Michael S Watt

List of Publications by Year
in descending order

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134	3,286	147801	223800
papers	citations	31 h-index	46 g-index

135	135	135	3552
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Assessing very high resolution UAV imagery for monitoring forest health during a simulated disease outbreak. ISPRS Journal of Photogrammetry and Remote Sensing, 2017, 131, 1-14.	11.1	249
2	Influence of initial planting spacing and genotype on microfibril angle, wood density, fibre properties and modulus of elasticity in Pinus radiata D. Don corewood. Forest Ecology and Management, 2009, 258, 1924-1931.	3.2	103
3	The hosts and potential geographic range of Dothistroma needle blight. Forest Ecology and Management, 2009, 257, 1505-1519.	3.2	97
4	UAV Multispectral Imagery Can Complement Satellite Data for Monitoring Forest Health. Remote Sensing, 2018, 10, 1216.	4.0	79
5	The effects of genotype and spacing on Pinus radiata [D. Don] corewood stiffness in an 11-year old experiment. Forest Ecology and Management, 2005, 205, 375-383.	3.2	76
6	The influence of weed competition for light and water on growth and dry matter partitioning of young Pinus radiata, at a dryland site. Forest Ecology and Management, 2003, 183, 363-376.	3.2	70
7	Modelling the influence of stand structural, edaphic and climatic influences on juvenile Pinus radiata dynamic modulus of elasticity. Forest Ecology and Management, 2006, 229, 136-144.	3.2	61
8	Dothistroma needle blight and pitch canker: the current and future potential distribution of two important diseases of Pinus species. Canadian Journal of Forest Research, 2011, 41, 412-424.	1.7	56
9	A global climatic risk assessment of pitch canker disease. Canadian Journal of Forest Research, 2009, 39, 2246-2256.	1.7	53
10	Comparison of high-density LiDAR and satellite photogrammetry for forest inventory. ISPRS Journal of Photogrammetry and Remote Sensing, 2018, 142, 257-267.	11.1	52
11	The influence of nitrogen and phosphorus supply and genotype on mesophyll conductance limitations to photosynthesis in Pinus radiata. Tree Physiology, 2009, 29, 1143-1151.	3.1	50
12	Development of models to predict Pinus radiata productivity throughout New Zealand. Canadian Journal of Forest Research, 2010, 40, 488-499.	1.7	50
13	Phenotyping Whole Forests Will Help to Track Genetic Performance. Trends in Plant Science, 2018, 23, 854-864.	8.8	50
14	Early Detection of Invasive Exotic Trees Using UAV and Manned Aircraft Multispectral and LiDAR Data. Remote Sensing, 2019, 11, 1812.	4.0	50
15	Ecosystem carbon accretion 10 years after afforestation of depleted subhumid grassland planted with three densities of Pinus nigra. Global Change Biology, 2007, 13, 1414-1422.	9.5	49
16	What determines pine naturalization: species traits, climate suitability or forestry use?. Diversity and Distributions, 2012, 18, 1013-1023.	4.1	49
17	Above-ground biomass accumulation and nitrogen fixation of broom (Cytisus scoparius L.) growing with juvenile Pinus radiata on a dryland site. Forest Ecology and Management, 2003, 184, 93-104.	3.2	46
18	Modeling growth response to soil water availability simulated by HYDRUS for a mature triploid Populus tomentosa plantation located on the North China Plain. Agricultural Water Management, 2016, 176, 243-254.	5.6	46

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19	Modelling the influence of weed competition on the growth of young Pinus radiata at a dryland site. Forest Ecology and Management, 2003, 178, 271-286.	3.2	44
20	Moving beyond simple linear allometric relationships between tree height and diameter. Ecological Modelling, 2011, 222, 3910-3916.	2.5	44
21	Optimising prediction of forest leaf area index from discrete airborne lidar. Remote Sensing of Environment, 2017, 200, 220-239.	11.0	44
22	Defining sustainability of plantation forests through identification of site quality indicators influencing productivityâ€"A national view for New Zealand. Forest Ecology and Management, 2005, 216, 51-63.	3.2	42
