

This list comes from the following study:

Franck Courchamp, Corey J. A. Bradshaw. 2017. 100 articles every ecologist should read. *Nature Ecology & Evolution*. In press.

The 100 selected articles

1. Darwin, C.R.; Wallace, A.R. 1858. On the tendency of species to form varieties; and on the perpetuation of varieties and species by natural means of selection. *Zoological Journal of the Linnean Society* 3:45-62
2. Hardin, G. 1960. The competitive exclusion principle. *Science* 131:1292-1297
3. Paine, R.T. 1966. Food Web Complexity and Species Diversity. *The American Naturalist* 100:65-75
4. Hutchinson, G.E. 1961. The Paradox of the Plankton. *The American Naturalist* 95:137-145
5. Hutchinson, G.E. 1959. Homage to Santa Rosalia or Why Are There So Many Kinds of Animals? *The American Naturalist* 93:145
6. MacArthur, R.H.; Wilson, E.O. 1963. An Equilibrium Theory of Insular Zoogeography. *Evolution* 17:373-387
7. Hutchinson, G.E. 1957. Concluding Remarks. *Cold Spring Harbor Symposia on Quantitative Biology* 22:415-427
8. Hairston, N.G.; Smith, F.; Slobodkin, L. 1960. Community structure, population control, and competition. *The American Naturalist* 94:421-425
9. Connell, J.H. 1978. Diversity in tropical rain forests and coral reefs. *Science* 199:1302-1310
10. Janzen, D.H. 1970. Herbivores and the Number of Tree Species in Tropical Forests. *The American Naturalist* 104:501
11. May R.M. 1974. Biological populations with non-overlapping generations: stable points, stable cycles, and chaos. *Science* 186:645-647
12. Gause, G.F. 1934. Experimental Analysis of Vito Volterra'S Mathematical Theory of the Struggle for Existence. *Science* 79:16-17
13. Chesson, P. 2000. Mechanisms of Maintenance of Species Diversity. *Annual Review of Ecology and Systematics* 31:343-366
14. Carpenter, S.R.; Kitchell, J.F.; Hodgson, J.R. 1985. Cascading trophic interactions and lake productivity. *BioScience* 35:634-639
15. Levin, S.A. 1992. The problem of pattern and scale in ecology: the Robert H. MacArthur Award lecture. *Ecology* 73:1943-1967
16. Hanski, I. 1998. Metapopulation dynamics. *Nature* 396:41-49

17. MacArthur, R.; Levins, R. 1967. The Limiting Similarity, Convergence, and Divergence of Coexisting Species. *The American Naturalist* 101:377-385
18. Tilman, D. 1977. Resource Competition Between Plankton Algae: An Experimental and Theoretical Approach. *Ecology* 58:338-348
19. Hamilton, W.D. 1964a. The genetical evolution of social behaviour. I. *Journal of Theoretical Biology* 7:423-70
20. Charnov, E.L. 1976. Optimal foraging, the marginal value theorem. *Theoretical Population Biology* 9:129-136
21. Tilman, D. 1996a. Biodiversity: Population versus ecosystem stability. *Ecology* 77:350-363
22. Rosenzweig, M. 1971. Paradox of enrichment: destabilization of exploitation ecosystems in ecological time. *Science* 171:385-387
23. Connell, J.H. 1961. The Influence of Interspecific Competition and Other Factors on the Distribution of the Barnacle *Chthamalus Stellatus*. *Ecology* 42:710-743
24. MacArthur, R.; Levins, R. 1964. Competition, habitat selection, and character displacement in a patchy environment. *Proceedings of the National Academy of Sciences of the United States of America* 51:1207-1210
25. Hardin, G.J. 1968. The tragedy of the commons. *Science* 162:1243-1248
26. Levin, S.A. & Paine, R.T. 1974. Disturbance, patch formation, and community structure. *Proceedings of the National Academy of Sciences of the United States of America* 71:2744-2747
27. Felsenstein, J. 1981. Skepticism towards Santa Rosalia, or why are there so few kinds of animals? *Evolution* 35:124-138
28. Tilman, D. 1994a. Competition and biodiversity in spatially structured habitats. *Ecology* 75:424-401
29. Holling, C.S. 1973. Resilience and Stability of Ecological Systems. *Annual Review of Ecology and Systematics* 4:449-27
30. Hurlbert, S.H. 1984. Pseudoreplication and the Design of Ecological Field Experiments. *Ecological Monographs* 54:187
31. Vitousek, P.M. et al. 1997b. Human Domination of Earth's Ecosystems. *Science* 277:494-499
32. May R.M. 1972. Will a large complex system be stable? *Nature* 238:413-414
33. Pianka, E.R. 1970. On r- and K-selection. *American Naturalist* 104:592-597
34. Brown, J.H. et al. 2004. Toward a metabolic theory of ecology. *Ecology* 85:1771-1789
35. Ehrlich, P.R.; Raven, P.H. 1964. Butterflies and plants: a study in coevolution. *Evolution* 18:586-608
36. MacArthur, R.H.; McArthur, J. 1961. On bird species diversity. *Ecology* 42:594-598
37. Simberloff, D.S. et al. 1969. Experimental Zoogeography of Islands: The Colonization of Empty Islands. *Ecology* 50:278-296

