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## Resumé

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### **Education:**

Ph.D. in Botany, Washington State University, 1987

*Dissertation:* Factors Affecting Species Distribution and Coexistence in the Colorado Shortgrass Steppe.

B.A. in Biology, University of Colorado, 1983. Graduated with Distinction.

*Independent Research:* Heavy metal tolerance in *Heterotheca villosa*.

### **Employment History:**

*Senior Research Scientist* (1994 - present). Pacific Northwest National Laboratory, Richland, WA. (Operated by Battelle Memorial Institute)

Manager for Hanford Site Ecological Compliance Assessment, including day-to-day task oversight, performance and evaluation of field surveys for rare plant and animal species, perform wetland delineation, work with projects to develop and implement of mitigation actions. Developed the Hanford Site biological resource mitigation strategy.

Technical team leader for the preparation of NRC licensing-action Environmental Impact Statements, including responsibility for all aspects of technical coordination, supervision of document production, budget, and resource planning.

Technical lead for terrestrial ecology, wetlands, and threatened and endangered species evaluations portions of Environmental Impact Statements for the Nuclear Regulatory Commission, the Department of Energy, and Federal Energy Regulatory Commission.

Task manager and technical leader for the evaluation of Endangered Species Act Compliance of all NRC licensed commercial nuclear power generating facilities.

Provide botanical and ecological support, such as the field analysis of plant communities at the National Training Center (Ft. Irwin, CA), the Hanford Site, and other locations; taxonomic support to various projects; and preparation of biological assessments and NEPA support documents.

Project manager for Hanford Site habitat mitigation projects, including the development and application of methods for habitat analysis and mapping using HEP and GIS based approaches, and develop and evaluate revegetation and habitat restoration techniques.

Project manager for the development of the Environmental Quality Profiling Tool (EQPT), and the Health and Ecological Risk Management and Evaluation System (HERMES) - GIS based environmental decision support tools to predict and evaluate impacts to biological resources.

*Senior Scientist* (1989 - 1994) Westinghouse Hanford Company, Richland, WA.

Lead scientist for projects supporting environmental remediation and restoration. Planned and performed ecological evaluations and rare plant surveys for NEPA documentation and RCRA/CERCLA remedial investigations, development and evaluation of soil surface stabilization and revegetation enhancement techniques, performing and managing ecological and human health risk assessments, and operating a lysimeter facility as part of the permanent isolation barrier development program.

*Instructor* (1988 - 1989) Department of Mathematics, Lycoming College. Williamsport, PA.

Taught undergraduate level introductory Statistics.

*Post-Doctoral Fellow* (1988) Biology Dept., Bucknell University, Lewisburg, PA.

Performed research on the effects of gall forming insects on carbon allocation in goldenrod using C-14 labeling techniques, responsible for the design and execution of experimental and analytical procedures, and performed all subsequent data analysis and interpretation.

#### **Graduate Student Committees:**

*Christopher Kemp*, MS Environmental Science, WSU, 1995

*Jennifer Lewinsohn*, MS, Biology, WSU, 2001

*Dianne Garrison*, MS Candidate, Environmental Science, WSU, 2009

#### **Significant Scientific Awards and Recognition:**

Phi Beta Kappa National Honor Society

American Botanical Society Young Botanist Award - 1983

#### **Experience:**

- Laboratory Team Leader, Vogtle Combined License Environmental Impact Statement, Vogtle Early Site Permit Environmental Impact Statement and Browns Ferry Nuclear Plant, License Renewal Supplemental Environmental Impact Statement.
- Prepared terrestrial ecology, wetlands, and threatened and endangered species sections and prepared Biological Assessments to support the Oconee, St. Lucie, Turkey Point, Peach Bottom, Ginna, and Brunswick Nuclear Plant license renewal supplemental EIS's, the North Anna Early Site Permit EIS, the Watts Bar full-power license supplemental EIS, and the commercial nuclear power plant decommissioning generic EIS (NRC).
- Wetlands, terrestrial ecology, and threatened and endangered species technical lead for the Spokane River Hydropower license renewal Environmental Impact Statement (FERC).
- Prepared wetlands, terrestrial ecology, and threatened and endangered species impacts analysis for the Moab Uranium Mill Tailings Remediation EIS (DOE).
- Management of the Department of Energy Hanford Site Ecological Compliance Assessment Project. This program evaluates the potential impacts of all Hanford Site projects and provides assurance to DOE that potential impacts of Hanford projects on State and Federally listed threatened and endangered species and important habitats are identified and minimized through early field investigations.
- Task manager for the evaluation of the status of Endangered Species Act compliance at all NRC licensed nuclear power generating facilities. Perform ESA compliance reviews and prepared biological assessments at commercial nuclear facilities such as San Onofre, Diablo Canyon, and Columbia Generating Station.
- Primary Contributor to the NRC Environmental Standard Review Plan for license renewal and new license applications.
- Lead an interdisciplinary team of biologists, risk assessors, economists, and GIS specialists in the development of EQPT, an integrated environmental decision support tool based on GIS technology. This tool allows the user to evaluate multiple aspects of environmental decisions, including ecological risk, habitat loss, and monetary costs.
- Prepared Biological Assessment of the potential impacts on Bald eagle, Gray wolf, Grizzly bear, Peregrine falcon, Marbled Murrelet, and Northern Spotted Owl resulting from construction and operation of hatchery facilities and acclimation ponds for the Yakima Fisheries Project, Kittitas County, Washington.
- Lead author of “Vascular Plants of the Hanford Site”, which is the most extensive compilation available of the local flora of the Hanford Site near Richland, WA.
- Completed U.S. Army Corps of Engineers Wetland Delineation Training Program.

