

TENTATIVE SYLLABUS
BIOL 5301-029
HISTORY OF ECOLOGICAL THOUGHT AND CONSERVATION PRACTICE
Spring 2019
Wednesday 17:30–20:20; Liberal Arts Building 207

Instructor:

Markus J. Peterson, Biology 406

P: 915-747-5354; F: 915-747-6808; Email: mjpeterson@utep.edu

Course Description:

This course provides a survey of the philosophical roots and evolution of ecological thought and conservation practice. Emphasis is placed on theoretical foundations, seminal concepts, classic papers, and historic trends.

Prerequisites:

An undergraduate course in ecology and graduate classification, or instructor approval.

Course Objectives:

Upon course completion, students should understand and, where appropriate, be able to rigorously utilize:

1. Key theoretical and methodological concepts and terminology associated with ecology and conservation.
2. History and development of ecological thought and conservation practice.
3. Basic principles of population ecology and conservation.
4. Theoretical and practical concepts associated with community organization and structure.
5. The limitations and merits of these principles as the underpinnings for currently popular applications of ecology, such as adaptive resource management, biodiversity conservation, ecosystem management, ecosystem services to humanity, and sustainable development.

Required Texts:

Begon, M., C. R. Townsend, and J. L. Harper. 2006. *Ecology: From individuals to ecosystems*. Fourth edition. Blackwell Publishing, Malden, Massachusetts, USA. (ISBN: 1405111178)

Real, L. A., and J. H. Brown, Editors. 1991. *Foundations of ecology: Classic papers with commentaries*. University of Chicago Press, Chicago, Illinois, USA. (ISBN: 0226705943)

Worster, D. 1994. *Nature's economy: A history of ecological ideas*. Second edition. Cambridge University Press, Cambridge, United Kingdom. (ISBN: 0521468345)

Recommended/Optional Texts:

McIntosh, R. P. 1985. *The background of ecology: Concept and theory*. Cambridge University Press, Cambridge, United Kingdom. (ISBN: 0521270871)

Readings:

See page 5 for a list of recommended readings. Those required for the class (page 4) are either in the required textbooks or available on OneDrive.

All written assignments must follow *Conservation Biology* style guidelines. See [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1523-1739/homepage/ForAuthors.html](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1523-1739/homepage/ForAuthors.html) and recently published articles for details. Assignment instructions will be handed out in class and available on OneDrive.

Grading:

The concept papers are worth 150 points each (total 450). The group project, including outline, written report, and summary (250 points) and class presentation (100 points) total 350 points. Class participation (200 points) brings the course total to 1000 points. Assignment details are presented in separate handouts. See page 4 for due dates.

<i>Scale:</i> 90–100% = A	<i>Point Distribution:</i>	Exams	0% (or 30%)
80–89% = B		Concept Analyses	45% (or 30%)
70–79% = C		Participation	20% (or 10%)
60–69% = D		Group Project	35%
≤59% = F			

Important UTEP Dates:

21 January	MLK day; university closed
22 January	First day of spring semester classes
22–25 January	Late registration
23 January	First day BIOL 5321
06 February	Spring census Day
18–22 March	Spring break
29 March	Cesar Chavez observance (no classes)
05 April	Spring drop/withdrawal deadline
09 May	Last day of spring classes
10 May	Dead day
15 May	Final exam period—19:00–21:45
18–19 May	Spring commencement

Examinations:

- You must take examinations during class on the dates listed in the syllabus.
- No “makeup” examinations will be given.
- An exam may be taken early if you must miss class for a university approved reason (<http://student-rules.tamu.edu/rule07>). Proof must be provided.

Expectations:

- Attend *every* class; there is no room for random absences because each lecture builds on previous work. Attendance for the entire class period will form part of your class participation grade.
- Be on time. I expect you to be in your seat when the class *begins*. Punctuality will form part of your class participation grade.
- Read assigned materials *before* class. This, as evidenced by your participation in class, will form the majority of your class participation grade.
- Participate in all class discussions (see above).
- Submit all assignments electronically before class on the date due.
- Adhere to UTEP expectations regarding academic integrity; do not plagiarize. See details and website listed below for relevant definitions and rules.

Academic Integrity:

Academic dishonesty is prohibited and considered a violation of the UTEP *Handbook of Operating Procedures*. It includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. More information on academic dishonesty can be found at <http://academics.utep.edu/Default.aspx?tabid=23785>. All forms of academic dishonesty will be reported and result in the allocation of an automatic failing final grade in this course.

