

How Geoscientists Use Maps

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Geoscientists study and map the distribution of rocks exposed at the Earth's surface. They look at how they are folded, fractured and altered by geological processes and determine their ages and field relations. Geoscientists use geo maps to discover natural resources like oil, gas, minerals, and water. They also provide solutions for natural and manmade disasters and for providing recommendations to build infrastructure like high rise buildings, highways, and dams, all of which improve the quality of our lives.

Water is the most important natural resource and much of the world's water comes from underground water supplies. Geoscientists use geo maps to study the movement, behavior and quality of groundwater, potential sources of pollution, and provide recommendations for the design of equipment to extract water from aquifers.

One of the recent disasters was the ship wreck of the Costa Concordia, an 114,137 ton cruise ship off the coast of Giglio, Italy. Geoscientists used geo maps to provide valuable information to the salvage engineers on the contours of the rock off the coast. This information was extremely crucial in helping these engineers find the appropriate rock formation on the seafloor on which to build the platform that would help with the parbuckling process to bring the ship upright. Without the recommendations of the geoscientists, the ship would have slid off the rock into the ocean and caused a huge environmental disaster that could have decimated marine life.

Geoscientists helped in building the Hoover dam by analyzing geo maps and determining the rock formation to assist with cost effective drilling equipment manufacture. The dam prevented loss of life due to flooding down-river and helped in generating hydroelectricity which is environmentally friendly. The dam today is the only water source for people living in bordering states.

Geo maps, therefore, provide geoscientists a window into improving our way of life.

References:

Oleson, Timothy. (2013, 07/13). Mapping field camp's past and present: Exploring a mainstay of geosciences education. <http://www.earthmagazine.org/article/mapping-field-camp%E2%80%99s-past-and-present-exploring-mainstay-geoscience-education>.

The Geological Society of America (04/2012). The Value of Geologic Mapping. http://www.geosociety.org/positions/pos3_mapping.pdf.

The Shipwreck Log. (09/2013). Costa Concordia Parbuckling Completed. <http://www.shipwrecklog.com/log/category/grounding/costa-concordia/>