3.17 Primary production

For primary producers the production is estimated as a function of the producers’ biomass, $B_i$, from a simple saturating relationship

$$f(B_i) = \frac{r_i \cdot B_i}{1 + \frac{B_i}{h_i}} \text{ Eq. 67}$$

where, $r_i$ is the maximum production/biomass ratio that can be realized (for low $B_i$’s), and $r_i/h_i$ is the maximum net primary production when the biomass is not limiting to production (high $B_i$’s). For parameterization it is only necessary to provide an estimate of $r_i / (P_i/B_i)$, i.e., a factor expressing how much primary production can be increased compared to the base model state. If a Forcing function is applied to primary production (see Apply FF (primary producer)), it multiplies the $r$ parameter in Eq. 67.