William Anderegg

List of Publications by Year
in descending order

117 papers	15,517 citations	22153 59 h-index	18130 120 g-index
125 all docs	125 docs citations	125 times ranked	12701 citing authors

#	Article	IF	Citations
1	Consequences of widespread tree mortality triggered by drought and temperature stress. Nature Climate Change, 2013, 3, 30-36.	18.8	1,018
2	Pervasive drought legacies in forest ecosystems and their implications for carbon cycle models. Science, 2015, 349, 528-532.	12.6	836
3	A multi-species synthesis of physiological mechanisms in drought-induced tree mortality. Nature Ecology and Evolution, 2017, 1, 1285-1291.	7.8	739
4	Tree mortality from drought, insects, and their interactions in a changing climate. New Phytologist, 2015, 208, 674-683.	7.3	641
5	Global patterns of drought recovery. Nature, 2017, 548, 202-205.	27.8	560
6	Expert credibility in climate change. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12107-12109.	7.1	554
7	Meta-analysis reveals that hydraulic traits explain cross-species patterns of drought-induced tree mortality across the globe. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5024-5029.	7.1	554
8	The roles of hydraulic and carbon stress in a widespread climate-induced forest die-off. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 233-237.	7.1	539
9	Vegetation demographics in Earth System Models: A review of progress and priorities. Global Change Biology, 2018, 24, 35-54.	9.5	478
10	Not all droughts are created equal: translating meteorological drought into woody plant mortality. Tree Physiology, 2013, 33, 672-683.	3.1	361
11	Climate-driven risks to the climate mitigation potential of forests. Science, 2020, 368, .	12.6	346
12	Research frontiers for improving our understanding of droughtâ€induced tree and forest mortality. New Phytologist, 2018, 218, 15-28.	7.3	334
13	Hydraulic diversity of forests regulates ecosystem resilience during drought. Nature, 2018, 561, 538-541.	27.8	332
14	Fire frequency drives decadal changes in soil carbon and nitrogen and ecosystem productivity. Nature, 2018, 553, 194-198.	27.8	325
15	Tree mortality predicted from drought-induced vascular damage. Nature Geoscience, 2015, 8, 367-371.	12.9	317
16	Large divergence of satellite and Earth system model estimates of global terrestrial CO2Âfertilization. Nature Climate Change, 2016, 6, 306-310.	18.8	309
17	Drought's legacy: multiyear hydraulic deterioration underlies widespread aspen forest dieâ€off and portends increased future risk. Global Change Biology, 2013, 19, 1188-1196.	9.5	307
18	Predicting stomatal responses to the environment from the optimization of photosynthetic gain and hydraulic cost. Plant, Cell and Environment, 2017, 40, 816-830.	5.7	276

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19	Spatial and temporal variation in plant hydraulic traits and their relevance for climate change impacts on vegetation. New Phytologist, 2015, 205, 1008-1014.	7.3	264
20	Impacts of droughts on the growth resilience of Northern Hemisphere forests. Global Ecology and Biogeography, 2017, 26, 166-176.	5.8	232
21	Tree carbon allocation explains forest droughtâ€kill and recovery patterns. Ecology Letters, 2018, 21, 1552-1560.	6.4	217
22	Optimal stomatal behavior with competition for water and risk of hydraulic impairment. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E7222-E7230.	7.1	215
23	Dead or dying? Quantifying the point of no return from hydraulic failure in droughtâ€induced tree mortality. New Phytologist, 2019, 223, 1834-1843.	7.3	187
24	Linking definitions, mechanisms, and modeling of drought-induced tree death. Trends in Plant Science, 2012, 17, 693-700.	8.8	186
25	Pragmatic hydraulic theory predicts stomatal responses to climatic water deficits. New Phytologist, 2016, 212, 577-589.	7.3	168
26	Ghosts of the past: how drought legacy effects shape forest functioning and carbon cycling. Ecology Letters, 2020, 23, 891-901.	6.4	168
27	Non-structural carbohydrates in woody plants compared among laboratories. Tree Physiology, 2015, 35, tpv073.	3.1	163
28	Mechanisms of woody-plant mortality under rising drought, CO2 and vapour pressure deficit. Nature Reviews Earth & Environment, 2022, 3, 294-308.	29.7	163
29	Divergent forest sensitivity to repeated extreme droughts. Nature Climate Change, 2020, 10, 1091-1095.	18.8	160
30	Widespread droughtâ€induced tree mortality at dry range edges indicates that climate stress exceeds species' compensating mechanisms. Global Change Biology, 2019, 25, 3793-3802.	9.5	153
31	Accelerating net terrestrial carbon uptake during the warming hiatus due to reduced respiration. Nature Climate Change, 2017, 7, 148-152.	18.8	151
32	Greater focus on water pools may improve our ability to understand and anticipate droughtâ€induced mortality in plants. New Phytologist, 2019, 223, 22-32.	7.3	134
33	Linking drought legacy effects across scales: From leaves to tree rings to ecosystems. Global Change Biology, 2019, 25, 2978-2992.	9.5	133
34	Why is Tree Drought Mortality so Hard to Predict?. Trends in Ecology and Evolution, 2021, 36, 520-532.	8.7	130
35	Soil Moisture Stress as a Major Driver of Carbon Cycle Uncertainty. Geophysical Research Letters, 2018, 45, 6495-6503.	4.0	119
36	Anthropogenic climate change is worsening North American pollen seasons. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	118

