



## A Methodology for Making Basic Geological Map at the Scale 1:50 000

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### Abstract

Basic geological maps form a basis for detailed geological, engineering-geological, hydrogeological, and mineral resources research, including making thematic maps of different types and scales, and are a starting point for major infrastructural projects and development. There are two types currently being published, which differ in scale and principle. One is the Chronostratigraphical Map (scale 1:100 000), and the other is the Lithostratigraphical Map (scale 1:50 000). So far, 54 sheets of the first map have been published, while 56 sheets in total cover the entire area of Croatia. The second map is still under production and will be more detailed in terms of scale and contents. The methodology for making the basic 1:50 000 scale geological map is described in this paper. It consists of preparatory work, fieldwork and back-office work. Preparatory work includes an analysis of all available geological maps, primarily 1:100 000 scale, and supporting documents, literature, laboratory reports, and archives, and consultations with the authors. It also includes an analysis of topographical and remote sensing data, and the preparation of topographical maps (usually 1:25 000 scale) used in fieldwork. Fieldwork usually consists of three phases: preliminary prospecting, recording geological columns, and geological mapping. The point data collected by these methods are stored in field logs which are then transferred onto a central field map. Line data (geological boundaries) shown on the central field map are interpreted and drawn by authors (geologists) based on geological research. Back-office work includes the digitalization of the central field map and the insertion of point data from field logs using ESRI ArcGIS and Autodesk AutoCAD Map. When the map is complete, geological cross-sections and columns are added to the layout, together with the legend, and other graphical elements, so the map sheet is ready for plotting. As a parallel process all relevant data are archived and stored in the GIS database.

Keywords: Basic Geological Map, geological mapping, Croatian Geological Survey, ESRI ArcGIS, Autodesk AutoCAD Map, GIS database