

| Process/plankton type | Symbol | Meaning | Parameter value (mmol m ⁻³) | | | |
|---------------------------|----------------|---|---|---|---|--|
| Nutrient Uptake (U) | | | Monod* (U_h) $\frac{n}{n+k}$ | Sigmoidal (U_s) $\frac{n^2}{n^2+k^2}$ | Exponential (U_e) $1 - \exp(-\frac{n}{k})$ | Trigonometric (U_t) $\frac{2}{\pi} \arctan(\frac{n}{k})$ |
| Non-diatom | kN_{nd} | shape-defining constant for nitrogen | 0.5 | 0.74 | 1.12 | 0.60 |
| | kFe_{nd} | shape-defining constant for iron | 0.33×10^{-3} | 0.49×10^{-3} | 0.74×10^{-3} | 0.40×10^{-3} |
| Diatom | kN_d | shape-defining constant for nitrogen | 0.75 | 1.12 | 1.68 | 0.91 |
| | kSi_d | shape-defining constant for silicon | 0.75 | 1.12 | 1.68 | 0.91 |
| | kFe_d | shape-defining constant for iron | 0.67×10^{-3} | 0.99×10^{-3} | 1.50×10^{-3} | 0.81×10^{-3} |
| Grazing (G) | | | Holling type III* (G_1) $g_m \frac{P_a P_a^2}{k_g^2 + P_a P_a^2 + P_b P_b^2}$ | | Holling type II (G_2) $g_m \frac{P_a P_a^2}{k_g (P_a P_a + P_b P_b) + P_a P_a^2 + P_b P_b^2}$ | |
| Microzooplankton | k_{mi} | half-saturation constant | 0.80 | | | 0.46 |
| | $p_{mi_{nd}}$ | grazing preference for non-diatom | 0.75 | | | 0.75 |
| | $p_{mi_{det}}$ | grazing preference for detritus | 0.25 | | | 0.25 |
| Mesozooplankton | k_{me} | half-saturation constant | 0.30 | | | 0.17 |
| | $p_{me_{nd}}$ | grazing preference for non-diatom | 0.15 | | | 0.15 |
| | $p_{me_{det}}$ | grazing preference for detritus | 0.15 | | | 0.15 |
| | p_{me_d} | grazing preference for diatoms | 0.35 | | | 0.35 |
| | $p_{me_{mi}}$ | grazing preference for microzooplankton | 0.35 | | | 0.35 |
| Mortality (ρ, ξ) | | | Hyperbolic* (ρ_h, ξ_h) $\mu \frac{P}{P+k_M} P$ | Linear (ρ_l, ξ_l) μP | Quadratic (ρ_q, ξ_q) μP^2 | Sigmoidal (ρ_s, ξ_s) $\mu \frac{P^2}{P^2+k_M^2} P$ |
| Non-diatom | μ_{nd} | maximum rate (day ⁻¹) | 0.10 | 0.10 | 0.05 | 0.10 |
| | k_{Mnd} | half-saturation constant | 0.50 | – | – | 0.74 |
| Diatom | μ_d | maximum rate (day ⁻¹) | 0.10 | 0.10 | 0.05 | 0.10 |
| | k_{Md} | half-saturation constant | 0.50 | – | – | 0.74 |
| Microzooplankton | μ_{mi} | maximum rate (day ⁻¹) | 0.10 | 0.10 | 0.05 | 0.10 |
| | k_{Mmi} | half-saturation constant | 0.50 | – | – | 0.74 |
| Mesozooplankton | μ_{me} | maximum rate (day ⁻¹) | 0.20 | 0.19 | 0.07 | 0.20 |
| | k_{Mme} | half-saturation constant | 0.75 | – | – | 1.12 |