Civility:

Students are expected to conduct themselves in a professional manner in class. Text messaging and the use of cell phones while lectures are in progress will not be tolerated. Students should voice concerns to me via email.

Disabilities:

If a student has or suspects s/he has a disability that needs accommodation, s/he should contact Disabled Student Services (DSS) office at 747-5148 or dss@utep.edu, or go to Room 106 Union East Building. Student are responsible for presenting me with any DSS accommodation letters and instructions.

Military Statement:

If you are in the military and anticipate deployment, contact me as soon as possible.

Need help with academic, career, or personal issues? These people will help.

University Counseling Center	202 Union West	747-5302
Center for Accommodations and Support Services	106 Union East	747-5148
University Career Center	103 Union West	747-5640

TENTATIVE SYLLABUS
BIOL 5301-029
HISTORY OF ECOLOGICAL THOUGHT AND CONSERVATION PRACTICE
SPRING 2019

Day	Mo.	Topic	Readings	Due Dates
23	Jan	Introductory Material ¹ (pretest, survey) Philosophy and Terminology “Ecology” and Human Society	[Begon et al. 2006: 1–15, 17–18 ²] Morrison et al. 2008: Chapter 1 ³ Naess 1973 ³ , Peterson & Peterson 1996 ³	
30		Historical & Philosophical Perspectives ¹ Protoecologists Arcadian and Imperial Traditions of Ecology	Kingsland 1991 ⁴ Worster 1994 ⁵ , Part I	
06	Feb	The Subversive Science The Dismal Science	Worster 1994 ⁵ , Part II Worster 1994 ⁵ , Part III Darwin & Wallace 1858 ³	Project title and paragraph-length summary/outline
13		Post Darwinian Ecology Ecological Pioneers	Worster 1994 ⁵ , Chap. 10 Forbes 1887 ⁴ , Cowles 1899 ⁴	
20		Succession Ecologists Come Out of the Closet	Worster 1994 ⁵ , Chap. 11, Weaver & Clements 1938 ³ , Gleason 1926 ⁴ Worster 1994 ⁵ , Chap. 12	Concept paper I
27		The New Ecology ¹	Tansley 1935 ⁴ , Lindeman 1942 ⁴ Worster 1994 ⁵ , Chaps. 13–14	
06	Mar	Ecological Theory, Theses, Antitheses, and Syntheses	Worster 1994 ⁵ , Chap. 15, Hutchinson 1957 ⁴ , 1959 ⁴	Detailed outline, literature cited
13		The Age of Ecology	Worster 1994 ⁵ , Part VI Naess 1986	
20		Spring Break		
27		Population Ecology ¹ Population Ecology Review	Cole 1954 ⁴ , May 1974 ⁴ [Begon et al. 2006: 1–15 ²]	Concept paper II
03	Apr	Community Organization & Structure ¹ Nature of Community Pop. Interaction & Community Structure	Begon et al. 2006: 16 ⁶ [Begon et al. 2006: 17–18 ²] Begon 2006: 19 ⁶	
10		Food Webs Patterns in Species Richness	Begon et al. 2006: 20 ⁶ Begon et al. 2006: 21 ⁶	Concept paper III
17		Ecological Applications—Communities Ecology, Human Society, & Conservation ¹	Begon et al. 2006: 22 ⁶ White 1967 ³ , Hardin 1968 ³ , Lui et al. 2003 ³	
24		Household Dynamics Environmental Conflict	Peterson et al. 2007 ³ , 2008 ³ Peterson et al. 2005 ³ , Leach 2006 ³ , Peterson et al. 2006a ³ , 2006b ³ , 2010b ³ , 2013	
01	May	Group Presentations—Applications of Ecology; Conservation		Group Papers & Presentations
08		Group Presentations—Applications of Ecology; Conservation		Group Presentations
15		Final Exam Period (19:00–21:45)		

¹ **Boldfaced type** indicates major topics.

² Recommended reading for those with limited background on ecology of organisms, populations, and population interactions, **or** for those studying for Ph.D. preliminary exams in ecology, from *Ecology: From Individuals to Ecosystems* (Begon et al. 2006)—listed by chapter.

³ Required reading available on OneDrive.

⁴ Required reading from *Foundations of Ecology* (Real and Brown 1991).

⁵ Required reading from *Nature's Economy: A History of Ecological Ideas* (Worster 1994)

⁶ Required reading from *Ecology: From Individuals to Ecosystems* (Begon et al. 2006)—listed by chapter.

