

Enviromental-Geological assessment of Santiago`s Basin

¹MILOVIC, J.J., ²FERNANDEZ, J.C. ¹Servicio Nacional de Geología y Minería, Puerto Varas, Chile, ²Servicio Nacional de Geología y Minería, Santiago, Chile.

A project, in cooperation with CPRM, to inventory and evaluate the geological enviroment of Santiago`s Basin (33°-34° S – 70°30`-71° W), was carried out not only to supply guidelines to personnel in charge of land use planning, but to develop and establish a methodology for this studies too.

The basin supports over 6 million people and large agricultural terrains. It consists mainly of quaternary deposits; alluvial and colluvial fans and ignimbrite flows, and it is confined by Cretacic and Tertiary volcanic and sedimentary rocks of the Cordillera de la Costa to the west and Cordillera de los Andes to the east. Cretacic and Tertiary bodies, mainly granodioritic, intrude in extent rocks of both "cordilleras".

The methodology applied and adapted was the one developed by CPRM in Curitiba`s Project; identification of morpholitoestructural units (Domains), by photogeological and topographic maps interpretation. A field characterization of these Domains led to a more detailed division into SubDomains and Particular Units. Features included to accomplish these were sedimentary deposit and superficial soil properties, relief, geotechnical and groundwater characteristics and geological hazards. A special emphasis was given to aquifers vulnerability. Finally, it was made a fragility and capacity evaluation of each SubDomain or Particular Unit if subjected to different uses; urban, agricultural, industrial, roads and sewer system and waste disposal sites.

Results show a fast, cheap and comprehensive methodolgy for this semi-cuantitative assessments on a regional scale (1:100.000).