- Developed the use of natural polysaccharides as soil fixatives for use in radioactive or hazardous waste clean-up settings. Products evaluated included potato starch, wood processing by-products, and sugar beet by-products. These materials were shown to be effective soil stabilizers that did not interfere with in-field contaminant screening or with soil treatment processes.
- Conducted research in support of the development of permanent isolation barriers for radioactive and hazardous waste sites. Tasks included investigating the effects of vegetation and soil surface treatments on soil water balance and assessing the potential long-term impacts of plants on barrier functionality and the effects of long- and short-term successional changes on barrier function and integrity.
- Applied GPS/GIS technology to the analysis of plant community resources of the US Army's National Training Center proposed expansion area. Principle components and ordination analyses were used to identify major habitat characteristics that correlate most strongly with the distribution of wildlife species. This allowed the NTC to pinpoint areas of significant ecological value based on a generalization of point-samples to the overall landscape.

#### **Peer-Reviewed publications:**

- Durham, R. E., B. A. Zamora, and M. R. Sackschewsky. 2001. Predicting first-year bare-root seedling establishment with soil and community dominance factors. In: E. D. McArthur and D. J. Fairbanks, Compilers, Shrubland Ecosystem genetics and Biodiversity: Proceedings. 2000 June 13-15, Provo, UT. Proceedings RMRS-P-21, Ogden UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, 365 pp.
- Sackschewsky, M.R., C.J. Kemp, S.O. Link, and W.J. Waugh. 1995. Soil water balance changes in engineered soil surfaces. *Journal of Environmental Quality* 24:352-359.
- Waugh, W.J., M.E. Theide, L.L. Cadwell, G.W. Gee, H.D. Freeman, M.R. Sackschewsky, and J.R. Relyea. 1991. Small Lysimeters for documenting arid site water balance. In R.G. Allen (ed.) Proceedings of the International Symposium on Lysimetry. Amer. Soc. Civil Engr., New York. Pp. 151-159.
- Monson, Russell K.; M.R. Sackschewsky; and G.J. Williams III. 1986. Field measurements of photosynthesis, water-use efficiency, and growth in *Agropyron smithii* (C3) and *Bouteloua gracilis* (C4) in the Colorado shortgrass steppe. *Oecologia* 68:400-409.
- Williams, G.J. III and M.R. Sackschewsky. 1985. Regulation of a shortgrass steppe community in time and space: Physiology and genetics. pp. 239-250 In: Genetic differentiation and dispersal in plants. Ed. by P. Jacquard, G. Heim, and J. Antonovics. Springer-Verlag.

#### **Technical Reports:**

- Durham, R. E. and M. R. Sackschewsky. 2008. IDF Sagebrush Habitat Mitigation Project: FY2008 Compensation Area Monitoring Report. PNNL-17927. Pacific Northwest National Laboratory, Richland, WA.
- Durham, R. E. and M. R. Sackschewsky. 2008. L-325 Sagebrush Habitat Mitigation Project: FY2008 Compensation Area Monitoring Report. PNNL-17926, Pacific Northwest National Laboratory, Richland, WA.

