

Appendix 1

Acronyms

ABS	abscisic acid	BTDV	bluetongue disease virus
AGB	aboveground biomass	BVOC	biogenic volatile organic compound
aDGVM	adaptive dynamic global vegetation model	BYDV	barley yellow dwarf virus
ADS	Asian dust storm	C	carbon
AFLP	amplified fragment length polymorphism	C₃	C ₃ carbon fixation pathway for photosynthesis
AGW	anthropogenic global warming	C₄	C ₄ carbon fixation pathway for photosynthesis
AM	arbuscular mycorrhizal	Ca	CO ₂ concentration in the air
AMF	arbuscular mycorrhizal fungi	CAM	crassulacean acid metabolism
AMI	acute myocardial infarction	CASA	Carnegie-Ames-Stanford Approach
AMO	Atlantic Multidecadal Oscillation	CBD	cerebrovascular disease
APSIM	Agricultural Production Systems Simulator	CBSC	carbon-based secondary compounds
AO/NAO	Arctic Oscillation/North Atlantic Oscillation	CCA	canonical correspondence analysis
APS	atmospheric pollen season	CDC	Canadian Drought Code
ARPEGE	Action de Recherche Petite Echelle Grande Echelle (Research Project on Small and Large Scales)	CEC	carbon exchange capacity
AsA	ascorbic acid	CER	CO ₂ exchange rate
AVHRR	Advanced Very High Resolution Radiometer	CERES	Crop Environment Resources Synthesis
Ba	barium	CEVSA	Carbon Exchanges in the Vegetation-Soil-Atmosphere System
BAI	basal area index	CH₂ClI	iodocarbon chloriodomethane
BioCON	Biodiversity, Carbon Dioxide, and Nitrogen Effects on Ecosystem Functioning	CH₃Cl	methyl chloride
BIOME3	Biogeochemical Model	CH₄	methane
BP	before present	CH₂I₂	diiodomethane
BSW	bog surface wetness	CHD	coronary heart disease
Bt	<i>Bacillus thuringiensis</i>	CLEH	climate-linked epidemic hypothesis
BTD	bluetongue disease	CO₂	carbon dioxide
		CPR	Continuous Plankton Recorder
		CS₂	carbon disulfide
		CSIRO	Commonwealth Scientific and Industrial Research Organization (Australia)

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Cu	copper	GPCP	Global Precipitation Climatology Project
CVD	cardiovascular disease	GPP	gross primary production
CZCS	Coastal Zone Color Scanner	gr	gram(s)
DAE	days after emergence	GSH	glutathione
DAS	days after seeding	GtC	gigatons of carbon
DBH	diameter at breast height	H₂O₂	hydrogen peroxide
DGGE	denaturant gradient gel electrophoresis	H₂S	hydrogen sulfide
DHZR	dihydrozeatin ribosidem	HC1	Hidden Cave (Guadalupe Mountains)
DIC	dissolved organic carbon	HR	heterotrophic respiration
DM	dry matter	HSG	hematite stained grain
DMS	dimethyl sulfide	IAA	indole-3 acetic acid
DNA	deoxyribonucleic acid	IC	ischemic stroke
DOC	dissolved organic carbon	IE	infection efficiency
DTR	diurnal temperature range	IMAR	Inner Mongolia Autonomous Region
ECM	ectomycorrhizal	iPA	isopentenyl adenosine
EF-Tu	protein synthesis elongation factor	IPCC	Intergovernmental Panel on Climate Change
ENSO	El Niño-Southern Oscillation	IPCC 2007-I	Intergovernmental Panel on Climate Change – Group 1 Contribution
EPA	Environmental Protection Agency	IPCC 2007-II	Intergovernmental Panel on Climate Change – Group II Contribution
EU	European Union	IPCC 2007-III	Intergovernmental Panel on Climate Change – Group III Contribution
EVI	Enhanced Vegetation Index	IPCC-FAR	Intergovernmental Panel on Climate Change – First Assessment Report
FA	fluctuating asymmetry	IPCC-SAR	Intergovernmental Panel on Climate Change – Second Assessment Report
FACE	free-air CO ₂ enrichment	IPCC-TAR	Intergovernmental Panel on Climate Change – Third Assessment Report
FACTS	Forest Atmosphere Carbon Transfer and Storage	IPCC-AR4	Intergovernmental Panel on Climate Change – Fourth Assessment Report
FATI	free-air temperature increase	IPCC-AR5	Intergovernmental Panel on Climate Change – Fifth Assessment Report
FAO	Food and Agriculture Organization	IUCN	International Union for Conservation of Nature
Fe	iron	IWUE (iWUE)	intrinsic water use efficiency
FRAP	ferric reducing/antioxidant potential	ka	thousand years
GA3	gibberellic acid	kDa	kilodalton
GAM	generalized additive model	KPRNA	Konza Prairie Research Natural Area
GBR	Great Barrier Reef	kS	specific conductivity
GCM	General Circulation Models	LBM	larch budmoth
GCTE	Global Change and Terrestrial Ecosystems	LCLUC	land cover/land use change
GDP	Gross Domestic Product		
GIMMS	Global Inventory Modeling and Mapping Studies		
GLO-PEM	Global Production Efficiency Model		
gNDVI	Normalized Difference Vegetation Index over the Growing Season		

