



# Appendix D

# Acronyms and Units

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<b>AGCM</b>	atmospheric general circulation model
<b>AIS</b>	Antarctic Ice Sheet
<b>AMO</b>	Atlantic Multidecadal Oscillation
<b>AMOC</b>	Atlantic meridional overturning circulation
<b>AMSU</b>	Advanced Microwave Sounding Unit
<b>AO</b>	Arctic Oscillation
<b>AOD</b>	aerosol optical depth
<b>AR</b>	atmospheric river
<b>AW</b>	Atlantic Water
<b>BAMS</b>	Bulletin of the American Meteorological Society
<b>BC</b>	black carbon
<b>BCE</b>	Before Common Era
<b>CAM5</b>	Community Atmospheric Model, Version 5
<b>CAPE</b>	convective available potential energy
<b>CCN</b>	cloud condensation nuclei
<b>CCSM3</b>	Community Climate System Model, Version 3
<b>CDR</b>	carbon dioxide removal
<b>CE</b>	Common Era
<b>CENRS</b>	Committee on Environment, Natural Resources, and Sustainability (National Science and Technology Council, White House)



<b>CESM-LE</b>	Community Earth System Model Large Ensemble Project
<b>CFCs</b>	chlorofluorocarbons
<b>CI</b>	climate intervention
<b>CMIP5</b>	Coupled Model Intercomparison Project, Fifth Phase (also CMIP3 and CMIP6)
<b>CONUS</b>	contiguous United States
<b>CP</b>	Central Pacific
<b>CSSR</b>	Climate Science Special Report
<b>DIC</b>	dissolved inorganic carbon
<b>DJF</b>	December-January-February
<b>DoD SERDP</b>	U.S. Department of Defense, Strategic Environmental Research and Development Program
<b>DOE</b>	U.S. Department of Energy
<b>EAIS</b>	East Antarctic Ice Sheet
<b>ECS</b>	equilibrium climate sensitivity
<b>ENSO</b>	El Niño–Southern Oscillation
<b>EOF analysis</b>	empirical orthogonal function analysis
<b>EP</b>	Eastern Pacific
<b>ERF</b>	effective radiative forcing
<b>ESD</b>	empirical statistical downscaling
<b>ESDM</b>	empirical statistical downscaling model
<b>ESM</b>	Earth System Model
<b>ESS</b>	Earth system sensitivity
<b>ETC</b>	extratropical cyclone
<b>ETCCDI</b>	Expert Team on Climate Change Detection Indices
<b>GBI</b>	Greenland Blocking Index



<b>GCIS</b>	Global Change Information System
<b>GCM</b>	global climate model
<b>GeoMIP</b>	Geoengineering Model Intercomparison Project
<b>GFDL HiRAM</b>	Geophysical Fluid Dynamics Laboratory, global High Resolution Atmospheric Model (NOAA)
<b>GHCN</b>	Global Historical Climatology Network (National Centers for Environmental Information, NOAA)
<b>GHG</b>	greenhouse gas
<b>GMSL</b>	global mean sea level
<b>GMT</b>	global mean temperature
<b>GPS</b>	global positioning system
<b>GRACE</b>	Gravity Recovery and Climate Experiment
<b>GrIS</b>	Greenland Ice Sheet
<b>GWP</b>	global warming potential
<b>HadCM3</b>	Hadley Centre Coupled Model, Version 3
<b>HadCRUT4</b>	Hadley Centre Climatic Research Unit Gridded Surface Temperature Dataset 4
<b>HCFCs</b>	hydrochlorofluorocarbons
<b>HFCs</b>	hydrofluorocarbons
<b>HOT</b>	Hawai'i Ocean Time-series
<b>HOT-DOGS</b>	Hawai'i Ocean Time-series Data Organization & Graphical System
<b>HURDAT2</b>	revised Atlantic Hurricane Database (National Hurricane Center, NOAA)
<b>IAM</b>	integrated assessment model
<b>IAV</b>	impacts, adaptation, and vulnerability
<b>INMCM</b>	Institute for Numerical Mathematics Climate Model
<b>IPCC</b>	Intergovernmental Panel on Climate Change