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37	Xylem embolism refilling and resilience against droughtâ€induced mortality in woody plants: processes and tradeâ€offs. Ecological Research, 2018, 33, 839-855.	1.5	116
38	Woody plants optimise stomatal behaviour relative to hydraulic risk. Ecology Letters, 2018, 21, 968-977.	6.4	109
39	The impact of rising CO ₂ and acclimation on the response of US forests to global warming. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 25734-25744.	7.1	105
40	Forest and woodland replacement patterns following drought-related mortality. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 29720-29729.	7.1	99
41	Drought characteristics' role in widespread aspen forest mortality across Colorado, <scp>USA</scp>. Global Change Biology, 2013, 19, 1526-1537.	9.5	98
42	Hydraulic and carbohydrate changes in experimental drought-induced mortality of saplings in two conifer species. Tree Physiology, 2013, 33, 252-260.	3.1	96
43	Large droughtâ€induced aboveground live biomass losses in southern <scp>R</scp>ocky <scp>M</scp>ountain aspen forests. Global Change Biology, 2012, 18, 1016-1027.	9.5	93
44	A stomatal control model based on optimization of carbon gain versus hydraulic risk predicts aspen sapling responses to drought. New Phytologist, 2018, 220, 836-850.	7.3	93
45	Tropical nighttime warming as a dominant driver of variability in the terrestrial carbon sink. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15591-15596.	7.1	92
46	Convergence of bark investment according to fire and climate structures ecosystem vulnerability to future change. Ecology Letters, 2017, 20, 307-316.	6.4	90
47	Plant water content integrates hydraulics and carbon depletion to predict drought-induced seedling mortality. Tree Physiology, 2019, 39, 1300-1312.	3.1	79
48	Satellite-based vegetation optical depth as an indicator of drought-driven tree mortality. Remote Sensing of Environment, 2019, 227, 125-136.	11.0	79
49	Plant hydraulics improves and topography mediates prediction of aspen mortality in southwestern <scp>USA</scp>. New Phytologist, 2017, 213, 113-127.	7.3	77
50	Plant water potential improves prediction of empirical stomatal models. PLoS ONE, 2017, 12, e0185481.	2.5	77
51	Cross-biome synthesis of source versus sink limits to tree growth. Science, 2022, 376, 758-761.	12.6	76
52	When a Tree Dies in the Forest: Scaling Climate-Driven Tree Mortality to Ecosystem Water and Carbon Fluxes. Ecosystems, 2016, 19, 1133-1147.	3.4	73
53	Detecting forest response to droughts with global observations of vegetation water content. Global Change Biology, 2021, 27, 6005-6024.	9.5	73
54	Plant functional traits and climate influence drought intensification and landâ€“atmosphere feedbacks. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 14071-14076.	7.1	70

