

## **The Analysis of Negative Consequences of Using Deep-Sea Mining Machines in the Pacific Ocean**

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**Keywords:** analysis of environmental impact; deep-sea mining machine for iron-manganese nodules; mining of solid minerals in the ocean; marine ecosystems; spread of suspended matter plume.

**Abstract:** The environmental impact of machines used for deep-sea mining of iron-manganese nodules (IMN) in the Clarion-Clipperton Province of the Pacific Ocean is analyzed. The main types of impact on the marine environment are considered, including mechanical destruction of bottom sediments, formation of a suspended matter plume and disruption of the structure of benthic communities. A comparative assessment of various mining machine movement mechanisms (tracked, screw, towed and based on the Archimedean spiral) and methods of collecting ferrometallurgical metal (mechanical, hydraulic) was carried out. Measures for minimizing damage during deep-sea ferrometallurgical metal mining were proposed.