23	Influence of initial stand density and genotype on longitudinal variation in modulus of elasticity for 17-year-old Pinus radiata. Forest Ecology and Management, 2007, 252, 67-72.	3.2	41
24	The Invasive Buddleja davidii (Butterfly Bush). Botanical Review, The, 2009, 75, 292-325.	3.9	41
25	Detecting and mapping tree seedlings in UAV imagery using convolutional neural networks and field-verified data. ISPRS Journal of Photogrammetry and Remote Sensing, 2020, 168, 156-169.	11.1	38
26	The potential global distribution of the invasive weed Nassella neesiana under current and future climates. Biological Invasions, 2012, 14, 1545-1556.	2.4	37
27	Use of regression kriging to develop a Carbon:Nitrogen ratio surface for New Zealand. Geoderma, 2012, 183-184, 49-57.	5.1	36
28	Future wood productivity of <scp>P</scp>inus radiata in <scp>N</scp>ew <scp>Z</scp>ealand under expected climatic changes. Global Change Biology, 2012, 18, 1342-1356.	9.5	36
29	Linking Climate Suitability, Spread Rates and Host-Impact When Estimating the Potential Costs of Invasive Pests. PLoS ONE, 2013, 8, e54861.	2.5	35
30	Influence of tree morphology, genetics, and initial stand density on outerwood modulus of elasticity of 17-year-old Pinus radiata. Forest Ecology and Management, 2007, 244, 86-92.	3.2	33
31	Identification of key soil indicators influencing plantation productivity and sustainability across a national trial series in New Zealand. Forest Ecology and Management, 2008, 256, 180-190.	3.2	33
32	Use of a process-based model to describe spatial variation in Pinus radiata productivity in New Zealand. Forest Ecology and Management, 2011, 262, 1008-1019.	3.2	33
33	Assessing corewood acoustic velocity and modulus of elasticity with two impact based instruments in 11-year-old trees from a clonal-spacing experiment of Pinus radiata D. Don. Forest Ecology and Management, 2007, 239, 217-221.	3.2	32
34	Influence of ammonium and nitrate supply on growth, dry matter partitioning, N uptake and photosynthetic capacity of Pinus radiata seedlings. Trees - Structure and Function, 2010, 24, 1097-1107.	1.9	32
35	Comparing parametric and non-parametric methods of predicting Site Index for radiata pine using combinations of data derived from environmental surfaces, satellite imagery and airborne laser scanning. Forest Ecology and Management, 2015, 357, 1-9.	3.2	32
36	A comparison of UAV laser scanning, photogrammetry and airborne laser scanning for precision inventory of small-forest properties. Forestry, 2020, 93, 150-162.	2.3	32

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37	Partititioning concurrent influences of nitrogen and phosphorus supply on photosynthetic model parameters of Pinus radiata. Tree Physiology, 2007, 27, 335-344.	3.1	30
38	An Assessment of High-Density UAV Point Clouds for the Measurement of Young Forestry Trials. Remote Sensing, 2020, 12, 4039.	4.0	29
39	Influence of the main and interactive effects of site, stand stocking and clone on Pinus radiata D. Don corewood modulus of elasticity. Forest Ecology and Management, 2008, 255, 3455-3459.	3.2	27
40	Development of a hydrothermal time seed germination model which uses the Weibull distribution to describe base water potential. Ecological Modelling, 2010, 221, 1267-1272.	2.5	27
41	Influence of stocking on radial and longitudinal variation in modulus of elasticity, microfibril angle, and density in a 24-year-old Pinus radiata thinning trial. Canadian Journal of Forest Research, 2011, 41, 1422-1431.	1.7	27
42	A survey of herbicide use and a review of environmental fate in New Zealand planted forests. New Zealand Journal of Forestry Science, 2013, 43, 17.	0.8	27
43	Development of a national model of Pinus radiata stand volume from lidar metrics for New Zealand. International Journal of Remote Sensing, 2013, 34, 5892-5904.	2.9	27
44	A process-based population dynamics model to explore target and non-target impacts of a biological control agent. Ecological Modelling, 2009, 220, 2035-2050.	2.5	26
