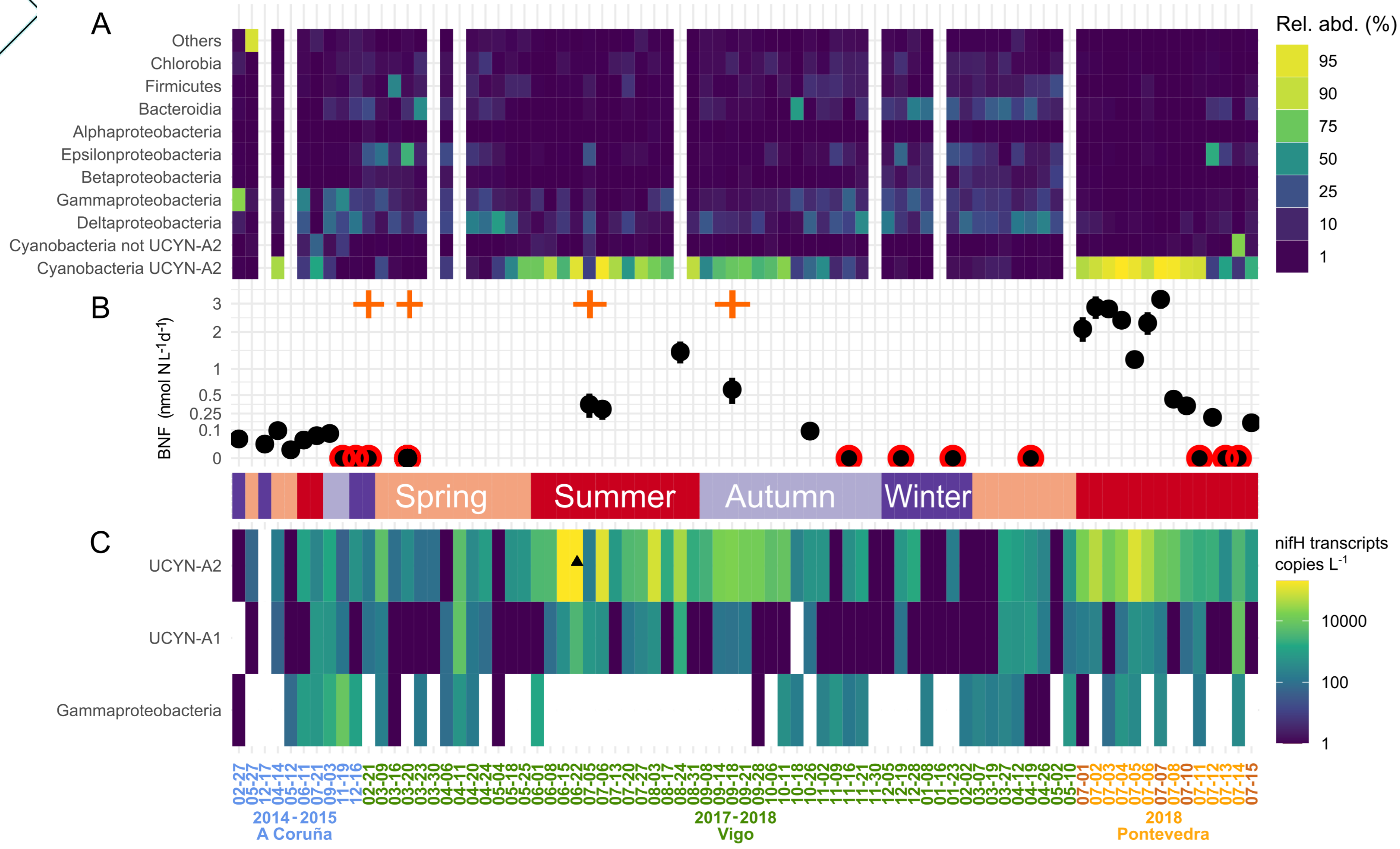
