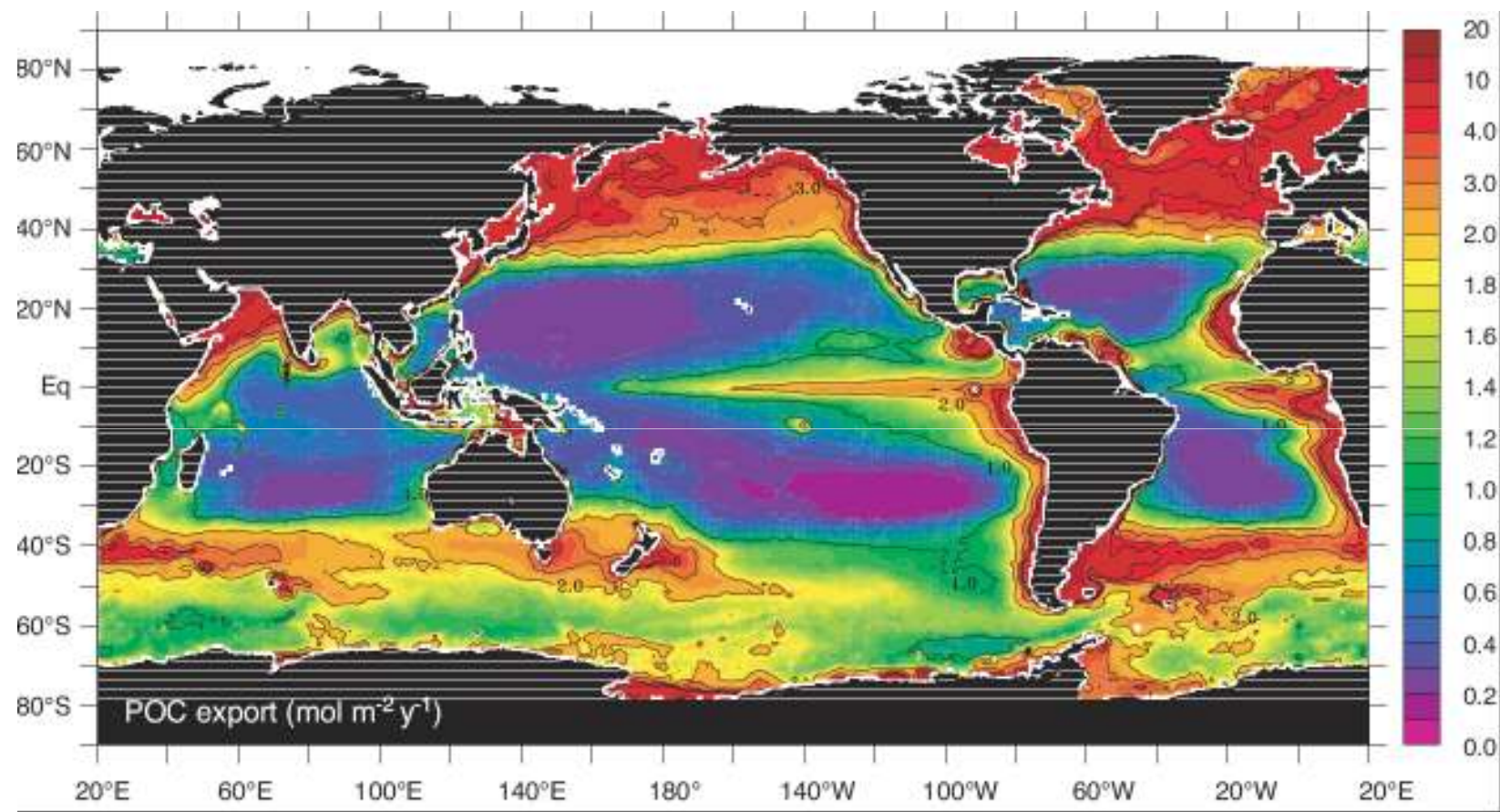
**b**

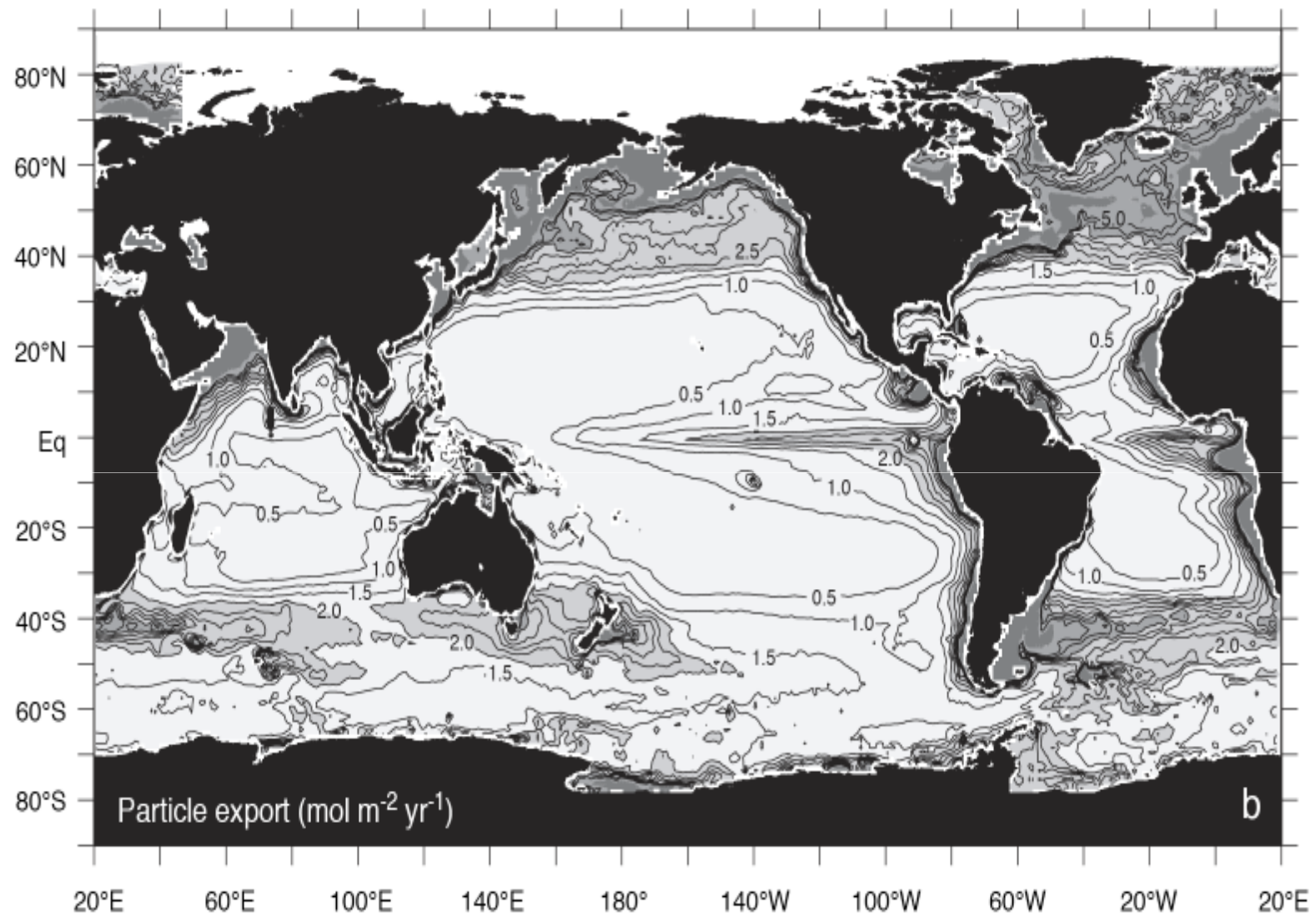
EXPORT PATHWAY
(*Diatoms*, Grazing Food Chain)

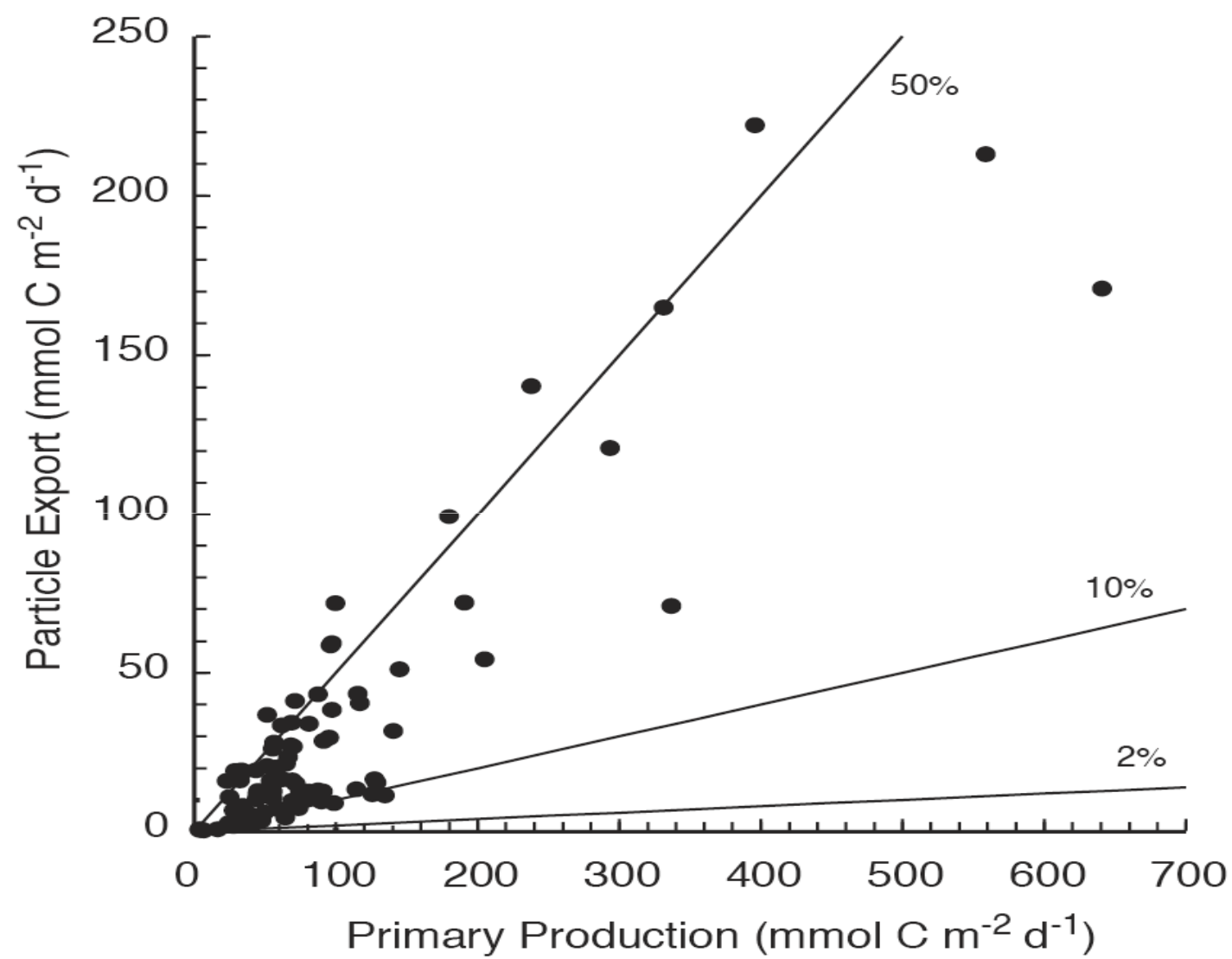