- Sackschewsky, M. R., K. D. Leigh, B. M. Miller, J. A. Stegen, J.V. Ramsdell, J. P. Rishell, K. A. Cort, R.H. Krieg, P. L. Hendrickson, M.A. Smith, C. Cook, C.T. Kincaid, P.M. Daling, D.C. Stapp. 2008. Final Environmental Impact Statement for an Early Site Permit (ESP) at the Vogtle Electric Generating Plant Site. NUREG-1872. U.S. Nuclear Regulatory Commission, Washington, DC.
- Duberstein CA, M Simmons, MR Sackschewsky, and JM Becker. 2007. Development of a Habitat Suitability Index Model for the Sage Sparrow on the Hanford Site. PNNL-16885, Pacific Northwest National Laboratory, Richland, WA.
- Duncan JP, KW Burk, MA Chamness, RA Fowler, BG Fritz, PL Hendrickson, GV Last, TM Poston, EP Kennedy, MR Sackschewsky, MJ Scott, SF Snyder, MD Sweeney, and PD Thorne. 2007. Hanford Site National Environmental Policy Act (NEPA) Characterization . PNNL-6415 Rev 18, Pacific Northwest National Laboratory, Richland, WA.
- Durham, R. E. and M. R. Sackschewsky. 2007. IDF Sagebrush Habitat Mitigation Project: FY2007 Compensation Area Monitoring Report. PNNL-16976. Pacific Northwest National Laboratory, Richland, WA.
- Durham, R. E. and M. R. Sackschewsky. 2007. L-325 Sagebrush Habitat Mitigation Project: FY2007 Compensation Area Monitoring Report. PNNL-16975, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky MR. and J.L. Downs 2007. Ecological Data in Support of the Tank Closure and Waste Management Environmental Impact Statement, Part 2: Results of Spring 2007 Field Surveys . PNNL-16620, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky MR. 2007. Ecological Data in Support of the Tank Closure and Waste Management Environmental Impact Statement, Part 1: Historical Data . PNNL-16503, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky, M. R. (ed.). 2006. Ecological Compliance Assessment Management Plan. DOE/RL-95-11 Rev. 2 U.S. Department OF Energy, Richland, WA. (PNNL-16902)
- Sackschewsky, M. R. 2006. Mitigation Action Plan for the U.S. Department of Energy, Hanford Site, Project L-325 Electrical Utility Upgrades Project. HNF-31621, Fluor Hanford Co. Richland, WA.
- Sackschewsky, M. R. 2006. Mitigation Action Plan for the U.S. Department of Energy, Hanford Site, Integrated Disposal Facility (IDF) Construction. PNNL-15629 limited distribution, published as DOE/ORP-2005-5.
- Sackschewsky, M. R. 2006. Compensatory Mitigation Implementation Plan for the Integrated Disposal Facility. PNNL-15630 limited distribution, published by CH2MHill Hanford Group as RPP-29051.
- Sackschewsky, M. R. 2006. Inter-Agency ESA Section 7 Conference Summary and Endangered Species Evaluation – Columbia Generating Station, Benton County, WA. PNNL-15936, Pacific Northwest National Laboratory, Richland, WA.
- Parkhurst. M, BM Miller, LW Vail, MJ Scott, JA Ward, JV Ramsdell, Jr, PL Hendrickson, WF Sandusky, III, MR Sackschewsky, PR Nickens, PM Daling, EE Hickey, JA Jaksch, and DA Neitzel. 2006. Environmental Impact Statement for an Early Site Permit (ESP) at the North Anna ESP Site, Final Report . PNNL-16260, Pacific Northwest National Laboratory, Richland, WA. [NUREG 1811]
- Sackschewsky, MR, JA Stegen, WF Sandusky, III, KA Cort, K Rhoads, SB Saslow, and PL Hendrickson. 2005. Environmental Impact Statement for the Browns Ferry Nuclear Power Plant License Renewal. PNNL-16622, Pacific Northwest National Laboratory, Richland, WA. [NUREG 1437 Supplement 21]