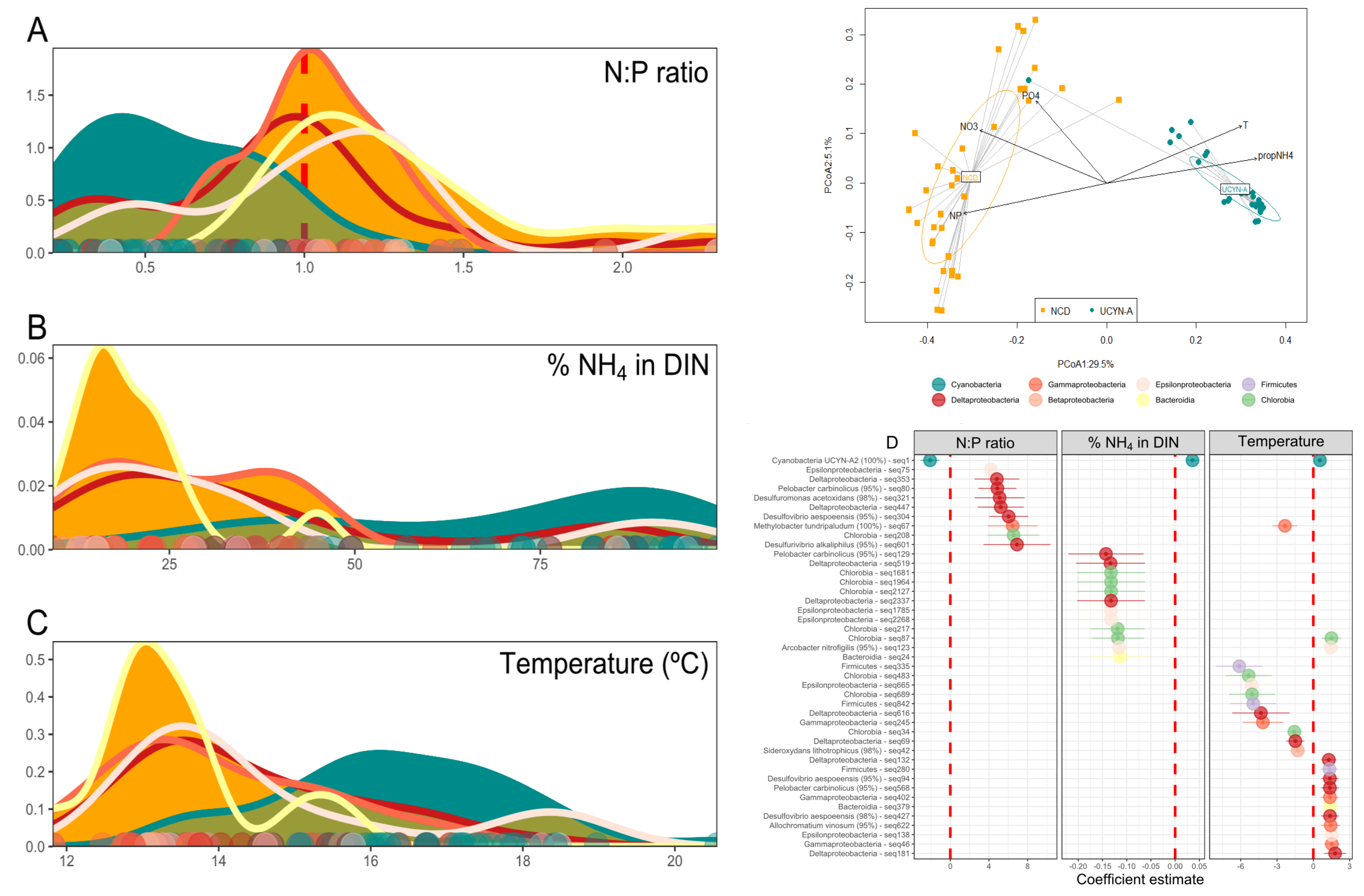


