References

Achard F, H.D., Eva, H.-J. Stibig, P. Mayaux, J. Gallego, T. Richards, and J.-P. Malingreau. 2002. Determination of deforestation rates of the world's humid tropical forests. *Science* 297:999–1002.

Adams, P. A. and J. E. Heath. 1964. Temperature regulation in the sphinx moth, *Celerio lineata*. *Nature* 201:20–22.

Agrawal, D. C. 2010. Photosynthetic solar constant. *Latin American Journal of Physics Education* 4:46–50.

Allen, B., M. A. Nowak, and E. O. Wilson. 2013. Limitations of inclusive fitness. *Proceedings of the National Academy of Sciences of the United States* 110:20135–39.

Allen, E. B. and M. F. Allen. 1986. Water relations of xeric grasses in the field: interactions of mycorrhizae and competition. *New Phytologist* 104:559–71.

Anderegg, W. R. L., J. M. Kane, and L. D. L. Anderegg. 2013. Consequences of widespread tree mortality triggered by drought and temperature stress. *Nature Climate Change* 3:30–36.

Anderson, J. M. and M. J. Swift. 1983. Decomposition in tropical forests. In S. L. Sutton, T. C. Whitmore, and A. C. Chadwick, eds. *Tropical Rain Forest: Ecology and Management.* Oxford: Blackwell Scientific Publications.

Angilletta, M. J., Jr. 2001. Thermal and physiological constraints on energy assimilation in a widespread lizard (*Sceloporus undulatus*). *Ecology* 82:3044–56.

Aono, Y. and S. Saito. 2010. Clarifying springtime temperature reconstructions of the medieval period by gap-filling the cherry blossom phenological data series at Kyoto, Japan. *International Journal of Biometeorology* 54:211–19.

Arakawa, H. 1956. Climatic change as revealed by the blooming dates of the cherry blossoms at Kyoto. *Journal of Meteorology* 13:599–600.

Arditi, R. and L. R. Ginzburg. 1989. Coupling in predator-prey dynamics: ratio-dependence. *Journal of Theoretical Biology* 139:311–26.

Arditi, R. and L. R. Ginzburg. 2012. *How Species Interact: Altering the Standard View on Trophic Ecology.* Oxford: Oxford University Press.

Arrhenius, O. 1921. Species and area. *Journal of Ecology* 9:95–99.

Bacastow, R. and C. D. Keeling. 1974. Atmospheric carbon dioxide and radiocarbon in the natural carbon cycle: II. Changes from A.D. 1700 to 2070 as deduced from a geochemical model. In G. M. Woodwell and E. V. Pecan, eds. *Carbon and the Biosphere.* BHNL/CONF 720510. Springfield, Va.: National Technical Information Service.

Baker, L. A., D. Hope, Y. Xu, J. Edmonds, and L. Lauver. 2001. Nitrogen balance for the central Arizona–Phoenix (CAP) ecosystem. *Ecosystems* 4:582–602.

Baker, M. C., L. R. Mewaldt, and R. M. Stewart. 1981. Demography of white-crowned sparrows (*Zonotrichia leucophrys nuttalli*). *Ecology* 62:636–44.

Baldridge, E., D. J. Harris, X. Xiao, and E. P. White. 2016. An extensive comparison of species-abundance distribution models. *PEERJ* 4:e2823.

Baldwin, J. and P. W. Hochachka. 1970. Functional significance of isoenzymes in thermal acclimation: acetylcholinesterase from trout brain. *Biochemical Journal* 116:883–87.

Baptista, L. F., P. W. Trail, and H. M. Horblit. 1997. Family Columbidae (doves and pigeons). In J. del Hoyo, A. Elliott, and J. Sargatal, eds. *Handbook of the birds of the World.* Vol. 4. *Sand Grouse to Cuckoos*. Barcelona: Lynx Edicions.

Barbiero, R. P. and M. L. Tuchman. 2004. Long-term dreissenid impacts on water clarity in Lake Erie. *Journal of Great Lakes Research* 30:557–65.

Barbour, C. D. and J. H. Brown. 1974. Fish species diversity in lakes. *American Naturalist* 108:473–89.

Barnes, R. S. K. and R. N. Hughes. 1988. *An Introduction to Marine Ecology,* 2nd edition. Oxford: Blackwell Scientific Publications.

Barnola, J. M., D. Raynaud, Y. S. Korotkevich, and C. Lorius. 1987. Vostok ice core provides 160,000-year record of atmospheric CO_2. *Nature* 329:408–14.

Barnosky, A. D., N. Matzke, S. Tomiya, G. O. U. Wogan, B. Swartz, T. Quental, C. Marshall, J. L. McGuire, E. L. Lindsey, K. C. Maguire, B. Mersey, and E. A. Ferrer. 2011. Has the Earth's sixth mass extinction already arrived? *Nature* 471:51–57.

Bässler, C., T. Hothorn, R. Brandl, and J. Müller. 2013. Insects overshoot the expected upslope shift caused by climate warming. *PLoS ONE* 8:e65842.

Baur, B. and A. Baur. 1993. Climatic warming due to thermal radiation from an urban area as possible cause for the local extinction of a land snail. *Journal of Applied Ecology* 30:333–40.

Baur, B. and A. Baur. 2013. Snails keep the pace: shift in upper elevation limit on mountain slopes as a response to climate warming. *Canadian Journal of Zoology* 91:596–99.

Béjà, O., L. Aravind, E. V. Koonin, M. T. Suzuki, A. Hadd, L. P. Nguyen, S. B. Jovanovich, C. M. Gates, R. A. Feldman, J. L. Spudich, E. N. Spudich, and E. F. Delong. 2000. Bacterial rhodopsin: evidence for a new type of phototrophy in the sea. *Science* 289:1902–6.

Béjà, O., E. N. Spudich, J. L. Spudich, M. Leclerc, and E. F. Delong. 2001. Proteorhodopsin phototrophy in the ocean. *Nature* 411:786–89.

Béjà, O., M. T. Suzuki, J. F. Heidelberg, W. C. Nelson, C. M. Preston, T. Hamada, J. A. Eisen, C. M. Fraser, and E. F. Delong. 2002. Unsuspected diversity among marine aerobic anoxygenic phototrophs. *Nature* 415:630–33.

Benke, A. C. 1976. Dragonfly production and prey turnover. *Ecology* 57:915–27.

Benke, A. C. 2010. Secondary production. *Nature Education Knowledge* 1(10):23. www.nature.com/scitable/knowledge/library/secondary-production-13234142.

Benke, A. C. 2011. Secondary production, quantitative food webs, and trophic position. *Nature Education Knowledge* 2(2):2. www.nature.com/scitable/knowledge/library/secondary-production-quantitative-food-webs-and-trophic-17653963.

Benke, A. C. and A. D. Huryn. 2010. Benthic invertebrate production—facilitating answers to ecological riddles in freshwater ecosystems. *Journal of the North American Benthological Society* 29:264–85.

Bennett, A. F. and R. E. Lenski. 2007. An experimental test of evolutionary trade-offs during temperature adaptation. *Proceedings of the National Academy of Sciences of the United States* 104(Suppl. 1):8649–54.

Bennett, K. D. 1983. Postglacial population expansion of forest trees in Norfolk, UK. *Nature* 303:164–67.

Bernhardt, E. S., L. E. Band, C. J. Walsh, and P. E. Berke. 2008. Understanding, managing, and minimizing urban impacts on surface water nitrogen loading. *Annals of the New York Academy of Sciences* 1134:61–96.

Berry, J. and O. Björkman. 1980. Photosynthetic response and adaptation to temperature in higher plants. *Annual Review of Plant Physiology* 31:491–543.

Bertschy, K. A. and M. G. Fox. 1999. The influence of age-specific survivorship on pumpkinseed sunfish life histories. *Ecology* 80:2299–2313.

Beschta, R. L. and W. J. Ripple. 2013. Are wolves saving Yellowstone's aspen? A landscape-level test of a behaviorally mediated trophic cascade: comment. *Ecology* 94:1420–25.

Bethel, W. M. and J. C. Holmes. 1977. Increased vulnerability of amphipods to predation due to altered behavior induced by larval parasites. *Canadian Journal Zoology* 55:110–15.

Birch, L. C. 1948. The intrinsic rate of natural increase of an insect population. *Journal of Animal Ecology* 17:15–26.

Bishop, M. J., B. P. Kelaher, M. P. Lincoln Smith, P. H. York, and D. J. Booth. 2006. Ratio-dependent response of a temperate Australian estuarine system to sustained nitrogen loading. *Oecologia* 149:701–8.

Bjerknes, J. 1966. A possible response of the atmospheric Hadley circulation to equatorial anomalies of ocean temperature. *Tellus* 18:820–29.

Bjerknes, J. 1969. Atmospheric teleconnections from the equatorial Pacific. *Monthly Weather Review* 97:163–72.

Blair, R. 2004. The effects of urban sprawl on birds at multiple levels of biological organization. *Ecology and Society* 9:2 [online].

Blanco, J. F. and F. N. Scatena. 2005. Floods, habitat hydraulics, and upstream migration of *Neritina virginea* (Gastropoda: Neritidae) in northeastern Puerto Rico. *Caribbean Journal of Science* 41:55–74.

Blanco, J. F. and F. N. Scatena. 2006. Hierarchical contribution of river-ocean connectivity, water chemistry, hydraulics, and substrate to the distribution of diadromous snails in Puerto Rican streams. *Journal of the North American Benthological Society* 25:82–98.

Blanco, J. F. and F. N. Scatena. 2007. The spatial arrangement of *Neritina virginea* (Gastropoda: Neritidae) during upstream migration in a split-channel reach. *River Research and Applications* 23:235–45.

Bloom, A. J., F. S. Chapin III, and H. A. Mooney. 1985. Resource limitation in plants—an economic analogy. *Annual Review of Ecology and Systematics* 16:363–92.

Boag, P. T. and P. R. Grant. 1978. Heritability of external morphology in Darwin's finches. *Nature* 274:793–94.

Boag, P. T. and P. R. Grant. 1984a. Darwin's finches (*Geospiza*) on Isla Daphne Major, Galápagos: breeding and feeding ecology in a climatically variable environment. *Ecological Monographs* 54:463–89.

Boag, P. T. and P. R. Grant. 1984b. The classical case of character release: Darwin's finches (*Geospiza*) on Isla Daphne Major, Galápagos. *Biological Journal of the Linnean Society* 22:243–87.

Bobbink, R. and J. H. Willems. 1987. Increasing dominance of *Brachypodium pinnatum* (L.) Beauv. in chalk grasslands: a threat to a species-rich ecosystem. *Biological Conservation* 40:301–14.

Bobbink, R. and J. H. Willems. 1991. Effect of different cutting regimes on the performance of *Brachypodium pinnatum* in Dutch chalk grassland. *Biological Conservation* 56:1–21.

Boden, T. A., G. Marland, and R. J. Andres. 2017. Global, regional, and national fossil-fuel CO_2 emissions. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tenn., U.S.A. doi 10.3334/CDIAC/00001_V2017.

Bollinger, G. 1909. *Zur Gastropodenfauna von Basel und Umgebung.* Ph.D. dissertation, University of Basel, Switzerland.

Bolser, R. C. and M. E. Hay. 1996. Are tropical plants better defended? Palatability and defenses of temperate vs. tropical seaweeds. *Ecology* 77:2269–86.

Bond, P. and P. Goldblatt. 1984. Plants of the Cape Flora. *Journal of South African Botany,* Supplementary Volume No. 13.

Bormann, F. H. and G. E. Likens. 1994. *Pattern and Process in a Forested Ecosystem.* New York: Springer-Verlag.

Bowen, G. W. and R. L. Burgess. 1981. A quantitative analysis of forest island pattern in selected Ohio landscapes. ORNL/TM 7759. Oak Ridge National Laboratory, Oak Ridge, Tenn.

Bowman, W. D., T. A. Theodose, J. C. Schardt, and R. T. Conant. 1993. Constraints of nutrient availability on primary production in two alpine tundra communities. *Ecology* 74:2085–97.

Boyles, J. G., P. M. Cryan, G. F. McCracken, and T. H. Kunz. 2011. Economic importance of bats in agriculture. *Science* 332:41–42.

Bradshaw, W. E. and C. M. Holzapfel. 2006. Evolutionary response to rapid climate change. *Science* 312:1477–78.

Braithwaite, V. A. and A. G. V. Salvanes. 2005. Environmental variability in the early rearing environment generates behaviourally flexible cod: implications for rehabilitating wild populations. *Proceedings of the Royal Society B* 272:1107–13.

Brenchley, W. E. 1958. *The Park Grass Plots at Rothamsted.* Harpende: Rothamsted Experimental Station.

Brisson, J. and J. F. Reynolds. 1994. The effects of neighbors on root distribution in a creosote bush (*Larrea tridentata*) population. *Ecology* 75:1693–702.

Brock, T. D. 1978. *Thermophilic Microorganisms and Life at High Temperatures.* New York: Springer-Verlag.

Brouwer, R. 1983. Functional equilibrium: sense or nonsense? *Netherlands Journal of Agricultural Science* 31:335–48.

Brown, J. H. 1984. On the relationship between abundance and distribution of species. *American Naturalist* 130:255–79.

Brown, J. H. 1986. Two decades of interaction between the MacArthur-Wilson model and the complexities of mammalian distributions. *Biological Journal of the Linnean Society* 28:231–51.

Brown, J. H. 1988. Species diversity. In A. A. Meyers and P. S. Giller, eds. *Analytical Biogeography* London: Chapman and Hall.

Brown, J. H. and A. Kodric-Brown. 1977. Turnover rates in insular biogeography: effects of immigration on extinction. *Ecology* 58:445–49.

Brown, J. H. and M. V. Lomolino. 2000. Concluding remarks: historical perspective and the future of island biogeography theory. *Global Ecology and Biogeography* 9:87–92.

Brown, J. H., D. W. Mehlman, and G. C. Stevens. 1995. Spatial variation in abundance. *Ecology* 76:2028–43.

Brown, J. H. and J. C. Munger. 1985. Experimental manipulation of a desert rodent community: food addition and species removal. *Ecology* 66:1545–63.

Bshary, R. 2003. The cleaner wrasse, *Labroides dimidiatus,* is a key organism for reef fish diversity at Ras Mohammed National Park, Egypt. *Journal of Animal Ecology* 72:169–72.

Byers, J. E. 2000. Competition between two estuarine snails: implications for invasions of exotic species. *Ecology* 81:1225–39.

Byers, J. E. and L. Goldwasser. 2001. Exposing the mechanism and timing of impact of nonindigenous species on native species. *Ecology* 82:1330–43.

Cairns, S. C. and G. C. Grigg. 1993. Population dynamics of red kangaroos (*Macropus rufus*) in relation to rainfall in the south Australian pastoral zone. *Journal of Applied Ecology* 30:444–58.

Calder, W. A. 1994. When do hummingbirds use torpor in nature? *Physiological Zoology* 67:1051–76.

Calow, P. and G. E. Petts. 1992. *The Rivers Handbook.* London: Blackwell Scientific Publications.

Cardinale, B. J. 2011. Biodiversity improves water quality through niche partitioning. *Nature* 472:86–U113.

Carey, F. G. 1973. Fishes with warm bodies. *Scientific American* 228:36–44.

Carpenter, F. L., M. A. Hixon, C. A. Beuchat, R. W. Russell, and D. C. Patton. 1993. Biphasic mass gain in migrant hummingbirds: body composition changes, torpor, and ecological significance. *Ecology* 74:1173–82.

Carpenter, S. R., T. M. Frost, J. F. Kitchell, T. K. Kratz, D. W. Schindler, J. Shearer, W. G. Sprules, M. J. Vanni, and A. P. Zimmerman. 1991. Patterns of primary production and herbivory in 25 North American lake ecosystems. In J. Cole, G. Lovett, and S. F. Findlay, eds. *Comparative Analyses of Ecosystems: Patterns, Mechanisms, and Theories.* New York: Springer-Verlag.

Carpenter, S. R. and J. F. Kitchell. 1988. Consumer control of lake productivity. *BioScience* 38:764–69.

Carpenter, S. R. and J. F. Kitchell. 1993. *The Trophic Cascade in Lakes.* Cambridge, England: Cambridge University Press.

Carpenter, S. R., J. F. Kitchell, and J. R. Hodgson. 1985. Cascading trophic interactions and lake productivity. *BioScience* 35:634–39.

