

Heidi M Nepf

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

118
papers

8,414
citations

46
h-index

91
g-index

121
ext. papers

9,845
ext. citations

4.2
avg, IF

6.91
L-index

#	Paper	IF	Citations
118	Drag, turbulence, and diffusion in flow through emergent vegetation. <i>Water Resources Research</i> , 1999 , 35, 479-489	5.4	843
117	Flow and Transport in Regions with Aquatic Vegetation. <i>Annual Review of Fluid Mechanics</i> , 2012 , 44, 123-142	5.4	518
116	Flow structure in depth-limited, vegetated flow. <i>Journal of Geophysical Research</i> , 2000 , 105, 28547-28557		512
115	Mixing layers and coherent structures in vegetated aquatic flows. <i>Journal of Geophysical Research</i> , 2002 , 107, 3-1		354
114	Hydrodynamics of vegetated channels. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2012 , 50, 262-279	1.9	326
113	Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders. <i>Journal of Hydraulic Engineering</i> , 2008 , 134, 34-41	1.8	294
112	The Structure of the Shear Layer in Flows over Rigid and Flexible Canopies. <i>Environmental Fluid Mechanics</i> , 2006 , 6, 277-301	2.2	251
111	The limited growth of vegetated shear layers. <i>Water Resources Research</i> , 2004 , 40,	5.4	221
110	Flow and transport in channels with submerged vegetation. <i>Acta Geophysica</i> , 2008 , 56, 753-777	2.2	206
109	Prediction of velocity profiles and longitudinal dispersion in salt marsh vegetation. <i>Limnology and Oceanography</i> , 2006 , 51, 218-228	4.8	192
108	Flow-induced reconfiguration of buoyant and flexible aquatic vegetation. <i>Limnology and Oceanography</i> , 2011 , 56, 2003-2017	4.8	190
107	Retention time and dispersion associated with submerged aquatic canopies. <i>Water Resources Research</i> , 2007 , 43,	5.4	180
106	Interaction between flow, transport and vegetation spatial structure. <i>Environmental Fluid Mechanics</i> , 2008 , 8, 423-439	2.2	175
105	Flow and deposition in and around a finite patch of vegetation. <i>Geomorphology</i> , 2010 , 116, 363-372	4.3	174
104	Shear instability and coherent structures in shallow flow adjacent to a porous layer. <i>Journal of Fluid Mechanics</i> , 2007 , 593, 1-32	3.7	157
103	A model for diffusion within emergent vegetation. <i>Limnology and Oceanography</i> , 1997 , 42, 1735-1745	4.8	134
102	Vortex development behind a finite porous obstruction in a channel. <i>Journal of Fluid Mechanics</i> , 2012 , 691, 368-391	3.7	133