<b>IPCC AR5</b>	Fifth Assessment Report of the IPCC; also SPM—Summary for Policymakers, and WG1, WG2, WG3—Working Groups 1–3
<b>IPO</b>	Interdecadal Pacific Oscillation
<b>IVT</b>	integrated vapor transport
<b>JGOFS</b>	U.S. Joint Global Ocean Flux Study
<b>JJA</b>	June-July-August
<b>JTWC</b>	Joint Typhoon Warning Center
<b>LCC</b>	land-cover changes
<b>LULCC</b>	land-use and land-cover change
<b>MAM</b>	March-April-May
<b>MSU</b>	Microwave Sounding Unit
<b>NAM</b>	Northern Annular Mode
<b>NAO</b>	North Atlantic Oscillation
<b>NARCCAP</b>	North American Regional Climate Change Assessment Program (World Meteorological Organization)
<b>NAS</b>	National Academy of Sciences
<b>NASA</b>	National Aeronautics and Space Administration
<b>NCA</b>	National Climate Assessment
<b>NCA3</b>	Third National Climate Assessment
<b>NCA4</b>	Fourth National Climate Assessment
<b>NCEI</b>	National Centers for Environmental Information (NOAA)
<b>NDC</b>	nationally determined contribution
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NPI</b>	North Pacific Index
<b>NPO</b>	North Pacific oscillation



<b>NPP</b>	net primary production
<b>OMZs</b>	oxygen minimum zones
<b>OSTP</b>	Office of Science and Technology Policy (White House)
<b>PCA</b>	principle component analysis
<b>PDO</b>	Pacific Decadal Oscillation
<b>PDSI</b>	Palmer Drought Severity Index
<b>PETM</b>	Paleo-Eocene Thermal Maximum
<b>PFCs</b>	perfluorocarbons
<b>PGW</b>	pseudo-global warming
<b>PNA</b>	Pacific North American Pattern
<b>RCM</b>	regional climate models
<b>RCP</b>	Representative Concentration Pathway
<b>RF</b>	radiative forcing
<b>RFaci</b>	aerosol–cloud interaction (effect on RF)
<b>RFari</b>	aerosol–radiation interaction (effect on RF)
<b>RMSE</b>	root mean square error
<b>RSL</b>	relative sea level
<b>RSS</b>	remote sensing systems
<b>S06</b>	surface-to-6 km layer
<b>SCE</b>	snow cover extent
<b>SGCR</b>	Subcommittee on Global Change Research (National Science and Technology Council, White House)
<b>SLCF</b>	short-lived climate forcer
<b>SLCP</b>	short-lived climate pollutant
<b>SLR</b>	sea level rise



<b>SOC</b>	soil organic carbon
<b>SRES</b>	IPCC Special Report on Emissions Scenarios
<b>SREX</b>	IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation
<b>SRM</b>	solar radiation management
<b>SSC</b>	Science Steering Committee
<b>SSI</b>	solar spectral irradiance
<b>SSP</b>	Shared Socioeconomic Pathway
<b>SST</b>	sea surface temperature
<b>STAR</b>	Center for Satellite Applications and Research (NOAA)
<b>SWCRE</b>	shortwave cloud radiative effect (on radiative fluxes)
<b>LWCRE</b>	longwave cloud radiative effect (on radiative fluxes)
<b>TA</b>	total alkalinity
<b>TC</b>	tropical cyclone
<b>TCR</b>	transient climate response
<b>TCRE</b>	transient climate response to cumulative carbon emissions
<b>TOPEX/JASON1,2</b>	Topography Experiment/Joint Altimetry Satellite Oceanography Network satellites (NASA)
<b>TSI</b>	total solar irradiance
<b>TTT</b>	temperature total troposphere
<b>UAH</b>	University of Alabama, Huntsville
<b>UHI</b>	urban heat island (effect)
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>USGCRP</b>	U.S. Global Change Research Program
<b>USGS</b>	U.S. Geological Survey



UV	ultraviolet
VOCs	volatile organic compounds
WAIS	West Antarctic Ice Sheet
WCRP	World Climate Research Programme
WMGHG	well-mixed greenhouse gas
WOCE	World Ocean Circulation Experiment (JGOFS)

### Abbreviations and Units

C	carbon
CO	carbon monoxide
CH <sub>4</sub>	methane
cm	centimeters
CO <sub>2</sub>	carbon dioxide
°C	degrees Celsius
°F	degrees Fahrenheit
GtC	gigatonnes of carbon
hPA	hectopascal
H <sub>2</sub> S	hydrogen sulfide
H <sub>2</sub> SO <sub>4</sub>	sulfuric acid
km	kilometers
m	meters
mm	millimeters
Mt	megaton
µatm	microatmosphere
N	nitrogen



<b>N<sub>2</sub>O</b>	nitrous oxide
<b>NO<sub>x</sub></b>	nitrogen oxides
<b>O<sub>2</sub></b>	molecular oxygen
<b>O<sub>3</sub></b>	ozone
<b>OH</b>	hydroxyl radical
<b>PgC</b>	petagrams of carbon
<b>ppb</b>	parts per billion
<b>ppm</b>	parts per million
<b>SF<sub>6</sub></b>	sulfur hexafluoride
<b>SO<sub>2</sub></b>	sulfur dioxide
<b>TgC</b>	teragrams of carbon
<b>W/m<sup>2</sup></b>	Watts per meter squared