Carroll, S. P. and C. Boyd. 1992. Host race radiation in the soapberry bug: natural history with the history. *Evolution* 46:1052–69.

Carroll, S. P., H. Dingle, T. R. Famula, and C. W. Fox. 2001. Genetic architecture of adaptive differentiation in evolving host races of the soapberry bug, *Jadera haematoloma. Genetica* 112:257–72.

Carroll, S. P., H. Dingle, and S. P. Klassen. 1997. Genetic differentiation of fitness-associated traits among rapidly evolving populations of the soapberry bug. *Evolution* 51:1182–88.

Carroll, S. P., S. P. Klassen, and H. Dingle. 1998. Rapidly evolving adaptations to host ecology and nutrition in the soapberry bug. *Evolutionary Ecology* 12:955–68.

Carruthers, R. I., T. S. Larkin, H. Firstencel, and Z. Feng. 1992. Influence of thermal ecology on the mycosis of a rangeland grasshopper. *Ecology* 73:190–204.

Caughley, G. 1977. *Analysis of Vertebrate Populations.* New York: John Wiley & Sons.

Caughley, G., J. Short, G. C. Grigg, and H. Nix. 1987. Kangaroos and climate: an analysis of distribution. *Journal of Animal Ecology* 56:751–61.

Census of Marine Life. 2016. www.coml.org/

Chamaille-Jammes, S., H. Fritz, and F. Murindagomo. 2014. Spatial patterns of the NDVI-rainfall relationship at the seasonal and interannual time scales in an African savanna. *International Journal of Remote Sensing* 27:5185–5200.

Chapin, F. S., III, L. R. Walker, C. L. Fastie, and L. C. Sharman. 1994. Mechanisms of primary succession following deglaciation at Glacier Bay, Alaska. *Ecological Monographs* 64:149–75.

Chapman, R. N. 1928. The quantitative analysis of environmental factors. *Ecology* 9:111–12.

Chapman, V. J. 1977. *Wet Coastal Ecosystems.* Amsterdam: Elsevier Scientific Publishing.

Charnov, E. L. 1973. *Optimal Foraging: Some Theoretical Explorations* Ph.D. Dissertation, University of Washington, Seattle.

Charnov, E. L. 2002. Reproductive effort, offspring size and benefit-cost ratios in the classification of life histories. *Evolutionary Ecology Research* 4:749–58.

Charnov, E. L., R. Warne, and M. Moses. 2007. Lifetime reproductive effort. *American Naturalist* 170: E129–E142.

Chen, I.-C., J. K. Hill, R. Ohlemüller, D. B. Roy, and C. D. Thomas. 2011. Rapid range shifts of species associated with high levels of climate warming. *Science* 333:1024–26.

Chiariello, N. R., C. B. Field, and H. A. Mooney. 1987. Midday wilting in a tropical pioneer tree. *Functional Ecology* 1:3–11.

Christian, C. E. 2001. Consequences of a biological invasion reveal the importance of mutualism for plant communities. *Nature* 413:635–39.

Clausen, J., D. D. Keck, and W. M. Hiesey. 1940. *Experimental Studies on the Nature of Species. I. The Effect of Varied Environments on Western North American Plants.* Washington, D.C.: Carnegie Institution of Washington, Publication no. 520.

Clements, F. E. 1916. *Plant Succession: An Analysis of the Development of Vegetation.* Washington, D.C.: Carnegie Institution of Washington, Publication no. 242.

Clements, F. E. 1936. Nature and structure of the climax. *Journal of Ecology* 24:252–84.

Cleveland, C. J., M. Betke, P. Federico, J. D. Frank, T. G. Hallam, J. Horn, J. D. López Jr., G. F. McCracken, R. A. Medellín, A. Moreno-Valdez, C. G. Sansone, J. K. Westbrook, and T. H. Kunz. 2006. Economic value of the pest control service provided by Brazilian free-tailed bats in south-central Texas. *Frontiers in Ecology and Environment* 4:238–43.

Coe, M. J., D. H. Cumming, and J. Phillipson. 1976. Biomass and production of large African herbivores in relation to rainfall and primary production. *Oecologia* 22:341–54.

Coleridge, S.T. 1798. "The Rime of the Ancient Mariner." In William Wordsworth and Samuel Taylor Coleridge, *Lyrical Ballads: With a Few Other Poems.* London: J. & A. Arch.

Coley, P. D. and T. M. Aide. 1991. Comparison of herbivory and plant defenses in temperate and tropical broad-leaved forests. In P. W. Price et al., eds. *Plant-Animal Interactions: Evolutionary Ecology in Tropical and Temperate Regions.* New York: John Wiley & Sons.

Collatz, G. J., C. Williams, B. Ghimire, S. Goward, and J. Masek. 2014. *NACP CMS: Forest Biomass and Productivity, 1-degree and 5-km, Conterminous US, 2005.* Data set. Available online [http://daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1221.

COML. 2010. Census of marine life. www.coml.org/.

Condit, R., B. J. Le Boeuf, P. A. Morris, and M. Sylvan. 2007. Estimating population size in asynchronous aggregations: a Bayesian approach and test with elephant seal censuses. *Marine Mammal Science* 23:834–35.

Connell, J. H. 1961a. The effects of competition, predation by *Thais lapillus* and other factors on natural populations of the barnacle, *Balanus balanoides. Ecological Monographs* 31:61–104.

Connell, J. H. 1961b. The influence of interspecific competition and other factors on the distribution of the barnacle *Chthamalus stellatus. Ecology* 42:710–23.

Connell, J. H. 1974. Ecology: field experiments in marine ecology. In R. N. Mariscal, ed. *Experimental Marine Biology.* New York: Academic Press.

Connell, J. H. 1975. Some mechanisms producing structure in natural communities: a model and evidence from field experiments. In M. L. Cody and J. Diamond, eds. *Ecology and Evolution of Communities.* Cambridge, Mass.: Harvard University Press.

Connell, J. H. 1978. Diversity in tropical rain forests and coral reefs. *Science* 199:1302–10.

Connell, J. H. 1983. On the prevalence and relative importance of interspecific competition: evidence from field experiments. *American Naturalist* 122:661–96.

Connell, J. H. and R. O. Slatyer. 1977. Mechanisms of succession in natural communities and their role in community stability and organization. *The American Naturalist* 111:1119–44.

Conroy, J. D., W. J. Edwards, R. A. Pontius, D. D. Kane, H. Y. Zhang, J. F. Shea, J. N. Richey, and D. A. Culver. 2005. Soluble nitrogen and phosphorus excretion of exotic freshwater mussels (*Dreissena* spp.): potential impacts for nutrient remineralisation in western Lake Erie. *Freshwater Biology* 50:1146–62.

Cook, L. M., B. S. Grant, I. J. Saccheri, and J. Mallet. 2012. Selective bird predation on the peppered moth: the last experiment of Michael Majerus. *Biology Letters* 8:609–12.

Cooper, P. D. 1982. Water balance and osmoregulation in a free-ranging tenebrionid beetle, *Onymacris unguicularis,* of the Namib Desert. *Journal of Insect Physiology* 28:737–42.

Cooper, W. S. 1923. The recent ecological history of Glacier Bay, Alaska. *Ecology* 4:93–128, 223–46, 355–65.

Cooper, W. S. 1931. A third expedition to Glacier Bay, Alaska. *Ecology* 12:61–95.

Cooper, W. S. 1939. A fourth expedition to Glacier Bay, Alaska. *Ecology* 20:130–55.

Coppock, D. L., J. K. Detling, J. E. Ellis, and M. I. Dyer. 1983. Plant herbivore interactions in a North American mixed-grass prairie. I. effects of black-tailed prairie dogs on intraseasonal aboveground plant biomass and nutrient dynamics and plant species diversity. *Oecologia* 56:1–9.

Costello, M. J., M. Coll, R. Danovaro, P. Halpin, H. Ojaveer, and P. Miloslavich. 2010. A census of marine biodiversity knowledge, resources, and future challenges. *PloS ONE* 5:e12110.

Coupland, R. T. and R. E. Johnson. 1965. Rooting characteristics of native grassland species in Saskatchewan. *Journal of Ecology* 53:475–507.

Cox, G. W. and R. E. Ricklefs. 1977. Species diversity, ecological release, and community structure in Caribbean landbird faunas. *Oikos* 29:60–66.

Culp, J. M. and G. J. Scrimgeour. 1993. Size dependent diel foraging periodicity of a mayfly grazer in streams with and without fish. *Oikos* 68:242–50.

Curtis, J. T. 1956. The modification of mid-latitude grasslands and forests by man. In W. L. Thomas, Jr., ed. *Man's Role in Changing the Face of the Earth.* Chicago: University of Chicago Press.

Damuth, J. 1981. Population density and body size in mammals. *Nature* 290:699–700.

Darwin, C. 1842a. *Journal of Researches into the Geology and Natural History of the Various Countries Visited During the Voyage of H.M.S.* 'Beagle' *Under the Command of Captain Fitz-Roy, N. N. from 1832–1836.* London: Henry Colborn.

Darwin, C. 1842b. *The Structure and Distribution of Coral Reefs.* London: Smith, Elder and Company. Reprinted by the University of California Press, Berkeley, 1962.

Darwin, C. 1859. *The Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life.* New York: Modern Library.

Darwin, C. 1862. On the two forms, or dimorphic condition, in the species of *Primula,* and on their remarkable sexual relations. In P. H. Barrett, ed. *The Collected Papers of Charles Darwin.* Chicago: University of Chicago Press.

Darwin, C. 1868. *The Variation of Animals and Plants Under Domestication.* London: John Murray.

Darwin, C. 1871. *The Descent of Man, and Selection in Relation to Sex.* London: John Murray.

Darwin, C. and F. Darwin. 1896. *The Life and Letters of Charles Darwin, Including an Autobiographical Chapter.* New York: D. Appleton and Company.

Davis, M. B. 1981. Quaternary history and the stability of forest communities. In D. C. West, H. H. Shugart, and D. B. Botkin, eds. *Forest Succession: Concepts and Application.* New York: Springer-Verlag.

Davis, M. B. 1983. Quaternary history of deciduous forests of eastern North America and Europe. *Annals of the Missouri Botanical Garden* 70:550–63.

Davis, M. B. 1989. Retrospective studies. In G. E. Likens, ed. *Long-Term Studies in Ecology.* New York: Springer-Verlag.

Davis, M. B. and R. G. Shaw. 2001. Range shifts and adaptive responses to Quaternary climate change. *Science* 292:673–79.

Davis, M. B., R. G. Shaw, and J. R. Etterson. 2005. Evolutionary responses to climate change. *Ecology* 86:1704–14.

Dawson, T. E., S. Mambelli, A. H. Plamboeck, P. H. Templer, and K. P. Tu. 2002. Stable isotopes in plant ecology. *Annual Review of Ecology and Systematics* 33:507–99.

Dayan, T. and D. Simberloff. 2005. Ecological and community-wide character displacement: the next generation. *Ecology Letters* 8:875–94.

Deevey, E. S. 1947. Life tables for natural populations of animals. *Quarterly Review of Biology* 22:283–314.

de Leon, L. F., E. Bermingham, J. Podos, and A. P. Hendry. 2010. Divergence with gene flow as facilitated by ecological differences: within-island variation in Darwin's finches. *Philosophical Transactions of the Royal Society B: Biological Sciences* 365:1041–52.

del Moral, R., L. R. Walker, and J. P. Bakker. 2007. Insights gained from succession for the restoration of landscape structure and function. In R. del Moral, L. R. Walker, and J. P. Bakker, eds. *Linking Restoration and Ecological Succession.* New York: Springer.

Denno, R. F. and G. K. Roderick. 1992. Density-related dispersal in planthoppers: effects of interspecific crowding. *Ecology* 73:1323–34.

Diamond, J. M. 1969. Avifaunal equilibria and species turnover rates on the Channel Islands of California. *Proceedings of the National Academy of Sciences* 64:57–63.

Dias, A. T. C., R. L. Bozelli, R. M. Darigo, F. de A. Esteves, H. F. dos Santos, M. P. Figueiredo-Barros, M. F. Q. S. Nunes, F. Roland, L. R. Zamith, and F. R. Scarano. 2012. Rehabilitation of a bauxite tailing substrate in central Amazonia: the effect of litter and seed addition on flood-prone forest restoration. *Restoration Ecology* 20:483–89.

Diaz, H. F. and G. N. Kiladis. 1992. Atmospheric teleconnections associated with the extreme phases of the Southern Oscillation. In H. F. Diaz and V. Markgraf, eds. *El Niño Historical and Paleoclimatic Aspects of the Southern Oscillation.* Cambridge, England: Cambridge University Press.

Diffendorfer, J. E., M. S. Gaines, and R. D. Holt. 1995. Habitat fragmentation and movements of three small mammals (*Sigmodon, Microtus,* and *Peromyscus*). *Ecology* 76:827–39.

Dillon, P. J. and F. H. Rigler. 1974. The phosphorus-chlorophyll relationship in lakes. *Limnology and Oceanography* 19:767–73.

Dobrynin, P., S. Liu, G. Tamazian, Z. Xiong, A. A. Yurchenko, K. Krasheninnikova, S. Kliver, A. Schmidt-Kuntzel, K. P. Koepfli, W. Johnson, L. F. K. Kuderna, R. Garcia-Perez, M. de Manuel, R. Godinez, A. Komissarov, A. Makunin, V. Brukhin, W. L. Qiu, L. Zhou, F. Li, J. Yi, C. Driscoll, A. Antunes, T. K. Oleksyk, E. Eizirik, P. Perelman, M. Roelke, D. Wildt, M. Diekhans, T. Marques-Bonet, L. Marker, J. B. JunWang, J. Wang, G. J. Zhang, and S. J. O'Brian. 2015. Genomic legacy of the African cheetah, *Acinonyx jubatus. Genome Biology* 16:277.

Dobzhansky, T. 1937. *Genetics and the Origin of Species.* New York: Columbia University Press.

Dobzhansky, T. 1950. Evolution in the tropics. *American Scientist* 38:209–21.

Dodd, M., J. Silvertown, K. McConway, J. Potts, and M. Crawley. 1995. Community stability: a 60-year record of trends and outbreaks in the occurrence of species in the Park Grass Experiment. *Journal of Ecology* 83:277–85.

Douglas, M. R. and P. C. Brunner. 2002. Biodiversity of central alpine *Coregonus* (Salmoniformes): impact of one-hundred years of management. *Ecological Applications* 12:154–72.

Dousset, B., F. Gourmelon, K. Laaidi, A. Zeghnoun, E. Giraudet, P. Bretin, E. Maurid, and S. Vandentorren. 2011. Satellite monitoring of summer heat waves in the Paris metropolitan area. *International Journal of Climatology* 31:313–23.

Edney, E. B. 1953. The temperature of wood lice in the sun. *Journal of Experimental Biology* 30:331–49.

Ehleringer, J. R. 1980. Leaf morphology and reflectance in relation to water and temperature stress. In N. C. Turner and P. J. Kramer, eds. *Adaptations of Plants to Water and High Temperature Stress.* New York: Wiley-Interscience.

Ehleringer, J. R., O. Björkman, and H. A. Mooney. 1976. Leaf pubescence: effects on absorptance and photosynthesis in a desert shrub. *Science.* 192:376–77.

Ehleringer, J. R., T. E. Cerling, and B. R. Helliker. 1997. C_4 photosynthesis, atmospheric CO_2, and climate. *Oecologia* 112:285–99.

Ehleringer, J. R. and C. Clark. 1988. Evolution and adaptation in *Encelia* (Asteraceae). In L. D. Gottlieb and S. K. Jain, eds. *Plant Evolutionary Biology.* London: Chapman and Hall.

Ehleringer, J. R., S. L. Phillips, W. S. F. Schuster, and D. R. Sandquist. 1991. Differential utilization of summer rains by desert plants. *Oecologia* 88:430–34.

Ehleringer, J. R., J. Roden, and T. E. Dawson. 2000. Assessing ecosystem-level water relations through stable isotope ratio analyses. In O. E. Sala, R. B. Jackson, H. A. Mooney, and R. W. Howarth, eds. *Methods in Ecosystem Science.* New York: Springer.

Eisen, L. and C. G. Moore. 2013. *Aedes (Stegomyia) aegypti* in the continental United States: a vector at the cool margin of its geographic range. *Journal of Medical Entomology* 50:467–78.