- Alexander, A. K. and M. R. Sackschewsky. 2005. Use of artificial burrows by burrowing owls (*Athene cunicularia*) at the HAMMER facility on the U. S. Department of Energy Hanford Site in the summer 2005. PNNL-15327, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky, M. R. 2005. Biological Assessment, Effect of Continued Operation of the San Onofre Nuclear Generating Station on Threatened or Endangered Marine Species. PNNL-14999, Pacific Northwest National Laboratory, Richland, WA
- Sackschewsky, M. R. 2005. Biological Assessment, Effect of Continued Operation of the Diablo Canyon Power Plant on Threatened or Endangered Species. PNNL-15000, Pacific Northwest National Laboratory, Richland, WA
- Sackschewsky, M. R. 2005. Status and Management Recommendations for the Columbia Springsnail (*Pyrgulopsis* sp.) near the 300 Area. PNNL-15215, Pacific Northwest National Laboratory, Richland, WA.
- Kropp RK, KL Sobocinski, CW May, GD Williams, JA Southard, MR Sackschewsky, and CA Duberstein. 2005. *Aquatic Resources Program Endangered Species Act Compliance Project Covered Species Technical Paper: Marine Mammals, Selected Rockfish, Selected Anadromous Fish, Selected Freshwater Fish, Plants, and Selected Birds*. PNWD-3626, Battelle—Pacific Northwest Division, Richland, WA.
- Neitzel DA, AL Bunn, SD Cannon, JP Duncan, RA Fowler, BG Fritz, DW Harvey, PL Hendrickson, DJ Hoitink, DG Horton, GV Last, TM Poston, EL Prendergast-Kennedy, SP Reidel, AC Rohay, MR Sackschewsky, MJ Scott, and PD Thorne. 2005. *Hanford Site National Environmental Policy Act (NEPA) Characterization Report, Revision 17*. PNNL-6415 Rev. 17, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky MR. 2004. Threatened and Endangered Species Evaluation for Operating Commercial Nuclear Power Generating Plants. PNNL-14468, Pacific Northwest National Laboratory, Richland, WA.
- Durham, R. E. and M. R. Sackschewsky. 2004. W-519 Sagebrush Mitigation Project FY-2004 Final Review and Status. PNNL-14901, Pacific Northwest National Laboratory, Richland, WA.
- Segaran PR, and MR Sackschewsky. 2004. Environmental factors in artificial seeding of Wyoming big sagebrush and Sandberg's bluegrass. PNNL-14790, Pacific Northwest National Laboratory, Richland, WA.
- Poston TM, M Simmons, JL Downs, MR Sackschewsky, DW Harvey, RE Peterson, GW Patton, BL Tiller, MA Chamness, RW Hanf, and KD Hand. 2004. "Literature Review of Environmental Documents in Support of the 100 and 300 Area River Corridor Baseline Risk Assessment." PNNL-SA-41467
- Patton GW, MA Chamness, AA Stegen, TM Poston, JL Downs, BL Tiller, RE Peterson, and MR Sackschewsky. 2003. "Evaluation of Aquatic and Riparian Receptor Impacts at the 100-N Area: Literature and Data Review." PNNL-SA-39495, Pacific Northwest National Laboratory, Richland, WA
- Sackschewsky, M.R. (ed.). 2003. Hanford Site Biological Resource Mitigation Strategy. DOE/RL-96-88.
- Durham, R. E. and M. R. Sackschewsky. 2002. W-519 Sagebrush Mitigation, FY 2002 Review and Status. PNNL-14131, Pacific Northwest National Laboratory, Richland, WA.
- Hester JM, and MR Sackschewsky. 2002. "Germination Enhancement of *Oenothera pallida*." PNNL-SA-37787, Pacific Northwest National Laboratory, Richland, WA.

