# Appendix A: List of Tables and Figures

### **TABLES**

Chapter ISummary	Page
Table 1-1—List of Boxes in Report	8
Table inbox 1-A—The Sensitivity and Adaptability of Human Activities and Nature	6
Table in box l—B-Potential Climate Change Impacts for Various Systems	
·	
Chapter 3—Research	
Table 3-1—List of Departments and Agencies or Bureaus Involved in USGCRP Research	119
Table 3-2Congressional Authorization Committees and Appropriations Subcommittees with	
Significant Legislative Authority over Agencies with a USGCRP Component	124
Table 3-3A—FY 1991 and 1992 Focused Research by Agency and Function,	
Table 3-3B—FY 1991 and 1992 Focused Adaptation Research by Agency and Element	
Table 3-4A-Percent of Total FY 1992 USGCRP Budget for the Third Science Element, Ecological	
Systems and Dynamics (ESD), Compared with Percent of Each Agency's GCRP	
Budget for E-SD.	135
Table 3-4BPercent of Total FY 1992 USGCRP Budget for the Fifth Science Element, Human	
Interactions (HI), Compared with Percent of Each Agency's GCRP Budget for HI	135
Table in box 3-APotential Uses of Remote-Sensing Data,	128
Volume 1	
Chapter4Coasts	
Table 4-1—Estimates of Insurance-Industry Potential Losses in 1987 Resulting from a Recurrence	
of Past Hurricanes	164
Table 4-2-Estimated Cost of a Major Hurricane Striking Densely Populated Areas (or Major Cities).	. 165
Table 4-3—Insured Losses Likely To Be Experienced Under Different Maximum-Wind-Speed	
Scenarios	160
Table 4-4Estimated Probabilities of Exceeding Given Levels of Flood-Insurance Losses	
Table 4-5—Results of a Mail Survey of 132 Owners of Beachfront Property in South Carolina After	
Hurricane Hugo	177
-	

For a list of boxes, see chapter l, pages 8-9.

### 334 | Preparing for an Uncertain Climate-Volume 1

Table 4-6Community Rating System Designed by the Federal Emergency Management Agency to Encourage Communities to Minimize Flood Damage
Chapter 5—Water Table 5-1—Federal Offices Involved in Water Resource Planning, Development, or Management
Chapter 6-Agriculture       6-1—Harvested Acreage and Value of Principal Crops, 1991
Volume 2
Chapter 4-Wetlands Table 4-1-Wetland Vulnerabilities to Climate Change
Chapter 5—PreservesTable 5-1—National Parks, Wildlife Refuges, and Wilderness Areas in the United States
Chapter 6-Forests Table 6-1—Human Values Associated with Forest Systems
FIGURES
Chapter 1-Summary Figure 1-1-Potential Soil-Moisture Changes Under Two GCM Climate Change Scenarios

# Appendix A-List of Tables and Figures I 335

Figure 1-3-The Delaware River Basin.	
Figure 1-4An Assessment of Coastal Hazards: Texas and Louisiana	
Figure 1-9Water Withdrawals and Consumption in the Coterminous United States, 1985,	
Figure 1-6Preserves and Climate Change,	
Figure 1-7-Current and Projected Range of Beech Under Climate Change	. 55
Chapter 2-Primer	
Figure 2-1—Long-Term Global Temperature Record	. 67
Figure 2-2-The Greenhouse Effect.	
Figure 2-3-Measured and Equivalent C0, Concentrations in the Atmosphere	
Figure 2-4Expected C0 <sub>2</sub> Concentrations in the Atmosphere According to Various Emissions Scenarios	
Figure 2-5GCM-Estimated Changes in Temperature and Precipitation from a Doubling of CO <sub>2</sub>	
Figure 2-6-Potential Soil-Moisture Changes Under the GISS climate Change Scenario ,	
Figure 2-7-Potential Soil-Moisture Changes Under the GFDL Climate Change Scenario	
Figure 2-8-Approximate Distribution of the Major Biotic Regions	
Figure 2-9Long-TermTempratmemdC0 2RecOrdstirnAt~tic1ceCO_ms_md R_ent	. 00
Atmospheric Measurements	80
Figure 2-10-The Distribution of Holdridge Life Zones Under Current Climate conditions	
Figure 2-11-Percent of U.S. Land Area Shifting HoldridgeLife Zones After C0, Doubling	
Figure 2-12-The Hydrologic Cycle Shows How Water Moves Through the Environment	
Figure 2-13-Soil-Moisture Changes Under the GFDL and GISS Climate Change scenarios,	
by Land-Use and Cover ~	101
Figure in box 2-A-Modeled Topography of the United States by Use of Two Different Grid Sizes	
Figure in box 2-CU.S. Coastal Marine Fisheries	. 82
Chapter 3-Research	
Figure3-lAOrganizational Chart for the Federal Coordinating Council for Science, Engineering,	
and Technology (FCCSET)	113
Figure 3-lBOrganizational Chart for the Committee on Earth and Environmental Sciences (CEES)	114
Figure 3-2-Priority Framework for USGCRP.	116
Figure 3-3-Functional Architecture of USGCRP.	117
Figure 3-4U.S. Global Change Research Program Budget by Agency.	120
	121 122
	123
	145
Figure in box 3-A-Incoming, Reflected, and Scattered Solar Radiation.	128
1 Igure in 50x 5 71 Incoming, Reflected, and Seattered Solar Radiation.	120
Volume 1	
Chapter 4-Coasts	
Figure 4-1-Historical Land Loss of Poplar Island in Chesapeake Bay as a Result of	
Sea Level Rise and Erosion	. 157
Figure 4-2-Schematics of a Developed and an undeveloped Barrier Island	
Figure 4-3A-Intensity of Historic Hurricanes.	160
0 0	161
Figure 4-4-Coastal Hazard Assessment.	167
Figure 4-5-FEMA's Criteria for Imminent-Collapse and Setback Determinations Under the	
Upton-Jones Amendment.	. 181
Figure 4-&New Zones Established by Beachfront Legislation.	
Figure in box 4-ASaffir-Simpson Hurricane-Intensity scale	162

