

1. Record Nr.	UNINA9910968896103321
Titolo	Assessing climate change impacts on the United States // Alex B. McNeill, editor
Pubbl/distr/stampa	New York, : Nova Science Publishers, 2010
ISBN	1-61668-537-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (312 p.)
Collana	Climate change and its causes, effects and prediction
Altri autori (Persone)	McNeillAlex B
Disciplina	363.738740973
Soggetti	Climatic changes - Environmental aspects - United States Climatic changes - United States United States Environmental conditions
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- ASSESSING CLIMATE CHANGE IMPACTS ON THE UNITED STATES -- ASSESSING CLIMATE CHANGE IMPACTS ON THE UNITED STATES -- CONTENTS -- PREFACE -- Chapter 1 SCIENTIFIC ASSESSMENT OF THE EFFECTS OF GLOBAL CHANGE ON THE UNITED STATES -- SECTION I. EXECUTIVE SUMMARY -- I.1. Introduction -- I.2. Causes of Climate Change -- I.3. Trends and Projections of Physical Changes -- I.3.a. Temperature -- I.3.b. Precipitation, runoff, and drought -- I.3.c. Ice and snow -- I.3.d. Sea level -- I.3.e. Atlantic hurricanes -- I.3.f. Abrupt Climate Change -- I.3.g. Stratospheric ozone -- I.4. Effects of Global Change on the Natural Environment and Human Systems -- I.4.a. Biological diversity, ecosystem composition, and the natural environment -- I.4.b. Agriculture and food production -- I.4.c. Water resources -- I.4.d. Social systems and settlements -- I.4.e. Human health -- I.4.f. Energy production, use, and distribution -- I.4.g. Transportation -- SECTION II. INTRODUCTION -- II.1. Objectives -- Sidebar -- Scientific Assessment -- II.2. Relationship to Other Assessments and Primary Scientific Literature -- II.3. Characterization of Uncertainty -- II.3.a. Description of confidence -- II.3.b. Description of likelihood -- II.4. Report Structure -- SECTION III: EVALUATION OF OVERALL PROGRESS BY CCSP -- III.1. Program Inputs -- III.1.a. Surface-based observing networks -- III.1.b. Satellite observations -- III.1.c. Field campaigns -- III.1.d. Data management -- III.1.e. Modeling -- III.

2. Program Outputs -- III.2.a. Goal 1: Improve knowledge of the Earth's past and present climate and environment, including its natural variability, and improve understanding of the causes of observed variability and change -- III.2.b. Goal 2: Improve quantification of the forces bringing about changes in the Earth's climate and related systems.

III.2.c. Goal 3: Reduce uncertainty in projections of how the Earth's climate and related systems may change in the future -- III.2.d. Goal 4: Understand the sensitivity and adaptability of different natural and managed ecosystems and human systems to climate and related global changes -- III.2.e. Goal 5: Explore the uses and identify the limits of evolving knowledge to manage risks and opportunities related to climate variability and change -- SECTION IV. TRENDS AND PROJECTIONS OF GLOBAL ENVIRONMENTAL CHANGE -- IV.1. Radiative Forcing and Observed Climate Change -- IV.1.a. Radiative forcing due to greenhouse gases and other factors -- Carbon dioxide, methane, and nitrous oxide -- Fluorocarbons, chlorocarbons, and sulfur hexafluoride -- Ozone -- Water vapor -- Aerosols -- Land cover changes, linear contrails, and solar irradiance -- IV.1.b. Observed temperature changes -- Temperature trends -- Temperature patterns -- Temperature extremes -- Surface temperature over the last 2,000 years -- IV.1.c. Observed precipitation changes -- Precipitation trends and patterns -- Precipitation extremes and storms -- IV.1.d. Observed changes in other physical systems -- Cryosphere (snow and ice) -- Hydrosphere -- Sea level -- IV.2. Attribution of Observed Climate Change to Human Activities at the Global and Continental Scale -- IV.2.

a. Attribution of observed climate change to anthropogenic emissions and land use / land cover -- Temperature -- Additional climate variables -- IV.2.b. Attribution of observed changes in physical and biological systems -- IV.3. Projected Future Greenhouse Gas Concentrations and Climate Change -- IV.3.a. Global emission scenarios and associated changes in concentrations and radiative forcing -- Greenhouse gas emissions -- Future concentration and radiative forcing changes.

