

Name: Timothy R. Seastedt

Title: Professor of Ecology and Evolutionary Biology and Fellow,  
Institute of Arctic and Alpine Research,  
University of Colorado, Boulder CO 80309

Degrees: B.A., Zoology, University of Montana, 1971  
M.S., Biological Sciences, University of Alaska, 1976  
Ph.D., Ecology, University of Georgia, 1979

Experience:

2002 Interim Director, Institute of Arctic and Alpine Research  
1996- Professor, University of Colorado  
1991-96 Associate Professor, University of Colorado  
1990-91 Visiting Scientist, NREL, Colorado State University  
1989-91 Associate Professor, Kansas State University  
1983-89 Assistant Professor, Kansas State University  
1981-83 Postdoctoral Research Associate, Kansas State University  
1980-81 Research Associate and Adjunct Faculty of Zoology, University of Montana  
1979-80 Postdoctoral Research Associate, University of Georgia  
1976-79 Research and Teaching Assistant, University of Georgia  
1974-76 Research Assistant, University of Alaska  
1972-74 Peace Corps, Kingdom of Tonga  
1972 Coordinator, EPA funded study of Flathead Lake, Montana  
1968-71 University of Montana, Wildlife Research Assistant

Fields of Research Competence: Terrestrial Ecology, Biogeochemistry, Soil Biology, Ecosystem Management, Ecology of Invasive Species.

Courses Taught: Fundamentals of Ecology, Introductory Biology, Nutrient Dynamics, Ecological Modeling, Ecosystem Ecology, Advanced Field Ecology, Ecology of Invasive Species, Controversies in Ecology, Novel Ecosystems

Recent Awards and Honors:

2001 Research Program Honored in Congressional Record (E1915, 10/17/01)  
2005 Boulder Pacesetter Award for Environmental Research  
2007 Acknowledged participant in IPCC effort

National Committees, Society Responsibilities, 1997-present:

1993-present Subject Editor, *Pedobiologia*  
1995-98 Subject Editor, *Ecology* and *Ecological Monographs*  
1996-97 President, Association of Ecosystem Research Centers  
1997- Chair, Committee of Visitors, Long-Term Ecological Research in Environmental Biology Program, National Science Foundation.  
1997- Panelist, Ecosystem Management for Department of Defense Lands, SERDP, DoD.  
1999-present. Subject Editor, *Soil Biology and Biochemistry*  
2000-present. Grasslands/Shrublands Group, State of the Nation's Ecosystems, H. John Heinz III Center for

- Science, Economics and the Environment.
- 2000 Invited Participant, Workshop on Ecological Monitoring for Genetically Modified Crops. National Academy of Science.
- 2001 Program Reviewer, National Research Council
- 2002 Panelist, USDA National Research Grants Program.
- 2002-2006 Editorial Board, *Frontiers in Ecology and the Environment*, Ecological Society of America.
- 2005-present Editorial Board, *Oecologia*
- 2005 Panelist. USDA NRI Invasive Plants Grants Program
- 2006 Invited Participant, NSF-USDA Development of USDA Long-Term Research Program (workshop and whitepaper), Washington D.C.
- 2011 Invited Participant and speaker, International Novel Ecosystems Workshop, Poet's Cove, BC.
- 2011 Invited speaker and 'opponent' for dissertation, SLA, Omeå, Sweden

Recent CU Service Activities:

Administrator, Niwot Ridge LTER Program, 1992-2004.  
 INSTAAR Mountain Research Station Implementation Committee Chair, 2004, followed by MRS Advisory Board, 2005-06.  
 Ecology and Evolutionary Biology Budget Committee, 2003-2009 .  
 Ecology and Evolutionary Biology Post-tenure review committee, co-chair, 2005-present.  
 Executive Committee 2007-2008, EBIO and INSTAAR, EBIO 2009-2010.

Recent Community Service:

BioBlitz Science Leader ([www.grasslands-bioblitz.org](http://www.grasslands-bioblitz.org)) Collection and identification of soil invertebrates as part of a Boulder outreach activity.  
 Biological Control of Knapweed. Assisted Lyons City Council member in biological release program, summer 2005-08.  
 Selection Committee, 2006 Boulder Pacesetter Awards.  
 Boulder County Weed Management Task Force, 2003-2006.  
 City of Boulder, Environmental Affairs ad-hoc committee on ecosystem health

Extramural Grants Awarded while at CU (PI except where indicated):

1992 Biological Hysteresis in Climate Change Models for Grasslands: Implications for Plant Community Dynamics on Biogeochemical Feedbacks. PI with D.S. Ojima, Co-PI. DOE-NIGEC, \$85,399.

Effects of Climate Change in the Colorado Alpine: Ecosystem Response to Altered Snowpack and Rainfall Regimes. PI with 12 others. NSF-LTER \$3,540,000 (11/92-11/98).

Creation of a trace gas laboratory at the University of Colorado Mountain Research Station. PI with W.D. Bowman, R.K. Monson and S.K. Schmidt. NSF \$31,425

1993 LTER Supplement. NSF-DEB \$75,000. (11/92-11/93).

1994 LTER Supplement. NSF-DEB \$71,000. (11/93-11/94).  
 Comparative responses of moist and dry arctic tundra to altered snow and temperature regimes. NSF-DPP \$691,389 (7/94-6/99) CoPI with M.D. Walker, PI, and D.A. Walker, CoPI.

1995 LTER REU Supplement. NSF-DEB \$10,000. (6/95-5/96).

1996. LTER REU Supplement. NSF-DEB \$10,000. (6/96-5/97)  
 LTER-SGER Supplement. NSF-DEB \$40,000. (7/96-12/97)

1997. LTER-REU Supplement. NSF-DEB \$15,000. (6/97-12/98)

1998. LTER-REU Supplement. NSF-DEB \$65,000. (6/98-12/99)

Collaborative Research: Identifying Ecosystem Controls on Biodiversity: A US/UK Project. NSF Ecosystems \$399,962. (7/98-6/02). PI. (other universities participating in this include CSU (1.1 million) and NU (300 k). CU Vice-Chancellor's Awards and Grants Committee. \$4,710. Understanding the alpine: virtual field trips to Niwot Ridge.

LTER. NSF-DEB 9810218 The Niwot Ridge Long-Term Ecological Research Program 1998-2004: Control on the structure, function and interactions of alpine and subalpine ecosystems in the Colorado Front Range. \$4,200,000. (12/98-11/04) PI with 20 co PIs.

1999: LTER Supplement. 1999. Expansion of T1 facilities for outreach activities. NSF DEB \$167,000. 12/98-11/99.

