

## Information on data compilation

1. All data were collected using similar or exactly the same methodology as previous cruise unless described
2. Date listed is the local (New Zealand) date; NZ is 13 h ahead of UTCC
3. All cruises after 1994 had blue filters to compensate for light quality in addition to quantity
4. Incubation times rounded to nearest hour
5. Consecutive Julian date is calculated by adding January day to 365 through the end of the sampling season
6. Irradiance depths measured using in situ PAR sensor (BioSpherical) on the CTD
7. Chlorophyll concentrations measured using fluorometry
8. Mixed layers were determined from the vertical profiles of density ( $\sigma_t$ ) determined from CTD profiles. A change of  $0.01 \text{ kg m}^{-3}$  from a stable surface layer reading was defined as the base of the mixed layer.
9. Integrated primary productivity data calculated using a trapezoidal integration through the 0.1% isolume
10. Chlorophyll data integrated using a trapezoidal integration to the 1% isolume
11. PAR (photosynthetically active radiation) data were collected using a BioSpherical 4II sensor that was placed as close to the incubator as possible. It thus reflects the incubator's PAR, not that of the sampling location.
12. All data were reprocessed and quality controlled in 2021 and finalized on Sept. 26, 2021
13. -999 = no data or data excluded during quality control
14. Dominant functional group determined by either HPLC analyses, degree of  $\text{Si(OH)}_4$  removal, or microscopic examination
15. Reference refers to the publication that used the data from that cruise