45	Key features of the seed germination response to high temperatures. New Phytologist, 2012, 196, 332-336.	7.3	25
46	Comparison of optical LAI measurements under diffuse and clear skies after correcting for scattered radiation. Agricultural and Forest Meteorology, 2016, 221, 61-70.	4.8	25
47	Characterising forest structure using combinations of airborne laser scanning data, RapidEye satellite imagery and environmental variables. Forestry, 2016, 89, 159-169.	2.3	25
48	Wood properties of juvenile Pinus radiata growing in the presence and absence of competing understorey vegetation at a dryland site. Trees - Structure and Function, 2005, 19, 580-586.	1.9	23
49	Predicting the spatial distribution of Cupressus lusitanica productivity in New Zealand. Forest Ecology and Management, 2009, 258, 217-223.	3.2	23
50	Predicting the severity of Swiss needle cast on Douglas-fir under current and future climate in New Zealand. Forest Ecology and Management, 2010, 260, 2232-2240.	3.2	23
51	Taking a closer look at invasive alien plant research: A review of the current state, opportunities, and future directions for UAVs. Methods in Ecology and Evolution, 2019, 10, 2020-2033.	5.2	23
52	Advances in modelling and decision support systems for vegetation management in young forest plantations. Forestry, 2006, 79, 29-42.	2.3	22
53	Modelling the influence of predicted future climate change on the risk of wind damage within New Zealand's planted forests. Global Change Biology, 2015, 21, 3021-3035.	9.5	22
54	Assessment of multiple climate change effects on plantation forests in New Zealand. Forestry, 2019, 92, 1-15.	2.3	22

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55	Application of remote sensing technologies to identify impacts of nutritional deficiencies on forests. ISPRS Journal of Photogrammetry and Remote Sensing, 2019, 149, 226-241.	11.1	22
56	Development of a model describing modulus of elasticity across environmental and stand density gradients in plantation-grown Pinus radiata within New Zealand. Canadian Journal of Forest Research, 2010, 40, 1558-1566.	1.7	21
57	Use of LiDAR to estimate stand characteristics for thinning operations in young Douglas-fir plantations. New Zealand Journal of Forestry Science, 2013, 43, 18.	0.8	21
58	Comparison of models describing forest inventory attributes using standard and voxel-based lidar predictors across a range of pulse densities. International Journal of Applied Earth Observation and Geoinformation, 2019, 78, 341-351.	2.8	21
59	Forest-Scale Phenotyping: Productivity Characterisation Through Machine Learning. Frontiers in Plant Science, 2020, 11, 99.	3.6	21
60	Testing a juvenile tree growth model sensitive to competition from weeds, using Pinus radiata at two contrasting sites in New Zealand. Canadian Journal of Forest Research, 2004, 34, 1985-1992.	1.7	20
61	Modelling Environmental Variation in Young's Modulus for Pinus radiata and Implications for Determination of Critical Buckling Height. Annals of Botany, 2006, 98, 765-775.	2.9	20
62	Soil quality relationships with tree growth in exotic forests in New Zealand. Forest Ecology and Management, 2009, 258, 2326-2334.	3.2	20
63	Increased risk of pitch canker to Australasia under climate change. Australasian Plant Pathology, 2011, 40, 228-237.	1.0	20
64	Modelling variation in Pinus radiata stem volume and outerwood stress-wave velocity from LiDAR metrics. New Zealand Journal of Forestry Science, 2013, 43, 1.	0.8	20
65	The influence of LiDAR pulse density on the precision of inventory metrics in young unthinned Douglas-fir stands during initial and subsequent LiDAR acquisitions. New Zealand Journal of Forestry Science, 2014, 44, .	0.8	20
66	Spatial prediction of optimal final stand density for even-aged plantation forests using productivity indices. Canadian Journal of Forest Research, 2017, 47, 527-535.	1.7	20
67	Climate Change and the Potential Global Distribution of Serrated Tussock (<i>Nassella) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50	1.5	19