REFERENCES¹

HISTORY OF ECOLOGICAL THOUGHT AND CONSERVATION PRACTICE BIOL 5301-029

- Abbey, E. 1968. *Desert solitaire: a season in the wilderness*. McGraw-Hill, New York.
- Alee, W. C., O. Park, A. E. Emerson, T. Park, and K. P. Schmidt. 1949. *Principles of animal ecology*. Saunders, Philadelphia, Pennsylvania.
- Allen, T. F. H., and T. B. Starr. 1982. *Hierarchy: perspectives for ecological complexity*. University of Chicago Press, Chicago, Illinois.
- Anderson, R. M., and R. M. May. 1978. Regulation and stability of host-parasite population interactions: I. regulatory processes. *Journal of Animal Ecology* **47**:219–247.
- Anderson, R. M., and R. M. May. 1979. Population biology of infectious diseases: Part I. *Nature* **280**:361–367.
- Andrewartha, H. G., and L. C. Birch. 1954. *The distribution and abundance of animals*. University of Chicago Press, Chicago, Illinois.
- Andrewartha, H. G., and L. C. Birch. 1984. *The ecological web: More on the distribution and abundance of animals*. University of Chicago Press, Chicago, Illinois.
- Begon, M., C. R. Townsend, and J. L. Harper. 2006. *Ecology: from individuals to ecosystems*. Blackwell Publishers, Boston, Massachusetts.
- Birch, L. C. 1948. The intrinsic rate of natural increase of an insect population. *Journal of Animal Ecology* **17**:15–26.²
- Bissonette, J. A., editor. 1997. *Wildlife and landscape ecology: effects of pattern and scale*. Springer-Verlag, New York.
- Boitani, L., and T. K. Fuller, editors. 2000. *Research techniques in animal ecology: controversies and consequences*. Columbia University Press, Irvington, New York.
- Botkin, D. B. 1990. *Discordant harmonies: a new ecology for the twenty-first century*. Oxford University Press, New York.
- Boyce, M. S., and A. Haney, editors. 1997. *Ecosystem management: applications for sustainable forest and wildlife resources*. Yale University Press, New Haven, Connecticut.
- Braun, C. E., editor. 2005. *Techniques for wildlife investigations and management*. The Wildlife Society, Bethesda, Maryland.
- Bray, J. R., and J. T. Curtis. 1957. An ordination of the upland forest communities of southern Wisconsin. *Ecological Monographs* **27**:326–349.²
- Brooks, J. L., and S. I. Dodson. 1965. Predation, body size, and composition of plankton. *Science* **150**:28–35.²
- Brown, J. H. 1991. Methodological advances: new approaches and methods in ecology. Pages 445–455 in L. A. Real, and J. H. Brown, editors. *Foundations of ecology: classic papers with commentaries*. University of Chicago Press, Chicago, Illinois.
- Callicott, J. B., and M. P. Nelson, editors. 1998. *The great new wilderness debate*. University of Georgia Press, Athens, Georgia.
- Cantrill, J. G., and C. L. Oravec, editors. 1996. *The symbolic earth: discourse and our creation of the environment*. University Press of Kentucky, Lexington, Kentucky.
- Carson, R. L. 1962. *Silent spring*. Houghton Mifflin, Boston, Massachusetts.
- Chamberlin, T. C. 1890. The method of multiple working hypotheses. *Science* **15**:92–96.
- Clements, F. E. 1916. *Plant succession: an analysis of the development of vegetation*. Carnegie Institution of Washington, Washington, D.C.
- Clements, F. E. 1936. Nature and structure of the climax. *Journal of Ecology* **24**:252–284.²

¹ For *required* readings, see schedule on page 4 of the Tentative Syllabus. For your convenience, this list includes citations for required readings as well as most other articles I shall refer to in class.

² Reprinted in Real, L. A., and J. H. Brown, editors. 1991. *Foundations of ecology: Classic papers with commentaries*. University of Chicago, Chicago, Illinois.

