Heidi M Nepf

List of Publications by Year
in descending order

120	11,211	36271 51	29127 104
papers	citations	h-index	g-index

121	121	121	3648
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Drag, turbulence, and diffusion in flow through emergent vegetation. Water Resources Research, 1999, 35, 479-489.	1.7	1,019
2	Flow and Transport in Regions with Aquatic Vegetation. Annual Review of Fluid Mechanics, 2012, 44, 123-142.	10.8	721
3	Flow structure in depth-limited, vegetated flow. Journal of Geophysical Research, 2000, 105, 28547-28557.	3.3	637
4	Mixing layers and coherent structures in vegetated aquatic flows. Journal of Geophysical Research, 2002, 107, 3-1.	3.3	463
5	Hydrodynamics of vegetated channels. Journal of Hydraulic Research/De Recherches Hydrauliques, 2012, 50, 262-279.	0.7	430
6	Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders. Journal of Hydraulic Engineering, 2008, 134, 34-41.	0.7	360
7	The Structure of the Shear Layer in Flows over Rigid and Flexible Canopies. Environmental Fluid Mechanics, 2006, 6, 277-301.	0.7	303
8	The limited growth of vegetated shear layers. Water Resources Research, 2004, 40, .	1.7	271
9	Flowâ€induced reconfiguration of buoyant and flexible aquatic vegetation. Limnology and Oceanography, 2011, 56, 2003-2017.	1.6	270
10	Flow and transport in channels with submerged vegetation. Acta Geophysica, 2008, 56, 753-777.	1.0	257
11	Prediction of velocity profiles and longitudinal dispersion in salt marsh vegetation. Limnology and Oceanography, 2006, 51, 218-228.	1.6	227
12	Retention time and dispersion associated with submerged aquatic canopies. Water Resources Research, 2007, 43, .	1.7	217
13	Shear instability and coherent structures in shallow flow adjacent to a porous layer. Journal of Fluid Mechanics, 2007, 593, 1-32.	1.4	210
14	Interaction between flow, transport and vegetation spatial structure. Environmental Fluid Mechanics, 2008, 8, 423-439.	0.7	208
15	Flow and deposition in and around a finite patch of vegetation. Geomorphology, 2010, 116, 363-372.	1.1	208
16	Lateral dispersion in random cylinder arrays at high Reynolds number. Journal of Fluid Mechanics, 2008, 600, 339-371.	1.4	173
17	A model for diffusion within emergent vegetation. Limnology and Oceanography, 1997, 42, 1735-1745.	1.6	172
18	Vortex development behind a finite porous obstruction in a channel. Journal of Fluid Mechanics, 2012, 691, 368-391.	1.4	171

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19	From the blade scale to the reach scale: A characterization of aquatic vegetative drag. Advances in Water Resources, 2013, 51, 305-316.	1.7	162
20	A vortexâ€based model of velocity and shear stress in a partially vegetated shallow channel. Water Resources Research, 2008, 44, .	1.7	160
21	Model and laboratory study of dispersion in flows with submerged vegetation. Water Resources Research, 2007, 43, .	1.7	158
22	Flow adjustment and interior flow associated with a rectangular porous obstruction. Journal of Fluid Mechanics, 2011, 680, 636-659.	1.4	157
23	Mass Transport in Vegetated Shear Flows. Environmental Fluid Mechanics, 2005, 5, 527-551.	0.7	152
24	The wake structure behind a porous obstruction and its implications for deposition near a finite patch of emergent vegetation. Water Resources Research, 2012, 48, .	1.7	150
25	Waveâ€induced velocities inside a model seagrass bed. Journal of Geophysical Research, 2010, 115, .	3.3	142
26	Flow adjustment at the leading edge of a submerged aquatic canopy. Water Resources Research, 2013, 49, 5537-5551.	1.7	125
27	Sediment deposition within and around a finite patch of model vegetation over a range of channel velocity. Water Resources Research, 2016, 52, 600-612.	1.7	123
28	Observations of particle capture on a cylindrical collector: Implications for particle accumulation and removal in aquatic systems. Limnology and Oceanography, 2004, 49, 76-85.	1.6	121
29	Sediment patterns near a model patch of reedy emergent vegetation. Geomorphology, 2012, 179, 141-151.	1.1	119
30	Effect of a seagrass (Posidonia oceanica) meadow on wave propagation. Marine Ecology - Progress Series, 2012, 456, 63-72.	0.9	115
31	Spatial distribution of deposition within a patch of vegetation. Water Resources Research, 2011, 47, .	1.7	114
32	Scalar transport in random cylinder arrays at moderate Reynolds number. Journal of Fluid Mechanics, 2003, 487, 43-79.	1.4	109
33	Mean and turbulent velocity fields near rigid and flexible plants and the implications for deposition. Journal of Geophysical Research F: Earth Surface, 2013, 118, 2585-2599.	1.0	108
34	A study of model bivalve siphonal currents. Limnology and Oceanography, 1990, 35, 680-696.	1.6	107
35	Effects of Added Vegetation on Sand Bar Stability and Stream Hydrodynamics. Journal of Hydraulic Engineering, 2010, 136, 994-1002.	0.7	104
36	The onset of sediment transport in vegetated channels predicted by turbulent kinetic energy. Geophysical Research Letters, 2016, 43, 11,261.	1.5	96