Elser, J. J., W. F. Fagan, R. F. Denno, D. R. Dobberfuhl, A. Folarin, A. Huberty, S. Interlandi, S. S. Kilham, E. McCauley, K. L. Schulz, E. H. Siemann, and R. W. Sterner. 2000. Nutritional constraints in terrestrial and freshwater food webs. *Nature* 408:578–80.

Elton, C. 1924. Periodic fluctuations in the numbers of animals: their causes and effects. *British Journal of Experimental Biology* 2:119–63.

Elton, C. 1927. *Animal Ecology.* London: Sidgewick & Jackson.

Endler, J. A. 1980. Natural selection on color patterns in *Poecilia reticulata. Evolution* 34:76–91.

Endler, J. A. 1995. Multiple-trait coevolution and environmental gradients in guppies. *Trends in Ecology & Evolution* 10:22–29.

FAO. 1972. *Atlas of the Living Resources of the Sea.* 3d ed. Rome: FAO.

Feggestad, A. J., P. M. Jacobs, X. D. Miao, and J. A. Mason. 2004. Stable carbon isotope record of Holocene environmental change in the central Great Plains. *Physical Geography* 25:170–90.

Feldman, G., D. Clark, and D. Halpern. 1984. Satellite color observations of the phytoplankton distribution in the eastern equatorial Pacific during the 1982–1983 El Niño. *Science* 226:1069–71.

Fietz, J., F. Tataruch, K. H. Dausmann, and J. U. Ganzhorn. 2003. White adipose tissue composition in the free-ranging fat-tailed dwarf lemur (*Cheirogaleus medius;* Primates), a tropical hibernator. *Journal of Comparative Physiology B: Biochemical Systemic and Environmental Physiology* 173:1–10.

Findlay, D. L. and S. E. M. Kasian. 1987. Phytoplankton community responses to nutrient addition in Lake 226, Experimental Lakes Area, northwestern Ontario. *Canadian Journal of Fisheries and Aquatic Sciences* 44(Suppl. 1):35–46.

Fisher, S. G., L. J. Gray, N. B. Grimm, and D. E. Busch. 1982. Temporal succession in a desert stream ecosystem following flash flooding. *Ecological Monographs* 52:93–110.

Fitter, A. and R. K. M. Hay. 1987. *Environmental Physiology of Plants* London: Academic Press.

Flessa, K. W. 1975. Area, continental drift and mammalian diversity. *Paleobiology* 1:189–94.

Flessa, K. W. 1981. The regulation of mammalian faunal similarity among continents. *Journal of Biogeography* 8:427–38.

Forel, F. A. 1892. *Le Léman: Monographie limnologique.* Tome I, Géographie, Hydrographie, Géologie, Climatologie, Hydrologie. Lausanne, F. Rouge. Reprinted Genève, Slatkine Reprints, 1969.

Forman, R. T. T. 1995. *Land Mosaics: the Ecology of Landscapes and Regions.* Cambridge, England: Cambridge University Press.

Forman, R. T. T. and M. Godron. 1986. *Landscape Ecology.* New York: Wiley.

Frank, P. W., C. D. Boll, and R. W. Kelly. 1957. Vital statistics of laboratory cultures of *Daphnia pulex* De Geer as related to density. *Physiological Zoology* 30:287–305.

Frazer, N. B., J. W. Gibbons, and J. L. Greene. 1991. Life history and demography of the common mud turtle *Kinosternon subrubrum* in South Carolina, USA. *Ecology* 72:2218–31.

Friedli, H., H. Lötscher, H. Oeschger, U. Siegenthaler, and B. Stauffer. 1986. Ice core record of the $^{13}C/^{12}C$ ratio of atmospheric CO_2 in the past two centuries. *Nature* 324:237–38.

Friedmann, H. 1955. The honey-guides. *Bulletin of the United States National Museum* 208:1–292.

Gabriel, K. M. A. and W. R. Endlicher. 2011. Urban and rural mortality rates during heat waves in Berlin and Brandenburg, Germany. *Environmental Pollution* 159:2044–50.

Gadagkar, R. 2010. Sociobiology in turmoil again. *Current Science* 99:1036–41.

Gallardo, A. and J. Merino. 1993. Leaf decomposition in two Mediterranean ecosystems of southwest Spain: influence of substrate quality. *Ecology* 74:152–61.

Gaston, K. J. 1996. The multiple forms of the interspecific abundance-distribution relationship. *Oikos* 76:211–20.

Gaston, K. J., T. M. Blackburn, J. J. D. Greenwood, R. D. Gregory, R. M. Quinn, and J. H. Lawton. 2000. Abundance-occupancy relationships. *Journal of Applied Ecology* 37:39–59.

Gause, G. F. 1934. *The Struggle for Existence.* Baltimore: Williams & Wilkins. Reprinted by Hafner Publishing Company, New York, 1969.

Gause, G. F. 1935. Experimental demonstration of Volterra's periodic oscillation in the numbers of animals. *Journal of Experimental Biology* 12:44–48.

Gauslaa, Y. 1984. Heat resistance and energy budget in different Scandinavian plants. *Holarctic Ecology* 7:1–78.

Gessner, M. O. and E. Chauvet. 1994. Importance of stream microfungi in controlling breakdown rates of leaf litter. *Ecology* 75:1807–17.

Gibbs, H. L. and P. R. Grant. 1987. Ecological consequences of an exceptionally strong El Niño event on Darwin's finches. *Ecology* 68:1735–46.

Gibbs, R. J. 1970. Mechanisms controlling world water chemistry. *Science* 170:1088–90.

Gleason, H. A. 1926. The individualistic concept of the plant association. *Torrey Botanical Club Bulletin* 53:7–26.

Gleason, H. A. 1939. The individualistic concept of the plant association. *American Midland Naturalist* 21:92–110.

Glynn, P. W. 1983. Crustacean symbionts and the defense of corals: coevolution of the reef? In M. H. Nitecki, ed. *Coevolution.* Chicago: University of Chicago Press.

Graça, M. A. S. and F. X. Ferrand de Almeida. 1983. Contribuição para o conhecimento da lontra (*Lutra lutra* L.) num sector da bacia do Rio Mondego. *Ciencia Biologica* (Contribution to the knowledge of the otter (*Lutra lutra* L.) in a sector of the Mondego River basin.) (Portugal) 5:33–42.

Graham, W. F. and R. A. Duce. 1979. Atmospheric pathways of the phosphorus cycle. *Geochimica et Cosmochimica* 43:1195–1208.

Granéli, E., K. Wallström, U. Larsson, W. Granéli, and R. Elmgren. 1990. Nutrient limitation of primary production in the Baltic Sea area. *Ambio* 19:142–51.

Grant, B. R. and P. R. Grant. 1989. *Evolutionary Dynamics of a Natural Population.* Chicago: University of Chicago Press.

Grant, P. R. 1986. *Ecology and Evolution of Darwin's Finches.* Princeton, N.J.: Princeton University Press.

Grassle, J. F. 1991. Deep-sea benthic biodiversity. *BioScience* 41:464–69.

Grice, G. D. and A. D. Hart. 1962. The abundance, seasonal occurrence and distribution of the epizooplankton between New York and Bermuda. *Ecological Monographs* 32:287–309.

Grime, J. P. 1977. Evidence for the existence of three primary strategies in plants and its relevance to ecological and evolutionary theory. *American Naturalist* 111:1169–94.

Grime, J. P. 1979. *Plant Strategies and Vegetation Processes.* New York: John Wiley & Sons.

Grimm, N. B. 1987. Nitrogen dynamics during succession in a desert stream. *Ecology* 68:1157–70.

Grimm, N. B. 1988. Role of macroinvertebrates in nitrogen dynamics of a desert stream. *Ecology* 69:1884–93.

Grimm, N. B., S. H. Faeth, N. E. Golubiewski, C. L. Redman, J. Wu, X. Bai, and J. M. Briggs. 2008. Global change and the ecology of cities. *Science* 319:756–60.

Grinnell, J. 1917. The niche-relationships of the California thrasher. *Auk* 34:427–33.

Grinnell, J. 1924. Geography and evolution. *Ecology* 5:225–29.

Groffman, P. M., N. L. Law, K. T. Belt, L. E. Band, and G. T. Fisher. 2004. Nitrogen fluxes and retention in urban watershed ecosystems. *Ecosystems* 7:393–403.

Grosholz, E. D. 1992. Interactions of intraspecific, interspecific, and apparent competition with host-pathogen population dynamics. *Ecology* 73:507–14.

Gross, J. E., L. A. Shipley, N. T. Hobbs, D. E. Spalinger, and B. A. Wunder. 1993. Functional response of herbivores in food-concentrated patches: tests of a mechanistic model. *Ecology* 74:778–91.

Grutter, A. S. 1999. Cleaner fish really do clean. *Nature* 398:672–73.

Gunderson, D. R. 1997. Trade-off between reproductive effort and adult survival in oviparous and viviparous fishes. *Canadian Journal of Fisheries and Aquatic Sciences* 54:990–98.

Habeeb, D., J. Vargo, and B. Stone Jr. 2015. Rising heat wave trends in large US cities. *Natural Hazards* 76:1651–65.

Haddad, N. M. 1999. Corridor and distance effects on interpatch movements: a landscape experiment with butterflies. *Ecological Applications* 9:612–22.

Haddad, N. M. and K. A. Baum. 1999. An experimental test of corridor effects on butterfly densities. *Ecological Applications* 9:623–33.

Hadley, N. F., A. Savill, and T. D. Schultz. 1992. Coloration and its thermal consequences in the New Zealand tiger beetle *Neocicindela perhispida. Journal of Thermal Biology* 17:55–61.

Hadley, N. F. and T. D. Schultz. 1987. Water loss in three species of tiger beetles (*Cicindela*): correlations with epicuticular hydrocarbons. *Journal of Insect Physiology* 33:677–82.

Hairston, N. G., Sr. 1989. *Ecological Experiments: Purpose, Design, and Execution.* Cambridge, England: Cambridge University Press.

Hall, J. B. and M. D. Swaine. 1976. Classification and ecology of closed-canopy forest in Ghana. *Journal of Ecology* 64:913–51.

Hamilton, W. D. 1964. The genetical evolution of social behavior, I and II. *Journal of Theoretical Biology* 7:1–52.

Hamilton, W. J., III and M. K. Seely. 1976. Fog basking by the Namib Desert beetle, *Onymacris unguicularis. Nature* 262:284–85.

Hanski, I. 1982. Dynamics of regional distribution: the core and satellite hypothesis. *Oikos* 38:210–21.

Hanski, I., M. Kuussaari, and M. Nieminen. 1994. Metapopulation structure and migration in the butterfly *Melitaea cinxia. Ecology* 75:747–62.

Hanson, J. M. and R. H. Peters. 1984. Empirical prediction of crustacean zooplankton biomass and profundal macrobenthos in lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 41:439–45.

Hardie, K. 1985. The effect of removal of extraradical hyphae on water uptake by vesicular-arbuscular mycorrhizal plants. *New Phytologist* 101:677–84.

Hardy, G. H. 1908. Mendelian proportions in a mixed population. *Science* 28:49–50.

Harper, J. L., P. H. Lovell, and K. G. Moore. 1970. The shapes and sizes of seeds. *Annual Review of Ecology and Systematics* 1:327-56.

Harrington, G. N. 1991. Effects of soil moisture on shrub seedling survival in a semi-arid grassland. *Ecology* 72:1138-49.

Haukioja, E., K. Kapiainen, P. Niemelä, and J. Tuomi. 1983. Plant availability hypothesis and other explanations of herbivore cycles: complementary or exclusive alternatives? *Oikos* 40:419-32.

Havens, K. E. 1994. A preliminary characterization of the Lake Okeechobee (Florida, USA) food web. *Bulletin of the North American Benthological Society* 11:97.

Hawn, A. T., A. N. Radford, and M A. du Plessis. 2007. Delayed breeding affects lifetime reproductive success differently in male and female green woodhoopoes. *Current Biology* 17:844-49.

Heap, I. 2007. International survey of herbicide-resistant weeds. www.weedscience.org.

Hedin, L. O., P. M. Vitousek, and P. A. Matson. 2003. Nutrient losses over four million years of tropical forest development. *Ecology* 84:2231-55.

Hegazy, A. K. 1990. Population ecology and implications for conservation of *Cleome droserifolia:* a threatened xerophyte. *Journal of Arid Environments* 19:269-82.

Heinrich, B. 1979. *Bumblebee Economics.* Cambridge, Mass.: Harvard University Press.

Heinrich, B. 1984. Strategies of thermoregulation and foraging in two vespid wasps, *Dolichovespula maculata* and *Vespula vulgaris. Journal of Comparative Physiology* B154:175-80.

Heinrich, B. 1993. *The Hot-Blooded Insects.* Cambridge, Mass.: Harvard University Press.

Helfrich, G. 2004. *Humboldt's Cosmos: Alexander von Humboldt and the Latin American Journey That Changed the Way We See the World.* New York: Gotham.

Hendry, A. P., S. K. Huber, L. F. de León, A. Herrel, and J. Podos. 2009. Disruptive selection in a bimodal population of Darwin's finches. *Philosophical transactions of the Royal Society B-Biological Sciences* 276:753-59.

Hengeveld, R. 1988. Mechanisms of biological invasions. *Journal of Biogeography* 15:819-28.

Hengeveld, R. 1989. *Dynamics of Biological Invasions.* New York: Chapman and Hall.

Heske, E. J., J. H. Brown, and S. Mistry. 1994. Long-term experimental study of a Chihuahuan Desert rodent community: 13 years of competition. *Ecology* 75:438-45.

Hickling, R. L., D. B. Roy, J. K. Hill, R. Fox, and C. D. Thomas. 2006. The distributions of a wide range of taxonomic groups are expanding polewards. *Global Change Biology* 12:450-55.

Hogetsu, K. and S. Ichimura. 1954. Studies on the biological production of Lake Suwa. 6. The ecological studies in the production of phytoplankton. *Japanese Journal of Botany* 14:280-303.

Hölldobler, B. and E. O. Wilson. 1990. *The Ants.* Cambridge, Mass.: The Belknap Press of Harvard University Press.

Holland, J.N., and D.L. DeAngelis. 2009. Consumer-resource theory predicts dynamic transitions between outcomes of interspecific interactions. *Ecology Letters* 12:1357-66.

Holling, C. S. 1959a. The components of predation as revealed by a study of small mammal predation of the European pine sawfly. *The Canadian Entomologist* 91:293-320.

Holling, C. S. 1959b. Some characteristics of simple types of predation and parasitism. *Canadian Entomologist* 91:385-98.

Holmes, R. T., J. C. Schultz, and P. Nothnagle. 1979. Bird predation on forest insects: an exclosure experiment. *Science* 206:462-63.

Horn, J. W. and T. H. Kunz. 2008. Analyzing NEXRAD doppler radar images to assess nightly dispersal patterns and population trends in Brazilian free-tailed bats (*Tadarida brasiliensis*). *Integrative and Comparative Biology* 48:24-39.

Houde, A. E. 1997. *Sex, Color, and Mate Choice in Guppies.* Princeton, N.J.: Princeton University Press.

Howe, W. H. and F. L. Knopf. 1991. On the imminent decline of the Rio Grande cottonwoods in central New Mexico. *Southwestern Naturalist* 36:218-24.

Huang, H. T. and P. Yang. 1987. The ancient cultured citrus ant. *BioScience* 37:665-67.

Hubbell, S. P. and L. K. Johnson. 1977. Competition and nest spacing in a tropical stingless bee community. *Ecology* 58:949-63.

Hudson, P. J., A. P. Dobson, and D. Newborn. 1992. Do parasites make prey vulnerable to predation? *Journal of Animal Ecology* 61:681-92.

Huffaker, C. B. 1958. Experimental studies on predation: dispersion factors and predator-prey oscillations. *Hilgardia* 27:343-83.

Hulshoff, R. M. 1995. Landscape indices describing a Dutch landscape. *Landscape Ecology* 10:101-11.

Huntly, N. and R. Inouye. 1988. Pocket gophers in ecosystems: patterns and mechanisms. *BioScience* 38:786-93.

Huston, M. 1980. Soil nutrients and tree species richness in Costa Rican forests. *Journal of Biogeography* 7:147-57.

Huston, M. 1994a. Biological diversity, soils, and economics. *Science* 262:1676-79.

Huston, M. 1994b. *Biological Diversity.* New York: Cambridge University Press.

Hutchinson, G. E. 1957. Concluding remarks. *Cold Spring Symposia on Quantitative Biology* 22:415-27.

