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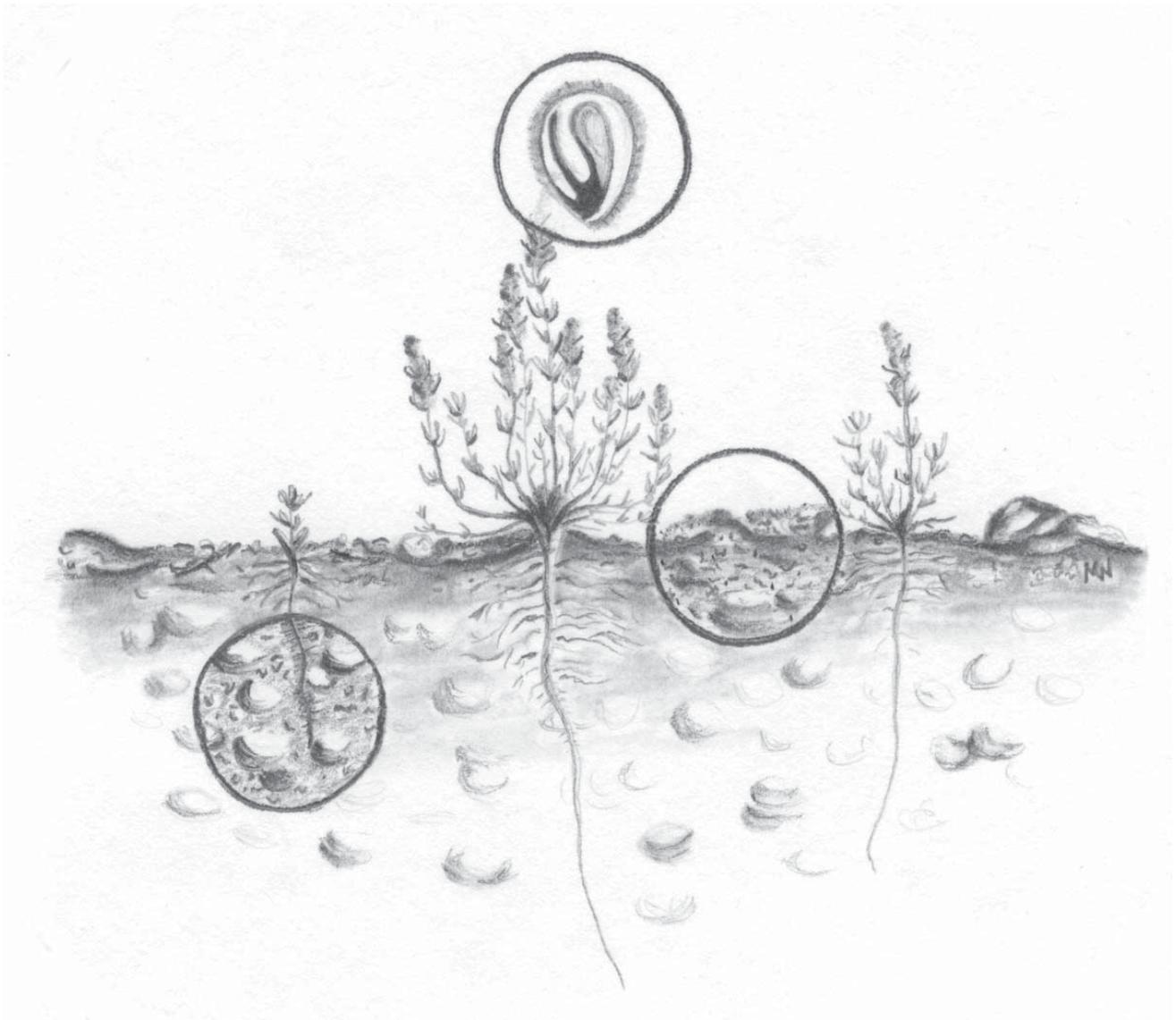
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Seed and Soil Dynamics in Shrubland Ecosystems: Proceedings



Abstract

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The 38 papers in this proceedings are divided into six sections; the first includes an overview paper and documentation of the first Shrub Research Consortium Distinguished Service Award. The next four sections cluster papers on restoration and revegetation, soil and microsite requirements, germination and establishment of desired species, and community ecology of shrubland systems. The final section contains descriptions of the field trips to the High Plains Grassland Research Station and to the Snowy Range and Medicine Bow Peak. The proceedings unites many papers on germination of native seed with vegetation ecology, soil physio-chemical properties, and soil biology to create a volume describing the interactions of seeds and soils in arid and semiarid shrubland ecosystems.

