DESCRIPTION

*Earth Resources and Environmental Impacts* uses everyday examples and current issues to help readers understand how mineral, water and energy resources – and the impacts of their use and extraction – affect their daily lives. A historical perspective makes the material in this text fascinating by showing readers that the earth’s resources have always been fundamental to society, even as far back as the Stone Age. Environmental impacts and sustainable use of energy and mineral resources are emphasized. With the increase of public interest surrounding environmental impacts, readers will appreciate the knowledge gained from this text.

ABOUT THE AUTHOR

*Kieran O'Hara*’s research interests are in the areas of structural geology and geochemistry. Over the past several years research has focused on frictional heating processes during earthquakes and the effects it has on the rock record. This work centers on the geochemical and structural study of pseudotachylytes (frictional melts), and also on the effect of frictional heating on coal. A novel technique (O’Hara, 2004) has been developed using vitrinite reflectance in coal to estimate the paleo-stress on ancient seismogenic faults. A second area of interest is in ductile shear zones, especially the geochemical and finite strain changes in continental mylonite zones in the northern and southern Appalachians. Fluid inclusion research in tectonically deformed terranes is also a topic of current research (O’Hara and Becker, 2004).
FEATURES

• Earth’s resources are discussed within the broader context of Earth-system science.

• Introductory material (Part I) means no prerequisite Earth science courses are needed.

• Parts II, III and IV address mineral, energy, and water/soil resources, respectively.

• By classifying energy resources as carbon-based (fossil fuels) versus non carbon-based, man’s role in the global carbon cycle is emphasized.

• Four of the 15 chapters address environmental impacts of resource use and extraction.

• On nuclear energy and fossil fuels, three nuclear accidents and three major oil spills are compared and contrasted.

• Case studies on water resources include the United States, the Middle East, China and eastern Australia.

• Simple quantitative examples (such as the power of a wind turbine or a hydroelectric plant) are provided in text boxes throughout the book.

• Fundamental ideas on energy are outlined and the concepts of energy and power density are introduced (Chapter 9).