68	Predicting the severity of Dothistroma on Pinus radiata under current climate in New Zealand. Forest Ecology and Management, 2011, 261, 1792-1798.	3.2	19
69	How robust is the Australian Weed Risk Assessment protocol? A test using pine invasions in the Northern and Southern hemispheres. Biological Invasions, 2012, 14, 987-998.	2.4	19
70	Using hyperspectral plant traits linked to photosynthetic efficiency to assess N and P partition. ISPRS Journal of Photogrammetry and Remote Sensing, 2020, 169, 406-420.	11.1	19
71	Relationships between soil and foliar nutrients in young densely planted mini-plots of Pinus radiata and Cupressus lusitanica. Forest Ecology and Management, 2007, 240, 122-130.	3.2	18
72	Maximising biodiversity in plantation forests: Insights from long-term changes in clearfell-sensitive beetles in a Pinus radiata plantation. Biological Conservation, 2011, 144, 2842-2850.	4.1	18

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73	Predicting the severity of Cyclaneusma minus on Pinus radiata under current climate in New Zealand. Canadian Journal of Forest Research, 2012, 42, 667-674.	1.7	17
74	Use of advanced modelling methods to estimate radiata pine productivity indices. Forest Ecology and Management, 2021, 479, 118557.	3.2	17
75	Modelling the influence of stand structural, edaphic and climatic influences on juvenile Pinus radiata fibre length. Forest Ecology and Management, 2008, 254, 166-177.	3.2	16
76	The influence of N and P supply and genotype on carbon flux and partitioning in potted Pinus radiata plants. Tree Physiology, 2009, 29, 857-868.	3.1	16
77	Monitoring biochemical limitations to photosynthesis in N and P-limited radiata pine using plant functional traits quantified from hyperspectral imagery. Remote Sensing of Environment, 2020, 248, 112003.	11.0	16
78	Modelling the influence of environment and stand characteristics on basic density and modulus of elasticity for young Pinus radiata and Cupressus lusitanica. Forest Ecology and Management, 2008, 255, 1023-1033.	3.2	15
79	Determining the main and interactive effect of age and clone on wood density, microfibril angle, and modulus of elasticity for Pinus radiata. Canadian Journal of Forest Research, 2010, 40, 1550-1557.	1.7	15
80	Stand variation in Pinus radiata and its relationship with allometric scaling and critical buckling height. Annals of Botany, 2013, 111, 675-680.	2.9	15
81	Adsorption of the herbicide terbuthylazine across a range of New Zealand forestry soils. Canadian Journal of Forest Research, 2010, 40, 1448-1457.	1.7	14
82	The potential cost of environmental certification to vegetation management in plantation forests: a New Zealand case study. Canadian Journal of Forest Research, 2011, 41, 986-993.	1.7	14
83	Combining Airborne Laser Scanning and Aerial Imagery Enhances Echo Classification for Invasive Conifer Detection. Remote Sensing, 2017, 9, 156.	4.0	14
84	The impact of defoliation on nitrogen translocation patterns in the woody invasive plant, Buddleia davidii. Functional Plant Biology, 2008, 35, 462.	2.1	13
85	Using a climatic niche model to predict the direct and indirect impacts of climate change on the distribution of <scp>D</scp>ouglasâ€fir in <scp>N</scp>ew <scp>Z</scp>ealand. Global Change Biology, 2011, 17, 3608-3619.	9.5	13
86	The influence of LiDAR pulse density and plot size on the accuracy of New Zealand plantation stand volume equations. New Zealand Journal of Forestry Science, 2013, 43, 15.	0.8	13
87	Multi-sensor modelling of a forest productivity index for radiata pine plantations. New Zealand Journal of Forestry Science, 2016, 46, .	0.8	13
88	Effect of stem guying on the incidence of resin pockets. Forest Ecology and Management, 2009, 258, 1913-1917.	3.2	12
89	Using species niche models to inform strategic management of weeds in a changing climate. Biological Invasions, 2010, 12, 3711-3725.	2.4	12