LTER Equipment, REU, and Schoolyard Supplements 1999. NSF DEB \$115,000 (12/98-11/99)  
EPA Region VIII PESP MM988113-01 Enhancing the effectiveness of biocontrol insects as part of a non-chemical management of diffuse knapweed. 7/99-12/00 \$40,000. PI with Rella Abernathy.

2000: NSF DEB 9810218 Supplement. REU, ROA, and Schoolyard supplements 11/99-10/00 \$45,477.

NSF DEB 9810218 Supplement, International travel grant \$ \$3,490

NSF DEB 9810218 Equipment Supplement. \$25,000.

NSF DEB 9806438. Collaborative Research: Identifying Ecosystem Controls on Biodiversity: A US/UK Project. 2000-2001 allocation \$136,547.

2001: NSF DEB 9810218. REU, Schoolyard, and Equipment Supplement. \$54,000

NSF DEB 9810218. International Meeting and Travel supplement. \$29,000

USDA 2001-01043. Causes and consequences of invasion of a C3-C4 grassland by diffuse knapweed. P.I. with Katie Suding, Co-P.I. 7/1/01-6/31/04 \$280,000

2003 LTER Supplement \$54,000.

EPA Region VIII. Developing sustainable management procedures for wide-spread noxious weeds on public lands in the Colorado Front Range. \$40,000.

2004 Long-Term Ecological Research Program. NSF DEB 2004-2010. Niwot Ridge. \$4.92 million. Co-PI.

2005: Dissertation Research: The Effects of Nitrogen Deposition on Ecosystem Function in the Forest-Alpine Tundra Ecotone (Dan Liptzin's Ph.D. research) NSF 11,900.

Dissertation Research: Forest Fire Mitigation and Understory Invasion. (Elisa Miller's Ph.D. research) NSF. 11,900.

National Park Service Inventory and Monitoring Program. Development of a National Park Service Long-Term Monitoring Program. \$19,000

2006: USDA\CSREES 2006-03618 \$172,378. (three years) Tests of Top-Down and Bottom-Up Controls and Interactions on Densities of Spotted Knapweed (*Centaurea maculosa*)

2007: CESU-National Park Service. \$20,000. Evaluation of research information for the Sand Creek Massacre site.

NSF \$12,817. International: Topography, elemental Ratios, and Nutrient Limitation in Tropical Montane Ecosystems. (Nataly Ascarrunz's Ph.D. research).

2008 USDA/CSREES 2008-03034. \$499,851. (three years) Ecosystem management of regionally abundant, invasive plants in an era of global environmental change. PI.

2011 CESU (cooperative ecosystems studies unit) Assessment of Grassland Condition and Development of Reference Conditions for Three Intermountain Region Parks \$12,813. PI

2011. NSF DEB. Ecosystem transformations along the Colorado Front Range: Prairie dog interactions with multiple components of global environmental change \$851,000 (three years) PI.

2011. NSF CNH: Dynamics of Coupled Natural and Human Systems in the Colorado Front Range Wildland/Urban Interface: Causes and Consequences \$1,400,000. (three years) Co-PI with Patrick Bourgeron, PI.

Publications: (Undergraduates indicated with a '\*\*')

Seastedt, T. R. and J. F. Tibbs. 1974. Land use and water quality in the Flathead drainage, Montana Govt. Printing Office (EPA) Denver, Colorado. 155 p.

Seastedt, T. R. and F. S. MacLean, Jr. 1977. Calcium supplements in the diets of nesting Lapland longspurs near Barrow, Alaska. *Ibis* 119:533.

Seastedt, T. R. and D. A. Crossley, Jr. 1978. Further investigations of microarthropod populations using the Merchant-Crossley high-gradient extractor. *Journal of the Georgia Entomological Society* 13:338-344.

Seastedt, T. R. and S. F. MacLean, Jr. 1979. Territory size and composition in relation to resource abundance of Lapland longspurs breeding in arctic Alaska. *Auk* 96:131-142.

MacLean, S. F., Jr. and T. R. Seastedt. 1979. Avian territoriality: sufficient resources or interference competition. *American Naturalist* 114:308-312.

Seastedt, T. R., Aruna Kothari and D. A. Crossley, Jr. 1980. A simplified gelatin embedding technique for sectioning litter and soil samples. *Pedobiologia* 20:55-59

Seastedt, T. R. and S. F. MacLean, Jr. 1980. Polygyny and nest spacing in Lapland longspurs: a hypothesis. *Animal Behavior* 28:313-314.

Seastedt, T. R. and D. A. Crossley, Jr. 1980. Effects of microarthropods on the nutrient dynamics of forest litter. *Soil Biology and Biochemistry* 12:337-342.

Seastedt, T. R. 1980. Comparison of diets of young Lapland longspurs in arctic and subarctic Alaska. *Condor* 82:232-233.

Abbott, D. T., T. R. Seastedt and D. A. Crossley, Jr. 1980. The abundance, distribution and effects of clear-cutting on Cryptostigmata in the southern Appalachians. *Environmental Entomology* 9:618-623.

Seastedt, T. R., L. Mameli and K. Gridley. 1981. Arthropod use of invertebrate carrion. *American Midland Naturalist* 105:124-129.

Seastedt, T. R. and D. A. Crossley, J. R. 1981. Microarthropod response to cable logging and clear-cutting

in the southern Appalachians. *Ecology* 62:126-135.

Seastedt, T. R. and C. M. Tate. 1981. Decomposition rates and nutrient content of arthropod remains in forest litter. *Ecology* 62:13-19.

Seastedt, T. R. and D. A. Crossley, Jr. 1981. Sodium dynamics of forest ecosystems and the animal starvation hypothesis. *American Naturalist* 117:1029-1034.

Whitford, W. G., V. Meentemeyer, T. R. Seastedt, K. Cromack, Jr., D. A. Crossley, Jr., P. Santos, R. L. Todd and J. B. Waide. 1981. Tests of the AET model of litter decomposition in deserts and a clear-cut forest. *Ecology* 62:275-277.

Seastedt, T. R., D. A. Crossley, Jr., V. Meentemeyer and J. B. Waide. 1983. A two-year study of leaf litter decomposition in relation to macro-climatic Factors and microarthropod abundance. *Holarctic Ecology* 6:11-16.

Seastedt, T. R. and D. A. Crossley, Jr. 1983. Naphthalene and artificial throughfall effects on forest floor nutrient dynamics: a field microcosm study. *Soil Biology & Biochemistry* 15:159-165.

Seastedt, T. R., D. A. Crossley, Jr. and W. W. Hargrove. 1983. Effects of low-level consumption by canopy arthropods on the growth and nutrient dynamics of black locust and red maple trees in the southern Appalachians. *Ecology* 64:1040-1048.