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55	Loss of whole-tree hydraulic conductance during severe drought and multi-year forest die-off. Oecologia, 2014, 175, 11-23.	2.0	69
56	A theoretical and empirical assessment of stomatal optimization modeling. New Phytologist, 2020, 227, 311-325.	7.3	69
57	Systematic overâ€crediting in California's forest carbon offsets program. Global Change Biology, 2022, 28, 1433-1445.	9.5	69
58	Infestation and Hydraulic Consequences of Induced Carbon Starvation. Plant Physiology, 2012, 159, 1866-1874.	4.8	65
59	Ecosystem dynamics and management after forest dieâ€off: a global synthesis with conceptual stateâ€andâ€transition models. Ecosphere, 2017, 8, e02034.	2.2	56
60	Trait velocities reveal that mortality has driven widespread coordinated shifts in forest hydraulic trait composition. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 8532-8538.	7.1	55
61	Climate and plant trait strategies determine tree carbon allocation to leaves and mediate future forest productivity. Global Change Biology, 2019, 25, 3395-3405.	9.5	53
62	Climate and functional traits jointly mediate tree waterâ€use strategies. New Phytologist, 2021, 231, 617-630.	7.3	53
63	Future climate risks from stress, insects and fire across US forests. Ecology Letters, 2022, 25, 1510-1520.	6.4	53
64	Complex aspen forest carbon and root dynamics during drought. Climatic Change, 2012, 111, 983-991.	3.6	52
65	Pervasive decreases in living vegetation carbon turnover time across forest climate zones. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 24662-24667.	7.1	52
66	Altitudinal shifts of the native and introduced flora of <scp>C</scp>alifornia in the context of 20thâ€century warming. Global Ecology and Biogeography, 2016, 25, 418-429.	5.8	51
67	Remote sensing of forest die-off in the Anthropocene: From plant ecophysiology to canopy structure. Remote Sensing of Environment, 2019, 231, 111233.	11.0	45
68	A multi-sensor, multi-scale approach to mapping tree mortality in woodland ecosystems. Remote Sensing of Environment, 2020, 245, 111853.	11.0	45
69	Understanding and predicting forest mortality in the western United States using longâ€term forest inventory data and modeled hydraulic damage. New Phytologist, 2021, 230, 1896-1910.	7.3	44
70	Distributed Plant Hydraulic and Hydrological Modeling to Understand the Susceptibility of Riparian Woodland Trees to Droughtâ€Induced Mortality. Water Resources Research, 2018, 54, 4901-4915.	4.2	43
71	Effects of Widespread Droughtâ€Induced Aspen Mortality on Understory Plants. Conservation Biology, 2012, 26, 1082-1090.	4.7	42
72	Precipitation thresholds regulate net carbon exchange at the continental scale. Nature Communications, 2018, 9, 3596.	12.8	39

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73	Leveraging plant hydraulics to yield predictive and dynamic plant leaf allocation in vegetation models with climate change. Global Change Biology, 2019, 25, 4008-4021.	9.5	38
74	Differential declines in Alaskan boreal forest vitality related to climate and competition. Global Change Biology, 2018, 24, 1097-1107.	9.5	37
75	Dependence of Aspen Stands on a Subsurface Water Subsidy: Implications for Climate Change Impacts. Water Resources Research, 2019, 55, 1833-1848.	4.2	36
76	Estimating Global Ecosystem Isohydry/Anisohydry Using Active and Passive Microwave Satellite Data. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 3306-3321.	3.0	34
77	Testing early warning metrics for droughtâ€induced tree physiological stress and mortality. Global Change Biology, 2019, 25, 2459-2469.	9.5	34
78	Wood density and hydraulic traits influence speciesâ€™ growth response to drought across biomes. Global Change Biology, 2022, 28, 3871-3882.	9.5	34
79	Rapid increases in shrubland and forest intrinsic water-use efficiency during an ongoing megadrought. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	34
80	Scaled biomass estimation in woodland ecosystems: Testing the individual and combined capacities of satellite multispectral and lidar data. Remote Sensing of Environment, 2021, 262, 112511.	11.0	33
81	Phylogenetic and biogeographic controls of plant nighttime stomatal conductance. New Phytologist, 2019, 222, 1778-1788.	7.3	32
82	Plant hydraulics play a critical role in Earth system fluxes. New Phytologist, 2020, 226, 1535-1538.	7.3	31
83	Rapid and surprising dieback of Utah juniper in the southwestern USA due to acute drought stress. Forest Ecology and Management, 2021, 480, 118639.	3.2	28
84	Informing Natureâ€based Climate Solutions for the United States with the bestâ€available science. Global Change Biology, 2022, 28, 3778-3794.	9.5	28
85	Opportunities, challenges and pitfalls in characterizing plant waterâ€use strategies. Functional Ecology, 2022, 36, 24-37.	3.6	27
86	The stomatal response to rising CO2 concentration and drought is predicted by a hydraulic trait-based optimization model. Tree Physiology, 2019, 39, 1416-1427.	3.1	25
87	Embolism recovery strategies and nocturnal water loss across species influenced by biogeographic origin. Ecology and Evolution, 2019, 9, 5348-5361.	1.9	25
88	Hillslope Hydrology Influences the Spatial and Temporal Patterns of Remotely Sensed Ecosystem Productivity. Water Resources Research, 2020, 56, e2020WR027630.	4.2	21
89	Optimization theory explains nighttime stomatal responses. New Phytologist, 2021, 230, 1550-1561.	7.3	19
90	Observed and projected climate trends and hotspots across the National Ecological Observatory Network regions. Frontiers in Ecology and the Environment, 2015, 13, 547-552.	4.0	17