Abundance and activity of diazotrophic cyanobacteria (UCYN-A2) shows seasonality



The environmental parameters that drive diazotroph community composition, abundance and biological nitrogen fixation (BNF) in this upwelling system are inorganic N availability and temperature.

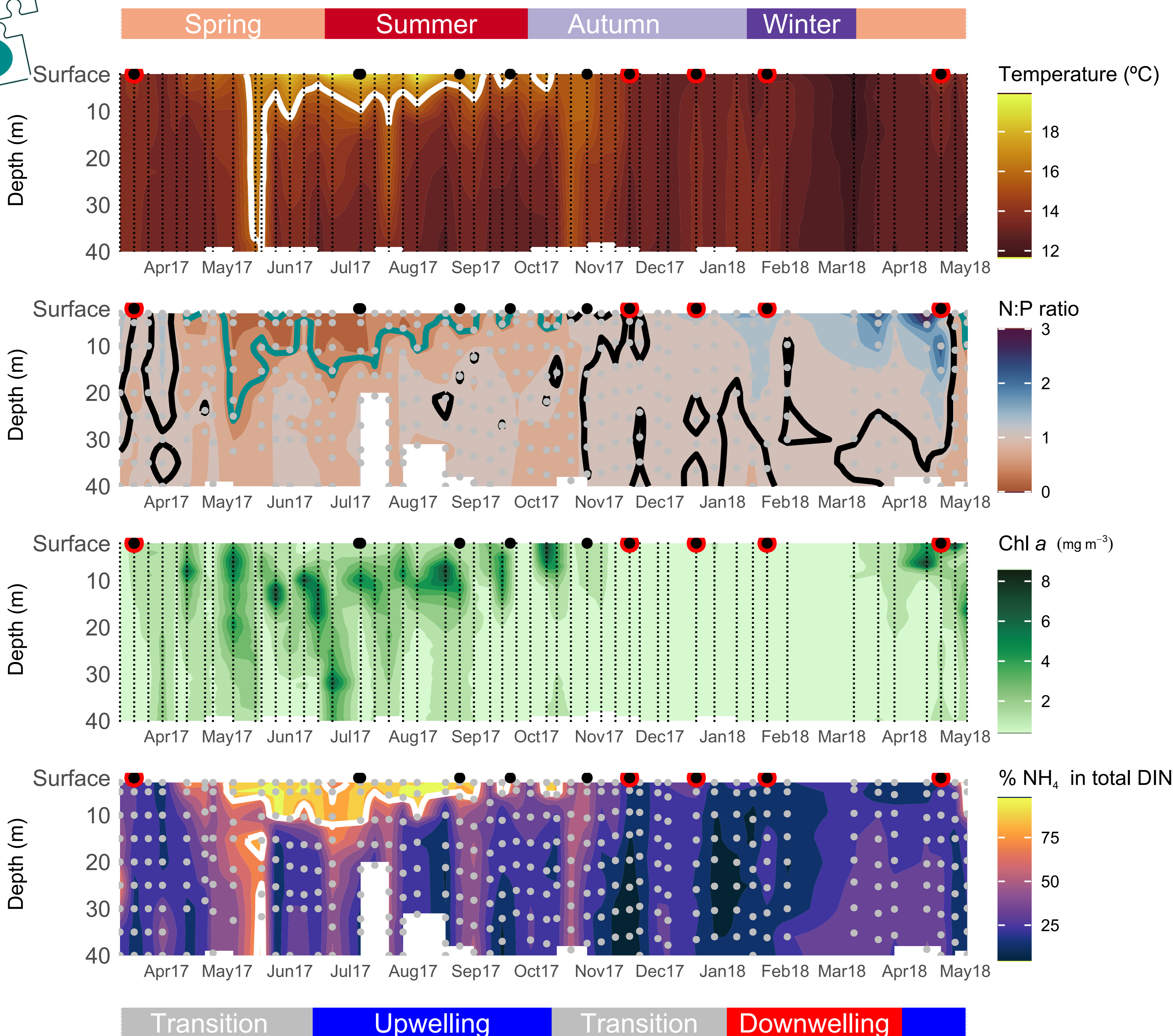


The optimum niche occurred at high temperatures (>16°C), low nitrogen:phosphorus ratios (0.45) and a large fraction of the total inorganic nitrogen available in form of ammonium (>75%).