90	Environmental fate of terbuthylazine and hexazinone in a New Zealand planted forest Pumice soil. Forest Ecology and Management, 2015, 337, 67-76.	3.2	12

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91	A Novel Approach to Modelling Stand-Level Growth of an Even-Aged Forest Using a Volume Productivity Index with Application to New Zealand-Grown Coast Redwood. Forests, 2021, 12, 1155.	2.1	12
92	Growth, biomass, leaf area and water-use efficiency of juvenile Pinus radiata in response to water deficits. New Zealand Journal of Forestry Science, 2015, 45, .	0.8	11
93	Calibrated tree counting on remotely sensed images of planted forests. International Journal of Remote Sensing, 2015, 36, 3819-3836.	2.9	11
94	The economic impact of optimising final stand density for structural saw log production on the value of the New Zealand plantation estate. Forest Ecology and Management, 2017, 406, 361-369.	3.2	11
95	Deep Learning and Phenology Enhance Large-Scale Tree Species Classification in Aerial Imagery during a Biosecurity Response. Remote Sensing, 2021, 13, 1789.	4.0	11
96	Long-term effects of water stress on hyperspectral remote sensing indicators in young radiata pine. Forest Ecology and Management, 2021, 502, 119707.	3.2	11
97	Modelling the influence of weed competition on growth of young Pinus radiata. Development and parameterization of a hybrid model across an environmental gradient. Canadian Journal of Forest Research, 2007, 37, 607-616.	1.7	10
98	Characterising prediction error as a function of scale in spatial surfaces of tree productivity. New Zealand Journal of Forestry Science, 2017, 47, .	0.8	10
99	Preprocessing Ground-Based Visible/Near Infrared Imaging Spectroscopy Data Affected by Smile Effects. Sensors, 2019, 19, 1543.	3.8	10
100	Using seasonal measurements to inform ecophysiology: extracting cardinal growth temperatures for process-based growth models of five Eucalyptus species/crosses from simple field trials. New Zealand Journal of Forestry Science, 2014, 44, .	0.8	9
101	Reducing the Uncertainty of Radiata Pine Site Index Maps Using an Spatial Ensemble of Machine Learning Models. Forests, 2021, 12, 77.	2.1	9
102	Use of advanced modelling methods to predict dothistroma needle blight on Pinus radiata at a fine resolution within New Zealand. Forest Ecology and Management, 2021, 492, 119226.	3.2	9
103	The Potential Global Distribution of Tall Buttercup (Ranunculus acris ssp. acris): Opposing Effects of Irrigation and Climate Change. Weed Science, 2013, 61, 230-238.	1.5	8
104	Relative persistence of commonly used forestry herbicides for preventing the establishment of broom (Cytisus scoparius) seedlings in New Zealand plantations. New Zealand Journal of Forestry Science, 2015, 45, .	0.8	8
105	Hyperspectral VNIR-spectroscopy and imagery as a tool for monitoring herbicide damage in wilding conifers. Biological Invasions, 2019, 21, 3395-3413.	2.4	8
106	Comparing volume productivity of redwood and radiata pine plantations in New Zealand. Forest Ecology and Management, 2021, 500, 119628.	3.2	8
107	Nitrogen leaching after fertilising young Pinus radiata plantations in New Zealand. Forest Ecology and Management, 2012, 280, 20-30.	3.2	7
108	Dense wilding conifer control with aerially applied herbicides in New Zealand. New Zealand Journal of Forestry Science, 2014, 44, 4.	0.8	7

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109	Chlorophyll fluorescence response of Pinus radiata clones to nitrogen and phosphorus supply. Ciencia E Investigacion Agraria, 2009, 36, .	0.2	7
110	Potential for Cleopus japonicus to control the weed Buddleja davidii in plantation forests in New Zealand. Forest Ecology and Management, 2011, 261, 78-83.	3.2	6
111	Soil C/N influences the carbon flux and partitioning in control and fertilized mini-plots of Pinus radiata in New Zealand. Ciencia E Investigacion Agraria, 2011, 38, 277-289.	0.2	6
112	Differences in intra-tree variation in spiral grain angle for radiata pine. New Zealand Journal of Forestry Science, 2013, 43, 12.	0.8	6