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91	Temperature memory and non-structural carbohydrates mediate legacies of a hot drought in trees across the southwestern USA. Tree Physiology, 2022, 42, 71-85.	3.1	17
92	Plant Hydraulic Stress Explained Tree Mortality and Tree Size Explained Beetle Attack in a Mixed Conifer Forest. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 3555-3568.	3.0	16
93	Hot moments in ecosystem fluxes: High GPP anomalies exert outsized influence on the carbon cycle and are differentially driven by moisture availability across biomes. Environmental Research Letters, 2020, 15, 054004.	5.2	16
94	Drought-induced decoupling between carbon uptake and tree growth impacts forest carbon turnover time. Agricultural and Forest Meteorology, 2022, 322, 108996.	4.8	16
95	Awareness of Both Type 1 and 2 Errors in Climate Science and Assessment. Bulletin of the American Meteorological Society, 2014, 95, 1445-1451.	3.3	15
96	Competition and Drought Alter Optimal Stomatal Strategy in Tree Seedlings. Frontiers in Plant Science, 2020, 11, 478.	3.6	15
97	Genetic variation reveals individualâ€level climate tracking across the annual cycle of a migratory bird. Ecology Letters, 2021, 24, 819-828.	6.4	15
98	Coupled wholeâ€tree optimality and xylem hydraulics explain dynamic biomass partitioning. New Phytologist, 2021, 230, 2226-2245.	7.3	15
99	The Ivory Lighthouse: communicating climate change more effectively. Climatic Change, 2010, 101, 655-662.	3.6	13
100	The competitive advantage of a constitutive CAM species over a C₄ grass species under drought and CO₂ enrichment. Ecosphere, 2019, 10, e02721.	2.2	13
101	Temporal controls on crown nonstructural carbohydrates in southwestern US tree species. Tree Physiology, 2021, 41, 388-402.	3.1	12
102	Reconciling carbonâ€cycle processes from ecosystem to global scales. Frontiers in Ecology and the Environment, 2021, 19, 57-65.	4.0	12
103	Moving beyond scientific agreement. Climatic Change, 2010, 101, 331-337.	3.6	11
104	Robust detection of plant species distribution shifts under biased sampling regimes. Ecosphere, 2011, 2, art115.	2.2	10
105	Vegetation, land surface brightness, and temperature dynamics after aspen forest dieâ€off. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 1297-1308.	3.0	9
106	Circadian Regulation Does Not Optimize Stomatal Behaviour. Plants, 2020, 9, 1091.	3.5	8
107	Gambling With the Climate: How Risky of a Bet Are Natural Climate Solutions?. AGU Advances, 2021, 2, e2021AV000490.	5.4	7
108	Reply to Oâ€™Neill and Boykoff: Objective classification of climate experts. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, .	7.1	6

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109	Seasonal and diurnal trends in progressive isotope enrichment along needles in two pine species. Plant, Cell and Environment, 2021, 44, 143-155.	5.7	6
110	Turgor-driven tree growth: scaling-up sink limitations from the cell to the forest. Tree Physiology, 2022, 42, 225-228.	3.1	6
111	Response of a facultative CAM plant and its competitive relationship with a grass to changes in rainfall regime. Plant and Soil, 2018, 427, 321-333.	3.7	5
112	Calibration Strategies for Detecting Macroscale Patterns in NEON Atmospheric Carbon Isotope Observations. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2020JG005862.	3.0	4
113	The NEON Daily Isotopic Composition of Environmental Exchanges Dataset. Scientific Data, 2022, 9, .	5.3	4
114	Heterogeneous isotope effects decouple conifer leaf and branch sugar Î´18O and Î´13C. Oecologia, 2022, 198, 357-370.	2.0	2
115	Reply to Aarstad: Risk management versus "truth". Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, E177-E177.	7.1	1
116	Testing the effects of species interactions and water limitation on tree seedling biomass allocation and physiology. Tree Physiology, 2021, 41, 1323-1335.	3.1	1
117	Reply to Bodenstein: Contextual data about the relative scale of opposing scientific communities. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, E189-E189.	7.1	0