Seastedt, T. R. 1983. The rhinoceros beetle, *Xyloryctes jamaicensis* Drury, (Coleoptera, Scarabaeidae), a locally abundant detritivore of a Kansas riparian forest. *Journal of the Kansas Entomological Society* 56:543-546.

Seastedt, T. R. 1984. The role of microarthropods in decomposition and mineralization processes. *Annual Review of Entomology* 29:25-46

Seastedt, T. R. and D. A. Crossley, Jr. 1984. The influence arthropods on ecosystems. *BioScience* 34:157-161.

Seastedt, T. R. 1984. Belowground macroarthropods of annually burned and unburned tallgrass prairie. *American Midland Naturalist* 111:405-408.

Seastedt, T. R. 1984. Microarthropods of burned and unburned tallgrass prairie. *Journal of the Kansas Entomological Society* 57:468-476.

Hargrove, W. W., D. A. Crossley, Jr. and T. R. Seastedt. 1984. Shifts in insect herbivory in the canopy of black locust, *Robinia pseudoacacia* L. following fertilization. *Oikos* 43:322-328.

Seastedt, T. R. 1985. Canopy interception of nitrogen in bulk precipitation by annually burned and unburned tallgrass prairie. *Oecologia* 66:88-92.

Seastedt, T. R. 1985. Maximization of Primary and Secondary Productivity by Grazers. *American Naturalist* 126:559-564.

Seastedt, T. R., O. J. Reichman and T. C. Todd. 1986. Microarthropods and nematodes in kangaroo rat burrows. *Southwestern Nat.* 31:114-116.

- James, S. W. and T. R. Seastedt. 1986. Nitrogen mineralization by native and introduced earthworms: Effects on big bluestem growth. *Ecology* 67:1094-1097.
- Seastedt, T. R., D. C. Hayes and N. J. Petersen. 1986. Effects of vegetation, burning and mowing on soil arthropods of tallgrass prairie. Pages 99-103 in Proc. Ninth North Amer. Prairie Conf. Tri-College Press, Fargo, ND. G. K. Clambey and R. H. Pemble (eds.).
- Knapp, A. K. and T. R. Seastedt. 1986. Detritus accumulation limits productivity of tallgrass prairie. *BioScience* 36:662-668.
- Seastedt, T. R., T. C. Todd and S. W. James. 1987. Experimental manipulations of arthropod, nematode and earthworm communities in a North American tallgrass prairie. *Pedobiologia* 30:9-18.
- Hayes, D. C. and T. R. Seastedt. 1987. Root dynamics of tallgrass prairie in wet and dry years. *Canadian J. Botany* 65:787-791.
- Gilliam, F. S., T. R. Seastedt and A. K. Knapp. 1987. Seasonality of grass canopy interception of precipitation in burned and unburned prairie. *Southwest. Nat.* 267-271.
- Crossley, D. A., Jr., C. S. Gist, W. W. Hargrove, L. S. Risley, T. S. Schowalter, and T. R. Seastedt. 1988. Foliage consumption and arthropod nutrient dynamics. Pages 193-205, In W. T. Swank and D. A. Crossley, Jr. (eds.) Forest Hydrology and Ecology at Coweeta. Springer-Verlag.
- Seastedt, T. R. 1988. Mass, nitrogen and phosphorus dynamics in foliage and root detritus of tallgrass prairie. *Ecology* 69:59-65.
- Seastedt, T. R., R. A. Ramundo, and D. C. Hayes. 1988. Maximization of densities of soil animals by foliage herbivory: Empirical evidence, graphical and conceptual models. *Oikos* 51:243-248.
- Seastedt, T. R. and D. A. Crossley, Jr. 1988. Soil arthropods of Coweeta and their role in decomposition and mineralization processes. Pages 233-243, In W. T. Swank and D. A. Crossley, Jr. (eds.) Forest Hydrology and Ecology at Coweeta. Springer-Verlag.
- Seastedt, T. R., S. W. James and T. C. Todd. 1988. Interactions among soil invertebrates, microbes and plant growth in tallgrass prairie. *Agriculture, Ecosystems and Environment* 24:219-228.
- Seastedt, T. R. and D. C. Hayes. 1988. Factors influencing nitrogen concentrations in soil water in a North American tallgrass prairie. *Soil Biology and Biochemistry* 20:725-729.
- Seastedt, T. R., M. V. Reddy and S. P. Cline. 1989. Microarthropods in decaying wood from temperate coniferous and deciduous forests. *Pedobiologia* 33:69-77.
- Briggs, J. M., T. R. Seastedt and D. J. Gibson. 1989. Comparative analysis of temporal and spatial variability in above-ground production in a deciduous forest and prairie. *Holarctic Ecology* 12:130-136.
- Evans, E. W., J. M. Briggs, E. J. Finck, D. J. Gibson, S. W. James, D. W. Kaufman and T. R. Seastedt. 1989. Is fire a disturbance in grasslands? Pages 159-161. In: Proc. 11th North American Prairie Conference, University of Nebraska Press.
- Ramundo, R.A., Shapley, T.D., C.L. Turner, M.I. Dyer and T.R. Seastedt. 1989. Effects of burning, mowing and nitrogen fertilizer on chlorophyll, nitrogen, phosphorus and spectral reflectance characteristics of tallgrass

prairie. Pages 205-209. In: Proc. 11th North American Prairie Conf., University of Nebraska Press.

Seastedt, T. R., R. A. Ramundo and D. C. Hayes. 1989. Silica, nitrogen and phosphorus dynamics of tallgrass prairie. Pages 205-210 In: Proc. 11th North American Prairie Conf., Univ. of Nebraska press.

Hayes, D. C. and T. R. Seastedt. 1989. Nitrogen dynamics of soil water of burned and unburned tallgrass prairie. *Soil Biol. Biochemistry* 21:1003-1007.

Schaeffer D.J., T. R. Seastedt, D. J. Gibson, D. C. Hartnett, B. A. D. Hetrick, S. W. James, D. W. Kaufman, A. P. Schwab, E. E. Herricks and E. W. Novak. 1990. Field Bioassessments for Selecting Test Systems to Evaluate Military Training Lands in Tallgrass Prairie. *Environmental Management* 14:81-93.

Seastedt, T. R. and R. A. Ramundo. 1990. The influence of fire on belowground processes of tallgrass prairie. Pages 99-117 In S. L. Collins and L. L. Wallace. Fire and the Tallgrass Prairie. University OK Press.