- Cody, M. L. 1975. Towards a theory of continental species diversities. Pages 214–257 in M. L. Cody, and J. M. Diamond, editors. *Ecology and evolution of communities*. Belknap Press, Cambridge, Massachusetts.
- Cole, L. C. 1954. The population consequences of life history phenomena. *Quarterly Review of Biology* **29**:103–137.²
- Connell, J. H. 1961. The influence of interspecific competition and other factors on the distribution of the barnacle *Chthamalus stellatus*. *Ecology* **42**:710–723.²
- Connell, J. H. 1975. Some mechanisms producing structure in natural communities: a model and evidence from field experiments. Pages 460–490 in M. L. Cody, and J. M. Diamond, editors. *Ecology and evolution of communities*. Belknap Press, Cambridge, Massachusetts.
- Connell, J. H. 1978. Diversity in tropical rainforests and coral reefs: high diversity of trees and corals is maintained only in a non-equilibrium state. *Science* **199**:1302–1310.
- Connell, J. H. 1983. On the prevalence and relative importance of interspecific competition: Evidence from field experiments. *American Naturalist* **122**:661–696.
- Connell, J. H., and R. O. Slatyer. 1977. Mechanisms of succession in natural communities and their role in community stability and organization. *American Naturalist* **111**:1119–1144.
- Costanza, R., R. d'Arge, R. de Groot, S. Farber, M. Grasso, B. Hannon, K. Limburg, S. Naeem, R. V. Oneill, J. Paruelo, R. G. Raskin, P. Sutton, and M. van den Belt. 1997. The value of the world's ecosystem services and natural capital. *Nature* **387**:253–260.
- Cowles, H. C. 1899. The ecological relations of the vegetation of the sand dunes of Lake Michigan. *Botanical Gazette* **27**:95–117, 167–202, 281–308, 361–391.²
- Cox, R. 2006. *Environmental communication and the public sphere*. Sage Publications, Thousand Oaks, California, USA.
- Crumpacker, D. W. 1998. Prospects for sustainability of biodiversity based on conservation biology and U.S. Forest Service approaches to ecosystem management. *Landscape and Urban Planning* **40**:47–71.
- Darwin, C. R., and A. R. Wallace. 1858. On the tendency of species to form varieties; and on the perpetuation of varieties and species by natural means of selection. *Journal of the Proceedings of the Linnean Society of London. Zoology* **3**:45–62.
- Davidson, J., and H. G. Andrewartha. 1948. The influence of rainfall, evaporation and atmospheric temperature on fluctuations in the size of a natural population of *Thrips imagines* (Thysanoptera). *Journal of Animal Ecology* **17**:200–222.²
- Davis, M. B. 1969. Climatic changes in southern Connecticut recorded by pollen deposition at Rogers Lake. *Ecology* **50**:409–422.²
- DeLong, D. C. 1996. Defining biodiversity. *Wildlife Society Bulletin* **24**:738–749.
- DeLuca, K. M. 1999. *Image politics: the new rhetoric of environmental activism*. Guilford Press, New York.
- Devall, B. 1980. The deep ecology movement. *Natural Resources Journal* **20**:299–322.
- Devall, B., and G. Sessions. 1985. *Deep ecology: living as if nature mattered*. Gibbs M. Smith, Layton, Utah.
- DeVoto, B. A. 2005. *DeVoto's West: history, conservation, and the public good*. Swallow Press, Athens, Ohio.
- Dillard, A. 1974. *Pilgrim at Tinker Creek*. Harper's Magazine Press, New York.
- Ehrlich, P. R. 1968. *The population bomb*. Ballantine Books, New York.
- Ehrlich, P. R. 2003. Get off the train and walk. *Conservation Biology* **17**:352–353.
- Ehrlich, P. R., and P. H. Raven. 1964. Butterflies and plants: a study in coevolution. *Evolution* **18**:586–608.²
- Elton, C. S. 1927. *Animal ecology*. Sidgwick & Jackson, London.
- Elton, C. S. 1930. *Animal ecology and evolution*. Clarendon Press, London.
- Elton, C. S. 1958. *The ecology of invasions by animals and plants*. Methuen, London.
- Flannery, T. F. 1995. *The future eaters: an ecological history of the Australasian lands and people*. Reed Books, Melbourne, Australia.
- Forbes, S. A. [1887] 1925. The lake as a microcosm. *Bulletin of the Illinois State Natural History Survey* **15**:537–550.²
- Fox, W. 1995. *Toward a transpersonal ecology: developing new foundations for environmentalism*. State University of New York Press, Albany, New York.
- Glacken, C. J. 1967. *Traces on the Rhodian shore: nature and culture in Western thought from ancient times to the end of the eighteenth century*. University of California Press, Berkeley, California.