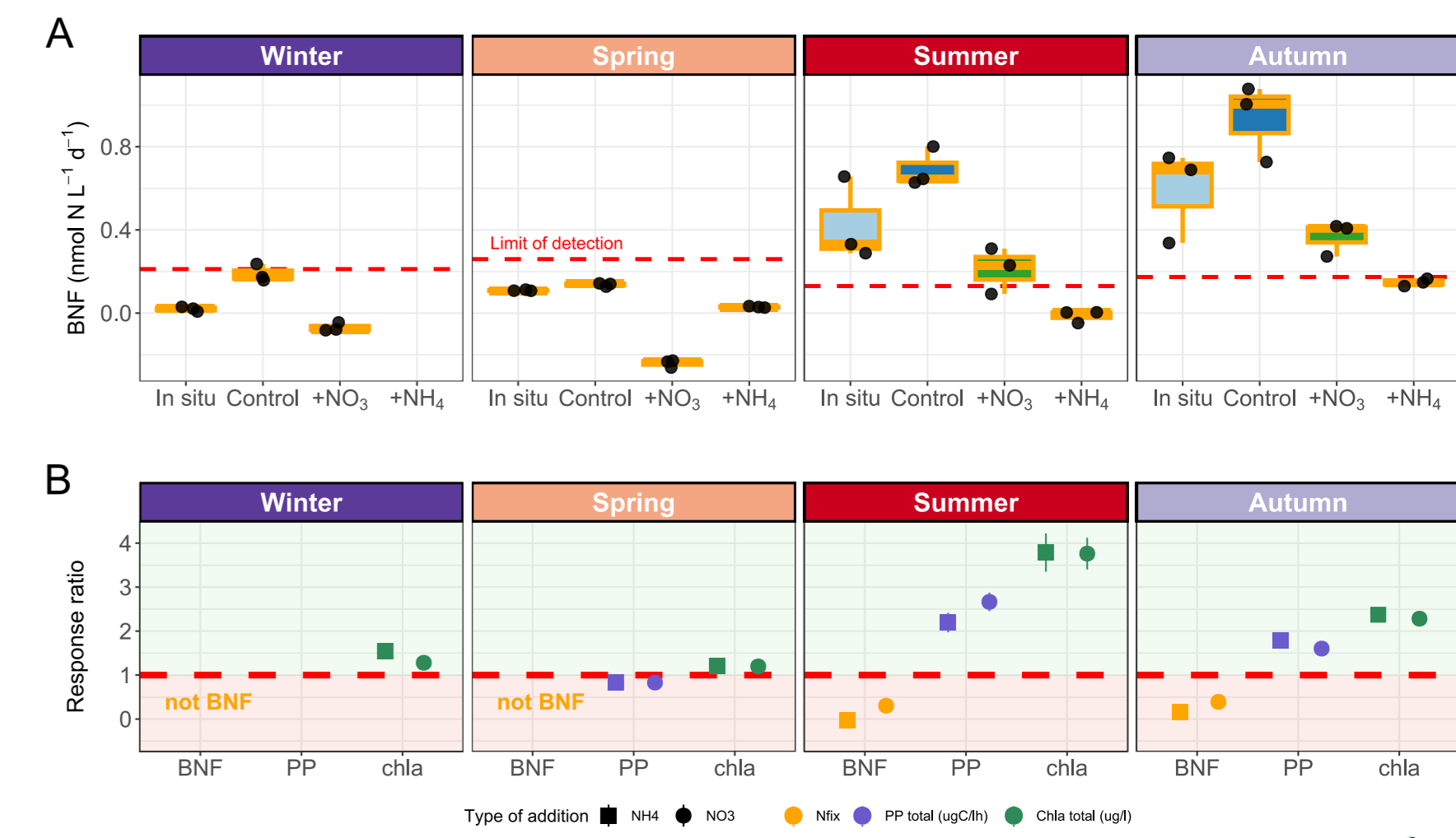
PUZZLING OUT THE ECOLOGICAL NICHE CONSTRUCTION FOR NITROGEN FIXERS IN A COASTAL UPWELLING SYSTEM

M. Fontela¹, D. Fernández-Román², H. Farnelid³, A. Fernández-Carrera⁴, E. Marañón², S. Martínez-García², T. Rodríguez-Ramos⁵, M. M. Varela⁵, B. Mouriño-Carballido²