38. Grime, J.P. 1977. Evidence for the existence of three primary strategies in plants and its relevance to ecological and evolutionary theory. *The American Naturalist* 111:1169-1194
39. Brown, J.H. 1984. On the Relationship between Abundance and Distribution of Species. *The American Naturalist* 124:255
40. Connell, J.H. 1961a. Effects of competition, predation by *Thais lapillus*, and other factors on natural populations of the barnacle *Balanus balanoides*. *Ecological Monographs* 31:61-104
41. Holt, R.D. 1977. Predation, apparent competition, and the structure of prey communities. *Theoretical Population Biology* 12:197-229
42. Anderson, R.M.; May, R.M. 1979. Population biology of infectious diseases: Part I. *Nature* 280:361-367
43. Huffaker, C.B. 1958. Experimental studies on predation: dispersion factors and predator-prey oscillations. *Hilgardia* 27:343-383
44. Clements, F.E. 1936. Nature and structure of the climax. *Journal of Ecology* 24:252-284
45. Pulliam, D.W. 1988. Sources, Sinks, and Population Regulation. *The American Naturalist* 132:652-661
46. Lawton, J.H. 1999. Are there general laws in ecology? *Oikos* 84:177-192
47. Lindeman, R.L. 1942. The trophic-dynamic aspect of ecology. *Ecology* 23:399-418
48. Kimura, M. 1968. Evolutionary Rate at the Molecular Level. *Nature* 217:624-626
49. May R.M. 1976. Simple mathematical models with very complicated dynamics. *Nature* 261:459-467
50. Trivers, R.L. 1974 Parent-Offspring Conflict. *American Zoologist* 14:249-264
51. Paine, R.T. 1980. Food Webs: Linkage, Interaction Strength and Community Infrastructure. *Journal of Animal Ecology* 49:666-685
52. Tilman, D.; Wedin, D.; Knops, J. 1996. Productivity and sustainability influenced by biodiversity in grassland ecosystems. *Nature* 379:718-720
53. MacArthur, R.H. 1958. Population ecology of some warblers of northeastern coniferous forests. *Ecology* 39:599-619
54. May R.M. 1977. Thresholds and breakpoints in ecosystems with a multiplicity of stable states. *Nature* 260:471-477
55. Simberloff, D. 1976. Experimental Zoogeography of Islands : Effects of Island Size. *Ecology* 57:629-648
56. Schindler, D.W. 1977. Evolution of phosphorus limitation in lakes. *Science* 195:260-262
57. Kunin, W.E.; Gaston, K.J. 1993. The biology of rarity: Patterns, causes and consequences. *Trends in Ecology & Evolution* 8:298-301
58. Vitousek, P. M.; Reiners W.A. 1975. Ecosystem succession and nutrient retention: a hypothesis. *BioScience* 25:376-381
59. Tilman, D. 1980. Resources: a Graphical-Mechanistic Approach To Competition and Predation. *The American Naturalist* 116:362-393