101	Lateral dispersion in random cylinder arrays at high Reynolds number. <i>Journal of Fluid Mechanics</i> , 2008 , 600, 339-371	3.7	123
100	From the blade scale to the reach scale: A characterization of aquatic vegetative drag. <i>Advances in Water Resources</i> , 2013 , 51, 305-316	4.7	121
99	Flow adjustment and interior flow associated with a rectangular porous obstruction. <i>Journal of Fluid Mechanics</i> , 2011 , 680, 636-659	3.7	121
98	Model and laboratory study of dispersion in flows with submerged vegetation. <i>Water Resources Research</i> , 2007 , 43,	5.4	120
97	A vortex-based model of velocity and shear stress in a partially vegetated shallow channel. <i>Water Resources Research</i> , 2008 , 44,	5.4	118
96	Mass Transport in Vegetated Shear Flows. <i>Environmental Fluid Mechanics</i> , 2005 , 5, 527-551	2.2	117
95	The wake structure behind a porous obstruction and its implications for deposition near a finite patch of emergent vegetation. <i>Water Resources Research</i> , 2012 , 48,	5.4	114
94	Wave-induced velocities inside a model seagrass bed. <i>Journal of Geophysical Research</i> , 2010 , 115,		108
93	Observations of particle capture on a cylindrical collector: Implications for particle accumulation and removal in aquatic systems. <i>Limnology and Oceanography</i> , 2004 , 49, 76-85	4.8	106
92	Sediment patterns near a model patch of reedy emergent vegetation. <i>Geomorphology</i> , 2012 , 179, 141-151	4.3	92
91	Spatial distribution of deposition within a patch of vegetation. <i>Water Resources Research</i> , 2011 , 47,	5.4	92
90	Sediment deposition within and around a finite patch of model vegetation over a range of channel velocity. <i>Water Resources Research</i> , 2016 , 52, 600-612	5.4	90
89	Mean and turbulent velocity fields near rigid and flexible plants and the implications for deposition. <i>Journal of Geophysical Research F: Earth Surface</i> , 2013 , 118, 2585-2599	3.8	85
88	Effects of Added Vegetation on Sand Bar Stability and Stream Hydrodynamics. <i>Journal of Hydraulic Engineering</i> , 2010 , 136, 994-1002	1.8	85
87	Scalar transport in random cylinder arrays at moderate Reynolds number. <i>Journal of Fluid Mechanics</i> , 2003 , 487, 43-79	3.7	81
86	Flow adjustment at the leading edge of a submerged aquatic canopy. <i>Water Resources Research</i> , 2013 , 49, 5537-5551	5.4	80
85	Effect of a seagrass (<i>Posidonia oceanica</i>) meadow on wave propagation. <i>Marine Ecology - Progress Series</i> , 2012 , 456, 63-72	2.6	80
84	Vertical secondary flows in submersed plant-like arrays. <i>Limnology and Oceanography</i> , 1999 , 44, 1072-1080	1.8	76

83	Breaking criteria and energy losses for three-dimensional wave breaking. <i>Journal of Geophysical Research</i> , 2002 , 107, 41-1		70
82	A study of model bivalve siphonal currents. <i>Limnology and Oceanography</i> , 1990 , 35, 680-696	4.8	70
81	Interaction between neighboring vegetation patches: Impact on flow and deposition. <i>Water Resources Research</i> , 2014 , 50, 3809-3825	5.4	66
80	Aquatic interfaces: a hydrodynamic and ecological perspective. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2014 , 52, 744-758	1.9	63
79	Prediction of near-field shear dispersion in an emergent canopy with heterogeneous morphology. <i>Environmental Fluid Mechanics</i> , 2006 , 6, 477-488	2.2	61
78	The onset of sediment transport in vegetated channels predicted by turbulent kinetic energy. <i>Geophysical Research Letters</i> , 2016 , 43, 11,261	4.9	57
77	Laboratory observations of mean flows under surface gravity waves. <i>Journal of Fluid Mechanics</i> , 2007 , 573, 131-147	3.7	56
76	Shallow Flows Over a Permeable Medium: The Hydrodynamics of Submerged Aquatic Canopies. <i>Transport in Porous Media</i> , 2009 , 78, 309-326	3.1	54
75	Shallow Flows Over a Permeable Medium: The Hydrodynamics of Submerged Aquatic Canopies. <i>Transport in Porous Media</i> , 2009 , 78, 385-402	3.1	47
74	Estimation of the bed shear stress in vegetated and bare channels with smooth beds. <i>Water Resources Research</i> , 2015 , 51, 3647-3663	5.4	46
73	Observations of short-circuiting flow paths within a free-surface wetland in Augusta, Georgia, U.S.A.. <i>Limnology and Oceanography</i> , 2008 , 53, 1040-1053	4.8	46
72	Flow patterns around two neighboring patches of emergent vegetation and possible implications for deposition and vegetation growth. <i>Environmental Fluid Mechanics</i> , 2015 , 15, 881-898	2.2	45
71	A Comparison of Two- and Three-Dimensional Wave Breaking. <i>Journal of Physical Oceanography</i> , 1998 , 28, 1496-1510	2.4	44
70	Gravity currents in aquatic canopies. <i>Water Resources Research</i> , 2005 , 41,	5.4	42
69	Seagrass blade motion under waves and its impact on wave decay. <i>Journal of Geophysical Research: Oceans</i> , 2017 , 122, 3736-3752	3.3	40
68	Vortex Structure and Sediment Deposition in the Wake behind a Finite Patch of Model Submerged Vegetation. <i>Journal of Hydraulic Engineering</i> , 2018 , 144, 04017065	1.8	39
67	Wave damping by flexible vegetation: Connecting individual blade dynamics to the meadow scale. <i>Coastal Engineering</i> , 2019 , 147, 138-148	4.8	36
66	Field observations of wave-induced streaming through a submerged seagrass (<i>Posidonia oceanica</i>) meadow. <i>Journal of Geophysical Research: Oceans</i> , 2013 , 118, 1955-1968	3.3	35