113	Modelling the influence of environment on juvenile modulus of elasticity in Pinus radiata grown in Chile. Forest Ecology and Management, 2017, 400, 238-245.	3.2	6
114	Use of remotely sensed data to characterize weed competition in forest plantations. International Journal of Remote Sensing, 2017, 38, 2448-2463.	2.9	6
115	Comparison of TanDEM-X InSAR data and high-density ALS for the prediction of forest inventory attributes in plantation forests with steep terrain. Remote Sensing of Environment, 2020, 246, 111833.	11.0	6
116	Spatial comparisons of carbon sequestration for redwood and radiata pine within New Zealand. Forest Ecology and Management, 2022, 513, 120190.	3.2	6
117	Modelling between tree and longitudinal variation in green density within Pinus radiata: implications for estimation of MOE by acoustic methods. New Zealand Journal of Forestry Science, 2014, 44, .	0.8	5
118	Assessment of herbicides for selectively controlling broom (Cytisus scoparius) growing with radiata pine (Pinus radiata) in New Zealand. New Zealand Journal of Forestry Science, 2016, 46, .	0.8	5
119	Wood Properties of Juvenile and Mature Wood of Pinus radiata D. Don Trees Growing on Contrasting Sites in Chile. Forest Science, 2017, 63, 184-191.	1.0	5
120	Herbicides for use in management of certifiedPinus radiataplantations in New Zealand. Australian Forestry, 2014, 77, 123-132.	0.9	4
121	Aerial spot treatment using an oil carrier to apply ester based herbicides for control of Pinus contorta and P. nigra in New Zealand. New Zealand Journal of Forestry Science, 2014, 44, .	0.8	4
122	Modelling water balance in fertilised and unfertilised Cupressus lusitanica and Pinus radiata grown across an environmental gradient. Forest Ecology and Management, 2008, 255, 1104-1112.	3.2	3
123	The evaluation of aerially applied triclopyr mixtures for the control of dense infestations of wilding Pinus contorta in New Zealand. New Zealand Journal of Forestry Science, 2015, 45, .	0.8	3
124	Development of a generic model describing modulus of elasticity of Pinus radiata in Chile and New Zealand. Forest Ecology and Management, 2019, 453, 117583.	3.2	3
125	Improved nutritional status of Cupressus lusitanica when grown adjacent to Pinus radiata. Canadian Journal of Forest Research, 2009, 39, 882-887.	1.7	2
126	Development of regional models of Pinus radiata height from GIS spatial data supported with supplementary satellite imagery. New Zealand Journal of Forestry Science, 2013, 43, 11.	0.8	2

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127	STEM AND SOIL CO2 Efflux Responses Of Pinus radiata PLANTATIONS TO TEMPERATURE, SEASON, AGE, TIME (DAY/NIGHT) AND FERTILIZATION. Ciencia E Investigacion Agraria, 2016, 43, 9-9.	0.2	2
128	Environmental fate of terbuthylazine and hexazinone in a planted forest steepland Recent Soil, New Zealand. New Zealand Journal of Forestry Science, 2016, 46, .	0.8	2
129	Herbicide options for managing competitive vegetation during the establishment of Pinus radiata and Pseudotsuga menziesii var. menziesii in Southland, New Zealand. New Zealand Journal of Forestry Science, 2017, 47, .	0.8	2
130	Modelling the influence of environment on basic density of the juvenile wood for Pinus radiata grown in Chile. Forest Ecology and Management, 2019, 448, 112-118.	3.2	2
131	Suppression by three grass species of broom seedling emergence and survival. New Zealand Plant Protection, 0, 71, 57-65.	0.3	2
132	Influence of stand and site conditions on the quality of digital elevation models underlying New Zealand forests. New Zealand Journal of Forestry Science, 2013, 43, 5.	0.8	1
133	The influence of N and P supply and genotype on N remobilization in containerized Pinus radiata plants. Ciencia E Investigacion Agraria, 2012, 39, 505-520.	0.2	1
134	A potential nutritional modifier for predicting primary productivity of Pinus radiata in New Zealand using a simplified radiation-use efficiency model. Ciencia E Investigacion Agraria, 2013, 40, 361-374.	0.2	0