

Ecosphere

Making sense of multivariate community responses in global change experiments

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Appendix S1

Table S1. List of all experiments used in this analysis from the CoRRE database and associated publication.

Site	Project	# communities	Experiment	Citation
University of Alberta Kinsella Research Ranch, Alberta, Canada	Climate Change-Defoliation Experiment in Northern Temperate Grasslands	3	Warming crossed with defoliation and altered precipitation	White et al. <i>Agronomy Journal</i> , 2014, 106: 33-42
Riding Mountain National Park, Manitoba, Canada				
Gap Prairie Farm Rehabilitation Administration, Saskatchewan, Canada				
Angelo Coast Range Reserve, CA, USA	Watering	1	Water addition	Suttle et al. 2007, <i>Science</i> , 315: 640-642
Arctic LTER, Toolik Field Station, AK, USA	Moist Acidic Tundra (MAT2)	1	Nitrogen and Phosphorus addition	Hobbie et al. 2005, <i>Journal of Ecology</i> 93: 77-782
Arctic LTER, Toolik Field Station, AK, USA	Moist Non-acidic Tundra (MNT)	1	Nitrogen and Phosphorus addition	Gough and Hobbie 2003, <i>Oikos</i> 103: 204-216
Allegan State Game Area, Allegan County, MI	Clonal Experiment	1	Altered soil nutrient patchiness and plant clonality	Eilts et al. <i>The American Naturalist</i> , 2011, 177: 574-588
Allegan State Game Area, MI, USA	Experiment 1	1	Altered soil nutrient patchiness and seed addition	Gross et al. 2005, <i>Ecology</i> 86: 476-486
Azi Branch Research Station, Gansu, China	NitPhos	1	Nitrogen and phosphorus addition	Zhang et al. 2015 <i>Scientific Reports</i> , 5:16832
Lindenhof Site, Bayreuth, Germany	Lind	1	Watering	Jentsch and Beierkuhnlein 2010. <i>Nova Acta Leopoldina</i> 112: 89-98
Ecological-Botanical Garden, University of Bayreuth, Germany	Event2	1	Altered precipitations	Khan et al. 2018 <i>Ecosystems</i> 21: 1306-1321
Health and Safety Laboratory, Derbyshire, UK	Precipitation & warming (PQ)	1	Warming, drought, and watering	Fridley et al. 2007, <i>Global Change Biology</i> 17: 2002-2011
Carpenteria Salt Marsh Reserve, CA, USA	Salt Marsh	6	Nitrogen, phosphorus, and potassium additions	Pennings and Simpson 2008, <i>Plant</i>

				Ecology 196: 245-250
Teberda Biosphere Reserve, NW caucous Russia	Resource Manipulations in Alpine Plant Communities	4	Nitrogen and phosphorus additions with liming and watering	Onipchenko et al. Plant Soil 2012. 357: 103-115
Cedar Creek LTER, Cedar Creek Ecosystem Science Reserve, MN, USA	BioCON	1	Elevated CO2 and nitrogen additions	Reich et al. Nature, 2001, 410: 809-812
Cedar Creek LTER, Cedar Creek Ecosystem Science Reserve, MN, USA	E001	4	Micronutrients and nitrogen	Tilman Ecological Monographs, 1987, 57: 189-214
Cedar Creek LTER, Cedar Creek Ecosystem Science Reserve, MN, USA	E002	3	Micronutrients and nitrogen	Tilman Ecological Monographs, 1987, 57: 189-214
North Wales, Valley, Anglesey	Megarich	1	Elevated CO ₂ and warming addition	Harmens et al. Grass forage and science, 2004, 59: 144-156
High Plains Grasslands Research center, Cheyenne, WY	Extreme drought in grasslands experiment (EDGE)	1	Drought, precipitation variability	Fernandes et al. 2018. Environmental Microbiology 20: 259-26
Central Plains Experimental Range, Colorado		1		
Hays Agricultural Research Center, Hays, KS		1		
Konza LTER, Konza Prairie Biological Station, KS, USA		1		
Sevilleta LTER, Sevilleta National Wildlife Refuge, NM, USA		2		
French Massif Central, France	Imagine	1	Warming, drought, and elevated CO2	Bloor et al. 2010, Ecosystems, 13:888-900
Culardoch Experimental Site, Eastern Highlands, Scotland	Culardoch	1	Burning, clipping and nitrogen addition	Britton and Fisher, Journal of Applied Ecology, 2007, 44: 125-135
Chequamegon-Nicolet National Forest, WI	Gap	1	Create light openings in forest	Kern et al. Journal of Plant Ecology, 2013 6:101-112
Restoration Ecological Research Station, Duolon County, China	Nitrogen and Water Manipulation Experiment	1	Watering and nitrogen addition	Xu et al. 2012, PlosOne, 7: e39762