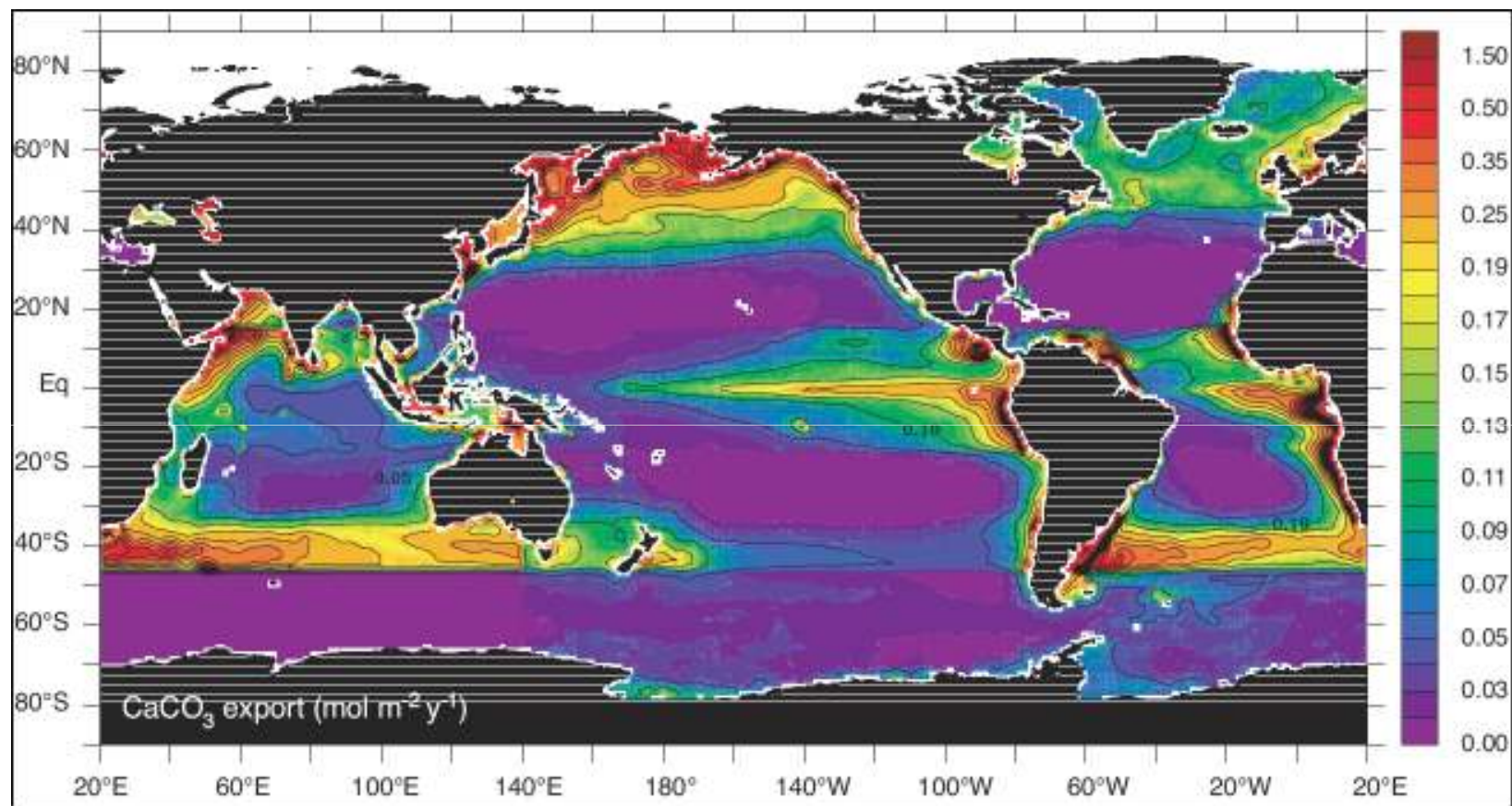












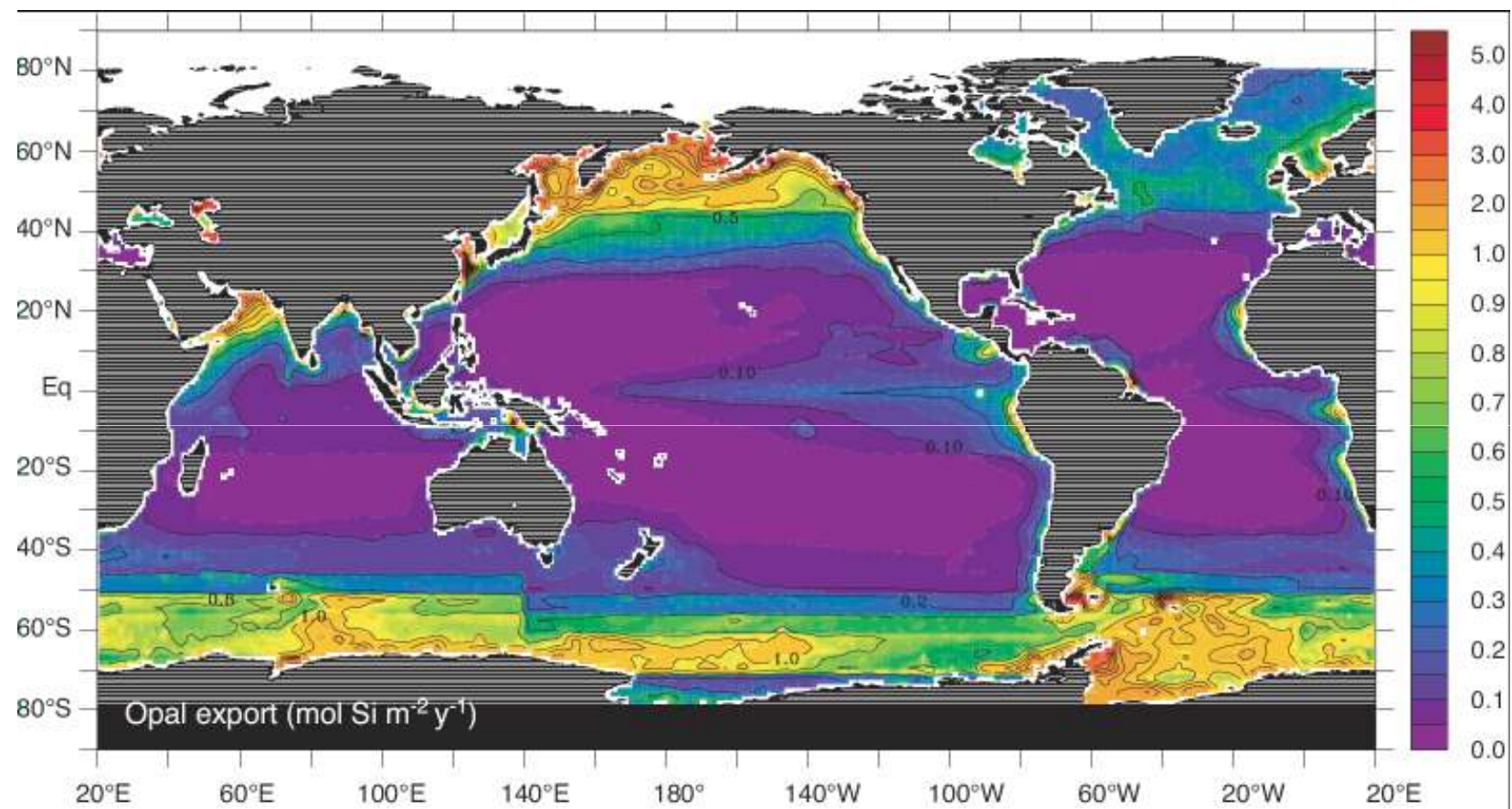


Table 4.4.1 Export production and *ef*-ratios calculated using the model of *Laws et al.* [2000] (from *Falkowski et al.* [2003]). See Figure 4.4.5 caption for an explanation of *ef* ratio.

	Export (Pg C yr ^G)	Mean <i>ef</i> -ratio
<i>By Ocean Basin</i>		
Pacific	4.3	0.19
Atlantic	4.3	0.25
Indian	1.5	0.15
Southern Ocean	0.62	0.28
Arctic	0.15	0.56
Mediterranean	0.19	0.21
Total (including Arctic & Mediterranean)	11.1	0.21
<i>By Trophic Status</i>		
Oligotrophic (Chlorophyll <i>a</i> < 0.1 mg m ^G)	1.0	0.15
Mesotrophic (0.1 < Chlorophyll <i>a</i> < 1.0 mg m ^G)	6.5	0.18
Eutrophic (Chlorophyll <i>a</i> > 1.0 mg m ^G)	3.6	0.36