Ramundo, R. A. and T. R. Seastedt. 1990. Site-specific seasonal bias in NADP wetfall ammonium ion estimates. *Atmospheric Environment* 24a: 3093-3095.

Schimel, D. S., T. G. F. Kittel, A. K. Knapp, T. R. Seastedt, W. J. Parton and V. B. Brown. 1991. Physiological interactions along resource gradients in a tallgrass prairie. *Ecology* 72: 672-684.

Dyer, M. I., C. L. Turner and T. R. Seastedt. 1991. Remote sensing measurements of production processes in grasslands: The need for new methodologies. *Agric. Ecosyst. Environ.* 34: 495-505.

Seastedt, T. R., J. M. Briggs and D. J. Gibson. 1991. Controls of nitrogen limitation in tallgrass prairie. *Oecologia* 87: 72-79.

Seastedt, T. R. and J. M. Briggs. 1991. Long-term ecological questions and considerations for taking long-term measurements: Lessons from the LTER and FIFE programs on tallgrass prairie. pages 152-172 In: P. G. Risser (ed). Long-Term Ecological Research: An International Perspective. John Wiley and Sons, Chichester.

Dyer, M. I., C. L. Turner and T. R. Seastedt. 1991. Mowing and fertilization effects on productivity and spectral reflectance in Bromis inermis plots. *Ecological Applications* 1: 443-452.

Seastedt, T. R. and M. V. Reddy. 1991. Factors influencing soil Sternorrhycha (Homoptera) Densities in tallgrass prairie. *Journal Kansas Entomological Society* 64: 238-242.

Seastedt, T.R., W.J. Parton and D.S. Ojima. 1992. Mass loss and nitrogen dynamics of decaying litter of grasslands: The apparent low nitrogen immobilization potential of root detritus. *Canadian Journal of Botany* 70: 384-391.

Ramundo, R. A., C. M. Tate and T.R. Seastedt. 1992. Effects of tallgrass prairie vegetation on the concentration and seasonality of nitrate- nitrogen in soil water and streams. Pages 9-12 in: D.D. Smith and C.A. Jacobs (eds). *Proceedings of the Twelfth North American Prairie Conference*. Ames, Iowa.

Todd, T.C., S.W. James and T.R. Seastedt. 1992. Soil invertebrate and plant responses to mowing and carbofuran application in a North American tallgrass prairie. *Plant and Soil* 144: 117-124.

Turner, C.L., T.R. Seastedt, M.I. Dyer, T.G.F. Kittel, and D.S. Schimel. 1992. Effects of management activities on the radiometric response of a tallgrass prairie. *Journal Geophysical Research* 97: 18855-18866.

- Seastedt, T.R. and A.K. Knapp. 1993. Consequences of non-equilibrium resource availability across multiple time scales: The transient maxima hypothesis. *American Naturalist* 141: 621-633.
- Turner, C.L. M.I. Dyer and T.R. Seastedt. 1993. Maximization of foliage production in grasslands: The role of grazing frequency and intensity. *Ecological Applications* 3: 175-186.
- 60
- Knapp, A.K., J.T. Fahnestock, S.J. Hamburg, L.J. Statland, T.R. Seastedt and D.S. Schimel. 1993. Landscape patterns in soil-plant water relations, net photosynthesis, and primary production in tallgrass prairie. *Ecology* 74: 549-560.
- Dyer, M.I., C.L. Turner and T.R. Seastedt. 1993. Herbivory and its consequences. *Ecological Applications* 3: 10-16.
- Gibson, D. J., T. R. Seastedt and J. M. Briggs. 1993. Management practices in tallgrass prairie: Landscape and experimental effects on species composition. *Journal of Applied Ecology* 30: 247-256. (reprinted in: F.B. Sampson and F. Knopf. (eds). 1996. *Readings in Ecosystem Management*. Springer-Verlag, NY.)
- Reichman, O.J., J.H. Benedix, Jr. and T.R. Seastedt. 1993. Animal generated disturbances and size hierarchies in a tallgrass prairie plant community. *Ecology* 74: 1281-1285.
- Parton, W.J., J.M.O. Scurlock, D.S. Ojima, T.G. Gilmanov, R.J. Scholes, D.S. Schimel, T. Kirchner, J.C. Menaut, T.R. Seastedt, E. Garcia Moya, A. Kamnalrut and J.I. Kinyamario. 1993. Observations and modeling of biomass and soil organic matter dynamics for the grassland biome worldwide. *Global Biogeochemical Cycles* 7: 785-809.
- \*Taylor, R.V. and T.R. Seastedt. 1994. Short- and long-term patterns of soil moisture in alpine tundra. *Arctic and Alpine Research* 26: 14-20.
- Seastedt, T.R., C.C. Coxwell, D.S. Ojima and W.J. Parton. 1994. Controls of plant and soil carbon in a semihumid temperate grassland. *Ecological Applications* 4: 344-353.
- \*Hargrave, B.S. and T.R. Seastedt. 1994. Nitrogen concentrations of senescent foliage in a relict tallgrass prairie. *Prairie Naturalist* 26:61-65.
- \*O'Lear, H.A. and T.R. Seastedt. 1994. Landscape patterns of litter decomposition in alpine tundra. *Oecologia* 99: 95-101.
- Crossley, D.A., Jr., E.R. Blood, P.F. Hendrix and T.R. Seastedt. 1995. Turnover of cobalt-60 by earthworms (*Eisenia fetida*) (Lumbricidae, Oligochaeta). *Journal of Applied Soil Ecology* 2: 71-75.
- Evans, E. W. and T. R. Seastedt. 1995. The relations of phytophagous invertebrates and range plants. Pages 580-634 In: D. S. Bedunah (ed). *Rangeland Plant Morphology and Physiology*. Society for Range Management.
- Seastedt, T. R. 1995. Soil systems and nutrient cycles of the North American Prairie. Pages 157-174 In: A. Joern and K.K. Keeler, (eds). *The Changing Prairie*. Oxford Univ. Press.
- Benning, T.L. and T.R. Seastedt. 1995. Landscape-level interactions between topographic features and nitrogen limitation in tallgrass prairie. *Landscape Ecology* 10: 337-348.



Bock, C.E., J.H. Bock, M.C. Grant and T.R. Seastedt. 1995. Effects of fire on abundance of plains lovegrass (*Eragrostis intermedia*) in a semiarid grassland in southeastern Arizona. *J. Veg. Sci.* 6: 325-328.

\*O'Lear, H.A., T.R. Seastedt, J. Briggs, J.M. Blair and R.A. Ramundo. 1996. Fire and Topographic Effects on Decomposition Rates and Nitrogen Dynamics of Buried Wood in Tallgrass Prairie. *Soil Biology and Biochemistry* 28: 323-330.