Hutchinson, G. E. 1959. Homage to Santa Rosalia or why are there so many kinds of animals? *American Naturalist* 93:145-59.

Hutchinson, G. E. 1961. The paradox of the plankton. *American Naturalist* 95:137-45.

Ichimura, S. 1956. On the standing crop and productive structure of phytoplankton community in some lakes of central Japan. *Japanese Botany Magazine Tokyo* 69:7-16.

Inbar, M., A. Eshel, and D. Wool. 1995. Interspecific competition among phloem feeding insects mediated by induced host plant sinks. *Ecology* 76:1506-15.

Inouye, D. W. 2008. Effects of climate change on phenology, frost damage, and floral abundance of montane wildflowers. *Ecology* 89:353-62.

Inouye, D. W. and O. R. Taylor Jr. 1979. A temperate region plant-ant-seed predator system: consequences of extrafloral nectar secretion by *Helianthella quinquenervis. Ecology* 60:1-7.

Iriarte, J. A., W. L. Franklin, W. E. Johnson, and K. H. Redford. 1990. Biogeographic variation of food habits and body size of the American puma. *Oecologia* 85:185-90.

Isack, H. A. and H.-U. Reyer. 1989. Honeyguides and honey gatherers: interspecific communication in a symbiotic relationship. *Science* 243:1343-46.

IUCN. 2007. Red list of threatened species. www.iucnredlist.org/.

Jakobsson, A. and O. Eriksson. 2000. A comparative study of seed number, seed size, seedling size and recruitment in grassland plants. *Oikos* 88:494-502.

Janzen, D. H. 1966. Coevolution of mutualism between and acacias in Central America. *Evolution* 20:249-75.

Janzen, D. H. 1967a. Fire, vegetation structure, and the ant X acacia interaction in Central America. *Ecology* 48:26-35.

Janzen, D. H. 1967b. Interaction of the bull's-horn acacia (*Acacia cornigera* L.) with an ant inhabitant (*Pseudomyrmex ferruginea* F. Smith) in eastern Mexico. *The University of Kansas Science Bulletin* 47:315-558.

Janzen, D. H. 1967c. Why mountain passes are higher in the tropics. *American Naturalist* 101:233-49.

Janzen, D. H. 1981. The peak in North American ichneumonid species richness lies between 38° and 42°. *Ecology* 62:532-37.

Janzen, D. H. 1985. Natural history of mutualisms. In D. H. Boucher, ed. *The Biology of Mutualism: Ecology and Evolution.* London: Croom Helm.

Jarvis, J. U. M. 1981. Eusociality in a mammal: cooperative breeding in naked mole-rat colonies. *Science* 212:571-73.

Jenny, H. 1980. *The Soil Resource.* New York: Springer-Verlag.

Johnson, N. C. 1993. Can fertilization of soil select less mutualistic mycorrhizae. *Ecological Applications* 3:749-57.

Johnson, N. C., J. H. Graham, and F. A. Smith. 1997. Functioning of mycorrhizal associations along the mutualism-parasitism continuum. *The New Phytologist* 135:575-585.

Johnson, N. C., J. D. Hoeksema, J. D. Bever, V. B. Chaudhary, C. Gehring, J. Klironomos, R. Koide, R. M. Miller, J. Moore, P. Moutoglis, M. Schwartz, S. Simard, W. Swenson, J. Umbanhowar, G. Wilson, and C. Zabinski. 2006. From Lilliput to Brobdingnag: extending models of mycorrhizal function across scales. *BioScience* 56:889-900.

Johnson, N. C., D. L. Rowland, L. Corkidi, L. M. Egerton-Warburton, and E. B. Allen. 2003. Nitrogen enrichment alters mycorrhizal allocation at five mesic to semiarid grasslands. *Ecology* 84:1895-1908.

Johnston, D. W. and E. P. Odum. 1956. Breeding bird populations in relation to plant succession on the Piedmont of Georgia. *Ecology* 37:50-62.

Jones, C. G., J. H. Lawton, and M. Shachak. 1994. Organisms as ecosystem engineers. *Oikos* 69:373-86.

Jordan, C. F. 1985. Soils of the Amazon rain forest. In G. T. Prance and T. E. Lovejoy, eds. *Amazonia.* Oxford: Pergamon Press.

Jost, C., G. Devulder, J. A. Vucetich, R. O. Peterson, and R. Arditi. 2005. The wolves of Isle Royale display scale-invariant satiation and ratio-dependent predation on moose. *Journal of Animal Ecology* 74:809-16.

Jouzel, J., V. Masson-Delmotte, O. Cattani, G. Dreyfus, S. Falourd, G. Hoffmann, B. Minster, J. Nouet, J. M. Barnola, J. Chappellaz, H. Fischer, J. C. Gallet, S. Johnson, M. Leuenberger, L. Loulergue, D. Luethi, H. Oerter, F. Parrenin, G. Raisbeck, D. Raynaud, A. Schilt, J. Schwander, E. Selmo, R. Souchez, R. Spahni, B. Stauffer, J. P. Steffensen, B. Stenni, T. F. Stocker, J. L. Tison, M. Werner, and E. W. Wolff. 2007. Orbital and millennial Antarctic climate variability over the past 800,000 years. *Science* 317:793-97.

Kairiukstis, L. A. 1967. In J. L. Tselniker (ed.) Svetovoi rezhim fotosintez i produktiwnost lesa. (Light regime, photosynthesis and forest productivity.) Nauka, Moscow.

Kalka, M. B., A. R. Smith, and E. K. V. Kalko. 2008. Bats limit arthropods and herbivory in a tropical forest. *Science* 320:71.

Kallio, P. and L. Kärenlampi. 1975. Photosynthesis in mosses and lichens. In J. P. Cooper, ed. *Photosynthesis and Productivity in Different Environments.* Cambridge, England: Cambridge University Press.

Kane, J. M. and T. E. Kolb. 2010. Importance of resin ducts in reducing ponderosa pine mortality from bark beetle attack. *Oecologia* 164:601-09.

Karr, J. R. and D. R. Dudley. 1981. Ecological perspective on water quality goals. *Environmental Management* 5:55-68.

Kaspari, M., S. O'Donnell, and J. R. Kercher. 2000. Energy, density, and constraints to species richness:

ant assemblages along a productivity gradient. *American Naturalist* 155:280–93.

Kates, R. W., B. L. Turner II, and W. C. Clark. 1990. The great transformation. In B. L. Turner II, W. C. Clark, R. W. Kates, J. F. Richards, J. T. Mathews, and W. B. Meyer, eds. *The Earth as Transformed by Human Action.* Cambridge, England: Cambridge University Press.

Katz, C. H. 1985. A nonequilibrium marine predator-prey interaction. *Ecology* 66:1426–38.

Kauffman, J. B., R. L. Sanford Jr., D. L. Cummings, I. H. Salcedo, and E. V. S. B. Sampaio. 1993. Biomass and nutrient dynamics associated with slash fires in neotropical dry forests. *Ecology* 74:140–51.

Kauffman, M. J., J. F. Brodie, and E. S. Jules. 2010. Are wolves saving Yellowstone's aspen? A landscape-level test of a behaviorally mediated trophic cascade. *Ecology* 91:2742–55.

Kauffman, M. J., J. F. Brodie, and E. S. Jules. 2013. Are wolves saving Yellowstone's aspen? A landscape-level test of a behaviorally mediated trophic cascade: reply. *Ecology* 94:1425–31.

Keeler, K. H. 1981. A model of selection for facultative nonsymbiotic mutualism. *American Naturalist* 118:488–98.

Keeler, K. H. 1985. Benefit models of mutualism. In D. H. Boucher, ed. *The Biology of Mutualism: Ecology and Evolution.* London: Croom Helm.

Keeling, C. D. and T. P. Whorf. 1994. Atmospheric CO_2 records from sites in the SIO air sampling network. In T. A. Boden, D. P. Kaiser, R. J. Sepanski, and F. W. Stoss, eds. *Trends '93: A Compendium of Data on Global Change.* ORNL/ CDIAC-65. Oak Ridge, Tenn.: Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory.

Keever, C. 1950. Causes of succession on old fields of the Piedmont, North Carolina. *Ecological Monographs* 20:230–50.

Keith, L. B. 1963. *Wildlife's Ten-Year Cycle.* Madison, Wis.: University of Wisconsin Press.

Keith, L. B. 1983. Role of food in hare population cycles. *Oikos* 40:385–95.

Keith, L. B., J. R. Cary, O. J. Rongstad, and M. C. Brittingham. 1984. Demography and ecology of a declining snowshoe hare population. *Wildlife Monographs* 90:1–43.

Kelly, A. E. and M. L. Goulden. 2008. Rapid shifts in plant distribution with recent climate change. *Proceedings of the National Academy of Sciences of the United States* 105:11823–26.

Kempton, R. A. 1979. The structure of species abundance and measurement of diversity. *Biometrics* 35:307–21.

Kettlewell, H. B. D. 1959. Darwin's missing evidence. *Scientific American* 200:48–53.

Kevan, P. G. 1975. Sun-tracking solar furnaces in high arctic flowers: significance for pollination and insects. *Science* 189:723–26.

Kidron, G. J., E. Barzilay, and E. Sachs. 2000. Microclimate control upon sand microbiotic crusts, western Negev Desert, Israel. *Geomorphology* 36:1–18.

Killingbeck, K. T. and W. G. Whitford. 1996. High foliar nitrogen in desert shrubs: an important ecosystem trait or defective desert doctrine? *Ecology* 77:1728–37.

Klemmedson, J. O. 1975. Nitrogen and carbon regimes in an ecosystem of young dense ponderosa pine in Arizona. *Forest Science* 21:163–68.

Knorr, W. 2009. Is the airborne fraction of anthropogenic CO_2 emissions increasing? *Geophysical Research Letters* 36.

Knutson, R. M. 1974. Heat production and temperature regulation in eastern skunk cabbage. *Science* 186:746–47.

Knutson, R. M. 1979. Plants in heat. *Natural History* 88:42–47.

Kodric-Brown, A. 1993. Female choice of multiple male criteria in guppies: interacting effects of dominance, coloration and courtship. *Behavioral Ecology and Sociobiology* 32:415–20.

Kolber, Z. S., C. L. Van Dover, R. A. Niederman, and P. G. Falkowski. 2000. Bacterial photosynthesis in surface waters of the open ocean. *Nature* 407:177–79.

Kontiainen, P., J. E. Brommer, P. Karell, and H. Pietiäinen. 2007. Heritability, plasticity and canalization of Ural owl egg size in a cyclic environment. *Journal of Evolutionary Biology* 21:88–96.

Korpimäki, E. 1988. Factors promoting polygyny in European birds of prey—a hypothesis. *Oecologia* 77:278–85.

Korpimäki, E. and K. Norrdahl. 1991. Numerical and functional responses of kestrels, short-eared owls, and long-eared owls to vole densities. *Ecology* 72:814–26.

Kramarova, N. A., E. R. Nash, P. A. Newman, P. K. Bhartia, R. D. McPeters, D. F. Rault, C. J. Seftor, P. Q. Xu, and G. J. Labow. 2014. Measuring the Antarctic ozone hole with the new Ozone Mapping and Profiler Suite (OMPS). *Atmospheric Chemistry and Physics* 14:2353–61.

Krebs, C. J., R. Boonstra, S. Boutin, and A. R. E. Sinclair. 2001. What drives the 10-year cycle of snowshoe hares? *BioScience* 51:25–36.

Krebs, C. J., S. Boutin, R. Boonstra, A. R. E. Sinclair, J. N. M. Smith, M. R. T. Dale, K. Martin, and R. Turkington. 1995. Impact of food and predation on the snowshoe hare cycle. *Science* 269:1112–15.

Kuhlbrodt, T., A. Griesel, M. Montoya, A. Levermann, M. Hofmann, and S. Rahmstorf. 2007. On the driving processes of the Atlantic meridional overturning circulation. *Reviews of Geophysics* 45:RG2001, doi:10.1029/2004RG000166

Kuhlbrodt, T., S. Rahmstorf, K. Zickfeld, F. B. Vikebø, S. Sundby, M. Hofmann, P. M. Link, A. Bondeau, W. Cramer, and C. Jaeger. 2009. An integrated assessment of changes in the thermohaline circulation. *Climatic Change* 96:489–537.

Kunte, K., W. Zhang, A. Tenger-Trolander, D. H. Palmer, A. Martin, R. D. Reed, S. P. Mullen, and M. R. Kronforst. 2014. Doublesex is a mimicry supergene. *Nature* 507:229–32.

Kunz, T. H., S. A. Gauthreaux Jr., N. I. Hristov, J. W. Horn, G. Jones, E. K. V. Kalko, R. P. Larkin, G. F. McCracken, S. M. Swartz, R. B. Srygley, R. Dudley, J. K. Westbrook and M. Wikelski. 2008. Aeroecology: probing and modeling the aerosphere. *Integrative and Comparative Biology* 48:1–11.

Kunz, T. H., J. O. Whitaker Jr., and M. D. Wadanoli. 1995. Dietary energetics of the insectivorous Mexican free-tailed bat (*Tadarida brasiliensis*) during pregnancy and lactation. *Oecologia* 101:407–15.

Kuttippurath, J., F. Lefèvre, J.-P. Pommereau, H. K. Roscoe, F. Goutail, A. Pazmiño, and J. D. Shanklin. 2013. Antarctic ozone loss in 1979–2010: first sign of ozone recovery. *Atmospheric Chemistry and Physics* 13:1625–35.

Lack, D. 1947. *Darwin's Finches* Cambridge, England: Cambridge University Press.

Lamberti, G. A. and V. H. Resh. 1983. Stream periphyton and insect herbivores: an experimental study of grazing by a caddisfly population. *Ecology* 64:1124–35.

Larcher, W. 1995. *Physiological Plant Ecology.* 3d ed. Berlin: Springer.

Latham, R. E. and R. E. Ricklefs. 1993. Continental comparisons of temperate-zone tree species diversity. In R. E. Ricklefs and D. Schluter, eds. *Species Diversity in Ecological Communities.* Chicago: University of Chicago Press.

Latombe, G., D. Fortin, and L. Parrott. 2014. Spatio-temporal dynamics in the response of woodland caribou and moose to the passage of grey wolf. *Journal of Animal Ecology* 83:185–98.

Laundré, J. W. 2010. Behavioral response races, predator-prey shell games, ecology of fear, and patch use of pumas and their ungulate prey. *Ecology* 91:2995–3007.

Lavorel, S. and E. Garnier. 2002. Predicting changes in community composition and ecosystem functioning from plant traits: revisiting the Holy Grail. *Functional Ecology* 16:545–56.

Lawlor, T. E. 1998. Biogeography of Great Basin mammals: paradigm lost? *Journal of Mammalogy* 79:1111–30.

Lawton, J. H., D. E. Bignell, B. Bolton, G. F. Bloemers, P. Eggleton, P. M. Hammond, M. Hodda, R. D. Holt, T. B. Larsen, N. A. Mawdsley, N. E. Stork, D. S. Srivastava, and A. D. Watt. 1998. Biodiversity inventories, indicator taxa and effects of habitat modification in tropical forest. *Nature* 391:72–76.

Le Boeuf, B. J. and R. M. Laws. 1994. Elephant Seals: Population Ecology, Behavior, and Physiology. Berkeley: University of California Press.

Lebo, M. E., J. E. Reuter, C. R. Goldman, C. L. Rhodes, N. Vucinich, and D. Mosely. 1993. Spatial variations in nutrient and particulate matter concentrations in Pyramid Lake, Nevada, USA, during a dry period. *Canadian Journal of Fisheries and Aquatic Science* 50:1045–54.

Leonard, P. M. and D. J. Orth. 1986. Application and testing of an index of biotic integrity in small, coolwater streams. *Transactions of the American Fisheries Society* 115:401–14.

Levang-Brilz, N. and M. E. Biondini. 2002. Growth rate, root development and nutrient uptake of 55 plant species from the Great Plains Grasslands, USA. *Plant Ecology* 165:117–44.

Leverich, W. J. and D. A. Levin. 1979. Age-specific survivorship and reproduction in *Phlox drummondii. American Naturalist* 113:881–903.

Levins, R. 1968. *Evolution in Changing Environments.* Princeton, N.J.: Princeton University Press.

Liebig, J. 1840. *Chemistry in Its Application to Agriculture and Physiology.* London: Taylor and Walton.