60. Lande, R. 1980. Sexual dimorphism, sexual selection, and adaptation in polygenic characters. *Evolution* 34:292-305
61. Tilman, D. et al. 1994. Habitat destruction and the extinction debt. *Nature* 371:65-66
62. Fretwell S.D. & Lucas H.L. 1970. On territorial behavior and others factors influencing habitat distribution in birds. I. *Theoretical development. Acta Biotheoretica* 19:16-36
63. May R.M. 1973a. Qualitative stability in model ecosystems. *Ecology* 54:638-641
64. Redfield, A.C. 1958. The biological control of chemical factors in the environment. *American Scientist* 46:205-221
65. Tilman, D. et al. 1997. The Influence of Functional Diversity and Composition on Ecosystem Processes. *Science* 277:1300-1302
66. Hamilton, W.D. 1967. Extraordinary Sex Ratios. *Science* 156:477-488
67. Schluter, D. & McPhail, J.D. 1992. Ecological character displacement and speciation in sticklebacks. *The American Naturalist* 140:85-108
68. Hanski, I. 1994. A practical model of metapopulation dynamics. *Journal of Animal Ecology*. 63:151-162.
69. Hamilton, W.D. 1964b. The genetical evolution of social behaviour. II. *Journal of Theoretical Biology* 7:17-52
70. Likens, G.E. et al. 1970. Effects of Forest Cutting and Herbicide Treatment on Nutrient Budgets in the Hubbard Brook Watershed-Ecosystem. *Ecological Monographs* 40:23-47
71. Odum, E.P. 1969. The strategy of ecosystem development. *Science* 164:262-270
72. Hubbell, S.P. 1979. Tree dispersion, abundance, and diversity in a tropical dry forest. *Science* 203:1299-1309
73. Grinnell, B.Y. 1917. The niche-relationships of the California thrasher. *The Auk* 34:427-433
74. MacArthur, R.H.; Pianka, E. R. 1966. On optimal use of a patchy environment. *American Naturalist* 100:603-609
75. Tilman, D.; Forest, I.; Cowles, J.M. 2014. Biodiversity and ecosystem functioning. *Annual Review of Ecology, Evolution, and Systematics* 45:471-493
76. May, R.M. & MacArthur, R.H. 1972a. Niche overlap as a function of environmental variability. *Proceedings of the National Academy of Sciences of the United States of America* 69:1109-1113
77. Leibold, M.A. et al. 2004. The metacommunity concept: a framework for multi-scale community ecology. *Ecology Letters* 7:601-613
78. Axelrod, R.; Hamilton, W. D. 1981. The Evolution of Cooperation. *Science* 211:1390-1396
79. Gleason, H.A. 1926. The Individualistic Concept of the Plant Association. *Bulletin of the Torrey Botanical Club* 53:462-04
80. Grime, J.P. 1998. Benefits of plant diversity to ecosystems: immediate, filter and founder effects. *Journal of Ecology* 86:902-910

81. Gould S.J.; Lewontin R.C. 1979. The spandrels of San Marco and the Panglossian paradigm: a critique of the adaptationist programme. *Proceedings of the Royal Society B: Biological Sciences* 205:581-598
82. Grant, P.R; Grant, B.R. 1995. The Founding of a New Population of Darwin's Finches. *Evolution* 49:229-240
83. Stearns, S.C. 1976. Life-history tactics: a review of the ideas. *The Quarterly Review of Biology* 51:3
84. Vitousek, P.M. 1994. Beyond global warming: ecology and global change. *Ecology* 75:1861-1876
85. Janzen D.H. 1967. Why mountain passes are higher in the tropics. *The American Naturalist* 101:233
86. Carpenter, S.R. et al. 1987. Regulation of lake primary productivity by food web structure. *Ecology* 68:1863-1876
87. Stenseth, N.C. 1997. Population regulation in snowshoe hare and Canadian lynx: asymmetric food web configurations between hare and lynx. *Proceedings of the National Academy of Sciences of the United States of America* 94:5147-5152
88. Anderson, R.M; May, R.M. 1978. Regulation and Stability of Host-Parasite Population Interactions. *Journal of Animal Ecology* 47:219-247
89. Krebs, C.J. et al. 1995. Impact of Food and Predation on the Snowshoe Hare Cycle. *Science* 269:1112-1115
90. Ginzburg, L.R.; Jensen, C.X.J. 2004. Rules of thumb for judging ecological theories. *Trends in Ecology and Evolution* 19:121-126
91. Chave, J. 2013. The problem of pattern and scale in ecology: what have we learned in 20 years? *Ecology Letters* 16:424-431
92. MacArthur, R. 1955. Fluctuations of Animal Populations and a Measure of Community Stability. *Ecology* 36:533
93. Ricklefs, R.E. 1987. Community diversity: relative roles of local and regional processes. *Science* 235:167-171
94. Levins, R. 1966. The strategy of model building in population biology. *American Scientist* 54:421-431
95. Anderson, R.M; May, R.M. 1981. The Population Dynamics of Microparasites and Their Invertebrate Hosts. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences* 291:451-524.
96. Brown, W.L.; Wilson, E.O. 1986. Character displacement. *Systematic Zoology* 35:49-64
97. Lande, R. 1993. Risks of Population Extinction from Demographic and Environmental Stochasticity and Random Catastrophes. *The American Naturalist* 142:911-927
98. May R.M. & Anderson, R.M. 1979. Population biology of infectious diseases: Part II. *Nature* 280:455-461
99. Parmesan, C.; Yohe, G. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature* 421:37-42
100. Power, M.E. 1990. Effects of fish in river food webs. *Science* 250:811-814