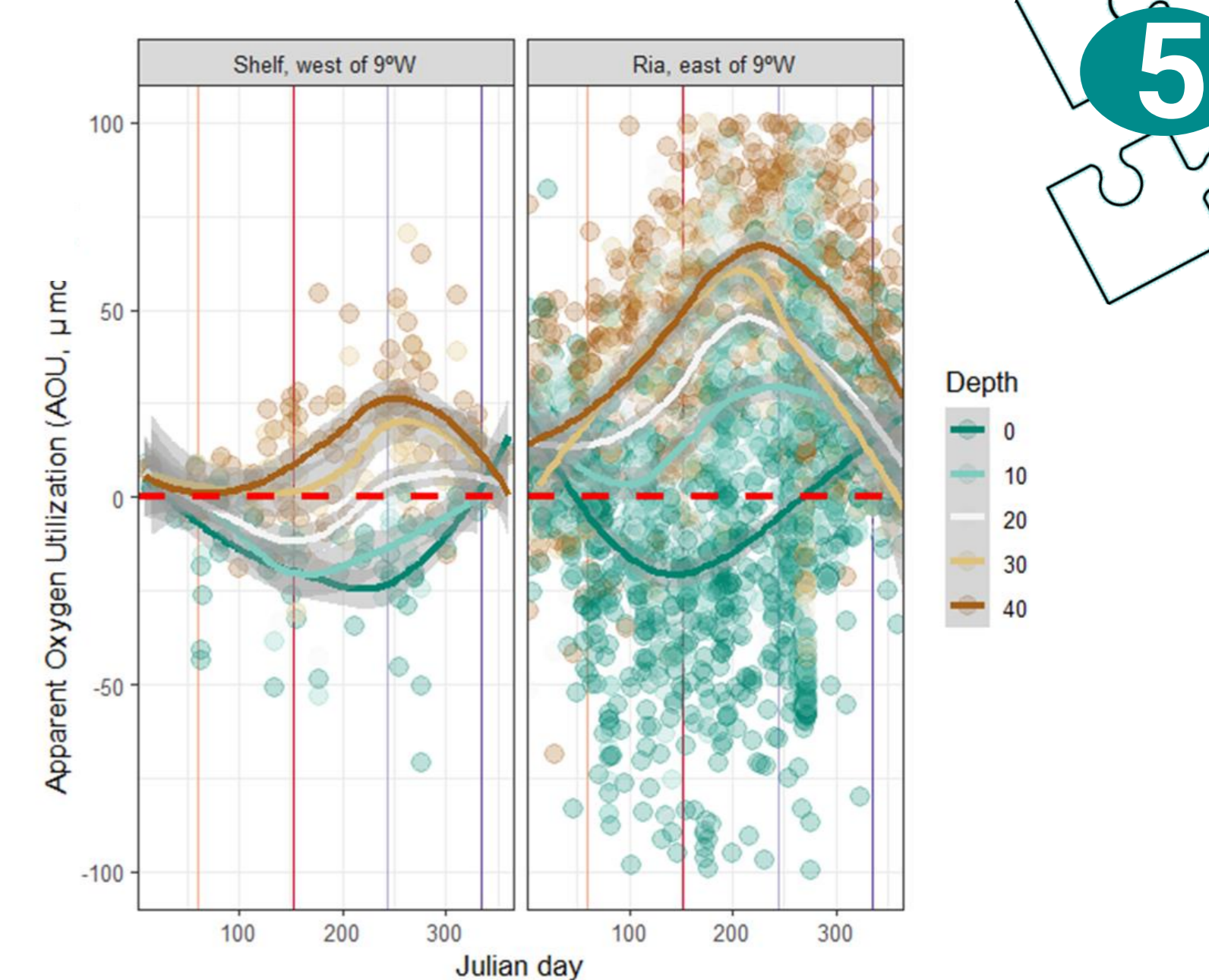
The optimum niche is constructed by a conjunction of seasonally recurrent biogeochemical processes driven by hydrography.



Nutrient amendment experiments showed that ...



BNF exists when the phytoplankton communities are constrained by nitrogen availability.



The apparent oxygen utilization (AOU), the difference between the observed dissolved oxygen and its saturation concentration, is an indicator of remineralization and/or primary production.

During the summer upwelling the biological drawdown of nitrate by non-diazotrophs form organic matter inside the bay. Thereafter, the combined effect of an intensive remineralization at the shelf and the sustained positive circulation within the bay, conveys excess phosphate into the surface. This high N:P ratio confers a competitive advantage to diazotrophs since they are not restricted by the nitrogen supply.

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