Ligon, D. 1999. *The Evolution of Avian Breeding Systems.* Oxford: Oxford University Press.

Ligon, J. D. and S. H. Ligon. 1978. Communal breeding in green woodhoopoes as a case for reciprocity. *Nature* (London) 276:496–98.

Ligon, J. D. and S. H. Ligon. 1982. The cooperative breeding behavior of the green wood hoopoe. *Scientific American* 247:126–34.

Ligon, J. D. and S. H. Ligon. 1989. Green woodhoopoe. In I. Newton, ed. *Lifetime Reproduction in Birds.* London: Academic Press Ltd.

Ligon, J. D. and S. H. Ligon. 1991. Green woodhoopoe: life history traits and sociality. In P. B. Stacey and W. D. Koenig, eds. *Cooperative Breeding in Birds: Long-Term Studies of Behavior and Ecology.* Cambridge, England: Cambridge University Press.

Likens, G. E. and F. H. Bormann. 1995. *Biogeochemistry of a Forested Ecosystem.* 2d ed. New York: Springer-Verlag.

Likens, G. E., F. H. Bormann, N. M. Johnson, D. W. Fisher, and R. S. Pierce. 1970. Effects of forest cutting and herbicide treatment on nutrient budgets in the Hubbard Brook watershed-ecosystem. *Ecological Monographs* 40:23–47.

Lilleskov, E. A., T. J. Fahey, T. R. Horton, and G. M. Lovett. 2002. Belowground ectomycorrhizal fungal community change over a nitrogen deposition gradient in Alaska. *Ecology* 83:104–15.

Lindeman, R. L. 1942. The trophic-dynamic aspect of ecology. *Ecology* 23:399–418.

Lindström, E. R., H. Andrén, P. Angelstam, G. Cederlund, B. Hörnfeldt, L. Jäderberg, P. A. Lemnell, B. Martinsson, K. Sköld, and J. E. Swenson. 1994. Disease reveals the predator: sarcoptic mange, red fox predation, and prey populations. *Ecology* 75:1042–49.

Linklater, W. L. 2004. Wanted for conservation research: behavioral ecologists with a broader perspective. *BioScience* 54:352–60.

Lloyd, R. A., K. A. Lohse, and T. P. A. Ferré. 2013. Influence of road reclamation techniques on forest ecosystem recovery. *Frontiers in Ecology and the Environment* 11:75–81.

Lomolino, M. V. 1990. The target hypothesis—the influence of island area on immigration rates of non-volant mammals. *Oikos* 57:297–300.

Lomolino, M. V., J. H. Brown, and R. Davis. 1989. Island biogeography of montane forest mammals in the American Southwest. *Ecology* 70:180–94.

Long, S. P. and C. F. Mason. 1983. *Saltmarsh Ecology.* Glasgow: Blackie.

Lorius, C., J. Jouzel, C. Ritz, L. Merlivat, N. I. Barkov, Y. S. Korotkevich, and V. M. Kotlyakov. 1985. A 150,000-year climatic record from antarctic ice. *Nature* 316:591–96.

Lotka, A. J. 1925. *Elements of Physical Biology.* Baltimore, Md.: Williams and Wilkins.

Lotka, A. J. 1932a. Contribution to the mathematical theory of capture. I. conditions for capture. *Proceedings of the National Academy of Sciences* 18:172–200.

Lotka, A. J. 1932b. The growth of mixed populations: two species competing for a common food supply. *Journal of the Washington Academy of Sciences* 22:461–69.

Lubchenco, J. 1978. Plant species diversity in a marine intertidal community: importance of herbivore food preference and algal competitive abilities. *American Naturalist* 112:23–39.

Luber, G. and M. McGeehin. 2008. Climate change and extreme heat events. *American Journal of Preventative Medicine* 35:429–35.

Lüthi, D., M. Le Floch, B. Bereiter, T. Blunier, J.-M. Barnola, U. Siegenthaler, D. Raynaud, J. Jouzel, H. Fischer, K. Kawamura, and T. F. Stocker. 2008. High-resolution carbon dioxide concentration record 650,000–800,000 years before present. *Nature* 453:379–82.

MacArthur, R. H. 1958. Population ecology of some warblers of northeastern coniferous forests. *Ecology* 39:599–619.

MacArthur, R. H. 1972. *Geographical Ecology.* New York: Harper & Row.

MacArthur, R. H. and J. W. MacArthur. 1961. On bird species diversity. *Ecology* 42:594–98.

MacArthur, R. H. and E. R. Pianka. 1966. On optimal use of a patchy environment. *American Naturalist* 100:603–9.

MacArthur, R. H. and E. O. Wilson. 1963. An equilibrium theory of insular zoogeography. *Evolution* 17:373–87.

MacArthur, R. H. and E. O. Wilson. 1967. *The Theory of Island Biogeography.* Princeton, N.J.: Princeton University Press.

MacLulich, D. A. 1937. Fluctuation in the numbers of the varying hare (*Lepus americanus*). *University of Toronto Studies in Biology Series No. 43.*

Mandelbrot, B. 1982. *The Fractal Geometry of Nature.* New York: W. H. Freeman.

Margulis, L., M. Chapman, R. Guerrero, and J. Hall. 2006. The last eukaryotic common ancestor (LECA): acquisition of cytoskeletal motility from aerotolerant spirochetes in the Proterozoic Eon. *Proceedings of the National Academy of Sciences of the United States of America* 103:13080–85.

Margulis, L. and R. Fester. 1991. *Symbiosis as a Source of Evolutionary Innovation: Speciation and Morphogenesis.* Cambridge, Mass.: MIT Press.

Marquis, R. J. and C. J. Whelan. 1994. Insectivorous birds increase growth of white oak through consumption of leaf-chewing insects. *Ecology* 75:2007–14.

Marshall, D. L. 1990. Non-random mating in a wild radish, *Raphanus sativus. Plant Species Biology* 5:143–56.

Marshall, D. L. and M. W. Folsom. 1991. Mate choice in plants: an anatomical to population perspective. *Annual Review of Ecology and Systematics* 22:37–63.

Marshall, D. L. and O. S. Fuller. 1994. Does nonrandom mating among wild radish plants occur in the field as well as in the greenhouse? *American Journal of Botany* 81:439–45.

Martikainen, P. and J. Kouki. 2003. Sampling the rarest: threatened beetles in boreal forest biodiversity inventories. *Biodiversity and Conservation* 12:1815–31.

Martinsen, G. D., E. M. Driebe, and T. G. Whitham. 1998. Indirect interactions mediated by changing plant chemistry: beaver browsing benefits beetles. *Ecology* 79:192–200.

Mathews, F., M. Orros, G. McLaren, M. Gelling, and R. Foster. 2005. Keeping fit on the ark: assessing the suitability of captive-bred animals for release. *Biological Conservation* 121:569–77.

Matter, S. F., M. Ezzeddine, E. Duermit, J. Mashburn, R. Hamilton, T. Lucas, and J. Roland. 2009. Interactions between habitat quality and connectivity affect immigration but not abundance or population growth of the butterfly, *Parnassius smintheus. Oikos* 118:1461–70.

May, R. M. 1989. Honeyguides and humans. *Nature* 338:707–8.

McAuliffe, J. R. 1994. Landscape evolution, soil formation, and ecological patterns and processes in Sonoran Desert bajadas. *Ecological Monographs* 64:111–48.

McKinney, M. L. 2002. Urbanization, biodiversity, and conservation. *BioScience* 52:883–90.

McLachlan, A. and A. Dorvlo. 2005. Global patterns in sandy beach macrobenthic communities. *Journal of Coastal Research* 21:674–87.

McNaughton, S. J. 1976. Serengeti migratory wildebeest: facilitation of energy flow by grazing. *Science* 191:92–94.

McNaughton, S. J. 1985. Ecology of a grazing ecosystem: the Serengeti. *Ecological Monographs* 55:259–94.

McNaughton, S. J., M. Oesterheld, D. A. Frank, and K. J. Williams. 1989. Ecosystem level patterns of primary productivity and herbivory in terrestrial habitats. *Science* 341:142–44.

McNaughton, S. J., R. W. Ruess, and S. W. Seagle. 1988. Large mammals and process dynamics in African ecosystems. *BioScience* 38:794–800.

Meehl, G. A. and C. Tabaldi. 2004. More intense, more frequent, and longer lasting heat waves in the 21st century. *Science* 305:994–97.

Meentemeyer, V. 1978. An approach to the biometeorology of decomposer organisms. *International Journal of Biometeorology* 22:94–102.

Meinhardt, K. and C. Gehring. 2013. Tamarix and soil ecology. In A. Sher and M. F. Quigley, eds. *Tamarix: A Case Study of Ecological Change in the American West.* Oxford: Oxford University Press.

Melillo, J. M., J. D. Aber, and J. F. Muratore. 1982. Nitrogen and lignin control of hardwood leaf litter decomposition dynamics. *Ecology* 63:621–26.

Mendel, G. 1866. Versuche über Pflanzen-Hybriden (Experiments in plant hybridization). *Verhandlungen des Naturforschenden Vereines, Abhandlungen, Brünn* 4:3–47.

Menzel, A., T. H. Sparks, N. Estrella, E. Koch, A. Aaasa, R. Ahas, K. Alm-Kübler, P. Bissolli, O. Braslavavska, A. Briede, F. M. Chmielewski, Z. Crepinsek, Y. Curnel, Å. Dahl, C. Defila, A. Donnelly, Y. Filella, K. Jatczak, F. Måge, A. Mestre, Ø. Nordli, J. Peñuelas, P. Pirinen, V. Remišová, H. Scheifinger, M Striz, A. Susnik, A. J. H. van Vliet, F.-E. Wielgolaski, S. Zach, and A. Zust. 2006. European phenological response to climate change matches the warming pattern. *Global Change Biology* 12:1969–76.

Mertz, D. B. 1972. The *Tribolium* model and the mathematics of population growth. *Annual Review of Ecology and Systematics* 3:51–106.

Messier, F. 1994. Ungulate population models with predation: a case study with the North American moose. *Ecology* 75:478–88.

Meybeck, M. 1982. Carbon, nitrogen, and phosphorus transport by world rivers. *American Journal of Science* 282:401–50.

Meyer, J. L. and G. E. Likens. 1979. Transport and transformation of phosphorus in a forest stream ecosystem. *Ecology* 60:1255–69.

Miller, R. B. 1923. First report on a forestry survey of Illinois. *Illinois Natural History Bulletin* 14:291–377.

Miller-Rushing, A. J. and R. B. Primack. 2008. Global warming and flowering times inThoreau's Concord: a community perspective. *Ecology* 89:332–41.

Mills, E. L., J. H. Leach, J. T. Carlton, and C. L. Secor. 1994. Exotic species and the integrity of the Great Lakes. *BioScience* 44:666–76.

Mills, K. H. and D. W. Schindler. 1987. Preface. *Canadian Journal of Fisheries and Aquatic Sciences* 44 (Suppl. 1):3–5.

Milne, B. T. 1993. Pattern analysis for landscape evaluation and characterization. In M. E. Jensen and P. S. Bourgeron, eds. *Ecosystem Management: Principles and Applications.* Gen. Tech. Report PNW-GTR-318. Portland, Ore.: U.S. Department of Agriculture Forest Service, Pacific Northwest Research Station.

Milton, R. C. 1964. An extended table of critical values for the Mann-Whitney (Wilcoxon) two-sample statistical. *Journal of the American Statistical Association* 59:925–34.

Minnich, R. A. 1983. Fire mosaics in southern California and northern Baja California. *Science* 219:1287–94.

Mitter, C., R. W. Poole, and M. Matthews. 1993. Biosystematics of the Heliothinae (Lepidoptera: Noctuidae). *Annual Review of Entomology* 38:207–25.

Moles, A. T., D. D. Ackerly, C. O. Webb, J. C. Tweddle, J. B. Dickie, A. J. Pitman, and M. Westoby. 2005a. Factors that shape seed mass evolution. *Proceedings of the National Academy of Sciences of the United States of America* 102:10540–44.

Moles, A. T., D. D. Ackerly, C. O. Webb, J. C. Tweddle, J. B. Dickie, and M. Westoby. 2005b. A brief history of seed size. *Science* 307:576–80.

Molles, M. C., Jr. 1978. Fish species diversity on model and natural reef patches: experimental insular biogeography. *Ecological Monographs* 48:289–305.

Mooney, H. A. 1972. The carbon balance of plants. *Annual Review of Ecology and Systematics* 3:139–45.

Moore, J. 1983. Responses of an avian predator and its isopod prey to an acanthocephalan parasite. *Ecology* 64:1000–15.

Moore, J. 1984a. Altered behavioral responses in intermediate hosts—an acanthocephalan parasite strategy. *American Naturalist* 123:572–77.

Moore, J. 1984b. Parasites that change the behavior of their host. *Scientific American* 250:108–15.

Moran, P. A. P. 1949. The statistical analysis of the sunspot and lynx cycles. *Journal of Animal Ecology* 18:115–16.

Morita, R. Y. 1975. Psychrophilic bacteria. *Bacteriological Reviews* 39:144–67.

Mosser, J. L., A. G. Mosser, and T. D. Brock. 1974. Population ecology of *Sulfolobus acidocaldarius.* I. temperature strains. *Archives for Microbiology* 97:169–79.

Muir, J. 1915. *Travels in Alaska.* Boston: Houghton Mifflin.

Müller, K. 1954. Investigations on the organic drift in north Swedish streams. *Reports of the Institute of Freshwater Research of Drottningholm* 35:133–48.

Müller, K. 1974. Stream drift as a chronobiological phenomenon in running water ecosystems. *Annual Review of Ecology and Systematics* 5:309–23.

Munger, J. C. and J. H. Brown. 1981. Competition in desert rodents: an experiment with semipermeable exclosures. *Science* 211:510–12.

Murie, A. 1944. The wolves of Mount McKinley. *Fauna of the National Parks of the U.S., Fauna Series No. 5.* Washington, D.C.: U.S. Department of the Interior, National Park Service.

Murphy, P. G. and A. E. Lugo. 1986. Ecology of tropical dry forest. *Annual Review of Ecology and Systematics* 17:67–88.

Murphy, S. M., S. M. Leahy, L. S. Williams, and J. T. Lill. 2010. Stinging spines protect slug caterpillars (Limacodidae) from multiple generalist predators. *Behavioral Ecology* 21:153–60.

Murphy, S. M., T. M. Stoepler, K. Grenis, and J. T. Lill. 2014. Host ontogeny determines parasitoid use of a forest caterpillar. *Entomologia Experimentalis et Applicata* 150:217–25.

Muscatine, L. and C. F. D'Elia. 1978. The uptake, retention, and release of ammonium by reef corals. *Limnology and Oceanography* 23:725–34.

Nadkarni, N. M. 1981. Canopy roots: convergent evolution in rainforest nutrient cycles. *Science* 214:1023–24.

Nadkarni, N. M. 1984a. Biomass and mineral capital of epiphytes in an *Acer macrophyllum* community of a temperate moist coniferous forest, Olympic Peninsula, Washington State. *Canadian Journal of Botany* 62:2223–28.

Nadkarni, N. M. 1984b. Epiphyte biomass and nutrient capital of a neotropical elfin forest. *Biotropica* 16:249–56.

Naiman, R. J., R. E. Bilby, D. E. Schindler, and J. M. Helfield. 2002. Pacific salmon, nutrients, and the dynamics of freshwater and riparian ecosystems. *Ecosystems* 5:399–417.

Naiman, R. J., G. Pinay, C. A. Johnston, and J. Pastor. 1994. Beaver influences on the long-term biogeochemical characteristics of boreal forest drainage networks. *Ecology* 75:905–21.

NASA. 2017. http://ozonewatch.gsfc.nasa.gov/meteorology/annual_data.html.

NASA's Goddard Institute for Space Studies (GISS). 2017. https://climate.nasa.gov/vital-signs/global-temperature.

National Academies of Sciences, Engineering, and Medicine. 2016. Attribution of extreme weather events in the context of climate change. Washington, D.C.: The National Academies Press.

National Research Council. 2013. *Abrupt Impacts of Climate Change: Anticipating Surprises.* Washington, D.C.: The National Academies Press.

Newbold, J. D., J. W. Elwood, R. V. O'Neill, and A. L. Sheldon. 1983. Phosphorus dynamics in a woodland stream ecosystem: a study of nutrient spiraling. *Ecology* 64:1249–65.