The 75 “read” articles

1. Cremer, S.; Armitage, S.A.O.; Schmid-Hempel, P. 2007. Social Immunity. *Current Biology* 17:693-702
2. Loreau, M.; Mouquet, N.; Gonzalez, A. 2003. Biodiversity as spatial insurance in heterogeneous landscapes. *Proceedings of the National Academy of Sciences of the United States of America* 100:12765-70
3. Grimm, V. 2005. Pattern-oriented modelling of agent-based complex systems: lessons from ecology. *Science* 310:987-991
4. Oksanen, L. 2001. Logic of experiments in ecology: is pseudoreplication a pseudoissue? *Oikos* 94:27-38
5. Hurlbert, S.H. 2004. On misinterpretations of pseudoreplication and related matters: a reply to Oksanen. *Oikos* 104:591-597
6. Hairston, N.G. 1993. Cause-Effect Relationships in Energy- Flow, Trophic Structure, and Interspecific Interactions. *American Naturalist* 142:379-411
7. Dushoff, J. et al. 2004. Dynamical resonance can account for seasonality of influenza epidemics. *Proceedings of the National Academy of Sciences of the United States of America* 101:16915-16916
8. Hunter, M.D.; Price, P.W. 1992. Playing Chutes and Ladders: Heterogeneity and the Relative Roles of Bottom-Up and Top- Down Forces in Natural Communities. *Ecology* 73:724-732
9. Stearns, S.C. 1989a. The evolutionary significance of phenotypic plasticity - phenotypic sources of variation among organisms can be described by developmental switches and reaction norms. *Bioscience* 39:436-445
10. Levins, R. 1969. Some demographic and genetic consequences of environmental heterogeneity for biological control. *Bulletin of the Entomological Society of America* 15:237-240
11. Jackson, J.B. et al. 2001. Historical overfishing and the recent collapse of coastal ecosystems. *Science* 293:629-37
12. Hamilton W.D. & Zuk M. 1982. Heritable true fitness and bright birds : a role for parasites? *Science* 28:384-387
13. Colwell, R.K.; Rangel, T.F. 2009. Hutchinson's duality: The once and future niche. *Proceedings of the National Academy of Sciences* 106:19651-19658
14. Gaillard, J-M. et al. 2000. Temporal variation in fitness components and population dynamics of large herbivores. *Annual Review of Ecology, Evolution, and Systematics* 31:367-393
15. Thompson, J.D. et al. 1996. Untangling multiple factors in spatial distributions: Lilies, Gophers, and rocks. *Ecology* 77:1698-1715