Cortinas, M.R. and T.R. Seastedt. 1996. Short- and Long-term effects of gophers (*Thomomys talpoides*) on soil organic matter dynamics in alpine tundra. *Pedobiologia* 40: 162-170.

Seastedt, T.R. 1996. Ecosystem science and society. *BioScience* 46: 370-372.

Chapin, F.S., S. Diaz, M. Howden, J. Puigdefabregas, M. Stafford, T. Benning, F. Bryant, B. Campbell, J. DuToit, K. Galvin, E. Holland, L. Joyce, A. Knapp, P. Matson, R. Miller, D. Ojima, W. Polley, T. Seastedt, A. Suarez, T. Svejcar and C. Wessman. 1996. Rangelands in a Changing Climate: Impacts, adaptations and mitigation. Pages 133-158 In: *Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses. Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change* [Watson, R.T., M.C. Zinyowera, and R.H. Moss (eds.)]. Cambridge University Press, Cambridge and New York, 880 pp.

Seastedt, T.R. 1996. Soil Fauna and the Biogeochemistry of Tropical Ecosystems. pages 184-204 in: M.V. Reddy (ed) *Soil Organisms and Litter Decomposition in the Tropics*. Oxford & IBH Publ. Co.

Seastedt, T.R., \* P. Duffy and \*J. Knight. 1996. Reverse fertilization experiment produces mixed results. *Restoration and Management Notes* 14:64.

Ojima, D.S., W.J. Parton, M.B. Coughenour, J.M.O. Scurlock, T.B. Kirchener, T.G.F. Kittel, D.O. Hall, D.S. Schimel, E. Garcia Moya, T.G. Gilmanov, T.R. Seastedt, A. Kamnalrut, J.I. Kinyamario, S.P. Long, J.C. Menaut, O.E. Sala, R.J. Scholes and J.A. van Veen. 1996. Impact of climate and atmospheric carbon dioxide changes on grasslands of the world. pages 271-312 in: Breymeyer, A.I., D.O. Hall, J.M. Melillo and G.I. Agren (eds). *Global Change: Effects on coniferous forests and grasslands*. *Scope* 56. Wiley & Sons, Chichester.

\*Pauker, S.J. and T.R. Seastedt. 1996. The effects of mobile tree islands on soil carbon storage in alpine tundra. *Ecology* 77:2563-2567.

Parton, W.J., M.B. Coughenour, J.M.O. Scurlock, D.S. Ojima, T.G. Gilmanov, R.J. Scholes, D.S. Schimel, T.B. Kirchner, J.C. Menaut, T.R. Seastedt, E. Garcia Moya, A. Kamnalrut, J.I. Kinyamario and D.O. Hall. 1996. Global grassland ecosystem modelling: development and test of ecosystem models for grassland systems. Pages 229- 270 in: Breymeyer, A.I., D.O. Hall, J.M. Melillo and G.I. Agren (eds). *Global Change: Effects on coniferous forests and grasslands*. *Scope* 56. Wiley & Sons, Chichester.

Asner, G. P., T. R. Seastedt and A. R. Townsend. 1997. Regional carbon-nitrogen cycle decoupling: implications for global terrestrial carbon storage. *BioScience* 47: 226-234.

Ingersoll, R.C., T.R. Seastedt and M. Hartman. 1997. A model information management system for ecological research. *BioScience* 47:310-316.

Benning, T.L. and T.R. Seastedt. 1997. Effects of fire, mowing and nitrogen additions on root characteristics in tallgrass prairie. *Int. Journal of Vegetation Science* 8: 541-546.

Williams, M.W., P.D. Brooks, and T.R. Seastedt. 1998. Nitrogen and carbon soil dynamics in response to climate change in a high-elevation ecosystem in the Rocky Mountains, USA. *Arctic and Alpine Research* 30: 26-30.

Knapp, A.K., and T. R. Seastedt. 1998. Grasslands, Konza Prairie, and long-term ecological research. Pages 3-15 in: A.K. Knapp, J.M. Briggs, D.C. Hartnett and S.C. Collins, eds. *Grassland dynamics: Long-Term Ecological Research in Tallgrass Prairie*. Oxford Univ. Press, New York.

Seastedt, T.R., B.P. Hayden, C.E. Owensby and A.K. Knapp. 1998. Climate change, elevated CO<sub>2</sub> and predictive modeling: Past and future climate change scenarios for the tallgrass Prairie. Pages 283-300 in: *Grassland Dynamics: Long-Term Ecological Research in Tallgrass Prairie* (A.K. Knapp, J.M. Briggs, D.C. Hartnett and S.C. Collins, eds.), Oxford Press, New York

Blair, J.M., T.R. Seastedt, C.W. Rice and R.A. Ramundo. 1998. Terrestrial nutrient cycling in tallgrass prairie. Pages 222-243 in: *Grassland Dynamics: Long-Term Ecological Research in Tallgrass Prairie* (A.K. Knapp, J.M. Briggs, D.C. Hartnett and S.C. Collins, eds.), Oxford Press, New York.

Dyer, M.I., C.L. Turner and T.R. Seastedt. 1998. Biotic interactivity between grazers and plants: Relationships contributing to atmospheric boundary layer dynamics. *Journal of Atmospheric Sciences* 55: 1247-1259.

Rice, C.W., T.C. Todd, J.M. Blair, T.R. Seastedt, R.A. Ramundo and G.T. Wilson. 1998. Belowground Biology and Processes. 1998. Pages 244-264 in: A.K. Knapp, J.M. Briggs, D.C. Hartnett and S.C. Collins, eds. *Grassland dynamics: Long-Term Ecological Research in Tallgrass Prairie*. Oxford Univ. Press.

Fisk, M.C., S.K. Schmidt and T.R. Seastedt. 1998. Landscape patterns of above- and belowground production and nitrogen cycling in alpine tundra. *Ecology* 79: 2253-2266.

Bryant, D.M., E.A. Holland, T.R. Seastedt and M.D. Walker. 1998. Analysis of litter decomposition in alpine tundra. *Canadian J. Botany* 76: 1295-1304.

\*Reever-Morghen, K.J. and T.R. Seastedt. 1999. Effects of soil nitrogen reduction on non-native plants in disturbed grasslands. *Restoration Ecology* 7: 51-55.

\*Addington, R.N. and T.R. Seastedt. 1999. Activity of soil microarthropods beneath snowpack in alpine tundra and subalpine forest. *Pedobiologia* 43: 47-53.

\*Simons, S.B. and T.R. Seastedt. 1999. Decomposition and nitrogen release from cottonwood and Russian olive foliage in a riparian ecosystem. *Southwestern Naturalist* 44: 256-260.