Newchurch, M. J., E.-S. Yang, D. M. Cunnold, G. C. Reinsel, J. M. Zawodny, and J. M. Russell III. 2003. Evidence for slow down in stratospheric ozone loss: first stage of ozone recovery. *Journal of Geophysical Research* 108(D16), 4507, doi:10.1029/2003JD003471, 2003 (published online).

Nicholls, N. 1992. Historical El Niño/Southern Oscillation variability in the Australasian region. In H. F. Diaz and V. Markgraf, eds. *El Niño Historical and Paleoclimatic Aspects of the Southern Oscillation.* Cambridge, England: Cambridge University Press.

Nilsson, S. G., J. Bengtsson, and S. Ås. 1988. Habitat diversity or area *per se*? Species richness of woody plants, carabid beetles and land snails on islands. *Journal of Animal Ecology* 57:685–704.

NOAA. 2003. National Oceanic & Atmospheric Administration, U.S. Department of Commerce. www.drought.noaa.gov/.

NOAA. 2015. National Oceanic & Atmospheric Administration, U.S. Department of Commerce. www.cpc.ncep.noaa.gov/products/analysis_monitoring/regional_monitoring/palmer/2015/11-28-2015.gif.

NOAA. 2017. National Oceanic & Atmospheric Administration, U.S. Department of Commerce. www.ncdc.noaa.gov/cag/time-series/global/globe/land_ocean/ytd/12/1880-2017?trend=true&trend_base=10&firsttrendyear=1880&lasttrendyear=2017.

Nobel, P. S. 1977. Internal leaf area and cellular CO_2 resistance: photosynthetic implications of variations with growth conditions and plant species. *Physiologia Plantarum* 40:137–44.

Norris R. D., P. P. Marra, T. K. Kyser, and L. M. Ratcliffe. 2005. Tracking habitat use of a long-distance migratory bird, the American redstart *Setophaga ruticilla,* using stable-carbon isotopes in cellular blood. *Journal of Avian Biology* 36:164–70.

Nowak, M. A., C. E. Tarnita, and E. O. Wilson. 2010. The evolution of eusociality. *Nature* 437:1291–98.

Ødegaard, F. 2006. Host specificity, alpha- and beta-diversity of phytophagous beetles in two tropical forests in Panama. *Biodiversity and Conservation* 15:83–105.

O'Donoghue, M., S. Boutin, C. J. Krebs, and E. J. Hofer. 1997. Numerical responses of coyotes and lynx to the snowshoe hare cycle. *Oikos* 80:150–62.

O'Donoghue, M., S. Boutin, C. J. Krebs, G. Zuleta, D. L. Murray, and E. J. Hofer. 1998. Functional responses of coyotes and lynx to the snowshoe hare cycle. *Ecology* 79:1193–208.

Ohrtman, M. and K. D. Lair. 2013. Tamarisk and Salinity: an overview. In A. Sher and M. F. Quigley, eds. *Tamarix: A Case Study of Ecological Change in the American West.* Oxford: Oxford University Press.

Oosting, H. J. 1942. An ecological analysis of the plant communities of Piedmont, North Carolina. *The American Midland Naturalist* 28:1–126.

Orrock, J. L., M. S. Witter, and O. J. Reichman. 2008. Apparent competition with an exotic plant reduces native plant establishment. *Ecology* 89:1168–74.

Ozanne, C. M. P., D. Anhuf, S. L. Boulter, M. Keller, R. L. Kitching, C. Körner, F. C. Meinzer, A. W. Mitchell, T. Nakashizuka, P. L. Silva Dias, N. E. Stork, S. J. Wright, and M. Yoshimura. 2003. Biodiversity meets the atmosphere: a global view of forest canopies. *Science* 301:183–85.

Packer, C. and A. E. Pusey. 1982. Cooperation and competition within coalitions of male lions: kin selection or game-theory? *Nature* 296:740–42.

Packer, C. and A. E. Pusey. 1983. Cooperation and competition in lions: reply. *Nature* 302:356.

Packer, C. and A. E. Pusey. 1997. Divided we fall: cooperation among lions. *Scientific American* 276:52–59.

Packer, C., D. A. Gilbert, A. E. Pusey, and S. J. O'Brien. 1991. A molecular genetic analysis of kinship and cooperation in African lions. *Nature* 351:562–65.

Paine, R. T. 1966. Food web complexity and species diversity. *American Naturalist* 100:65–75.

Paine, R. T. 1969. A note on trophic complexity and community stability. *American Naturalist* 103:91–93.

Paine, R. T. 1971. A short-term experimental investigation of resource partitioning in a New Zealand rocky intertidal habitat. *Ecology* 52:1096–106.

Paine, R. T. 1980. Food webs: linkage, interaction strength and community infrastructure. *Journal of Animal Ecology* 49:667–85.

Pandolfi, J. M., S. R. Connolly, D. J. Marshall, and A. L. Cohen. 2011. Projecting coral reef futures under global warming and ocean acidification. *Science* 333:418–22.

Pappers, S. M., G. van der Velde, N. J. Ouborg, and J. M. van Groenendael. 2002. Genetically based polymorphisms in morphology and life history associated with putative host races of the water lily leaf beetle *Galerucella nymphaeae. Evolution* 56:1610–21.

Paquette, A. and C. Messier. 2011. The effect of biodiversity on tree productivity: from temperate to boreal forests. *Global Ecology and Biogeography* 20:170–80.

Park, T. 1948. Experimental studies of interspecific competition. I. competition between populations of flour beetles *Tribolium confusum* Duval and *Tribolium castaneum* Herbst. *Ecological Monographs* 18:267–307.

Park, T. 1954. Experimental studies of interspecific competition. II. temperature, humidity and competition in two species of *Tribolium. Physiological Zoology* 27:177–238.

Park, T., D. B. Mertz, W. Grodzinski, and T. Prus. 1965. Cannibalistic predation in populations of flour beetles. *Physiological Zoology* 38:289–321.

Park, Y.-M. 1990. Effects of drought on two grass species with different distribution around coastal sand dunes. *Functional Ecology* 4:735–41.

Parmenter, R. R. and V. A. Lamarra. 1991. Nutrient cycling in a freshwater marsh: the decomposition of fish and waterfowl carrion. *Limnology and Oceanography* 36:976–87.

Parmenter, R. R., C. A. Parmenter, and C. D. Cheney. 1989. Factors influencing microhabitat partitioning among coexisting species of arid-land darkling beetles (Tenebrionidae): behavioral responses to vegetation architecture. *The Southwestern Naturalist* 34:319–29.

Parmesan, C. and G. Yohe. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature* 421:37–42.

Parolo, G. and G. Rossi. 2008. Upward migration of vascular plants following a climate warming trend in the Alps. *Basic and Applied Ecology* 9:100–107.

Pascoal, S., T. Cezard, A. Eik-Nes, K. Gharbi, J. Majewska, E. Payne, M. G. Richey, M. Zuk, and N. W. Bailey. 2014. Rapid convergent evolution in wild crickets. *Current Biology* 24:1369–74.

Pearcy, R. W. 1977. Acclimation of photosynthetic and respiratory carbon dioxide exchange to growth temperature in *Atriplex lentiformis* (Torr.) Wats. *Plant Physiology* 59:795–99.

Pearcy, R. W. and A. T. Harrison. 1974. Comparative photosynthetic and respiratory gas exchange characteristics of *Atriplex lentiformis* (Torr.) Wats. in coastal and desert habitats. *Ecology* 55:1104–11.

Peierls, B. L., N. F. Caraco, M. L. Pace, and J. J. Cole. 1991. Human influence on river nitrogen. *Nature* 350:386–87.

Perry, M. J. 1986. Assessing marine primary production from space. *BioScience* 36:461–67.

Peters, R. H. and K. Wassenberg. 1983. The effect of body size on animal abundance. *Oecologia* 60:89–96.

Peterson, B. J., R. W. Howarth, and R. H. Garritt. 1985. Multiple stable isotopes used to trace the flow of organic matter in estuarine food webs. *Science* 227:1361–63.

Phillips, D. L. and J. A. MacMahon. 1981. Competition and spacing patterns in desert shrubs. *Journal of Ecology* 69:97–115.

Pianka, E. R. 1970. On *r*- and *K*-selection. *American Naturalist* 104:592–97.

Pianka, E. R. 1972. *r*- and *K*-selection or *b* and *d* selection. *American Naturalist* 106:581–88.

Pickett, S. T. A., M. L. Cadenasso, J. M. Grove, P. M. Groffman, L. E. Band, C. G. Boone, W. R. Burch Jr., C. S. B. Grimmond, J. Hom, J. C. Jenkins, N. L. Law, C. H. Nilon, R. V. Pouyat, K. Szlavecz, P. S. Warren, and M. A. Wilson. 2008. Beyond urban legends: an emerging framework of urban ecology, as illustrated by the Baltimore Ecosystem Study. *BioScience* 58:139–50.

Pickett, S. T. A., M. L. Cadenasso, and S. J. Meiners. 2009. Ever since Clements: from succession to vegetation dynamics and understanding to intervention. *Applied Vegetation Science* 12:9–21.

Podos, J. 2010. Acoustic discrimination of sympatric morphs in Darwin's finches: a behavioural mechanism for assortative mating? *Philosophical Transactions of the Royal Society B: Biological Sciences* 365:1031–39.

Post, W. M., T.-H. Peng, W. R. Emanuel, A. W. King, V. H. Dale, and D. L. DeAngelis. 1990. The global carbon cycle. *American Scientist* 78:310–26.

Power, M. E. 1990. Effects of fish on river food webs. *Science* 250:811–14.

Power, M. E., D. Tilman, J. A. Estes, B. A. Menge, W. J. Bond, L. S. Mills, G. Daily, J. C. Castilla, J. Lubchenko, and R. T. Paine. 1996. Challenges in the quest for keystones. *BioScience* 46:609–20.

Preston, F. W. 1948. The commonness, and rarity, of species. *Ecology* 29:254–83.

Preston, F. W. 1962a. The canonical distribution of commonness and rarity: part I. *Ecology* 43:185–215.

Preston, F. W. 1962b. The canonical distribution of commonness and rarity: part II. *Ecology* 43:410–32.

Rabinowitz, D. 1981. Seven forms of rarity. In H. Synge, ed. *The Biological Aspects of Rare Plant Conservation.* New York: John Wiley & Sons.

Rahmstorf, S. 2002. Ocean circulation and climate during the past 120,000 years. *Nature* 419:207–214.

Raine, N. E., P. Willmer, and G. N. Stone. 2002. Spatial structuring and floral avoidance behaviour prevent ant-pollinator conflict in a Mexican ant-acacia. *Ecology* 83:3086–96.

Ralph, C. J. 1985. Habitat association patterns of forest and steppe birds of northern Patagonia, Argentina. *The Condor* 87:471–83.

Rasmusson, E. M. 1985. El Niño and variations in climate. *American Scientist* 73:168–77.

Ratnieks, F. L., K. R. Foster, and T. Wenseleers. 2011. Darwin's special difficulty: the evolution of "neuter insects" and current theory. *Behavioral Ecology and Sociobiology* 65:481–92.

Réale, D., A. G. McAdam, S. Boutin, and D. Berteaux. 2003. Genetic and plastic responses of a northern mammal to climate change. *Proceedings of the Royal Society of London* B 270:591–96.

Redford, K. H. 1992. The empty forest. *BioScience* 42:412–22.

Reichard, J. D., S. I. Prajapati, S. N. Austad, C. Keller, and T. H. Kunz. 2010. Thermal windows on Brazilian free-tailed bats facilitate thermoregulation during prolonged flight. *Integrative and Comparative Biology* 50:358–70.

Reid, W. V. and K. R. Miller. 1989. *Keeping Options Alive: The Scientific Basis for Conserving Biodiversity.* Washington, D.C.: World Resources Institute.

Reiners, W. A., I. A. Worley, and D. B. Lawrence. 1971. Plant diversity in a chronosequence at Glacier Bay, Alaska. *Ecology* 52:55–69.

Revelle, R. and H. E. Suess. 1957. Carbon dioxide exchange between atmosphere and ocean and the question of an increase of atmospheric CO_2 during the past decades. *Tellus* 9:18–27.

Ricciardi, A. and F. G. Whoriskey. 2004. Exotic species replacement: shifting dominance of dreissenid mussels in the Soulanges Canal, upper St. Lawrence River, Canada. *Journal of the North American Benthological Society* 23:507–14.

Richey, J. E. 1983. The phosphorus cycle. In B. Bolin and R. B. Cook, eds. *The Major Biogeochemical Cycles and Their Interaction.* New York: John Wiley & Sons.

Ricklefs, R. E. 1987. Community diversity: relative roles of local and regional processes. *Science* 235:167–71.

Ripple, W. J. and R. L. Beschta. 2004. Wolves and the ecology of fear: can predation risk structure ecosystems? *BioScience* 54:755–66.

Ripple, W. J. and R. L. Beschta. 2007. Restoring Yellowstone's aspen with wolves. *Biological Conservation* 138:514–19.

Risch, S. J. and C. R. Carroll. 1982. Effect of a keystone predaceous ant, *Solenopsis geminata,* on arthropods in a tropical agroecosystem. *Ecology* 63:1979–83.

Robertson, D. S., M. C. McKenna, O. B. Toon, S. Hope, and J. A. Lillegraven. 2004. Survival in the first hours of the Cenozoic. *Geological Society of America Bulletin* 116:760–68.

Robertson, G. P., M. A. Huston, F. C. Evans, and J. M. Tiedje. 1988. Spatial variability in a successional plant community: patterns of nitrogen availability. *Ecology* 69:1517–24.

Robine, J. M., S. L. K. Cheung, S. Le Roy, H. Van Oyen, C. Griffiths, J. P. Michel, and F. R. Herrmann. 2008. Death toll exceeded 70,000 in Europe during the summer of 2003. *Comptes Rendus Biologies* 33:171–178.

Rohlf, F. J. and R. R. Sokal. 1995. *Statistical Tables.* 3d ed. San Francisco: W. H. Freeman and Co.

Roland, J., N. Keyghobadi, and S. Fownes. 2000. Alpine Parnassius butterfly dispersal: effects of landscape and population size. *Ecology* 81:1642–53.

Roller, N. E. G. and J. E. Colwell. 1986. Coarse-resolution satellite data for ecological surveys. *BioScience* 36:468–75.

Root, T. 1988. *Atlas of Wintering North American Birds.* Chicago: University of Chicago Press.

Rosemond, A. D., C. M. Pringle, A. Ramirez, M. J. Paul, and J. L. Meyer. 2002. Landscape variation in phosphorus concentration and effects on detritus-based tropical streams. *Limnology and Oceanography* 47:278–89.

Rosenzweig, M. L. 1968. Net primary productivity of terrestrial environments: predictions from climatological data. *American Naturalist* 102:67–84.

Rosenzweig, M. L. 1992. Species diversity gradients: we know more and less than we thought. *Journal of Mammalogy* 73:715–30.

Rowland, D., A. A. Sher, and D. L. Marshall. 2004. Cottonwood population response to salinity. *Canadian Journal of Forest Research* 34:1458–66.

Roy, B. A. 1993. Floral mimicry by a plant pathogen. *Nature* 362:56–58.

Ruiz-Benito, P., L. Gómez-Aparicio, A. Paquette, C. Messier, J.Kattge, and M. A. Zavala. 2014. Diversity increases carbon storage and tree productivity in Spanish forests. *Global Ecology and Biogeography* 23:311–22.

Ryan, J. P., Ueki, I., Chao, Y., Zhang, H., Polito, P. S. and Chavez, F. P., 2006. Western Pacific modulation of large phytoplankton blooms in the central and eastern equatorial Pacific. *Journal of Geophysical Research: Biogeosciences* 111:G2.

Rydin, H. and S. O. Borgegård. 1988. Plant species richness on islands over a century of primary succession: Lake Hjälmaren. *Ecology* 69:916–27.

Saccheri, I., M. Kuussaari, M. Kankare, P. Vikman, W. Fortelius, and I. Hanski. 1998. Inbreeding and extinction in a butterfly metapopulation. *Nature* 392:491–94.

Sage, R. F. 1999. Why C_4 photosynthesis? In R. F. Sage and R. K. Monson, eds. *C_4 Plant Biology.* San Diego, Calif.: Academic Press.

Sakamoto, M. 1966. Primary production by phytoplankton community in some Japanese lakes and its dependence on lake depth. *Archive für Hydrobiologie* 62:1–28.