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37	Breaking criteria and energy losses for three-dimensional wave breaking. Journal of Geophysical Research, 2002, 107, 41-1.	3.3	90
38	Vertical secondary flows in submersed plantâ€like arrays. Limnology and Oceanography, 1999, 44, 1072-1080.	1.6	88
39	Interaction between neighboring vegetation patches: Impact on flow and deposition. Water Resources Research, 2014, 50, 3809-3825.	1.7	81
40	Wave damping by flexible vegetation: Connecting individual blade dynamics to the meadow scale. Coastal Engineering, 2019, 147, 138-148.	1.7	74
41	Aquatic interfaces: a hydrodynamic and ecological perspective. Journal of Hydraulic Research/De Recherches Hydrauliques, 2014, 52, 744-758.	0.7	73
42	Seagrass blade motion under waves and its impact on wave decay. Journal of Geophysical Research: Oceans, 2017, 122, 3736-3752.	1.0	73
43	Prediction of near-field shear dispersion in an emergent canopy with heterogeneous morphology. Environmental Fluid Mechanics, 2006, 6, 477-488.	0.7	70
44	Estimation of the bed shear stress in vegetated and bare channels with smooth beds. Water Resources Research, 2015, 51, 3647-3663.	1.7	68
45	Laboratory observations of mean flows under surface gravity waves. Journal of Fluid Mechanics, 2007, 573, 131-147.	1.4	67
46	Shallow Flows Over a Permeable Medium: The Hydrodynamics of Submerged Aquatic Canopies. Transport in Porous Media, 2009, 78, 309-326.	1.2	67
47	Flow patterns around two neighboring patches of emergent vegetation and possible implications for deposition and vegetation growth. Environmental Fluid Mechanics, 2015, 15, 881-898.	0.7	64
48	Vortex Structure and Sediment Deposition in the Wake behind a Finite Patch of Model Submerged Vegetation. Journal of Hydraulic Engineering, 2018, 144, .	0.7	64
49	A Turbulenceâ€Based Bedâ€Load Transport Model for Bare and Vegetated Channels. Geophysical Research Letters, 2018, 45, 10,428.	1.5	60
50	Impact of Vegetation on Bed Load Transport Rate and Bedform Characteristics. Water Resources Research, 2019, 55, 6109-6124.	1.7	58
51	Shallow Flows Over a Permeable Medium: The Hydrodynamics of Submerged Aquatic Canopies. Transport in Porous Media, 2009, 78, 385-402.	1.2	56
52	Observations of shortâ€circuiting flow paths within a freeâ€surface wetland in Augusta, Georgia, U.S.A.. Limnology and Oceanography, 2008, 53, 1040-1053.	1.6	54
53	Gravity currents in aquatic canopies. Water Resources Research, 2005, 41, .	1.7	51
54	A Comparison of Two- and Three-Dimensional Wave Breaking. Journal of Physical Oceanography, 1998, 28, 1496-1510.	0.7	50