- Gleason, H. A. 1926. The individualistic concept of plant association. *Bulletin of the Torrey Botanical Club* **53**:7–26.²
- Gleason, H. A. 1927. Further views on the succession–concept. *Ecology* **8**:299–326.
- Gotelli, N. J., and A. M. Ellison. 2012. *A primer of ecological statistics*. Sinauer Associates, Sunderland, Massachusetts.
- Gottlieb, R. 2002. *Environmentalism unbound: exploring new pathways for change (urban and industrial environments)*. MIT Press, Cambridge, Massachusetts.
- Gottlieb, R. 2005. *Forcing the spring: the transformation of the American environmental movement*. Island Press, Washington, D.C.
- Grant, W. E., and P. B. Thompson. 1997. Integrated ecological models: simulation of socio-cultural constraints on ecological dynamics. *Ecological Modelling* **100**:43–59.
- Grinnell, J. 1917. The niche-relationships of the California thrasher. *Auk* **34**:427–433.²
- Hairston, N. G., F. E. Smith, and L. B. Slobodkin. 1960. Community structure, population control, and competition. *American Naturalist* **94**:421–425.²
- Hardin, G. 1968. The tragedy of the commons. *Science* **162**:1243–1248.
- Hardin, G. 1974. Living on a lifeboat. *Bioscience* **24**:561–568.
- Hardin, G. 1993. *Living within limits: Ecology, economics, and population taboos*. Oxford University Press, New York.
- Harper, J. L. 1967. A Darwinian approach to plant ecology. *Journal of Ecology* **55**:247–270.²
- Holling, C. S. 1959. The components of predation as revealed by a study of small mammal predation of the European pine sawfly. *Canadian Entomologist* **91**:293–320.²
- Holling, C. S., editor. 1978. *Adaptive environmental assessment and management*. Wiley, Chichester, New York.
- Huffaker, C. B. 1958. Experimental studies on predation. dispersion factors and predator-prey oscillations. *Hilgardia* **27**: 343–383.²
- Huston, M. 1979. A general hypothesis of species diversity. *American Naturalist* **113**:81–101.
- Hutchinson, G. E. 1941. Ecological aspects of succession in natural populations. *American Naturalist* **75**:406–418.
- Hutchinson, G. E. 1957. Concluding remarks. *Cold Spring Harbor Symposia on Quantitative Biology* **22**:415–427.²
- Hutchinson, G. E. 1959. Homage to Santa Rosalia; or, why are there so many kinds of animals? *American Naturalist* **93**:145–159.²
- Hutchinson, G. E. 1961. The paradox of the plankton. *American Naturalist* **95**:137–145.
- Kettlewell, H. B. D. 1955. Selection experiments on industrial melanism in Lepidoptera. *Heredity* **9**:323–342.²
- Killingsworth, M. J., and J. S. Palmer. 1992. *Ecospeak: rhetoric and environmental politics in America*. Southern Illinois University Press, Carbondale, Illinois.
- Kingsland, S. E. 1985. *Modeling nature: episodes in the history of population ecology*. University of Chicago Press, Chicago, Illinois.
- Kingsland, S. E. 1991. Foundational papers: defining ecology as a science. Pages 1–13 in L. A. Real, and J. H. Brown, editors. *Foundations of ecology: classic papers with commentaries*. University of Chicago Press, Chicago, Illinois.
- Kingsland, S. E. 2005. *The evolution of American ecology, 1890–2000*. Johns Hopkins University Press, Baltimore, Maryland.
- Kingsolver, J. G., and R. T. Paine. 1991. Theses, antitheses, and syntheses: conservational biology and ecological debate. Pages 309–317 in L. A. Real, and J. H. Brown, editors. *Foundations of ecology: classic papers with commentaries*. University of Chicago Press, Chicago, Illinois.
- Krebs, C. J. 2000. Hypothesis testing in ecology. Pages 1–14 in L. Boitani, and T. K. Fuller, editors. *Research techniques in animal ecology: controversies and consequences*. Columbia University Press, Irvington, New York.
- Lack, D. 1954. *The natural regulation of animal numbers*. Clarendon Press, Oxford, United Kingdom.
- Lack, D. 1969. Subspecies and sympatry in Darwin's finches. *Evolution* **23**:252–263.
- Lack, D. 1976. *Island biology illustrated by the land birds of Jamaica*. University of California Press, Berkeley, California.
- Leach, W. D. 2006. Theories about consensus-based conservation. *Conservation Biology* **20**:573–575.

