

Table 1. Rate estimates integrated over the water column at the equator in the Pacific (140°W).

Date	Conditions*	<i>Prochlorococcus</i> division rate μ_{cc} integrated† (day ⁻¹)	<i>Prochlorococcus</i> production integrated‡ (mg of C m ⁻² day ⁻¹)	Total production integrated§ (mg of C m ⁻² day ⁻¹)		<i>Prochlorococcus</i> (% of production integrated)	
				Net	Gross	Net	Gross
1 April 1992	Warm El Niño	0.51	498	1033	2583	48	19
8 April 1992	Warm El Niño	0.63	347	981	2453	35	14
5 October 1992	Cold tongue	0.58	174	1385	3463	13	5
11 October 1992	Cold tongue	0.60	322	1843	4608	17	7
17 October 1992	Cold tongue	0.53	265	1571	3928	17	7

*According to Murray *et al.* (11). †Estimates of integrated division rates were computed as

$$\mu_{cc} = \ln \left[\frac{\int_0^{200} N_{1700}(z) \cdot \exp[\mu_{cc}(z)] \cdot dz}{\int_0^{200} N_{1700}(z) \cdot dz} \right], \text{ where } z \text{ is the water depth, } \mu_{cc}(z) \text{ is obtained from Fig. 4,}$$

and N_{1700} is the cell concentration just before division. Such a procedure, which weighs division rates by cell concentrations just before division, is more accurate than a simple depth-averaged rate. ‡Depth-integrated daily production rates for *Prochlorococcus* were computed from the estimated production at each depth, as

$$P = \int_0^{200} C_{\text{cell}} \cdot N_{1700}(z) \cdot \left\{ \exp[\mu_{cc}(z)] - 1 \right\} \cdot dz, \text{ where } C_{\text{cell}} \text{ is the intracellular carbon content of } \textit{Prochlorococcus}$$

estimated as 53 fg of C per cell (20). §Depth-integrated daily net production rates for the total community were computed from ¹⁴C estimates (21). Gross production was obtained from net production divided by 0.4 (18).

11. J. W. Murray, R. T. Barber, M. R. Roman, M. P. Bacon, R. A. Feely, *Science* **266**, 58 (1994).
18. M. Bender, J. Orchado, M.-L. Dickson, M. E. Carr, *Eos* **75**, 29 (1994).
20. L. Campbell, H. A. Nolla, D. Vaultot, *Limnol. Oceanogr.* **39**, 954 (1994).
21. R. T. Barber, personal communication.