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55	Field observations of waveâ€induced streaming through a submerged seagrass (<i>Posidonia) Tj ETQq1 1 0.784314 rgBT /Overlock 1	1.0	48
56	Turbulent Kinetic Energy in Submerged Model Canopies Under Oscillatory Flow. Water Resources Research, 2018, 54, 1734-1750.	1.7	47
57	Velocity and Drag Evolution From the Leading Edge of a Model Mangrove Forest. Journal of Geophysical Research: Oceans, 2017, 122, 9144-9159.	1.0	45
58	Impact of height heterogeneity on canopy turbulence. Journal of Fluid Mechanics, 2017, 813, 1176-1196.	1.4	44
59	How vegetation in flows modifies the turbulent mixing and spreading of jets. Scientific Reports, 2017, 7, 6587.	1.6	43
60	From patch to channel scale: The evolution of emergent vegetation in a channel. Advances in Water Resources, 2019, 129, 131-145.	1.7	38
61	Capillary Interception of Floating Particles by Surface-Piercing Vegetation. Physical Review Letters, 2013, 111, 164501.	2.9	34
62	Turbulence and Bed Load Transport in Channels With Randomly Distributed Emergent Patches of Model Vegetation. Geophysical Research Letters, 2020, 47, e2020GL087055.	1.5	34
63	Blade dynamics in combined waves and current. Journal of Fluids and Structures, 2019, 87, 137-149.	1.5	33
64	Wake structure and sediment deposition behind models of submerged vegetation with and without flexible leaves. Advances in Water Resources, 2018, 118, 28-38.	1.7	32
65	Densityâ€driven exchange flow between open water and an aquatic canopy. Water Resources Research, 2008, 44, .	1.7	31
66	Exchange flow between open water and floating vegetation. Environmental Fluid Mechanics, 2011, 11, 531-546.	0.7	31
67	The motion of kelp blades and the surface renewal model. Limnology and Oceanography, 2011, 56, 1453-1462.	1.6	30
68	Measured and Predicted Turbulent Kinetic Energy in Flow Through Emergent Vegetation With Real Plant Morphology. Water Resources Research, 2020, 56, e2020WR027892.	1.7	29
69	Momentum and Energy Predict the Backwater Rise Generated by a Large Wood Jam. Geophysical Research Letters, 2020, 47, e2020GL089346.	1.5	29
70	Capillary trapping of buoyant particles within regions of emergent vegetation. Water Resources Research, 2012, 48, .	1.7	28
71	Strong and weak, unsteady reconfiguration and its impact on turbulence structure within plant canopies. Physics of Fluids, 2014, 26, .	1.6	28
72	Impact of Stem Size on Turbulence and Sediment Resuspension Under Unidirectional Flow. Water Resources Research, 2021, 57, e2020WR028620.	1.7	28

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73	Thermally driven exchange flow between open water and an aquatic canopy. Journal of Fluid Mechanics, 2009, 632, 227-243.	1.4	27
74	Large eddy simulation of flow and scalar transport in a vegetated channel. Environmental Fluid Mechanics, 2017, 17, 497-519.	0.7	27
75	The role of patch size in ecosystem engineering capacity: a case study of aquatic vegetation. Aquatic Sciences, 2019, 81, 1.	0.6	27
76	Comparison of drag and velocity in model mangrove forests with random and in-line tree distributions. Journal of Hydrology, 2019, 568, 735-746.	2.3	27
77	Modeling the hydraulic effect of transverse deep zones on the performance of short-circuiting constructed treatment wetlands. Ecological Engineering, 2009, 35, 754-768.	1.6	25
78	Floating treatment islands in series along a channel: The impact of island spacing on the velocity field and estimated mass removal.. Advances in Water Resources, 2019, 129, 222-231.	1.7	25
79	Breaker-generated turbulence in and above a seagrass meadow. Continental Shelf Research, 2012, 49, 1-9.	0.9	24
80	Effects of blade flexural rigidity on drag force and mass transfer rates in model blades. Limnology and Oceanography, 2014, 59, 2028-2041.	1.6	24
81	Impact of Vegetationâ€Generated Turbulence on the Critical, Nearâ€Bed, Waveâ€Velocity for Sediment Resuspension. Water Resources Research, 2019, 55, 5904-5917.	1.7	24
82	Turbulence and Particle Deposition Under Steady Flow Along a Submerged Seagrass Meadow. Journal of Geophysical Research: Oceans, 2020, 125, e2019JC015985.	1.0	24
83	Influence of particle size and density, and channel velocity on the deposition patterns around a circular patch of model emergent vegetation. Water Resources Research, 2016, 52, 1044-1055.	1.7	23
84	The production of chemical heterogeneity in Upper Mystic Lake. Limnology and Oceanography, 2000, 45, 1647-1654.	1.6	22
85	Mixing in deep zones within constructed treatment wetlands. Ecological Engineering, 2007, 29, 209-220.	1.6	21
86	Vegetation wakes and wake interaction shaping aquatic landscape evolution. Limnology & Oceanography Fluids & Environments, 2014, 4, 106-119.	1.7	21
87	Flowâ€induced reconfiguration of aquatic plants, including the impact of leaf sheltering. Limnology and Oceanography, 2020, 65, 2697-2712.	1.6	21
88	Evolution of flow velocity from the leading edge of 2-D and 3-D submerged canopies. Journal of Fluid Mechanics, 2021, 916, .	1.4	21
89	Exchange flow between a canopy and open water. Journal of Fluid Mechanics, 2008, 611, 237-254.	1.4	20
90	Wave-induced reconfiguration of and drag on marsh plants. Journal of Fluids and Structures, 2021, 100, 103192.	1.5	19