Walker, M.D., D.A. Walker, J.M. Welker, A.M. Arft, T. Bardsley, P.D. Brooks, J.T. Fahnestock, M.H. Jones, M. Losleben, A.N. Parsons, T.R. Seastedt, and P.L. Turner. 1999. Long-term experimental manipulation of winter snow regime and summer temperature in arctic and alpine tundra. *Hydrological Processes* 13: 2315-2330.

Seastedt, T.R. 2000. Soil Fauna and controls of carbon dynamics: Comparisons of rangelands and forests across latitudinal gradients. In: D.C. Coleman and P. Hendrix (eds). *Invertebrates as Webmasters of Ecosystems*. CABI Publishing, Wallingford UK.

Conley, A.H., E.A. Holland, T.R. Seastedt and W.J. Parton. 2000. Simulation of carbon and nitrogen cycling in an alpine tundra. *Arctic, Antarctic, and Alpine Research* 32: 147-154.

- Gonzalez, G. and T.R. Seastedt. 2000. Comparison of the abundance and composition of litter fauna in tropical and subalpine forests. *Pedobiologia* 44: 545-555.
- \*Sinton, P., T.R. Seastedt, B. Bennett, C. Bock and J. Bock. 2000. C<sub>3</sub> and C<sub>4</sub> Colorado grassland changes identified by delta-13 C values of soil organic matter. *Western North American Naturalist* 60: 445-450.
- \*Reever-Morghen, K.R., T.R. Seastedt and \*P.J. Sinton. 2000. Frequent fire enables ungrazed tallgrass prairie to resist invasion by *Cirsium arvense* (Canada thistle). *Restoration Ecology* 18: 194-195.
- Seastedt, T.R. 2000. Ecosystem Management: the new tool of land managers? In: R. Nolan. *Ecosystems. Electric Biology CD Rom* (ISBN 1-929788-00-2). Aptos, CA 95003.
- Seastedt, T.R. and G. A. Adams. 2001. Effects of mobile tree islands on alpine tundra soils. *Ecology* 82: 8-17.
- Gonzalez, G. and T.R. Seastedt. 2001. Soil fauna and plant litter decomposition in tropical and subalpine forests. *Ecology* 82: 955-964.
- Bowman, W.D. and T.R. Seastedt. (eds). 2001. *Structure and Function of an Alpine Ecosystem: Niwot Ridge, Colorado*. Oxford Press, New York.
- Seastedt, T.R. 2001. Soils. Pages 157-176 in: Bowman, W.D. and T.R. Seastedt (eds). *Structure and Function of an Alpine Ecosystem: Niwot Ridge, Colorado*. Oxford Press, New York.
- Seastedt, T.R., M.D. Walker and D. Bryant. 2001. Controls on decomposition processes in alpine tundra. Pages 222-236 in: Bowman, W.D. and T.R. Seastedt (eds). *Structure and Function of an Alpine Ecosystem: Niwot Ridge, Colorado*. Oxford Press, New York.
- Welker, J.M., W.D. Bowman, and T.R. Seastedt. 2001. Environmental change and future directions in alpine research. Pages 304-322 in: Bowman, W.D. and T.R. Seastedt (eds). *Structure and Function of an Alpine Ecosystem: Niwot Ridge, Colorado*. Oxford Press, New York.
- Seastedt, T.R. and \*L. Vaccaro. 2001. Plant species richness, productivity and nitrogen and phosphorus limitations across a snowpack gradient in alpine tundra. *Arctic, Antarctic, and Alpine Research* 33: 100-106.
- Gonzalez, G., R.E. Ley, S.K. Schmidt, X. Zou, and T.R. Seastedt. 2001. Interactions between invertebrates and microbes: comparisons between tropical and subalpine forests. *Oecologia* 128: 549-556.
- LeJeune, K.D. and T.R. Seastedt. 2001. *Centaurea* species: The Forb that Won the West. *Conservation Biology*. 15: 1568-1574.
- Sherrod, S. K. and T.R. Seastedt. 2001. Effects of the northern pocket gopher (*Thomomys talpoides*) on alpine soil characteristics, Niwot Ridge, CO. *Biogeochemistry* 55: 195-218.
- Litaor, M.I., T.R. Seastedt and D.A. Walker. 2002. Spatial analysis of selected attributes of soil across an alpine topographic/snow gradient. *Landscape Ecology* 17: 71-85.
- Byers, J.E., S. Reichard, C.S. Smith, I.M. Parker, J.M. Randall, W.M. Lonsdale, I.A.E. Atkinson, T.R. Seastedt, E. Chornesky, D. Hayes, M. Williamson. 2002. A call for research needed to reduce the impacts of nonindigenous invasive species. *Conservation Biology* 16: 630-640.

Seastedt, T.R. 2002. Base camps of the Rockies: The intermountain grasslands. Pages 219-239 in: Baron, J. (ed). *Rocky Mountain Futures: An ecological Perspective*. Island Press, Covelo CA.

Bowman, W.D., D.M. Cairns, Jill Baron, and T.R. Seastedt. 2002. Islands in the Sky: Alpine and Treeline Ecosystems of the Rockies. Pages 183-202 in: Baron, J. (ed). *Rocky Mountain Futures: An ecological Perspective*. Island Press, Covelo CA.

Seastedt, T.R., \*Nathan Gregory and David Buckner. 2003. Reduction of diffuse knapweed by biocontrol insects in a Colorado grassland. *Weed Science* 51: 237-245.

Hobbie, J., S.R. Carpenter, N.B. Grimm, J.R. Gosz and T.R. Seastedt. 2003. The Long Term Ecological Research Program. *BioScience* 53: 21-32.

Reiners, W.A., Baker, W.L., Baron, J.S., Debinski, D.M., Elias, S.A., Fagre, D.B., Findley, J.S., Mearns, L.O., Roberts, D.W., Seastedt, T.R., Stohlgren, T.J., Veblen, T.T., and Wagner, F.H. 2003. Natural ecosystems I: The Rocky Mountains. In *Rocky Mountain/Great Basin regional climate change assessment*. Report for the U.S. Global Change Research Program. Utah State University, Logan, UT. pp. 145-184.

Hudak, A.T., T.R. Seastedt, and C.A. Wessman. 2003. Effects of bush encroachment on C and N pools in South African Savanna. *Austral Ecology* 28: 173-181.

Porazinska, D.L., R.D. Bardgett, M.B. Blaauw, H.W. Hunt, A.N. Parsons, T.R. Seastedt, and D.H. Wall. 2003 Relationships at the aboveground-belowground interface: plants, soil microflora and microfauna, and soil processes. *Ecological Monographs* 73: 377-395.