Sandalsnuten, Finse, Norway	WarmNit	1	Warming and fertilizer additions	Klanderud, Journal of Vegetation Science, 19: 363-372, 2008
Inner Mongolia Grassland Research Station, China	Nitrogen Experiment	1	Nitrogen addition	Yu et al. 2010, Ecology Letters, 13:1390-1399
Inner Mongolia Grassland Research Station, China	Nitrogen Deposition Experiment	1	Mowing and nitrogen addition	Han et al. 2014. Plant and Soil 382: 175-187
Jornada LTER, Las Cruces, New Mexico	119	4	Nitrogen addition	Mun and Whitford 1989 Plant and Soil 120: 225-231
Jornada LTER, Las Cruces, New Mexico	278	1	Watering or drought with nitrogen addition	Reichmann et al. 2013 Ecology 34: 435-443
Jasper Ridge Biological Preserve, CA, USA	Jasper Ridge Global Change Experiment	1	Nitrogen addition, watering, warming, and elevated CO2	Zhu et al. 2016 PNAS 113: 10589-10594
Kessler Atmospheric and Ecological Field Station, OK	WaPaClip	1	Drought, watering, warming and clipping	Xu et al. 2013, Global Change Biology, 19: 2753-2764
Kellogg LTER, Kellogg Biological Station, MI, USA	Successional plots (T7)	1	Tilling and nitrogen addition	Huberty et al. 1998 Journal of Ecology 86:794-803
Kluane Area, Yukon Territory, Canada	BFFert	1	Nitrogen, potassium, and phosphorus additions and fencing	Turkington et al. 2002, Journal of Ecology 90: 325-337
Kluane Area5, Yukon Territory, Canada	KGfFert	1	Nitrogen, potassium, and phosphorus additions and fungicide	McLaren and Turkington 2010 Journal of Ecology, 98: 459-469
Kruger National Park, South Africa	Grazing, Fire, Precipitation	1	Drought and clipping	Koerner and Collins, Ecology, 2014, 95: 98-109
Konza LTER, Konza Prairie Biological Station, KS, USA		3		
Konza LTER, Konza Prairie Biological Station, KS, USA	Belowground Plot Experiment	1	Burning, nitrogen and phosphorus additions	Callahan et al. 2003. Soil Biology & Biochemistry, 35: 1079-1093
Konza LTER, Konza Prairie Biological Station, KS, USA	Irrigation Plots	2	Watering	Wilcox et al. 2016 Ecology 97:561-568
Konza LTER, Konza Prairie Biological Station, KS, USA	Phosphorus Plots	1	Nitrogen and phosphorus addition	Avolio et al. 2014, Journal of Ecology, 102: 1649-1660
Konza LTER, Konza Prairie	Rainfall Manipulation Plots	1	Altered precipitation and warming	Knapp et al. Science 2002, 298:2202-2205

Biological Station, KS, USA				
Konza LTER, Konza Prairie Biological Station, KS, USA	Restoration Heterogeneity Plots	1	Soil depth and nitrogen addition	Baer et al. Ecological Monographs 2017, 86: 94-106
University of Kansas Field Station, Lawrence, KS, USA	Experiment 6	2	Nitrogen and phosphorus addition	Foster et al. 2011, Journal of Ecology 99: 473-481
Latnjajaure Field Station, Sweden	Climate Change in Sub-Arctic (CLIP)	2	Warming and fertilizer additions	Alatalo et al. PeerJ, 2014 2: e406
Lefthand Canyon, CO	Precipitation Manipulation Experiment	1	Altered precipitation	Prevey and Seastedt, 2014, Journal of Ecology, 102: 1549-1561
Langi Ghiran State Park, Australia	Herb-rich Woodland Dynamics	1	Watering and fertilizer addition	Price and Morgan, Plant Ecology 2007, 29:37
Archbold Biological Station's Buck Island Ranch (formerly Macarthur Agro-Ecological Research Center), FL, USA	Fireplots	1	Burning, nitrogen and phosphorus additions	Boughton et al. 2017, J of Plant Ecology 11: 576-584
McLaughlin Natural Reserve, CA	WatFer	1	Watering and nitrogen, phosphorus, and potassium addition	Eskelinen & Harrison 2014, Ecology 95: 682-692
Nanticoke River watershed, MD & DE	Wetland Fertilization Experiment	6	Nitrogen and phosphorus additions	Baldwin, 2013, Esuaries and Coasts. 36: 547-558
Northern Great Basin Experimental Range, Oregon, USA	gb	1	Altered precipitation	Bates et al. 2006, Journal of Arid Environments 64: 670-697
Wichita State Ninnescah Reserve, KS, USA	HerbDiv	1	Nitrogen, phosphorus, and potassium additions, insecticide, above and below-ground fencing	Russell and Houseman 2018, Journal of Plant Ecology 12: 531-541
Niwot LTER, Niwot Ridge, CO, USA	246Nfert	1	Nitrogen additions	Bowman et al. 2006, Ecological Applications 16: 1183-1193
Niwot LTER, Niwot Ridge, CO, USA	Dry Meadow NXP	2	Nitrogen and Phosphorus additions	Bowman et al. 1993, Ecology 74: 2085-2097