Sala, O. E., W. J. Parton, L. A. Joyce, and W. K. Laurenroth. 1988. Primary production of the central grassland regions of the United States. *Ecology* 69:40–45.

Sala, O. E., Chapin, F.S., Armesto, J. J., Berlow, E., Bloomfield, J., Dirzo, R., Huber-Sanwald, E., Huenneke, L. F., Jackson, R. B., Kinzig, A. and Leemans, R. 2000. Global biodiversity scenarios for the year 2100. *Science, 287:*1770–74.

Samenow, J. 2017. Iranian city soars to record 129 degrees: Near hottest on Earth in modern measurements. *The Washington Post.* www.washingtonpost.com/news/capital-weather-gang/wp/2017/06/29/iran-city-soars-to-record-of-129-degrees-near-hottest-ever-reliably-measured-on-earth/?utm_term=.55a3478c6feb.

Schenk, H. J. and R. B. Jackson. 2002. The global biogeography of roots. *Ecological Monographs* 72:311–28.

Schlesinger, W. H. 1991. *Biogeochemistry: An Analysis of Global Change.* New York: Academic Press.

Schluter, D., T. D. Price, and P. R. Grant. 1985. Ecological character displacement in Darwin's finches. *Science* 227:1056–59.

Schluter, D. and R. E. Ricklefs. 1993. Species diversity: an introduction to the problem. In R. E. Ricklefs and D. Schluter, eds. *Species Diversity in Ecological Communities.* Chicago: University of Chicago Press.

Schmidt-Nielsen, K. 1964. *Desert Animals: Physiological Problems of Heat and Water.* Oxford: Clarendon Press.

Schmidt-Nielsen, K. 1969. The neglected interface. The biology of water as a liquid-gas system. *Quarterly Review of Biophysics.* 2:283–304.

Schmidt-Nielsen, K. 1983. *Animal Physiology: Adaptation and Environment.* 3d ed. Cambridge, England: Cambridge University Press.

Schneider, D. W. and J. Lyons. 1993. Dynamics of upstream migration in two species of tropical freshwater snails. *Journal of the North American Benthological Society* 12:3–16.

Schoener, T. W. 1983. Field experiments on interspecific competition. *American Naturalist* 122:240–85.

Schoener, T. W. 1985. Some comments on Connell's and my reviews of field experiments on interspecific competition. *American Naturalist* 125:730–40.

Schoener, T. W. 2009. I.1 ecological niche. In S.A. Levin, ed. *The Princeton Guide to Ecology.* Princeton: Princeton University Press.

Scholander, P. F., R. Hock, V. Walters, F. Johnson, and L. Irving. 1950. Heat regulation in some arctic and tropical mammals and birds. *Biological Bulletin* 99:237–58.

Scholten, M. C. T., P. Blaaww, M. Stroedenga, and J. Rozema. 1987. The impact of competitive interactions on the growth and distribution of plant species in saltmarshes. In A. H. L. Huiskes et al., eds. *Vegetation Between Land and Sea.* Dordrecht: W. Junk.

Scholten, M. C. T. and J. Rozema. 1990. The competitive ability of *Spartina anglica* on Dutch salt marshes. In A. J. Gray and P. E. M. Benham, eds. *Spartina anglica: A Research Review.* London: HMSO.

Schultz, T. D., and N. F. Hadley. 1987. Microhabitat segregation and physiological differences in co-occurring tiger beetle species, *Cicindela oregona and Cicindela tranquebarica. Oecologia,* 73:363–70.

Schultz, T. D., M. C. Quinlan, and N. F. Hadley. 1992. Preferred body temperature, metabolic physiology, and water balance of adult *Cicindela longilabris:* a comparison of populations from boreal habitats and climatic refugia. *Physiological Zoology* 65:226–42.

Schumacher, H. 1976. *Korallenriff.* Munich: BLV Verlagsgellschaft mbH.

Seiwa, K. and K. Kikuzawa. 1991. Phenology of tree seedlings in relation to seed size. *Canadian Journal of Botany* 69:532–38.

Serrano, D. and J. L. Tella. 2003. Dispersal within a spatially structured population of lesser kestrels: the role of spatial isolation and conspecific attraction. *Journal of Animal Ecology* 72:400–10.

Setälä, H. and V. Huhta. 1991. Soil fauna increase *Betula pendula* growth: laboratory experiments with coniferous forest floor. *Ecology* 72:665–71.

Shaver, G. R. and F. S. Chapin III. 1986. Effect of fertilizer on production and biomass of tussock tundra, Alaska, U.S.A. *Arctic and Alpine Research* 18:261–68.

Sher, A. A., D. L. Marshall, and S. A. Gilbert. 2000. Competition between native *Populus deltoides* and invasive *Tamarix ramosissima* and the implications of reestablishing flooding disturbance. *Conservation Biology* 14:1744–54.

Sherman, P. W., J. U. M. Jarvis, and S. H. Braude. 1992. Naked mole rats. *Scientific American* 257:72–78.

Shiels, A. B. and L. R. Walker. 2003. Bird perches increase forest seeds on Puerto Rican landslides. *Restoration Ecology* 11:457–65.

Shine, R. and E. L. Charnov. 1992. Patterns of survival, growth, and maturation in snakes and lizards. *American Naturalist* 139:1257–69.

Shochat, E., S. B. Lerman, J. M. Anderies, P. S. Warren, S. H. Faeth, and C. H. Nilon. 2010. Invasion, competition, and biodiversity loss in urban ecosystems. *BioScience* 60:199–208.

Siegenthaler, U., H. Friedli, H. Loetscher, E. Moor, A. Neftel, H. Oeschger, and B. Stauffer. 1988. Stable-isotope ratios and concentrations of CO_2 in air from polar ice cores. *Annals of Glaciology* 10:151–56.

Silvertown, J. 1987. Ecological stability: a test case. *American Naturalist* 130:807–10.

Simberloff, D. and W. Boeklin. 1981. Santa Rosalia reconsidered: size ratios and competition. *Evolution* 35:1206–28.

Simberloff, D. S. 1976. Experimental zoogeography of islands: effects of island size. *Ecology* 57:629–48.

Simberloff, D. S. and E. O. Wilson. 1969. Experimental zoogeography of islands: the colonization of empty islands. *Ecology* 50:278–96.

Sinclair, A. R. E., S. Mduma, and J. S. Brashares. 2003. Patterns of predation in a diverse predator-prey system. *Nature* 425:228–90.

Sinervo, B. and C. M. Lively. 1996. The rock-paper-scissors game and the evolution of alternative male strategies. *Nature* 380:240–43.

Skole, D. and C. Tucker. 1993. Tropical deforestation and habitat fragmentation in the Amazon: satellite data from 1978 to 1988. *Science* 260:1905–10.

Smil, V. 1990. Nitrogen and phosphorus. In B. L. Turner II, W. C. Clark, R. W. Kates, J. F. Richards, J. T. Mathews, and W. B. Meyer, eds. *The Earth as Transformed by Human Action.* Cambridge, England: Cambridge University Press.

Smith, R. L. 1996. Ecology and field biology. New York: HarperCollins.

Smith, V. H. 1979. Nutrient dependence of primary productivity in lakes. *Limnology and Oceanography* 24:1051–64.

Söderlund, R. and T. Rosswall. 1982. The nitrogen cycles. In O. Hutzinger, ed. *The Handbook of Environmental Chemistry,* vol. 1, part B, *The Natural Environment and the Biogeochemical Cycles.* New York: Springer-Verlag.

Sousa, W. P. 1979a. Disturbance in marine intertidal boulder fields: the nonequilibrium maintenance of species diversity. *Ecology* 60:1225–39.

Sousa, W. P. 1979b. Experimental investigations of disturbance and ecological succession in a rocky intertidal algal community. *Ecological Monographs* 49:227–54.

Sousa, W. P. 1984. The role of disturbance in natural communities. *Annual Review of Ecology and Systematics* 15:353–91.

Stephens, B. B., K. R. Gurney, P. P. Tans, C. Sweeney, W. Peters, L. Bruhwiler, P. Ciais, M. Ramonet, P. Bousquet, T. Nakazawa, S. Aoki, T. Machida, G. Inoue, N. Vinnichenko, J. Lloyd, A. Jordan, M. Heimann, O. Shibistova, R. L. Langenfelds, L. P. Steele, R. J. Francey, and A. S. Denning. 2007. Weak northern and strong tropical land carbon uptake from vertical profiles of atmospheric CO_2. *Science* 316:1732–35.

Stevens E. D., J. W. Kanwisher, and F. G. Carey. 2000. Muscle temperature in free-swimming giant Atlantic bluefin tuna (*Thunnus thynnus L.*). *Journal of Thermal Biology* 25:419–23.

Stevens, G. C. 1989. The latitudinal gradient in geographical range: how so many species coexist in the tropics. *American Naturalist* 133:240–56.

Stevens, O. A. 1932. The number and weight of seeds produced by weeds. *American Journal of Botany* 19:784–94.

Stimson, J. 1990. Stimulation of fat-body production in the polyps of the coral *Pocillopora damicornis* by the presence of mutualistic crabs of the genus *Trapezia. Marine Biology* 106:211–18.

Stoepler, T. M., J. T. Lill, and S. M. Murphy. 2011. Cascading effects of host size and host plant species on parasitoid resource allocation. *Ecological Entomology* 36:724–35.

Stone, B., J. Vargo, and D. Habeeb. 2012. Managing climate change in cities: will climate action plans work? *Landscape and Urban Planning* 107:263–71.

Stork, N. E. 2007. Australian tropical forest canopy crane: new tools for new frontiers. *Austral Ecology* 32:4–9.

Strassmann, J. 2001. The rarity of multiple mating by females in the social Hymenoptera. *Insectes Sociaux* 48:1–13.

Strong, D. R., L. A. Szyska, and D. Simberloff. 1981. Tests of community-wide character displacement against null hypotheses. *Evolution* 33:897–913.

Suberkropp, K. and E. Chauvet. 1995. Regulation of leaf breakdown by fungi in streams: influences of water chemistry. *Ecology* 76:1433–45.

Suess, H. E. 1955. Radiocarbon concentration in modern wood. *Science* 122:415–17.

Sugihara, G. 1980. Minimal community structure: an explanation of species abundance patterns. *American Naturalist* 116:770–87.

Summerhayes, V. S. and C. S. Elton. 1923. Contribution to the ecology of Spitsbergen and Bear Island. *Journal of Ecology* 11:214–86.

Takyu, M., S.-I. Aiba, and K. Kitayama. 2003. Changes in biomass, productivity and decomposition along topographical gradients under different geological conditions in tropical lower montane forests on Mount Kinabalu, Borneo. *Oecologia* 134:397–404.

Tan, C. C. 1946. Mosaic dominance in the inheritance of color patterns in the lady-bird beetle, *Harmonia axyridis. Genetics* 31:195–210.

Tan, C. C. and J. C. Li. 1934. Inheritance of the elytral color patterns of the lady-bird beetle, *Harmonia axyridis* Pallas. *American Naturalist* 68:252–65.

Tansley, A. G. 1917. On competition between *Galium saxatile* L. (*G. hercynicum* Weig.) and *Galium sylvestre* Poll. (*G. asperum* Schreb.) on different types of soil. *Journal of Ecology* 5:173–79.

Tansley, A. G. 1935. The use and abuse of vegetational concepts and terms. *Ecology* 16:284–307.

Taper, M. L. and T. J. Case. 1992. Coevolution among competitors. *Oxford Series in Evolutionary Biology.*

Terborgh, J. 1973. On the notion of favorableness in plant ecology. *American Naturalist* 107:481–501.

Terborgh, J. 1988. The big things that run the world: a sequel to E. O. Wilson. *Conservation Biology* 2:402–3.

Terborgh, J., K. Feeley, M. Silman, P. Nuñez, and B. Balukjian. 2006. Vegetation dynamics of predator-free land-bridge islands. *Journal of Ecology* 94:253–63.

Terborgh, J., L. Lopez, P. Nuñez, V. M. Rao, G. Shahabuddin, G. Orihuela, M. Riveros, R. Ascanio, G. H. Adler, T. D. Lambert, and L. Balbas. 2001. Ecological meltdown in predator-free forest fragments. *Science* 294:1923–26.

Terra, L. S. W. Unpublished Light Trap Data. Vila do Conde, Portugal: Estação Aquícola.

Tewksbury, J. J., D. J. Levey, N. M. Haddad, S. Sargent, J. L. Orrock, A. Weldon, B. J. Danielson, J. Brinderhoff, E. I. Damschen, and P. Townsend. 2002. Corridors affect plants, animals and the interactions in fragmented landscapes. *Proceedings of the National Academy of Sciences of the United States of America* 99:12923–26.

Thibault, K. M. and J. H. Brown. 2008. Impact of an extreme climatic event on community assembly. *Proceedings of the National Academy of Sciences of the United States of America* 105:3410–15.

Thomson, D. A. and C. E. Lehner. 1976. Resilience of a rocky intertidal fish community in a physically unstable environment. *Journal of Experimental Marine Biology and Ecology* 22:1–29.

Thompson, R. S. and K. H. Anderson. 2000. Biomes of western North America at 18,000, 6000, and 0 ^{14}C yr B.P. reconstructed from pollen and packrat midden data *Journal of Biogeography,* 27:555–84.

Thornhill, R. 1981. Panorpa (Mecoptera: Panorpidae) scorpionflies: systems for understanding resource-defense polygyny and alternative male reproductive efforts. *Annual Review of Ecology and Systematics* 12:355–86.

Thornhill, R. and J. Alcock. 1983. *The Evolution of Insect Mating Systems.* Cambridge, Mass.: Harvard University Press.

Thorp, J. H., M. C. Thoms, and M. D. Delong. 2006. The riverine ecosystem synthesis: biocomplexity in river networks across space and time. *River Research and Applications* 22:123–47.

Thorp, J. H., M. C. Thoms, and M. D. Delong. 2008. *The River Ecosystem Synthesis: Towards Conceptual Cohesiveness in River Science.* Amsterdam: Academic Press.

Tilman, D. 1977. Resource competition between planktonic algae: an experimental and theoretical approach. *Ecology* 58:338–48.

Tilman, D. 1994. Competition and biodiversity in spatially structured habitats. *Ecology* 75:2–16.

Tilman, D. and M. L. Cowan. 1989. Growth of old field herbs on a nitrogen gradient. *Functional Ecology* 3:425–38.

Tilman, D., P. B. Reich, and F. Isbell. 2012. Biodiversity impacts ecosystem productivity as much as resources, disturbance, or herbivory. *Proceedings of the National Academy of Sciences of the United States* 109:10394–97.

Tilman, D., R. B. Reich, J. Knops, D. Wedin, T. Mielke, and Clarence Lehman. 2001. Diversity and productivity in a long-term grassland experiment. *Science* 294:843–45.

Tinbergen, N. 1963. On methods and aims of ethology. *Zeitschrift für Tierpsychologie* 20:410–33.

Tinghitella, R. M. 2008. Rapid evolutionary change in a sexual signal: genetic control of the mutation "flatwing" that renders male field crickets (*Teleogryllus oceanicus*) mute. *Heredity* 100:261–67.

Tinghitella, R. M. and M. Zuk. 2009. Asymmetric mating preferences accommodated the rapid evolutionary loss of a sexual signal. *Evolution* 63:2087-98.

Tinghitella, R. M., M. Zuk, M. Beveridge, and L. W. Simmons. 2011. Island hopping introduces Polynesian field crickets to novel environments, genetic bottlenecks and rapid evolution. *Journal of Evolutionary Biology* 24:1199-1211.

Todd, A. W. and L. B. Keith. 1983. Coyote demography during a snowshoe hare decline in Alberta. *Journal of Wildlife Management* 47:394-404.

Tonn, W. M. and J. J. Magnuson. 1982. Patterns in the species composition and richness of fish assemblages in northern Wisconsin lakes. *Ecology* 63:1149-66.

Toolson, E. C. 1987. Water profligacy as an adaptation to hot deserts: water loss rates and evaporative cooling in the Sonoran Desert cicada, *Diceroprocta apache* (Homoptera, Cicadidae). *Physiological Zoology* 60:379-85.

Toolson, E. C. and N. F. Hadley. 1987. Energy-dependent facilitation of transcuticular water flux contributes to evaporative cooling in the Sonoran Desert cicada, *Diceroprocta apache* (Homoptera, Cicadidae). *Journal of Experimental Biology* 131:439-44.