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91	Impact of current speed on mass flux to a model flexible seagrass blade. Journal of Geophysical Research: Oceans, 2016, 121, 4763-4776.	1.0	16
92	A numerical study of the effect of wetland shape and inlet-outlet configuration on wetland performance. Ecological Engineering, 2017, 105, 170-179.	1.6	16
93	Island topographies to reduce short-circuiting in stormwater detention ponds and treatment wetlands. Ecological Engineering, 2018, 117, 182-193.	1.6	16
94	Turbulenceâ€mediated facilitation of resource uptake in patchy stream macrophytes. Limnology and Oceanography, 2019, 64, 714-727.	1.6	16
95	Feedback between vegetation, flow, and deposition: A study of artificial vegetation patch development. Journal of Hydrology, 2021, 598, 126232.	2.3	16
96	Turbulence Dictates Bedload Transport in Vegetated Channels Without Dependence on Stem Diameter and Arrangement. Geophysical Research Letters, 2021, 48, e2021GL095316.	1.5	16
97	Evaluation of a random displacement model for predicting particle escape from canopies using a simple eddy diffusivity model. Agricultural and Forest Meteorology, 2016, 224, 40-48.	1.9	15
98	Flow and wake characteristics associated with large wood to inform river restoration. Scientific Reports, 2021, 11, 8644.	1.6	14
99	Wave damping by flexible marsh plants influenced by current. Physical Review Fluids, 2021, 6, .	1.0	13
100	Waveâ€Driven Sediment Resuspension Within a Model Eelgrass Meadow. Journal of Geophysical Research F: Earth Surface, 2019, 124, 1035-1053.	1.0	12
101	Variation in contaminant removal efficiency in free-water surface wetlands with heterogeneous vegetation density. Ecological Engineering, 2020, 143, 105662.	1.6	12
102	Free-surface gravity currents propagating in an open channel containing a porous layer at the free surface. Journal of Fluid Mechanics, 2016, 809, 601-627.	1.4	11
103	Logjams With a Lower Gap: Backwater Rise and Flow Distribution Beneath and Through Logjam Predicted by Twoâ€Box Momentum Balance. Geophysical Research Letters, 2021, 48, e2021GL094279.	1.5	11
104	Suspended Sediment Concentration Profile in a Typha Latifolia Canopy. Water Resources Research, 2021, 57, e2021WR029902.	1.7	11
105	Impact of exchange flows on wetland flushing. Water Resources Research, 2001, 37, 3265-3273.	1.7	10
106	A simpleâ€wave damping model for flexible marsh plants. Limnology and Oceanography, 2021, 66, 4182-4196.	1.6	10
107	Particle Retention in a Submerged Meadow and Its Variation Near the Leading Edge. Estuaries and Coasts, 2018, 41, 724-733.	1.0	9
108	Thermal mediation by littoral wetlands and impact on lake intrusion depth. Water Resources Research, 2000, 36, 725-735.	1.7	8

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109	Estimating the Instantaneous Dragâ€“Wind Relationship for a Horizontally Homogeneous Canopy. Boundary-Layer Meteorology, 2016, 160, 63-82.	1.2	8
110	A joint velocity-intermittency analysis reveals similarity in the vertical structure of atmospheric and hydrospheric canopy turbulence. Environmental Fluid Mechanics, 2020, 20, 77-101.	0.7	7
111	Flow Structure in an Artificial Seagrass Meadow in Combined Wave-Current Conditions. Frontiers in Marine Science, 2022, 9, .	1.2	7
112	A wave damping model for flexible marsh plants with leaves considering linear to weakly nonlinear wave conditions. Coastal Engineering, 2022, 175, 104124.	1.7	7
113	Thermal mediation in a natural littoral wetland: Measurements and modeling. Water Resources Research, 2000, 36, 2937-2946.	1.7	6
114	Reconfiguration of and drag on marsh plants in combined waves and current. Journal of Fluids and Structures, 2022, 110, 103539.	1.5	6
115	Wave damping by seagrass meadows in combined waveâ€current conditions. Limnology and Oceanography, 2022, 67, 1554-1565.	1.6	6
116	Drag force and reconfiguration of cultivated Saccharina latissima in current. Aquacultural Engineering, 2021, 94, 102169.	1.4	5
117	Reply [to â€œComment on â€˜Drag, turbulence, and diffusion in flow through emergent vegetationâ€™ by H. M. Nepfâ€]. Water Resources Research, 2000, 36, 1987-1988.	1.7	4
118	Fabrication of flexible blade models from a silicone-based polymer to test the effect of surface corrugations on drag and blade motion. Limnology and Oceanography: Methods, 2015, 13, 630-639.	1.0	4
119	Closure to â€œLaboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylindersâ€•by Yukie Tanino and Heidi M. Nepf. Journal of Hydraulic Engineering, 2009, 135, 693-694.	0.7	3
120	Organism-scale interaction with hydraulic conditions. Journal of Ecohydraulics, 2022, 7, 1-3.	1.6	2