

Copper, copper mine tailings and their effect on marine algae in Northern Chile

Juan A. Correa, Juan C. Castilla, Marco Ramírez, Manuel Varas, Nelson Lagos, Sofia Vergara, Alejandra Moenne, Domingo Román, Murray T. Brown

Abstract

Results are presented of a long-term research programme on the effect of copper contamination on biota in Chilean coastal waters. In spite of the magnitude of the copper mining tailings that affected Caleta Palito and surroundings in northern Chile, the effects on the intertidal assemblages remain restricted to a small geographic area. Even within the affected area, the effects are not homogeneous and there is evidence of active recovery in biological diversity in recent few years. Experimental evidence suggests that the current low algal diversity and abundance is strongly influenced by herbivory, although chronic effects of the discharges cannot be ruled out. Cellular changes in *Enteromorpha compressa* from the impacted area were characterised by abnormal granules in the cytoplasm, though these granules did not contain detectable levels of copper or other heavy metals.