Grizelle Gonzalez, T. R. Seastedt and \*Zugeily Donado. 2003. Earthworms, arthropods, and plant litter decomposition in subalpine stands of aspen (*Populus tremuloides*) and lodgepole pine (*Pinus contorta*) forests. *Pedobiologia*. 47: 863-869.

Seastedt, T.R., W.D. Bowman, N. Caine, D. McKnight, A. Townsend, and M. Williams. 2004 The landscape continuum: A Conceptual Model for High Elevation Ecosystems. *BioScience* 54: 111-122.

Wolf, J.J., S.W. Beatty and T.R. Seastedt 2004. Soil characteristics of Rocky Mountain National Park grasslands invaded by *Melilotus officinalis* and *M. alba*. *Journal of Biogeography* 31: 415-424.

Suding, K.N., K.D. LeJeune, and T.R. Seastedt. 2004. Competitive impacts and responses of an invasive weed: dependencies on nitrogen and phosphorus availability. *Oecologia* 141: 526-535.

Luken, J.O. and T.R. Seastedt. 2004. Plant invasions, management, and the conflict of perspective. *Weed Technology* 18: 1514-1517.

LeJeune, K.D., K.N. Suding, \*S. Sturgis, A. Scott and T.R. Seastedt. 2005. Biological control insect use of fertilized and unfertilized diffuse knapweed (*Centaurea diffusa* Lamarck) in a Colorado grassland. *Environmental Entomology* 34: 225-234.

Litaor, M.I., T.R. Seastedt, M.D. Walker, M. Carbone, and A. Townsend. 2005. The biogeochemistry of phosphorus across an alpine topographic/snow gradient. *Geoderma* 124: 49-61.

Heather E. Reed, Timothy R. Seastedt, and John M. Blair. 2005. Ecological consequences of C<sub>4</sub> grass invasion of a C<sub>4</sub> grassland: A dilemma for management. *Ecological Applications* 15: 1560-1569.

Seastedt, T.R., K.N. Suding and K.D. LeJeune. 2005. Understanding Invasions: The rise and fall of diffuse knapweed (*Centaurea diffusa*) in North America. Pages 129-139 In: Inderjit (Ed.) Invasive plants: ecological and agricultural aspects. Basal, Switzerland: Birkhauser-Verlag AG.

Seastedt, T.R. 2005. Soil biology and the emergence of adventive grassland ecosystems. Pages 15-24 in: S.C. Jarvis, P.J. Murray and J.A. Roker. Optimization of nutrient cycling and soil quality for sustainable grasslands. Wageningen Academic Publishers, The Netherlands.

Sherrod, S.K., T.R. Seastedt and M.D. Walker. 2005. Northern pocket gopher (*Thomomys talpoides*) control of alpine plant community structure. Arctic, Antarctic and Alpine Research 37: 585-590.

LeJeune, K. D., K. N. Suding, and T.R. Seastedt. 2006. Nutrient availability does not explain invasion and dominance of a mixed grass prairie by the exotic forb *Centaurea diffusa* Lam. Applied Soil Ecology. 32: 98-110.

\*Tiemann, L. and T.R. Seastedt. 2006. Study shows introduced thistle may facilitate growth of some native grasses (Colorado). Ecological Restoration 24: 58-59.

Breiter, N.C., and T. R. Seastedt. 2007. Post-release evaluation of *Mecinus janthinus* host specificity, a biological control for invasive toadflax (*Linaria* spp.) Weed Science 55: 164-168.

Seastedt, T.R., K.N. Suding, 2007. Biotic constraints on the invasion of diffuse knapweed (*Centaurea diffusa*) in a Colorado grassland. Oecologia 151: 626-636.

Reed, S.C., T.R. Seastedt, \*C.M. Mann, K.L. Cherwin, K.N. Suding, A.R. Townsend. 2007. Phosphorus Fertilization Stimulates Nitrogen Fixation and Increases Inorganic Nitrogen Concentrations in a Restored Grassland. Applied Soil Ecology 36: 238-242.

Seastedt, T.R. 2007. Resourceful Invaders. Nature 446: 985-986.

\*Bush, R.T., T. R. Seastedt, and D. Buckner . 2007. Plant Community Dynamics in Response to the Decline of a Dominant Invasive Plant, *Centaurea diffusa*, in a Colorado Grassland. Ecological Restoration 25: 169-174.

Seastedt, T.R., D Knochel , \*M Garmoe, and \*S. Shosky. 2007. Interactions and effects of multiple biological control insects on diffuse and spotted knapweed in the Front Range of Colorado. Biological Control 42: 345-354.

Robertson, G.P., Allen V.G., Boody, G., Boose, E.R., Creamer, N.G., Drinkwater, L.E., Gosz, J.R. Lynch, L., Havlin J.L., Jackson L.E., Pickett S.T.A., Pitelka, L., Randall A., Reed A.S., Seastedt, T.R., Waide R.B., and Wall D.H. 2008. Long-Term Agricultural Research (LTAR): A Research, Education, and Extension Imperative. Bioscience 58: 640-646.

Litaor, M.I., T.R. Seastedt, M. Williams 2008. Topographic Control on Snow Distribution, Soil Moisture, and Species Diversity of Herbaceous Alpine Vegetation, Niwot Ridge, Colorado. Journal of Geophysical Research - Biogeosciences. 113: G02008, doi: 10.1029/2007JG000419.

Inderjit, Seastedt, T.R., R.M., J. Pollock R. Callaway and J. Kaur. 2008. Allelopathy and plant invasions: traditional, congeneric, and biogeographical approaches. Biological Invasions 10:875-890. DOI 10.1007/s10530-008-9239-9.