Tosi, J. and R. F. Voertman. 1964. Some environmental factors in the economic development of the tropics. *Economic Geography* 40:189-205.

Toumey, J. W. and R. Kienholz. 1931. Trenched plots under forest canopies. *Yale University School of Forestry Bulletin* 30:1-31.

Tracy, R. L. and G. E. Walsberg. 2000. Prevalence of cutaneous evaporation in Merriam's kangaroo rat and its adaptive variation at the subspecific level. *Journal of Experimental Biology* 203:773-81.

Tracy, R. L. and G. E. Walsberg. 2001. Intraspecific variation in water loss in a desert rodent, *Dipodomys merriami. Ecology* 82:1130-37.

Tracy, R. L. and G. E. Walsberg. 2002. Kangaroo rats revisited: re-evaluating a classic case of desert survival. *Oecologia* 133:449-57.

Trappe, J. M. 2005. A. B. Frank and mycorrhizae: the challenge to evolutionary and ecologic theory. *Mycorrhiza* 15:277-81.

Tress, G., B. Tress, and G. Fry. 2005. Clarifying integrative research concepts in landscape ecology. *Landscape Ecology* 20:479-93.

Troll, C. 1939. Luftbildplan und okologische bodenforschung. *Zeitschraft der Gesellschaft fur Erdkunde Zu Berlin,* pp. 241-98.

Tscharntke, T. 1992. Cascade effects among four trophic levels: bird predation on galls affects density-dependent parasitism. *Ecology* 73:1689-98.

Turner, M. G., R. H. Gardner, and R. V. O'Neill. 2001. *Landscape Ecology in Theory and Practice: Pattern and Process.* New York: Springer-Verlag.

Turner, M. G., W. H. Romme, and D. B. Tinker. 2003. Surprises and lessons from the 1988 Yellowstone fires. *Frontiers in Ecology and the Environment* 1:351-58.

Turner, M. G., E. A. H. Smithwick, D. B. Tinker, and W. H. Romme. 2009. Variation in foliar nitrogen and aboveground net primary production in young postfire lodgepole pine. *Canadian Journal of Forest Research* 39:1024-35.

Turner, T. 1983. Facilitation as a successional mechanism in a rocky intertidal community. *The American Naturalist* 121:729-38.

Turner, T. F. and J. C. Trexler. 1998. Ecological and historical associations of gene flow in darters (Teleostei: Percidae). *Evolution* 52:1781-1801.

Tyukavina, A., M. C. Hansen, P. V. Potapov, S. V. Stehman, K. Smith-Rodriguez, C. Okpa, and R. Aguilar. 2017. Types and rates of forest disturbance in Brazilian Legal Amazon, 2000-2013. *Science Advances* 3:e1601047.

Ulrich, W., M. Ollik, and K. J. Ugland. 2010. A meta-analysis of species-abundance distributions. *Oikos* 119:1149-55.

United Nations, Department of Economic Affairs, Population Division. 2014. World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352).

United Nations Population Information Network. www.un.org/popin/.

Urban, M. C. 2015. Accelerating extinction risk from climate change. *Science* 348:571-73.

U.S. Bureau of the Census, International Data Base. www.census.gov/pub/ipc/www/idbnew.html.

USDA Agricultural Research Service. 2011. www.ars.usda.gov/Research/docs.htm?docid=11059&page=6.

USGS. 2013. http://diseasemaps.usgs.gov/2013/del_us_human.html.

USGS, USFWS. 2005. The cranes: status survey and conservation action plan, whooping crane (*Grus americana*). www.npsc.nbs.gov.

U.S. National Academy of Sciences and The Royal Society. 2014. *Climate Change Evidence and Causes.* http://nas-sites.org/americasclimatechoices/events/a-discussion-on-climate-change-evidence-and-causes/.

Utida, S. 1957. Cyclic fluctuations of population density intrinsic to the host-parasite system. *Ecology* 38:442-49.

Valett, H. M., S. G. Fisher, N. B. Grimm, and P. Camill. 1994. Vertical hydrologic exchange and ecological stability of a desert stream ecosystem. *Ecology* 75:548-60.

Van Bael, S. A., J. D. Brawn, and S. K. Robinson. 2008. Birds defend trees from herbivores in a Neotropical forest canopy. *Proceedings of the National Academy of Sciences of the United States* 100:8304-07.

Vancouver, G. and J. D. Vancouver. 1798. *A Voyage of Discovery to the North Pacific Ocean.* London: G. G. and J. Robinson.

Vanni, M. J., A. S. Flecker, J. M. Hood, and J. L. Headworth. 2002. Stoichiometry of nutrient recycling by vertebrates in a tropical stream: linking species identity and ecosystem processes. *Ecology Letters* 5:285-93.

Vannote, R. L., G. W. Minshall, K. W. Cummins, J. R. Sedell, and C. E. Cushing. 1980. The river continuum. *Canadian Journal of Fisheries and Aquatic Sciences* 37:130-37.

Verhulst, P. F. and A. Quetelet. 1838. Notice sur la loi que la population suit dans son accroisissement. *Corresponce in Mathematics and Physics* 10:113-21.

Vila-Aiub, M. M., M. C. Balbi, P. E. Gundel, C. M. Ghersa, and S. B. Powles. 2007. Evolution of glyphosate-resistant Johnsongrass (*Sorghum halepense*) in glyphosate-resistant soybean. *Weed Science* 55:566-71.

Violle, C., M. L. Navas, D. Vile, E. Kazakou, C. Fortunel, I. Hummel, and E. Garnier. 2007. Let the concept of trait be functional! *Oikos* 116:882-92.

Vitale, J. and W. H. Schlesinger. 2011. Historical analysis of the spring arrival of migratory birds to Dutchess County, New York: A 123-year record. Northeastern *Naturalist* 18:335-46.

Vitousek, P. M. 1994. Beyond global warming: ecology and global change. *Ecology* 75:1861-76.

Vitousek, P. M. and L. R. Walker. 1989. Biological invasion by *Myrica faya* in Hawaii: plant demography, nitrogen fixation, ecosystem effects. *Ecological Monographs* 59:247-65.

Volterra, V. 1926. Variations and fluctuations of the number of individuals in animal species living together. Reprinted 1931. In R. Chapman. *Animal Ecology.* New York: McGraw-Hill.

Vucetich, J. A. and R. O. Peterson. 2012. *The population biology of Isle Royale wolves and moose: an overview.* www.isleroyalewolf.org.

Vucetich, J. A., R. O. Peterson, and C. L. Schaefer. 2002. The effect of prey and predator densities on wolf predation. *Ecology* 83:3003-13.

Walker, G. T. 1924. Correlation in seasonal variations of weather, no. 9: a further study of world weather. *Memoirs of the Indian Meteorology Society* 24:275-332.

Walker, J. C. G. 1986. *Earth History: The Several Ages of the Earth.* Boston: Jones and Bartlett Publishers.

Walker, L. R., E. Velázquez, and A. Shiels. 2009. Applying lessons from ecological succession to the restoration of landslides. *Plant and Soil* 324:157-68.

Walker, L. R., J. Walker, and R. J. Hobbs. 2007. *Linking Restoration and Ecological Succession.* New York: Springer.

Wallace, J. B., S. L. Eggert, J. L. Meyer, and J. R. Webster. 1999. Effects of resource limitation on a detrital-based ecosystem. *Ecological Monographs* 69:409-42.

Walter, H. 1985. *Vegetation of the Earth.* 3d ed. New York: Springer-Verlag.

Ward, J. V. 1985. Thermal characteristics of running waters. *Hydrobiologia* 125:31-46.

Ware, D. M. and R. E. Thomson. 2005. Bottom-up ecosystem trophic dynamics determine fish production in the Northeast Pacific. *Science* 308:1280-84.

Waters, T. F. 1977. Secondary production in inland waters. *Advances in Ecological Research* 10:91-164.

Watwood, M. E. and C. N. Dahm. 1992. Effects of aquifer environmental factors on biodegradation of organic contaminants. In *Proceedings of the International Topical Meeting on Nuclear and Hazardous Waste Management Spectrum '92.* La Grange Park, Ill.: American Nuclear Society.

Webster, J. R. 1975. Analysis of potassium and calcium dynamics in stream ecosystems on three southern Appalachian watersheds of contrasting vegetation. Ph.D. thesis, University of Georgia, Athens.

Webster, J. R. and E. F. Benfield. 1986. Vascular plant breakdown in freshwater ecosystems. *Annual Review of Ecology and Systematics* 17:567-94.

Webster, K. E., T. K. Kratz, C. J. Bowser, J. J. Magnuson, and W. J. Rose. 1996. The influence of landscape position on lake chemical responses to drought in northern Wisconsin. *Limnology and Oceanography* 41:977-84.

Weinberg, W. 1908. On the demonstration of heredity in man. In S. H. Boyer, ed. *Papers on Human Genetics.* 1963. Englewood Cliffs, N.J.: Prentice Hall.

Werner, E. E. and G. G. Mittelbach. 1981. Optimal foraging: field tests of diet choice and habitat switching. *American Zoologist* 21:813-29.

West, P. M. and C. Packer. 2002. Sexual selection, temperature, and the lion's mane. *Science* 297:1339-49.

West, S. A. and A. Gardner. 2013. Adaptation and inclusive fitness. *Current Biology* 23:R577-R584.

Westoby, M. 1984. The self-thinning rule. *Advances in Ecological Research* 14:167-255.

Westoby, M., M. Leishman, and J. Lord. 1996. Comparative ecology of seed size and dispersal. *Philosophical Transactions of the Royal Society of London Series B* 351:1309-18.

Wetzel, R. G. 1975. *Limnology.* Philadelphia: W. B. Saunders.

Whicker, A. D. and J. K. Detling. 1988. Ecological consequences of prairie dog disturbances. *BioScience* 38:778-85.

White, C. S. and J. T. Markwiese. 1994. Assessment of the potential for *in sutu* bioremediation of cyanide and nitrate contamination at a heap leach mine in central New Mexico. *Journal of Soil Contamination* 3:271-83.

White, J. 1985. The thinning rule and its application to mixtures of plant populations. In J. White, ed. *Studies in Plant Demography.* New York: Academic Press.

White, J. and J. L. Harper. 1970. Correlated changes in plant size and number in plant populations. *Journal of Ecology* 58:467–85.

White, P. S. and S. T. A. Pickett. 1985. Natural disturbance and patch dynamics: an introduction. In S. T. A. Pickett and P. S. White, eds. *The Ecology of Natural Disturbance and Patch Dynamics.* New York: Academic Press.

Whiteman, H. 2015. India heat wave kills 2,330 people as millions wait for rain. CNN World. www.cnn.com/2015/06/01/asia/india-heat-wave-deaths/.

Whittaker, R. H. 1956. Vegetation of the Great Smoky Mountains. *Ecological Monographs* 26:1–80.

Whittaker, R. H. 1965. Dominance and diversity in land plant communities. *Science* 147:250–60.

Whittaker, R. H. 1975. *Communities and Ecosystems.* New York: Macmillan.

Whittaker, R. H. and G. E. Likens. 1973. The primary production of the biosphere. *Human Ecology* 1:299–369.

Whittaker, R. H. and G. E. Likens. 1975. The biosphere and man. In *Primary Productivity of the Biosphere.* New York: Springer-Verlag.

Whittaker, R. H. and W. A. Niering. 1965. Vegetation of the Santa Catalina Mountains, Arizona: a gradient analysis of the south slope. *Ecology* 46:429–52.

Wiebe, H. H., R. W. Brown, T. W. Daniel, and E. Campbell. 1970. Water potential measurement in trees. *BioScience* 20:225–26.

Wiens, J. A., R. L. Schooley, and R. D. Weeks. 1997. Patchy landscapes and animal movements: do beetles percolate? *Oikos* 78:257–64.

Williams, M. 1990. Forests. In B. L. Turner II, W. C. Clark, R. W. Kates, J. F. Richards, J. T. Mathews, and W. B. Meyer, eds. *The Earth as Transformed by Human Action.* Cambridge, England: Cambridge University Press.

Williams-Guillén K., I. Perfecto, and J. Vandermeer. 2008. Bats limit insects in a neotropical agroforestry system. *Science* 320:70.

Williamson, M. 1981. *Island Populations.* Oxford: Oxford University Press.

Willmer, P. G. and G. N. Stone. 1997. Ant deterrence in *Acacia* flowers: how aggressive ant-guards assist seed-set in *Acacia* flowers. *Nature* 388:165–67.

Wilson, E. O. 1980. Caste and division of labor in leaf-cutter ants (Hymenoptera: Formicidae: *Atta*), I: The overall pattern in *A. sexdens. Behavioral Ecology and Sociobiology* 7:143–56.

Wilson, E. O. and D. S. Simberloff. 1969. Experimental zoogeography of islands: defaunation and monitoring techniques. *Ecology* 50:267–78.

Winemiller, K. O. 1990. Spatial and temporal variation in tropical fish trophic networks. *Ecological Monographs* 60:331–67.

Winemiller, K. O. 1992. Life history strategies and the effectiveness of sexual selection. *Oikos* 63:318–27.

Winemiller, K. O. 1995. Fish ecology. pp. 49–65. In Vol. 2 *Encyclopedia of Environmental Biology.* New York: Academic Press.

Winemiller, K. O. and K. A. Rose. 1992. Patterns of life-history diversification in North American fishes: implications for population regulation. *Canadian Journal of Fisheries and Aquatic Sciences* 49:2196–218.

Winston, M. L. 1992. Biology and management of Africanized bees. *Annual Review of Entomology* 37:173–93.

Witkowski, E. T. F. 1991. Effects of invasive alien acacias on nutrient cycling in the coastal lowlands of the Cape fynbos. *Journal of Applied Ecology* 28:1–15.

Wu, J. 2013. Key concepts and research topics in landscape ecology revisited: 30 years after the Allerton Park workshop. *Landscape Ecology* 28:1–11.

Wu, J. and R. Hobbs. 2007. Landscape ecology: The-state-of-the-science. In J. Wu and R. Hobbs, eds. *Key Topics in Landscape Ecology.* Cambridge, England: Cambridge University Press.

Wurtsbaugh, W. A. 1992. Food-web modification by an invertebrate predator in the Great Salt Lake (USA). *Oecologia* 89:168–75.

Wurtsbaugh, W. A. and T. Smith Berry. 1990. Cascading effects of decreased salinity on the plankton, chemistry, and physics of the Great Salt Lake (Utah). *Canadian Journal of Fisheries and Aquatic Science* 47:100–109.

WWF. 2006. *Living Planet Report 2006.* Gland, Switzerland: WWF–World Wide Fund for Nature.

Yang, M. M., C. Mitter, and D. R. Miller. 2001. First incidence of inquilinism in gall-forming psyllids, with a description of the new inquiline species (Insecta, Hemiptera, Psylloidea, Psyllidae, Spondyliaspidinae). *Zoologica Scripta* 30:97–113.

Yoda, K., T. Kira, H. Ogawa, and K. Hozumi. 1963. Intraspecific competition among higher plants. XI. self-thinning in overcrowded pure stands under cultivated and natural conditions. *Journal of Biology Osaka City University* 14:107–29.

Zar, J. H. 1984. *Biostatistical Analysis.* 2d ed. Englewood Cliffs, N.J.: Prentice Hall.

Zar, J. H. 1996. *Biostatistical Analysis.* 3d ed. Upper Saddle River, N.J.: Prentice Hall.

Zhu, L. and J. Southworth. 2013. Disentangling the relationships between net primary production and precipitation in southern Africa savannas using satellite observations from 1982 to 2010. *Remote Sensing* 5:3803–25.

Zickfeld, K., A. Levermann, M. G. Morgan, T. Kuhlbrodt, S. Rahmstorf, and D. W. Keith. 2007. Expert judgements on the response of the Atlantic meridional overturning circulation to climate change. *Climatic Change* 82:235–65.

Zimmerman, E. K. and B. J. Cardinale. 2014. Is the relationship between algal diversity and biomass in North American lakes consistent with biodiversity experiments? *Oikos* 123:267–78.

Zuk, M. and G. R. Kolluru. 1998. Exploitation of sexual signals by predators and parasitoids. *Quarterly Review of Biology* 73:415–38.

Zuk, M., J. T. Rotenberry, and R. M. Tinghitella. 2006. Silent night: adaptive disappearance of a sexual signal in a parasitized population of field crickets. *Biology Letters* 2:521–24.