- Leopold, A. 1931. Report on a game survey of the north central states. Democrat Printing Company, Madison, Wisconsin.
- Leopold, A. 1933. Game management. Charles Scribner's Sons, New York.
- Leopold, A. 1949. A Sand County almanac and sketches here and there. Oxford University Press, London.
- Leslie, P. H. 1945. On the use of matrices in certain population mathematics. *Biometrika* **33**:183–212.²
- 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**:23–47.²
- Lindeman, R. L. 1942. The trophic-dynamic aspect of ecology. *Ecology* **23**:399–418.²
- Liu, J., G. C. Daily, P. R. Ehrlich, and G. W. Luck. 2003. Effects of household dynamics on resource consumption and biodiversity. *Nature* **421**:530–533.
- Losos, J. B., and R. E. Ricklefs, editors. 2010. The theory of island biogeography revisited. Princeton University Press, Princeton, New Jersey.
- Lovelock, J. E. 1979. Gaia: a new look at life on earth. Oxford University Press, Oxford, UK.
- Lubchenco, J., and L. A. Real. 1991. Experimental manipulations in lab and field systems: manipulative experiments as tests of ecological theory. Pages 715–733 in L. A. Real, and J. H. Brown, editors. *Foundations of ecology: classic papers with commentaries*. University of Chicago Press, Chicago, Illinois.
- MacArthur, R. H. 1958. Population ecology of some warblers of northeastern coniferous forests. *Ecology* **39**:599–619.²
- MacArthur, R. H. 1972. Geographical ecology. Harper & Row, New York.
- MacArthur, R. H., and E. R. Pianka. 1966. On optimal use of a patchy environment. *American Naturalist* **100**:603–609.²
- MacArthur, R. H., and E. O. Wilson. 1967. The theory of island biogeography. Princeton University Press, Princeton, New Jersey.
- May, R. M. 1972. Will a large complex system be stable? *Nature* **238**:413–414.
- May, R. M. 1973. Stability and complexity in model ecosystems. Princeton University Press, Princeton, New Jersey.
- May, R. M. 1974. Biological populations with non-overlapping generations: stable points, stable cycles, and chaos. *Science* **186**:645–647.²
- May, R. M., and R. M. Anderson. 1978. Regulation and stability of host-parasite population interactions: II. destabilizing processes. *Journal of Animal Ecology* **47**:249–267.
- May, R. M., and R. M. Anderson. 1979. Population biology of infectious diseases: Part II. *Nature* **280**:455–461.
- McIntosh, R. P. 1985. The background of ecology: concept and theory. Cambridge University Press, Cambridge, UK.
- McCool, S. F., K. Guthrie, and J. K. Smith. 2000. Building consensus: legitimate hope or seductive paradox? Research Paper RMRS-RP-25, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado.
- McNaughton, S. J. 1977. Diversity and stability of ecological communities: a comment on the role of empiricism in ecology. *American Naturalist* **111**:515–525.
- Meine, C. D. 1988. Aldo Leopold: his life and work. University of Wisconsin Press, Madison, Wisconsin, USA.
- Morrison, M. L., W. M. Block, M. D. Strickland, B. A. Collier, and M. J. Peterson. 2008. *Wildlife study design*. Springer, New York.
- Morrison, M. L., B. G. Marcot, and R. W. Mannan. 2006. *Wildlife-habitat relationships: concepts and applications*. Island Press, Washington, D.C.
- Muir, J. 1997. *Nature writings: the story of my boyhood and youth; My first summer in the Sierra; The mountains of California; Stickeen; Selected essays*. Library of America, New York.
- Naess, A. 1973. Shallow and deep, long-range ecology movement: a summary. *Inquiry—an Interdisciplinary Journal of Philosophy* **16**:95–100.
- Naess, A. 1986. Intrinsic value: will the defenders of nature please rise? Pages 504–515 in M. E. Soulé, editor. *Conservation biology: the science of scarcity and diversity*. Sinauer Associates, Sunderland, Massachusetts.

