

Table 1**The Model Parameters**

Parameters	Symbol	Value	Unit	Source
Averaged surface noontime irradiance	I_o^{Noon}	410	W m ⁻²	(9)
Light attenuation due to water	k_1	0.046	m ⁻¹	(3, 5)
Light attenuation by phytoplankton	k_2	0.03	m ⁻¹ (mmol m ⁻³) ⁻¹	(3, 5)
Initial slope of P-I curve	α	0.025	day ⁻¹ (W m ⁻²) ⁻¹	(2)
Maximum specific growth rate of small phytoplankton	$\mu 1_{max}$	2.0	day ⁻¹	(1, 2)
Ammonium inhibition parameter	ψ	5.59	(mmol m ⁻³) ⁻¹	(4)
Half-saturation for nitrate uptake	K_{NO3}	0.5	mmol m ⁻³	(8)
Half-saturation for ammonium uptake by small phytoplankton	K_{NH4}	0.05	mmol m ⁻³	(6)
Maximum specific growth rate of diatoms	$\mu 2_{max}$	1.5	day ⁻¹	(1, 2)
Half-saturation for silicate uptake	$K_{Si(OH)_4}$	3.0	mmol m ⁻³	(8)
Half-saturation for ammonium uptake by diatoms	K_{S2-NH4}	1.0	mmol m ⁻³	(6)
Diatoms sinking speed	W_1	1.0	m day ⁻¹	(7)
Microzooplankton maximum grazing rate	GI_{max}	1.25	day ⁻¹	(10)
Half-saturation for microzooplankton ingestion	KI_{gr}	0.5	mmol m ⁻³	(11)
Microzooplankton excretion rate to ammonium	reg_1	0.2	day ⁻¹	(11)

Mesozooplankton maximum grazing rate	$G2_{max}$	0.5	day ⁻¹	(10)
Mesozooplankton Assimilation efficiency	γ_1	0.75		(6)
Half-saturation for mesozooplankton ingestion	$K2_{gr}$	0.25	mmol m ⁻³	(11)
Mesozooplankton specific mortality rate	γ_2	0.05	day ⁻¹	(6)
Mesozooplankton excretion rate to ammonium	reg_2	0.1	day ⁻¹	(6)
Grazing preference for diatoms	ρ_1	0.7		This study
Grazing preference for microzooplankton	ρ_2	0.2		This study
Grazing preference for detritus	ρ_3	0.1		This study
Detritus sinking speed	W_2	10.0	m day ⁻¹	(11)

The sources for the parameter values need to be worked in details!

Sources noted here are: (1) Barber and Chavez, 1991; (2) Lindley, 1994; (3) Evans and Parslow, 1985; (4) Hofmann and Ambler, 1988; (5) Fasham *et al.*, 1990; (6) Fasham, 1995; (7) Jamart *et al.*, 1977, 1979; (8) Eppley *et al.*, 1969; (9) Chavez *et al.*, 1996; (10) Landry *et al.*, 1995; (11) Sarmiento *et al.*, 1993; (12) Martin *et al.*, 1987. THERE WILL BE MORE!!!