

# Temporal changes in phytoplankton productivity over the last ~200 years recorded from Mejillones Bay laminated sediments Sedimentos laminados de la bahía Mejillones como registro de cambios temporales en la productividad fitoplanctónica de los últimos ~200

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We analyzed the contents of total organic carbon, biogenic opal, chlorins, and alkenones (as productivity proxies) from a laminated sediment core recovered within Bahía Mejillones, northern Chile, in order to reconstruct recent temporal changes in phytoplankton productivity. Physical parameters (water content, dry bulk density, magnetic susceptibility, X-radiography, and grey scale intensity) were also used to characterize the sediments. A sedimentation rate of 0.18 cm year<sup>-1</sup> (based on <sup>210</sup>Pb measurements) was determined for the core (Core 3; 23°03' S, 70°27' W), which was recovered with a box-corer (water column depth: 80 m). By extrapolating this sedimentation rate to the base of the core, it yielded a total age of ~223 years. The sediments were characterized by a succession of light and dark millimetre-thick laminae, which differed in both physical properties and composition; the denser dark laminae had less water content and represented periods of increased phytoplankton productivity.