Niwot LTER, Niwot Ridge, CO, USA	International Tundra Experiment (ITEX)	1	Warming, added snow, nitrogen additions	Farrer et al 2014, Global Change Biology 20: 1238-1250
Oak Ridge National Environmental Research Park, TN	FACE	1	Elevated CO2	Souza et al. 2010. Journal of Plant Ecology, 3: 33-39
Plum Island LTER, Plum Island Estuary, MA, USA	TIDE	1	Nitrogen addition	Johnson et al. 2016 Ecological Applications 26: 2647-2659
Rio Mayo Experimental Station, Argentina	Interaction	1	Nitrogen addition and watering	Yahdjian and Sala, Ecosystems, 2010, 13: 575-585
San Claudio, Argentina	Lucero	1	Nitrogen addition and mowing	Tognetti 2010 PhD Dissertation. Facultad de Agronomía Universidad de Buenos Aires
San Claudio, Argentina	Terraplen	1	Nitrogen addition and elevated CO2	Tognetti and Chaneton, Journal of Applied Ecology, 2015: 52 119-128
Smithsonian Environmental Research Center, MD, USA	CO2 and Nitrogen Experiment	1	Elevated CO2 and nitrogen addition	Langley and Megonigal 2010, Nature 466: 96-99
Smithsonian Environmental Research Center, MD, USA	Tidal Marsh CO2 Experiment	3	Elevated CO2	Arp et al. 1993. Vegetatio 104/105: 133-143
Sevilleta LTER, Sevilleta National Wildlife Refuge, NM, USA	N Fert	1	Nitrogen addition	Ladwig et al. 2012 Oecologia 169: 177-185
Sevilleta LTER, Sevilleta National Wildlife Refuge, NM, USA	Warming – El Nino – Nitrogen Experiment (WENNDEx)	1	Nitrogen addition, warming, and watering	Collins et al. 2017 Global Change Biology 23: 1095-1108
Sierra Foothills Research and Extension Center, CA	GrazePrecip	2	Watering or drought	Hallett et al. 2019 Ecology Letters 22: 1658-1667
Spindletop Research Farm, KY, USA	University of Kentucky Climate Change Study	1	Watering and warming	McCulley et al. 2014, Frontiers in Chemistry, 2: art98

Sedgwick Reserve, CA, USA	Nitrogen	2	Nitrogen and seed addition	Seabloom et al. 2003, PNAS 100: 13384- 13389
Sedgwick Reserve, CA, USA	Water	2	Water and seed addition	Seabloom et al. 2003, PNAS 100: 13384- 13389
Svalbard, Norway	Global Nitrogen Enrichment (GANE)	1	Nitrogen and phosphorus additions	Madan et al. 2007 Polar Biology 30:559-570
Australian Federal Department of Defense Pontville Small Arms Range Complex, Tasmania	TasFACE Global Change Impacts Experiment	1	Warming and elevated CO2	Hovenden et al. 2006, Australian Journal of Botany 54: 1-10
Trattin, Australia	Lovegrass	1	Herbicide, mowing, grazing and nitrogen, phosphorus and potassium additions	Firn et al. 2010 Journal of Applied Ecology, 47: 96-105
Yunwu Mountain National Natural Reserve, China	NitAdd	1	Nitrogen addition	Unpublished data of of Wei Li and Jimin Cheng