65	A Turbulence-Based Bed-Load Transport Model for Bare and Vegetated Channels. <i>Geophysical Research Letters</i> , 2018 , 45, 10,428	4.9	35
64	Turbulent Kinetic Energy in Submerged Model Canopies Under Oscillatory Flow. <i>Water Resources Research</i> , 2018 , 54, 1734-1750	5.4	31
63	How vegetation in flows modifies the turbulent mixing and spreading of jets. <i>Scientific Reports</i> , 2017 , 7, 6587	4.9	27
62	Exchange flow between open water and floating vegetation. <i>Environmental Fluid Mechanics</i> , 2011 , 11, 531-546	2.2	27
61	Impact of Vegetation on Bed Load Transport Rate and Bedform Characteristics. <i>Water Resources Research</i> , 2019 , 55, 6109-6124	5.4	26
60	Density-driven exchange flow between open water and an aquatic canopy. <i>Water Resources Research</i> , 2008 , 44,	5.4	26
59	Impact of height heterogeneity on canopy turbulence. <i>Journal of Fluid Mechanics</i> , 2017 , 813, 1176-1196	3.7	25
58	Wake structure and sediment deposition behind models of submerged vegetation with and without flexible leaves. <i>Advances in Water Resources</i> , 2018 , 118, 28-38	4.7	25
57	Capillary interception of floating particles by surface-piercing vegetation. <i>Physical Review Letters</i> , 2013 , 111, 164501	7.4	25
56	The motion of kelp blades and the surface renewal model. <i>Limnology and Oceanography</i> , 2011 , 56, 1453-1462	4.6	25
55	Velocity and Drag Evolution From the Leading Edge of a Model Mangrove Forest. <i>Journal of Geophysical Research: Oceans</i> , 2017 , 122, 9144-9159	3.3	23
54	Modeling the hydraulic effect of transverse deep zones on the performance of short-circuiting constructed treatment wetlands. <i>Ecological Engineering</i> , 2009 , 35, 754-768	3.9	23
53	Breaker-generated turbulence in and above a seagrass meadow. <i>Continental Shelf Research</i> , 2012 , 49, 1-9	2.4	21
52	Capillary trapping of buoyant particles within regions of emergent vegetation. <i>Water Resources Research</i> , 2012 , 48,	5.4	21
51	Large eddy simulation of flow and scalar transport in a vegetated channel. <i>Environmental Fluid Mechanics</i> , 2017 , 17, 497-519	2.2	20
50	Blade dynamics in combined waves and current. <i>Journal of Fluids and Structures</i> , 2019 , 87, 137-149	3.1	20
49	Strong and weak, unsteady reconfiguration and its impact on turbulence structure within plant canopies. <i>Physics of Fluids</i> , 2014 , 26, 105102	4.4	19
48	Thermally driven exchange flow between open water and an aquatic canopy. <i>Journal of Fluid Mechanics</i> , 2009 , 632, 227-243	3.7	19

