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ONE PLANET MANY PEOPLE

Atlas of Our Changing Environment

Increasing concern as to how human activities impact the Earth has led to documentation and quantification of environmental changes taking place on land, in the water, and in the air. Through a combination of ground photographs, current and historical satellite images, and narrative based on extensive scientific evidence, this publication illustrates how humans have altered their surroundings and continue to make observable and measurable changes to the global environment. This publication underscores the importance of developing, harnessing and sharing technologies that help provide deeper understanding of the dynamics of environmental change. The words and pictures within these pages also serve as a vivid reminder that this planet is our only current home, and that sound policy decisions and positive actions by societies and individuals are needed to sustain the Earth and the well-being of its inhabitants. The information we provide will not only be useful in the context of the selected locations, but will also underscore the intrinsic value of the harnessing, visualizing and communicating technologies to gain a deeper understanding of the dynamics and impacts of our environmental changes.

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Through text, illustrations, satellite images, and ground photographs, this publication depicts and describes humanity's past and present impact on the environment. The primary focus is on environmental status and trends over the last 30 years, in terms of both physical and human geography. The introductory chapter, *Introducing the Earth – A Story of Change*, briefly encapsulates the history of the planet and the prehistory of the one species, *Homo sapiens*, that has come to dominate the modern era.

The second chapter, *People and Planet - Human Influences on the Planet*, demonstrates how overpopulation increases competition for natural resources and details how different cultures have different approaches to utilizing these resources. This chapter introduces concepts of land use intensification, explains ecosystems and ecoregions, outlines the concept of biodiversity including habitat loss and fragmentation, and provides a general overview of energy sources—their consumption and extraction, and the environmental implications of their use.

The third chapter, *Human Impacts on the Earth – Visualising Change over Time*, uses an abundance of images to show how human activities have made, and will continue to make, observable and measurable impacts on the global environment. Major sections examine changes in: the atmosphere, including global warming and air pollution; oceans and coastal zones; water, including wetlands and water pollution; forests, including forest fires; cropland; grassland; urban areas; and tundra, including polar regions.

The chapter summarizes what has happened in terms of human impacts, the driving forces behind environmental changes, and, in some cases, predicted trends. It also covers how various environmental changes and trends affect people, both negatively and positively, worldwide.

The final chapter, *Natural and Human-induced Extreme Events*, illustrates changes that result from geo-hazards such as earthquakes, volcanic eruptions, and tsunamis, climatic hazards including floods, droughts and hurricanes, as well as industrial hazards such as nuclear and industrial accidents and oil spills. Although advances in technology have led to improved forecasts of extreme events and faster reactions to their occurrence, it is still not possible to prevent all disasters—only better mitigate the damage that they cause.

Suggestions for mitigating the effects of global environmental change can be found in the final pages. These suggestions reflect the publication's goals of serving as an early warning for further environmental change and as a basis for directing policy decisions and individual actions aimed at sustaining the Earth and promoting the well-being of its inhabitants.



Front cover: Globe by David Pape, NASA/Goddard Space Flight Center Scientific Visualization Studio; Iceberg reflection, Christopher Uglow, Stillpictures; Insects consuming leaf, Pacharin Saenyan, Stillpictures; Crowd, Stillpictures; Turtles on sand, Jan Schilthuizen, Stillpictures; Landsat image of the Gulf of Fonseca, 15 Sep 1999, Courtesy UNEP/GRID Sioux Falls.

Spine: Two butterflies, Valery Shapurau, Stillpictures.

Back cover: Ikonos Image of Banda Aceh, Indonesia, 10 January 2003, Courtesy Space Imaging; Children on tree, Shi Liang Wang, Stillpictures; Autumn leaves, John F. Neidlinger III, Stillpictures; Aster Satellite Image of Riyadh, Saudi Arabia, courtesy National Center for Earth Resources Observation and Science, 26 Aug 2000; People around tree, Chamaipom Pongpanich, Stillpictures.