Chapter 5—Water	
Figure 5-l—Water Withdrawals and Consumption in the Coterminous United States, 1985	211
Figure 5-2—Average Consumptive Use and Renewable Water Supply by Water Resource Region	
Figure 5-3-U. S. Groundwater Overdraft	
Figure in box 5-B-The Rio Grande Basin	
Figure in box 5-E-Navigable Waters of the Mississippi River System	
Chapter 6-Agriculture	
Figure 6-1-U.S. Production, Domestic Consumption, and Exports of Wheat, Corn, and Soybeans.	
Figure 6-2-The USDA Agricultural Regions of the United States	
Figure 6—3-Regional Distribution of Cropland and Irrigated Cropland in the United States	
Figure 6-4Characteristics of Nine Farming Regions	
Figure 6-5-Corn Yields in the United States, 1950-91.	
Figure 6-6-Net Outlays of the Commodity Credit Corporation, 1982-91	
Figure 6-7-Costs of Federal Disaster-Assistance Payments Over the Period 1980-90	314
Figure6-8-Appropriation for USDA Agricultural Research and Extension Programs for FY 1972-93.	917
Figure in box 6-C-Change in Simulated Crop Yields After Doubling of CO <sub>2</sub> , by Region,	. 31
Under Two GCM Climate Change Scenarios	900
Figure in box 6-D-The Arkansas River Basin of Southeastem Colorado	999
Figure in box 6-EKesterson Reservoir and Surrounding Areas.	
Figure in box 6-E-The Potential for Water-Salinity Problems	
Figure in box 6-F-Extent of the Hard Red Winter Wheat Zone in 1920 and 1980	298
Figure in box 6-F-Proportion of Wheat Planted to Leading Varieties in the United States	
Figure in box 6-F-Midwestern Soybean Acreage in 1949 and 1982.	
Figure in box 6-G-The Ogallala Aquifer	
Volume 2	
Chapter4Wetlands	1
Figure 4-1-Cross-Sectional Diagrams of a Northeaster Salt Marsh and a Riparian Wetland System.	
Figure 4-2-General Distribution of Wetlands in the United States	
Figure 4-3-Wetland Acreage Lost in the United States, 1780s to 1980s	
Figure 4-4-Extent and Location of Artificially Drained Agricultural Land in the United States, 198 Figure in box 4-DRelationship Between Wetland Processes and Values	
Figure in box 4-FWetland Changes in the Mississippi River Active Delta (1956-78)	
rigute in box4-1 wettaild Changes in the Mississippi River Active Delta (1930-76)	. 1/3
Chapter 5-Preserves	
Figure 5-1-Preserves and Climate Change	22
Figure 5-2-Landownership of the U.S. Land Base , ,,,,	. 225
Figure 5-3-Habitat Needs of Elk, Eagles, and Grizzly Bears in the Greater Yellowstone Ecosystem	226
Figure 5-4A-Federally Owned Lands: Agency Jurisdiction,,.	
Figure 54B-Federally Owned Lands: Percentage of State Area	
Figure 5-5-Recreational Visits to National Parks	
Figure 5-6-Geographical Distribution of Some Federal Natural Areas,	
Figure 5-7-Authorizations and Total Annual Appropriations of Land and Water Conservation Fundamental	l 267
Figure 5-8-Ecosystem Types Represented on Federal Land	280
Figure 5-9—Ecosystem Types Represented in National Wilderness Areas	
Figure in box 5-F-Biosphere Reserve Sites in the United States.	
Figure in box 5-GStillwater National Wildlife Management Area.	253
Figure in box 5-L-GAP Analysis Example: Distribution of Endangered Hawaiian F inches in Relation to Existing Nature Reserves on the Island of Hawai in 1982	971
Figure in box 5-L-The National Science Foundation's Long-Term Ecological Research Network.	
- 13ar an box of the radional selence roundation s found fellin regional research retwork.	~ 1 4

## Appendix A-List of Tables and Figures I 337

Chapter	6Forests	
Figure	6-l-USDA Forest Regions of the United States.	302
Figure	6-2-Forest Density Within Advanced Very-High-Resolution Radiometer Pixels	303
Figure	6-3-Area of Forest and Nonforest Land by Region, 1987.,,,,,,,,,	304
Figure	6-4-Major Forest Types of the United States.	305
Figure	6-5-Status of U.S. Forest Land and Distribution of Timberland Ownership, 1987	308
Figure	6-6Timberland Ownership by Region, 1987	308
Figure	6—7-Forest Area Planted or Seeded in the United States by Section and by Ownership	309
Figure	6-8Forest Fires in the United States, 1924-87	319
Figure	6-9Current and Projected Range of Sugar Maple under Two Models of Global Warming	322
Figure	in box 6-B-Average Carbon Storage per Acre of Forestland in the United States	310