Appendix 1: Acronyms

LGM	Last Glacial Maximum	PDO	Pacific Decadal Oscillation
LIA	Little Ice Age	PDSI	Palmer Drought Severity Index
LIG	last interglacial	PET	physiologically equivalent temperature
LST	land surface temperature	PETM	Palaeocene-Eocene Thermal Maximum
m	meter	PHACE	prairie heating and CO ₂ enrichment
Ma	million years	PIH	primary intracerebral hemorrhagic stroke
Ma BP	million years before present	PM	particulate matter
MAAT	mean annual air temperature	PNL	progressive nitrogen limitation
MODIS	moderate resolution imaging spectroradiometer	PNUE	photosynthetic nitrogen use efficiency
Mg	megagram	POM	particulate organic matter
MWP	Medieval Warm Period	PopFACE	poplar free-air CO ₂ enrichment
MXD	maximum latewood density	ppb	parts per billion
N	nitrogen	PPB	purple phototrophic bacteria
N₂O	nitrous oxide	ppm	parts per million
NaCl	sodium chloride	ppmv	parts per million by volume
NAO	North Atlantic Oscillation	PRECIS	Providing Regional Climates for Impact Studies
NAS	National Academy of Sciences (USA)	PSII	photosystem II
NASA	National Aeronautics and Space Administration (USA)	RD	respiratory disease
NDVI	Normalized Difference Vegetation Index	Rda	area-based dark respiration
NEP	net ecosystem production	Rdm	mass-based dark respiration
NEE	net ecosystem exchange	rDNA	ribosomal deoxyribonucleic acid
NEEa	annual net ecosystem exchange	RERCA	recent rate of carbon accumulation
NH₄	ammonium	ROS	reactive oxygen species
NIPCC	Nongovernmental International Panel on Climate Change	RSV	respiratory syncytial virus
NOAA	National Oceanic and Atmospheric Administration (USA)	RTI	respiratory tract infection
NPP	net primary productivity	RWP	Roman Warm Period
NUE	nitrogen use efficiency	SACC	screen-aided CO ₂ control
O₃	ozone	SB	Southern Beaufort Sea
OCS	carbonyl sulfide	SCC	Swiss canopy crane
OM	organic matter	SCD	sudden cardiac death
ORNL	Oak Ridge National Laboratory (USA)	SCPDSI	self-calibrating Palmer Drought Severity Index
OTC	open-top chamber	SeaWiFS	Sea-Viewing Wide Field-Of-View Sensor
P	phosphorous	SEPP	Science and Environmental Policy Project
PAR	photosynthetically active radiation	SET	surface elevation table
Pg	petagram	SLR	sea-level rise
PAL	Pathfinder AVHRR [Advanced Very High Resolution Radiometer] Land	SO₂	sulfur dioxide

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SOC	soil organic carbon	TRMM	Tropical Rainfall Measuring Mission
SOM	soil organic matter	TRW	tree-ring width
SOS	start of spring	TSD	temperature-dependent sex determination
SPAR	soil-plant-atmosphere-research	UCD	unusually cold day
SPM	Summaries for Policymakers	UN	United Nations
SPS	sucrose-phosphate synthase	UNEP	United Nations Environment Program
SST	sea surface temperatures	UNFCCC	United Nations Framework Convention on Climate Change
TBARS	thiobarbituric acid reactive substance	UNT	unified neutral theory
TBE	tick-borne encephalitis	UV	ultraviolet
TBEV	tick-borne encephalitis virus	VOC	volatile organic compound
TDR	time domain reflectometry	VPD	vapor pressure deficit
TEM	terrestrial ecosystem model	VSP	vegetative storage protein
Tg	teragram	WH	Western Hudson Bay
Tmax	maximum temperature	WHO	World Health Organization
Tmin	minimum temperature	WMO	World Meteorological Organization
TMI	Tropical Rainfall Measuring Mission Microwave Imager	WSC	water-soluble carbohydrate
Topt	optimum temperature	WT	wild type
TP	Tibetan Plateau	WUE	water use efficiency
TRFO	tropical rainforest	ZR	zeatin riboside