IV.3.b. Projected changes in physical components of the climate system -- Temperature projections -- Precipitation projections -- Sea level rise projections -- Cryosphere (snow and ice) projections -- Projections of extreme events -- Abrupt climate change projections -- IV.3.c. Land cover change as an environmental driver -- IV.3.d. Effects on and from stratospheric ozone -- Effects of elevated greenhouse gas concentrations on stratospheric ozone -- Effects of stratospheric ozone changes on climate -- SECTION V. ANALYSIS OF THE EFFECTS OF GLOBAL CHANGE ON THE NATURAL ENVIRONMENT AND HUMAN SYSTEMS -- V.1. Biological Diversity, Ecosystem Composition, and the Natural Environment -- V.1.a. Ecosystem distribution and phenology -- Ecosystem distribution -- Effects on phenology -- Growing season length and primary production shifts -- Shifts in phenology -- Projected impacts -- Population and community dynamics -- Species-level projections -- V.1.b. Ecosystem services -- Projected impacts -- V.1.c. Extreme events -- Projected impacts -- V.1.d. Sea level rise -- Projected impacts -- V.1.e. Vulnerable ecosystems -- Coastal and marine ecosystems -- Arctic sea ice ecosystem -- Temperate montane ecosystems -- V.1.f. Adaptation options -- V.2. Agriculture and Food Production -- V.2.a. Crop yields and productivity -- Increasing temperatures -- Increasing CO₂ -- V.2.b. Water use and irrigation requirements -- V.2.c. Climate variability and extreme events -- V.2.d. Pests and weeds -- V.2.e. Projections for agriculture production -- V.2.

f. Livestock -- V.2.g. Freshwater and marine fisheries -- V.3. Land

Resources -- V.3.a. Forests -- V.3.b. Grasslands and shrublands -- V.3.c. Productivity -- Forest productivity -- Grassland and shrubland productivity -- V.3.d. Disturbance -- Wildland fires -- Insects and pathogens -- Storm events -- V.3.e. Species composition. Forest composition -- Grassland and shrubland composition -- V.4. Water Resources -- V.4.a. Water supply and precipitation -- Surface water and precipitation -- Projected impacts -- V.4.b. Groundwater -- V.4.c. Water quality -- V.4.d. Extreme events -- V.4.e. Implications for water users -- V.5. Social Systems and Settlements -- V.5.a. U.S. population trends -- V.5.b. Vulnerable communities -- V.5.c. Sea level rise -- Projected impacts -- V.5.d. Extreme events -- Floods and storms -- Wildland fire -- Drought -- V.6. Human Health -- V.6.a. Temperature effects -- Increased heat exposure -- Reduced cold exposure -- V.6.b. Extreme events -- Floods and storms -- Wildfires -- Droughts -- V.6.c. Climate-sensitive infectious diseases -- Water quality -- V.6.d. Aeroallergens -- V.6.e. Air quality -- Tropospheric ozone -- Particulate matter -- Particulate Emissions -- Photochemistry -- Transport and Removal -- V.7. Energy Production, Use, and Distribution -- V.7.a. Energy use -- Heating -- Cooling -- Combined heating and cooling -- V.7.b. Energy production and distribution -- Fossil and nuclear energy -- Renewable energy -- Hydropower -- Biomass -- Wind and Solar -- Extreme events -- V.8. Transportation -- Gulf Coast Case Study -- V.8.a. Study region -- V.8.b. Transportation infrastructure -- V.8.c. Trends in climate and coastal change in the Gulf Coast -- V.8.d. Impacts of changing climate on Gulf Coast transportation -- V.8.e. Impacts by transportation mode -- Roads -- Temperature -- Precipitation -- Relative Sea Level Rise -- Storm Activity -- Surge Wave Crests and Effects on Bridges -- Surge Inundation -- Wind -- Freight and passenger rail -- Temperature -- Precipitation -- Relative Sea Level Rise -- Storm Activity -- Marine -- Higher Temperatures -- Precipitation -- Relative Sea Level Rise -- Storm Activity: Water and Wind Damage -- Aviation. Temperature -- Precipitation -- Relative Sea Level Rise -- Storm Activity -- Pipelines -- Temperature -- Precipitation Change -- Storm Activity -- REFERENCES -- End Notes -- Chapter 2 POTENTIAL IMPACTS OF CLIMATE CHANGE IN THE UNITED STATES -- Introduction -- THE LINK BETWEEN EMISSIONS AND CLIMATE -- POTENTIAL IMPACTS OF CLIMATE CHANGE -- Effects on the Physical Environment -- Temperature -- Precipitation -- Cyclones, Typhoons, and Hurricanes -- Ocean currents -- Climate oscillations -- Sea level -- Ocean acidification -- Consequences for Biological Systems -- Ecosystems and Biodiversity -- Agriculture -- Forestry -- Fisheries -- Impacts on the Economy and Human Health -- Water Supply -- Infrastructure -- Human Health -- Aggregate Economic Impacts -- POLICY IMPLICATIONS OF UNCERTAINTY -- End Notes -- INDEX -- Blank Page.

Sommario/riassunto

Human activities are yielding rising atmospheric concentrations of greenhouse gases, greatly altering the Earth's land cover. This book presents an overview of the current understanding of the impacts of climate change in the U.S., emphasising the wide range of uncertainty about the magnitude and timing of those impacts.