47	Mixing in deep zones within constructed treatment wetlands. <i>Ecological Engineering</i> , 2007 , 29, 209-220	3.9	19
46	From patch to channel scale: The evolution of emergent vegetation in a channel. <i>Advances in Water Resources</i> , 2019 , 129, 131-145	4.7	18
45	Exchange flow between a canopy and open water. <i>Journal of Fluid Mechanics</i> , 2008 , 611, 237-254	3.7	18
44	Influence of particle size and density, and channel velocity on the deposition patterns around a circular patch of model emergent vegetation. <i>Water Resources Research</i> , 2016 , 52, 1044-1055	5.4	17
43	Effects of blade flexural rigidity on drag force and mass transfer rates in model blades. <i>Limnology and Oceanography</i> , 2014 , 59, 2028-2041	4.8	17
42	Vegetation wakes and wake interaction shaping aquatic landscape evolution. <i>Limnology & Oceanography Fluids & Environments</i> , 2014 , 4, 106-119		17
41	Comparison of drag and velocity in model mangrove forests with random and in-line tree distributions. <i>Journal of Hydrology</i> , 2019 , 568, 735-746	6	16
40	Impact of Vegetation-Generated Turbulence on the Critical, Near-Bed, Wave-Velocity for Sediment Resuspension. <i>Water Resources Research</i> , 2019 , 55, 5904-5917	5.4	15
39	The role of patch size in ecosystem engineering capacity: a case study of aquatic vegetation. <i>Aquatic Sciences</i> , 2019 , 81, 1	2.5	13
38	Impact of current speed on mass flux to a model flexible seagrass blade. <i>Journal of Geophysical Research: Oceans</i> , 2016 , 121, 4763-4776	3.3	13
37	Island topographies to reduce short-circuiting in stormwater detention ponds and treatment wetlands. <i>Ecological Engineering</i> , 2018 , 117, 182-193	3.9	12
36	The production of chemical heterogeneity in Upper Mystic Lake. <i>Limnology and Oceanography</i> , 2000 , 45, 1647-1654	4.8	12
35	Momentum and Energy Predict the Backwater Rise Generated by a Large Wood Jam. <i>Geophysical Research Letters</i> , 2020 , 47, e2020GL089346	4.9	12
34	Turbulence and Bed Load Transport in Channels With Randomly Distributed Emergent Patches of Model Vegetation. <i>Geophysical Research Letters</i> , 2020 , 47, e2020GL087055	4.9	12
33	Coherent Flow Structures in Vegetated Channels 2013 , 135-147		11
32	A numerical study of the effect of wetland shape and inlet-outlet configuration on wetland performance. <i>Ecological Engineering</i> , 2017 , 105, 170-179	3.9	10
31	Flow-induced reconfiguration of aquatic plants, including the impact of leaf sheltering. <i>Limnology and Oceanography</i> , 2020 , 65, 2697-2712	4.8	10
30	Turbulence and Particle Deposition Under Steady Flow Along a Submerged Seagrass Meadow. <i>Journal of Geophysical Research: Oceans</i> , 2020 , 125, e2019JC015985	3.3	10