- Naess, A. 1989. Ecology, community and lifestyle: outline of an ecosophy. Translated by D. Rothenberg. Cambridge University Press, Cambridge, UK.
- Nash, R. 1982. Wilderness and the American mind. Yale University Press, New Haven, Connecticut.
- Nicholson, A. J., and V. A. Bailey. 1935. The balance of animal populations.—part I. Proceedings of the Zoological Society, London **3**:551–598.²
- Noble, I. R., and R. O. Slatyer. 1979. The effect of disturbance on plant succession. Proceedings of the Ecological Society of Australia **10**:135–145.
- Noble, I. R., and R. O. Slatyer. 1981. Concepts and models of succession in vascular plant communities subject to recurrent fire. Pages 311–335 in A. M. Gill, R. H. Graves, and I. R. Noble, editors. Fire and the Australian biota. Australian Academy of Science, Canberra, Australia.
- O'Neill, R. V. 1976. Ecosystem persistence and heterotrophic regulation. Ecology **57**:1244–1253.
- O'Neill, R. V., D. L. DeAngelis, J. B. Waide, and T. F. H. Allen. 1986. A hierarchical concept of ecosystems. Princeton University Press, Princeton, New Jersey.
- Odum, E. P. 1953, 1959, 1971. Fundamentals of ecology. First, Second, and Third editions. W. B. Saunders, Philadelphia, Pennsylvania.
- Odum, E. P. 1969. The strategy of ecosystem development. Science **164**:262–270.²
- Odum, H. T. 1988. Self-organization, transformity, and information. Science **242**:1132–1139.
- Paine, R. T. 1966. Food web complexity and species diversity. American Naturalist **100**:65–75.²
- Park, T. 1948. Experimental studies of interspecies competition. I. Competition between populations of flour beetles, *Tribolium confusum* Duvall and *Tribolium castaneum* Herbst. Ecological Monographs **18**:267–307.²
- Peet, R. K. 1991. Case studies in natural systems: lessons from nature. Pages 605–615 in L. A. Real, and J. H. Brown, editors. Foundations of ecology: classic papers with commentaries. University of Chicago, Chicago, Illinois.
- Peterson, M. J. 2009. An ecologist's response to the SIU campaign: The role of natural scientists in environmental movements. Pages 361–387 in D. Endres, L. Sprain, and T. R. Peterson, editors. Social movement to address climate change: Local steps for global action. Cambria Press, Amherst, New York.
- Peterson, M. J., D. M. Hall, A. M. Feldpausch-Parker, and T. R. Peterson. 2010a. Obscuring ecosystem function with application of the ecosystem services concept. *Conservation Biology* **24**:113–119.
- Peterson, M. J., and T. R. Peterson. 1996. Ecology: scientific, deep and feminist. *Environmental Values* **5**:123–146.
- Peterson, M. N., X. D. Chen, and J. Liu. 2008. Household location choices: Implications for biodiversity conservation. *Conservation Biology* **22**:912–921.
- Peterson, M. N., M. J. Peterson, and T. R. Peterson. 2005. Conservation and the myth of consensus. *Conservation Biology* **19**:762–767.
- Peterson, M. N., M. J. Peterson, and T. R. Peterson. 2006a. Why conservation needs dissent. *Conservation Biology* **20**:576–578.
- Peterson, M. N., M. J. Peterson, T. R. Peterson, and K. Leong. 2013. Why transforming biodiversity conservation conflict is essential and how to begin. *Pacific Conservation Biology* **19**:94–103.
- Peterson, M. N., M. J. Peterson, T. R. Peterson, and J. Liu. 2007. A household perspective for biodiversity conservation. *Journal of Wildlife Management* **71**:1243–1248.
- Peterson, M. N., T. R. Peterson, J. L. Birkhead, K. Leong, and M. J. Peterson. 2010b. Rearticulating the myth of human-wildlife conflict. *Conservation Letters* **3**:74–82.
- Peterson, T. R. 1997. Sharing the Earth: the rhetoric of sustainable development. University of South Carolina Press, Columbia, South Carolina.
- Peterson, T. R., editor. 2004. Green talk in the White House: the rhetorical presidency encounters ecology Texas A&M University Press, College Station, Texas.
- Peterson, T. R., M. N. Peterson, M. J. Peterson, S. A. Allison, and D. Gore. 2006b. To play the fool: can environmental conservation and democracy survive social capital? *Communication and Critical/Cultural Studies* **3**:116–140.
- Pickett, S. T. A., and P. S. White, editors. 1985. The ecology of natural disturbance as patch dynamics. Academic Press, Orlando, Florida.