- Seastedt, R.J. Hobbs and K.N. Suding. 2008. Management of novel ecosystems: are novel approaches required? *Frontiers in Ecology and the Environment* 6: 547-553.
- Seastedt, T.R. and P. Murray. 2008. Belowground herbivory in grasslands. Pgs 54-67 In: S. N. Johnson & P.J. Murray (eds) *Root Feeders: an ecosystem perspective*. CAB International Oxfordshire, UK.
- Litaor, M.I., T.R. Seastedt, and \*L. Sackett. 2008. Analysis of the nutrient status of alpine soils of the Colorado Front Range using the nitrogen:phosphorus ratio index. *Soil Science Soc. America* 72: 1628-1636.
- Knochel, D. and T.R. Seastedt. 2009. Sustainable Control of Spotted Knapweed (*Centaurea stoebe*). Pages 211-226 In: *Management of Invasive Weeds* (Inderjit, ed.), Springer, Heidelberg, Germany
- Cherwin, K L. T.R. Seastedt, and K. N. Suding 2009. Effects of nutrient manipulations and grass removal on cover, species composition, and invasibility of a novel grassland in Colorado. *Restoration Ecology* 17: 818-826.
- Reed, H. E., J. M. Blair, D. Wall and T. R. Seastedt. 2009. Impacts of management legacies on the decomposition of litter and soil substrates in response to reduced precipitation in tallgrass prairie. *Applied Soil Ecology* 42: 79-85.
- Miller, E.G. and T.R. Seastedt 2009. Impacts of woodchip amendments and soil nutrient availability on understory establishment following thinning of a ponderosa pine forest. *Forest Ecology and Management* 258: 263-272.
- Seastedt, T.R. 2009. Traits of plant invaders. 2009. *Nature* 459: 783-784.
- Liptzin, D. and T. R. Seastedt. 2009. Patterns of snow, deposition, and soil nutrients at multiple spatial scales at a Rocky Mountain treeline ecotone. *Journal of Geophysical Research – Biogeosciences* 114: Article Number: G04002.
- Blumenthal, D.M., A.P. Norton and T.R. Seastedt. 2010. Restoring competitors and natural enemies for long-term control of plant invaders. *Rangelands*. 32: 16-20.
- Seastedt, T.R. 2010. Biological Control Monitoring. *Frontiers In Ecology and The Environment* 8: 347. (reviewed letter)
- Knochel, D.G. and T. R. Seastedt. 2010. Field measurements of herbivory, resource limitation, and plant competition on the growth and reproduction of spotted Knapweed (*Centaurea stoebe*). *Ecological Applications* 20: 1903-1912
- Knochel, D.G., \*Cody Flagg, and T.R. Seastedt 2010. Effects of plant competition, seed predation, and nutrient limitation on seedling survivorship of spotted knapweed (*Centaurea stoebe*) *Biological Invasions*. 12: 3771-3784.
- Knochel, D.G., \*N.D. Monson, and T.R. Seastedt 2010. Additive effects of above- and belowground herbivores on the dominance of spotted knapweed (*Centaurea stoebe*). *Oecologia* 164: 701-712.
- Liptzin, D. and T.R. Seastedt. 2010. Regional and local effects of atmospheric deposition on soil properties at abrupt treelines in the Front Range of Colorado. *Geoderma* 160: 208-217

Wooley, S.C, \*B. Smith, \*C. King, T.R. Seastedt and D. G.Knochel. 2011. The lesser of two weevils: physiological responses of spotted knapweed (*Centaurea stoebe*) to above- and belowground herbivory by *Larinus minutus* and *Cyphocleonus achates*. *Biocontrol Science and Technology* 21: 153-170.

Pielke Sr., R.A., R. Wilby, D. Niyogi, F. Hossain, K. Dairuku, J. Adegoke, G. Kallos, T. Seastedt, and K. Suding, 2011: [Dealing with complexity and extreme events using a bottom-up, resource-based vulnerability perspective](#). AGU Monograph on Complexity and Extreme Events in Geosciences, in press.

Yanmei Xiong, \*Justin J D'Atri, Shenglei Fu, Hanping Xia, and T.R. Seastedt. 2011. Rapid soil organic matter loss from forest dieback in a subalpine coniferous ecosystem. *Soil Biology and Biochemistry* 43: 2450-2456.

Seastedt, T.R. and Petr Pyšek. 2011. Mechanisms of invasions of North American and European grasslands. *Annual Review of Ecology, Evolution and Systematics* 42: 133-153.

Alan K. Knapp, Melinda D. Smith, Sarah E. Hobbie, Scott L. Collins, Timothy J. Fahey, Gretchen J. A. Hansen, Douglas A. Landis, Kimberly J. La Pierre, Jerry M. Melillo, Timothy R. Seastedt, Gaius R. Shaver, and Jackson R. Webster. 2012. Past, Present and Future Roles of Long-term Experiments in the LTER Network. *BioScience* 62: 377-389.

Jamieson, M.A., Knochel, D., \*Adriana Manrique and Seastedt, T.R. 2012. Top-down and bottom-up controls on Dalmatian toadflax (*Linaria dalmatica*) performance along the Colorado Front Range, USA. *Plant Ecology* 213:185–195

Seastedt, T.R., Laurel Hartley and Jesse Nippert. In press Ecosystem transformations along the Colorado Front Range: Prairie dog interactions with multiple components of global environmental change. IN: Richard Hobbs, Eric Higgs and Carol Hall (eds). *Novel Ecosystems: intervening in the new ecological world order*. Wiley-Blackwell Press (expected 2012).

Seastedt, T.R., K.N. Suding and F.S. Chapin III. In press. Ecosystem stewardship as a framework for conservation in a directionally changing world. IN: Richard Hobbs, Eric Higgs and Carol Hall (eds). *Novel Ecosystems: intervening in the new ecological world order*. Wiley-Blackwell Press (expected 2012).

Hulvey, K.B., L. Hallett, R.J. Standish, B.M. Starzomski, K.N. Suding, S.D. Murphy, M.R. Gardener, C.R. Nelson, P. Kennedy, T. R. Seastedt. In press. Incorporating novel ecosystems into management frameworks. IN: Richard Hobbs, Eric Higgs and Carol Hall (eds). *Novel Ecosystems: intervening in the new ecological world order*. Wiley-Blackwell Press (expected 2012).

Freppaz, M., M.W. Williams, T Seastedt, and G. Filippa. In press. Response of soil organic and inorganic nutrients in alpine soils to a 16-year factorial snow and N-fertilization experiment, Colorado Front Range, USA *Applied Soil Ecology*.

Liptzin, D.. R. Sanford and T.R. Seastedt. In press. Spatial patterns of total and available N and P at treeline. *Plant and Soil*.

Shackelford, Nancy, Richard Hobbs, Nicole Heller, Lauren Hallett, Timothy Seastedt. In press. Finding a middle-ground: The native/non-native debate. *Conservation Biology*.

Seastedt, T.R. in press. Biological Control: Perspectives for Maintaining Provisioning Services in the Anthropocene. IN: David Pimentel and Rajinder Peshin. Integrated Pest Management: Pesticide Problems. Springer Verlag.

Jamieson, M.A., T.R. Seastedt and M. D. Bowers in press. Nitrogen enrichment differentially affects above- and belowground plant defense. American Journal Botany.

Seastedt, T.R. and K.N. Suding (eds) in press. Ecosystem Functions and Services. Vol. 4, Climate Vulnerabilities. Elsevier..