29	Free-surface gravity currents propagating in an open channel containing a porous layer at the free surface. <i>Journal of Fluid Mechanics</i> , 2016 , 809, 601-627	3.7	10
28	Turbulence-mediated facilitation of resource uptake in patchy stream macrophytes. <i>Limnology and Oceanography</i> , 2019 , 64, 714-727	4.8	10
27	Floating treatment islands in series along a channel: The impact of island spacing on the velocity field and estimated mass removal.. <i>Advances in Water Resources</i> , 2019 , 129, 222-231	4.7	9
26	Impact of exchange flows on wetland flushing. <i>Water Resources Research</i> , 2001 , 37, 3265-3273	5.4	9
25	Wave-induced reconfiguration of and drag on marsh plants. <i>Journal of Fluids and Structures</i> , 2021 , 100, 103192	3.1	9
24	Particle Retention in a Submerged Meadow and Its Variation Near the Leading Edge. <i>Estuaries and Coasts</i> , 2018 , 41, 724-733	2.8	8
23	Thermal mediation by littoral wetlands and impact on lake intrusion depth. <i>Water Resources Research</i> , 2000 , 36, 725-735	5.4	8
22	Evaluation of a random displacement model for predicting particle escape from canopies using a simple eddy diffusivity model. <i>Agricultural and Forest Meteorology</i> , 2016 , 224, 40-48	5.8	7
21	Measured and Predicted Turbulent Kinetic Energy in Flow Through Emergent Vegetation With Real Plant Morphology. <i>Water Resources Research</i> , 2020 , 56, e2020WR027892	5.4	7
20	Wave-Driven Sediment Resuspension Within a Model Eelgrass Meadow. <i>Journal of Geophysical Research F: Earth Surface</i> , 2019 , 124, 1035-1053	3.8	6
19	Thermal mediation in a natural littoral wetland: Measurements and modeling. <i>Water Resources Research</i> , 2000 , 36, 2937-2946	5.4	6
18	Variation in contaminant removal efficiency in free-water surface wetlands with heterogeneous vegetation density. <i>Ecological Engineering</i> , 2020 , 143, 105662	3.9	6
17	Estimating the Instantaneous Drag-Wind Relationship for a Horizontally Homogeneous Canopy. <i>Boundary-Layer Meteorology</i> , 2016 , 160, 63-82	3.4	5
16	Flow and wake characteristics associated with large wood to inform river restoration. <i>Scientific Reports</i> , 2021 , 11, 8644	4.9	5
15	Feedback between vegetation, flow, and deposition: A study of artificial vegetation patch development. <i>Journal of Hydrology</i> , 2021 , 598, 126232	6	5
14	Fabrication of flexible blade models from a silicone-based polymer to test the effect of surface corrugations on drag and blade motion. <i>Limnology and Oceanography: Methods</i> , 2015 , 13, 630-639	2.6	4
13	A joint velocity-intermittency analysis reveals similarity in the vertical structure of atmospheric and hydrospheric canopy turbulence. <i>Environmental Fluid Mechanics</i> , 2020 , 20, 77-101	2.2	4
12	Reply [to Comment on Drag, turbulence, and diffusion in flow through emergent vegetation] by H. M. Nepf] <i>Water Resources Research</i> , 2000 , 36, 1987-1988	5.4	3

11	Impact of Stem Size on Turbulence and Sediment Resuspension Under Unidirectional Flow. <i>Water Resources Research</i> , 2021 , 57, e2020WR028620	5.4	3
10	Drag force and reconfiguration of cultivated <i>Saccharina latissima</i> in current. <i>Aquacultural Engineering</i> , 2021 , 94, 102169	3	3
9	Closure to [Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders] by Yukie Tanino and Heidi M. Nepf. <i>Journal of Hydraulic Engineering</i> , 2009 , 135, 693-694	1.8	2
8	Wave damping by flexible marsh plants influenced by current. <i>Physical Review Fluids</i> , 2021 , 6,	2.8	2
7	Logjams With a Lower Gap: Backwater Rise and Flow Distribution Beneath and Through Logjam Predicted by Two-Box Momentum Balance. <i>Geophysical Research Letters</i> , 2021 , 48, e2021GL094279	4.9	2
6	Reconfiguration of and drag on marsh plants in combined waves and current. <i>Journal of Fluids and Structures</i> , 2022 , 110, 103539	3.1	2
5	A simple-wave damping model for flexible marsh plants. <i>Limnology and Oceanography</i> , 2021 , 66, 4182	4.8	1
4	Evolution of flow velocity from the leading edge of 2-D and 3-D submerged canopies. <i>Journal of Fluid Mechanics</i> , 2021 , 916,	3.7	1
3	Suspended Sediment Concentration Profile in a <i>Typha Latifolia</i> Canopy. <i>Water Resources Research</i> , 2021 , 57, e2021WR029902	5.4	1
2	Turbulence Dictates Bedload Transport in Vegetated Channels Without Dependence on Stem Diameter and Arrangement. <i>Geophysical Research Letters</i> , 2021 , 48, e2021GL095316	4.9	0
1	A wave damping model for flexible marsh plants with leaves considering linear to weakly nonlinear wave conditions. <i>Coastal Engineering</i> , 2022 , 104124	4.8	0