- Porter, W. P., and D. M. Gates. 1969. Thermodynamic equilibria of animals with environment. *Ecological Monographs* **39**:227–244.²
- von Post, L. 1967[1916]. Forest tree pollen in south Swedish peat bog deposits. *Pollen et Spores* **9**:378–401.²
- Preston, F. W. 1962. The canonical distribution of commonness and rarity: part I. *Ecology* **43**:185–215, 431–432.
- Real, L. A., and J. H. Brown, editors. 1991. *Foundations of ecology: classic papers with commentaries*. University of Chicago Press, Chicago, Illinois.
- Real, L. A., and S. A. Levin. 1991. Theoretical advances: the role of theory in the rise of modern ecology. Pages 177–191 in L. A. Real, and J. H. Brown, editors. *Foundations of ecology: classic papers with commentaries*. University of Chicago Press, Chicago, Illinois.
- Redford, K. H., and B. D. Richter. 1999. Conservation of biodiversity in a world of use. *Conservation Biology* **13**:1246–1256.
- Rose, C. 1986. The comedy of the commons: custom, commerce, and inherently public property. *University of Chicago Law Review* **53**:711–781.
- Schoener, T. W. 1971. Theory of feeding strategies. *Annual Review of Ecology and Systematics* **2**:369–404.²
- Semper, K. 1881. *Animal life as affected by the natural conditions of existence*. D. Appleton and Company, New York.
- Sessions, G., editor. 1995. *Deep ecology for the twenty-first century*. Shambhala Publications, Boston, Massachusetts, USA.
- Shabecoff, P. 2003. *A fierce green fire: the American environmental movement*. Island Press, Washington, D.C.
- Shelford, V. E. 1913. *Animal communities in temperate America*. University of Chicago Press, Chicago, Illinois.
- Simberloff, D. S., and E. O. Wilson. 1969. Experimental zoogeography of islands: the colonization of empty islands. *Ecology* **50**:278–296.²
- Sinclair, A. R. E., J. M. Fryxell, and G. Caughley. 2006. *Wildlife ecology, conservation, and management*. Blackwell Publishers, Oxford, United Kingdom.
- Skellam, J. G. 1951. Random dispersal in theoretical populations. *Biometrika* **38**:196–218.²
- Sousa, W. P. 1979. Experimental investigation of disturbance an ecological succession in a rocky intertidal algal community. *Ecological Monographs* **49**:227–254.
- Sprugel, D. G. 1980. A “pedagogical genealogy” of American plant ecologists. *Bulletin of the Ecological Society of America* **61**:197–200.
- Stegner, W. E. 1954. *Beyond the hundredth meridian: John Wesley Powell and the second opening of the West*. Houghton Mifflin, Boston, Massachusetts, USA.
- Tansley, A. G. 1935. The use and abuse of vegetational concepts and terms. *Ecology* **16**:284–307.²
- Tansley, A. G. 1939. *The British islands and their vegetation*. Cambridge University Press, Cambridge, United Kingdom.
- Teal, J. M. 1962. Energy flow in a salt march ecosystem of Georgia. *Ecology* **43**:614–624.²
- Schmidt, P. M., and M. J. Peterson. 2009. Biodiversity conservation and indigenous land management in the era of self-determination. *Conservation Biology* **23**:1458–1466.
- Thoreau, H. D. 1989. *A week on the Concord and Merrimack rivers; Walden, or, life in the woods; The Maine woods; Cape Cod*. Library of America, New York.
- Tillman, D. 1988. *Plant strategies and the dynamics of structure of plant communities*. Princeton University Press, Princeton, New Jersey.
- Urban, D. L., R. V. O’Neill, and H. H. Shugart, Jr. 1987. Landscape ecology: a hierarchical perspective can help scientists understand spatial patterns. *Bioscience* **37**:119–127.
- Volterra, V. 1926. Fluctuations in the abundance of a species considered mathematically. *Nature* **118**:558–560.²
- Waddell, C., editor. 2000. *And no birds sing: rhetorical analyses of Rachel Carson's Silent Spring*. Southern Illinois University Press, Carbondale, Illinois.
- Walters, C. J. 1986. *Adaptive management of renewable resources*. Macmillan, New York.
- Warming, E. 1895. *Plantesamfund: Grundtræk af den økologiske plantegeografi*. P.G. Philipsens Forlag, Kopenhagen, Danmark.
- Warming, E. 1909. *Oecology of plants: an introduction to the study of plant-communities*. Translated by P. Groom, and I. B. Balfour. Clarendon Press, Oxford, United Kingdom.
- Watt, A. S. 1947. Pattern and process in the plant community. *Journal of Ecology* **35**:1–22.²

- Weaver, J. E., and F. E. Clements. 1929, 1938. *Plant ecology*. First and Second editions. McGraw-Hill, New York.
- White, G. [1789] 2012. *The natural history of Selborne*. CreateSpace, Lexington, Kentucky, USA.
- White, L., Jr. 1967. Historical roots of our ecologic crisis. *Science* **155**:1203–1207.
- Whittaker, R. H. 1953. A consideration of climax theory: the climax as a population and pattern. *Ecological Monographs* **23**:41–78.
- Wilson, E. O., and D. S. Simberloff. 1969. Experimental zoogeography of islands: defaunation and monitoring techniques. *Ecology* **50**:267–278.
- World Commission on Environment and Development. 1987. *Our common future*. Oxford University Press, Oxford, UK.
- Worster, D. 1979. *Dust bowl: the southern plains in the 1930s*. Oxford University Press, New York.
- Worster, D. 1994. *Nature's economy: a history of ecological ideas*. Cambridge University Press, Cambridge, United Kingdom.