Keywords: wildland shrubs, seed, soil, restoration, rehabilitation, seed bank, seed germination, biological soil crusts

Acknowledgments

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Seed and Soil Dynamics in Shrubland Ecosystems: Proceedings

Laramie, WY, August 12–16, 2002

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The Shrub Research Consortium (SRC) was formed in 1983 with five charter members (see list). Over time SRC has grown to its present size of 25 institutional members. The SRC had three principal objectives in its charter: (1) developing plant materials for shrubland rehabilitation; (2) developing methods of establishing, renewing, and managing shrublands in natural settings; and (3) assisting with publication and dissemination of research results. These objectives have been met by a series of symposia sponsored by the Consortium and partners. This publication is the 12th in the series; the previous 11 are listed on the next page. The U.S. Department of Agriculture, Forest Service, Intermountain Research Station and Rocky Mountain Research Station have published proceedings of all symposia to date. The executive committee has plans for another symposium in 2004 in Lubbock, Texas, with the theme of Shrublands Under Fire. Each symposium has had a theme, but the executive committee has encouraged attendance and participation by shrubland ecosystem biologists and managers with wider interests than any particular symposium theme—the heart of the Consortium's programs are wildland shrub ecosystem biology, research, and management.

Availability of Previous Wildland Shrub Symposia Proceedings

- First: Tiedemann, A. R.; Johnson, K. L., compilers. 1983. Proceedings—research and management of bitterbrush and cliffrose in Western North America; 1982 April 13–15; Salt Lake City, UT. General Technical Report INT-152. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 279 p. Out of print—available from National Technical Information Service as document PB83-261537 A13.
- Second: Tiedemann, A. R.; McArthur, E. D.; Stutz, H. C.; Stevens, R.; Johnson, K. L., compilers. 1984. Proceedings—symposium on the biology of *Atriplex* and related chenopods; 1983 May 2–6; Provo, UT. General Technical Report INT-172. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 309 p. Out of print—available from National Technical Information Service as document PB85-116358 A14.
- Third: McArthur, E. D.; Welch, B. L., compilers. 1986. Proceedings—symposium on the biology and management of *Artemisia* and *Chrysothamnus*; 1984 July 9–13; Provo, UT. General Technical Report INT-200. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 398 p. Out of print—available from National Technical Information Service as document PB86-182318 A18.
- Fourth: Provenza, F. D.; Flinders, J. T.; McArthur, E. D., compilers. 1987. Proceedings—symposium on plant herbivore interactions; 1985 August 7–9; Snowbird, UT. General Technical Report INT-222. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 179 p. A few copies are available from the Rocky Mountain Research Station; otherwise available from National Technical Information Service as document PB 90-228578 A09.
- Fifth: Wallace, A.; McArthur, E. D.; Haferkamp, M. R., compilers. 1989. Proceedings—symposium on shrub ecophysiology and biotechnology; 1987 June 30–July 2; Logan, UT. General Technical Report INT-256. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 183 p. Out of print—available from National Technical Information Service as document PB89-156442 A09.
- Sixth: McArthur, E. D.; Romney, E. M.; Smith, S. D.; Tueller, P. T., compilers. 1990. Proceedings—symposium on cheatgrass invasion, shrub die-off, and other aspects of shrub biology and management; 1989 April 5–7; Las Vegas, NV. General Technical Report INT-276. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 351 p. Out of print—available from National Technical Information Service as document PB91-117275 A16.
- Seventh: Clary, W. P.; McArthur, E. D.; Bedunah, D.; Wambolt, C. L., compilers. 1992. Proceedings—symposium on ecology and management of riparian shrub communities; 1991 May 29–31; Sun Valley, ID. General Technical Report INT-289. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 232 p. Out of print—available from National Technical Information Service as document PB92-227784 A11.
- Eighth: Roundy, B. A.; McArthur, E. D.; Haley, J. S.; Mann, D. K., compilers. 1995. Proceedings: wildland shrub and arid land restoration symposium; 1993 October 19–21; Las Vegas, NV. General Technical Report INT-GTR-315. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 384 p. Available from Rocky Mountain Research Station.
- Ninth: Barrow, J. R.; McArthur, E. D.; Sosebee, R. E.; Tausch, R. J., compilers. 1996. Proceedings: shrubland ecosystem dynamics in a changing environment; 1995 May 23–25; Las Cruces, NM. General Technical Report INT-GTR-338. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 275 p. A few copies are available from the Rocky Mountain Research Station; otherwise available from National Technical Information Service as document PB 96-178637 A09.
- Tenth: McArthur, E. D.; Ostler, W. K.; Wambolt, C. L. compilers. 1999. Proceedings: shrubland ecosystem ecotones; 1998 August 12–14; Ephraim, UT. Proceedings RMRS-P-11. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 299 p. Available from Rocky Mountain Research Station.
- Eleventh: McArthur, E. D.; Fairbanks, D. J., compilers. 2001. Shrubland ecosystem genetics and biodiversity: proceedings; 2000 June 13–15; Provo, UT. Proc. RMRS-P-21. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 365 p. Available from Rocky Mountain Research Station.

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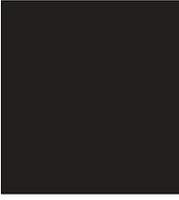
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**Introduction and
Overview**



**Restoration and
Revegetation**



**Soil Components and
Microsites**



**Germination
and Seedling
Establishment**



**Community
Ecology**



Field Trips





Introduction and Overview

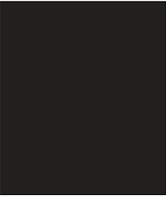


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