
Ecologic Territorial Order and Mine Land Aptitude: The Baja California Peninsula Case

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ABSTRACT

The ecological zoning of the Mexican Territory is a policy to regulate or to induce the use of land, to evaluate the natural resources, and to document the producing activities in order to increase environmental protection with the use of politics directed to guaranty a sustainable use of resources.

The goal, in this study, was to create a mining aptitude model for the Baja California Peninsula, starting with the zoning diagnosis face. Seven attributes were considered to elaborate the mining aptitude map: (1) mining works and concessions, (2) lithology, (3) nonmetallic occurrences, (4) stream sediment analysis, (5) geological structures, (6) aerial magnetometry, and (7) satellite images interpretation. These elements were managed in accordance with the methodology outlined in the manual of ecological zoning, which was implemented as a hierarchy analytical process based on geographic information system software.

Our analysis concluded that, in the zones where most of the attributes concur, 27.7% of the Baja California Peninsula surface has the highest aptitude for mining activity (40,360 km²). The medium to high mining aptitude areas cover 60.1% (87,587 km²) of the total surface in which most of the occurrences are nonmetallic mines, followed by stream sediment geochemical analysis with strong element correlation of metallic minerals. The low aptitude areas correspond to the 12% remaining territory (17,798 km²) in which the mining activities are incipient or absent.