16. Berenbaum, M.R. 2002. Postgenomic chemical ecology: from genetic code to ecological interactions. *Journal of chemical ecology* 28:873-896
17. Caughley, G. 1994. Directions in conservation biology. *Journal of Animal Ecology* 63:215-244
18. Chesson, P.; Kuang, J.J. 2008. The interaction between predation and competition. *Nature* 456:235-238
19. Coley, P.D.; Bryant, J.P.; Chapin, F.S. 1985. Resource Availability and Plant Antiherbivore Defense. *Science* 230:895-899
20. Fahrig, L.. 2003. Effects of habitat fragmentation on biodiversity. *Annual Review of Ecology, Evolution, and Systematics* 34:487-515
21. Milinski, M. 1997. How to avoid seven deadly sins in the study of behavior. *Advances in the Study of Behavior* 26:159-180
22. Preisser, E.L.; Bolnick, D.I.; Bernard, M.F. 2005. Scared To Death? The Effects Of Intimidation And Consumption In Predator - Prey Interactions. *Ecology* 86:501-509
23. Queller, D.C. 2000. Relatedness and the fraternal major transitions. *Philosophical Transactions of the Royal Society B* 355:1647-1655
24. Svenning, J-C. 2003. Deterministic Plio-Pleistocene extinctions in the European cool-temperate tree flora. *Ecology Letters* 6:646-653
25. Taylor, P.D. et al. 1993. Connectivity Is a Vital Element of Landscape Structure. *Oikos* 68:571-573
26. Kirkpatrick, M.; Barton, N.H. 2014. Evolution of a species' range. *The American Naturalist* 150:449-27
27. Rice, W.R. 1989. Analyzing Tables of Statistical Tests. *Evolution* 43:223-225
28. Brown, J.S. 1989. Desert rodent community structure: a test of four mechanisms of coexistence. *Ecological Monographs* 59:438-31
29. Cardinale, B.J.; Duffy, J.E.; Gonzalez, A. 2012. Biodiversity loss and its impact on humanity. *Nature* 486:59-67
30. Volkov, I. et al. 2003. Neutral theory and relative species abundance in ecology. *Nature* 424:1035-1037
31. Van Valen, L. 1973. A new evolutionary law. *Evolutionary Theory* 1:109-59
32. Duffy, E.J. 2002. Biodiversity and ecosystem function: the consumer connection. *Oikos* 99:201-219
33. Haldane J.B.S. & Jayakar S.D. 1963. Polymorphism due to selection of varying direction. *Journal of genetics* 58:237-242
34. Keller L.; Ross K.G. 1998. Selfish genes: a green beard in the red fire ant. *Nature* 394:573-575
35. Nelson, M.P.; Vucetich, J.A. 2009. On Advocacy by Environmental Scientists: What, Whether, Why, and How. *Conservation Biology* 23:1090-1101
36. Link, W.A.; Barker, R.J. 2006. Model weights and the foundations of multimodel inference. *Ecology* 87:2626-2635

37. Gomulkiewicz, R.; Holt, R.D.; Barfield, M. 1999. The effects of density dependence and immigration on local adaptation and niche evolution in a black-hole sink environment. *Theoretical Population Biology* 55:283-296
38. Scheffer, M. et al. 2001. Catastrophic shifts in ecosystems. *Nature* 413:591-596
39. Shurin, J.B.; Gruner, D.S.; Hillebrand, H. 2006. All wet or dried up? Real differences between aquatic and terrestrial food webs. *Proceedings of the Royal Society B* 273:42248
40. Bloom, A.J.; Chapin, F.S.; Mooney H.A. 1985. Resource limitation in plants- An economic analogy. *Annual review of ecology and systematics* 16:363-392
41. Cody M.L. 1966. A General Theory of Clutch Size. *Evolution* 20:174-184
42. Hamilton, W.D. 1966. The moulding of senescence by natural selection. *Journal of Theoretical Biology* 12:16772
43. Chesson, P.L.; Warner, R.R. 1981. Environmental variability promotes coexistence in lottery competitive-systems. *American Naturalist* 117:923
44. Hodos, W.; Campbell, C.B. 1969. Scala naturae - why there is no theory in comparative psychology. *Psychological Review* 76:337-350
45. Huston, M.A. 1997. Hidden treatments in ecological experiments: re-evaluating the ecosystem function of biodiversity. *Oecologia* 110:449-460
46. Myers, J. H. et al 2000. Eradication revisited: Dealing with exotic species. *Trends in Ecology and Evolution* 15:316-320
47. Sand-Jensen, K. 2007. How to write consistently boring scientific literature. *Oikos* 116:723-727
48. Southwood, T. 1977. Habitat, the templet for ecological strategies? *Journal of Animal Ecology* 46:337-365
49. Hudson, P.J.; Dobson, A.P.; Newborn, D. 1998. Prevention of population cycles by parasite removal. *Science* 282:2256-2258
50. Menge, B. et al. 2003. Coastal oceanography sets the pace of rocky intertidal community dynamics. *Proceedings of the National Academy of Sciences of the United States of America* 100:12229-12234
51. Watt, A.S. 1947. Pattern and process in the plant community. *The Journal of Ecology* 53:44562
52. Williams, J.W.; Jackson, S.T. 2007. Novel climates, no-analog communities, and ecological surprises. *Frontiers in Ecology and the Environment* 5:475-482
53. Shmida, A.; Wilson, M.V. 1985. Biological Determinants of Species Diversity. *Journal of Biogeography* 12:43831
54. Marquet, P.A. et al. 2014. On Theory in Ecology. *BioScience* 64:701-710
55. Hendry, A.P.; Kinnison, M.T. 1999. The pace of modern life: Measuring rates of contemporary microevolution. *Evolution* 53:1637-1653
56. Terborgh, J. 1971. Distribution on Environmental Gradients: Theory and a Preliminary Interpretation of Distributional Patterns in the Avifauna of the Cordillera Vilcabamba , Peru. *Ecology* 52:23-40

57. Sousa, W. 1979. Disturbance in Marine Intertidal Boulder Fields: the Nonequilibrium Maintenance of Species Diversity. *Ecology* 60:1225-1239
58. Soulé, M.E. 1985. What Is Conservation Biology? *BioScience* 35:727-734
59. Petrovskii, S.V.; Malchow, H. 2001. Wave of chaos: new mechanism of pattern formation in spatio-temporal population dynamics. *Theoretical population biology* 59:157-174
60. Dempster, E.R. 1955. Maintenance of genetic heterogeneity. *Cold Spring Harbor Symposia on Quantitative Biology* 20:25-32
61. Earn, D.J.D.; Dushoff, J.; Levin, S.A. 2002. Ecology and evolution of the flu. *Trends in Ecology & Evolution* 17:334-340
62. Grime, J.P. 1973. Competitive Exclusion In Herbaceous Vegetation. *Nature* 242:344-347
63. Paine, R.T. & Levin, S.A. 1981. Intertidal Landscapes: Disturbance and the Dynamics of Pattern. *Ecological Monographs* 51:145-178
64. Gehring C.A. & Whitham T.G. 1995. Duration of herbivore removal and environmental stress affect the ectomycorrhizae of pinyon pines. *Ecology* 76:2118-2123
65. Cavender-Bares, J. et al. 2009. The merging of community ecology and phylogenetic biology. *Ecology Letters* 12:693-715
66. Pimentel D. 1961. Animal Population Regulation by the Genetic Feed-Back Mechanism. *American Naturalist* 95:65-79
67. Polis G.A. 1991. Complex trophic interactions in deserts: an empirical critique of food-web theory. *The American Naturalist* 138:123
68. Weiner, J. 1992. Physiological limits to Energy Budgets Sustainable in Birds and Mammals: Ecological Implications. *Science* 7:384-388
69. Zinke, P.J. 1962. The Pattern of Influence of Individual Forest Trees on Soil Properties. *Ecology* 43:130-133
70. Crouse, D.T; Crowder, L.B; Caswell, H. 1987. A Stage-Based Population Model for Loggerhead Sea Turtles and Implications for Conservation. *Ecology* 68:1412
71. Thompson, J.N. et al. 1999. The evolution of species interactions. *Science* 284:2116-2118
72. Van Noordwijk, A.J.; Dejong, G.; de Jong, G. 1986. Acquisition and allocation of resources - their influence on variation in life history tactics. *American Naturalist* 128:137-142
73. Webb, C.O. et al. 2002. Phylogenies and community ecology. *Annual Review of Ecology and Systematics* 33:475-505
74. Yoda, K. et al. 1963. Self thinning in overcrowded pure stands under cultivated and natural conditions. *Journal of Biology Osaka City Univ* 14:107-129
75. Brown, J.H; Maurer, B.A. 1989. Macroecology: The Division of Food and Space among Species on Continents. *Science* 243:1145-1150