- Lewinsohn JS, and MR Sackschewsky. 2002. "Germination and emergence patterns of *Erigeron piperianus* and *E. Poliospermus*: implications for restoration of a restricted and widespread species." PNNL-SA-36113, Pacific Northwest National Laboratory, Richland, WA.]
- Bilyard, G. R., M.R. Sackchewsky, S.A. Tzemos. 2002. Hanford Site Ecological Quality Profile. PNNL-13745, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky, M.R. and J.L. Downs. 2001. Vascular Plants of the Hanford Site. PNNL-13688, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky, M. R., C. A. Duberstein, and J. M. Becker. 2001. 200 Areas Ecological Data Compilation. Letter Report for CH2M Hill Hanford Company. July 2001.
- Durham, R.E., J.S. Lewinsohn, and M.R. Sackschewsky. 2001. W-519 Sagebrush Mitigation Project FY 2001 Status Report. PNNL-14123, Pacific Northwest National Laboratory, Richland, WA..
- Sackschewsky M. R. and L. Stull. 2001. Biological Assessment for Endangered and Threatened species potentially affected by the continued operation of the Turkey Point Nuclear Plant and Associated Transmission lines. Biological Assessment prepared for the U. S. Nuclear Regulatory Commission. July, 2001.
- Becker, J.M. and M. R. Sackschewsky. 2001. Addendum to the 200 West Area Dust Mitigation Strategy. Letter Report to CH2M Hill Hanford Group. June 2001. PNNL-13884, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky, M. R. and J. M. Becker. 2001. 200 West Area Dust Mitigation Strategy. Letter Report to CH2M Hill Hanford Group. April 2001. PNNL-13883, Pacific Northwest National Laboratory, Richland, WA.
- Sackschewsky, M. R., J. S. Lewinsohn, and R. E. Durham. 2000. W-519 Sagebrush Mitigation Project, FY 2000 Status Report. Letter Report to U.S. Department of Energy. September 2000.
- Sackschewsky, M. R. 1999. Safe Interim Storage Project (Project W-058) Sagebrush Mitigation FY 1999 Monitoring Report. Letter Report to U.S. Department of Energy. PNNL-14122, Pacific Northwest national Laboratory. September 1999.
- Sackschewsky, M. R. 1999. Biological Assessment for Endangered and Threatened species potentially affected by the continued operation of the Oconee Nuclear Station and Associated Transmission lines. Biological Assessment prepared for the U. S. Nuclear Regulatory Commission. June 1999.
- Brandt, C. A. and M. R. Sackschewsky. 1999. Ecological Compliance Assessment Project Implementation Plan. Draft DOE/RL-95-11 Rev 2.
- Sackschewsky, M. R. 1998. Safe Interim Storage Project Sagebrush Mitigation 1998 Monitoring Report. Letter Report to U.S. Department of Energy. July 1998.
- Sackschewsky, M. R. 1998. Mitigation Implementation Plan for the Tank Waste Privatization Phase I, Infrastructure Development. Letter Report to Numatec Hanford Corporation, June 1998.
- Sackschewsky, M.R. 1997. Threatened and Endangered Species Evaluation for 75 Licensed Commercial Nuclear Power Generating Plants. Prepared for the U.S. Nuclear Regulatory Commission. PNNL-11524, Pacific Northwest National Laboratory, Richland, WA.

- Kemp, C.J. and M.R. Sackschewsky. 1997. Vegetation and Moisture Performance on a Resource Conservation and Recovery Act - Equivalent Landfill Cap at the Hanford Site. BHI-00980, Bechtel Hanford Inc., Richland WA.
- Brandt, C.A., J.M. Becker, N.A. Cadoret, J.A. Hall, M.R. Sackschewsky, and B.L. Tiller. 1995. National Training Center, Ft. Irwin Expansion Area Ecological Resource Assessment - Draft. Prepared for the U.S. Army, National Training Center
- Link, S.O., L.L. Cadwell, K.L. Petersen, M.R. Sackschewsky, and D.S. Landeen. 1995. The Role of Plants and Animals in Isolation Barriers at Hanford, Washington. PNL-10788, Pacific Northwest Laboratory, Richland, WA.
- Kemp, C.J. and M.R. Sackschewsky. 1994. Revegetation Enhancement Demonstration Project, Fiscal Year 1994. BHI-00059, Bechtel Hanford, Inc., Richland, WA.
- Kemp, C.J., W.M. Hayward, and M.R. Sackschewsky. 1994. Surface Stabilization and Revegetation Test Plots, fiscal year 1994 technical report. BHI-00082. Bechtel Hanford Inc. Richland, WA.
- Landeen, D.S., R.M. Mitchell, A.R. Johnson, and M.R. Sackschewsky. 1994. Comparison of radionuclide levels in Soil, Sagebrush, plant litter, cryptogams, and small mammals. WHC-EP-0771. Westinghouse Hanford Company, Richland, WA.
- Sackschewsky, M.R. 1993. Fixation of Soil Surface Contamination Using Natural Polysaccharides. WHC-EP-0688, Westinghouse Hanford Company, Richland, WA.
- Sackschewsky, M.R., C.J. Kemp, and W.M. Hayward. 1993. Surface Stabilization and Revegetation Test Plots, fiscal year 1993 status report. WHC-EP-0684, Westinghouse Hanford Company, Richland, WA.
- Smith, J. L., C. J. Kemp, and M. R. Sackschewsky. 1993. Residual Herbicide Study on Selected Hanford Site Roadsides. WHC-MR-0426, Westinghouse Hanford Company, Richland, WA.
- Landeen, D.S., M.R. Sackschewsky, and S. Weiss. 1993. 100 Areas CERCLA Ecological Investigations. WHC-EP-0620, Westinghouse Hanford Company, Richland, WA.
- Sackschewsky, M.R., C.J. Kemp, and L.L. Cadwell. 1993. Status report for the small-tube lysimeter facility, Fiscal Year 1992. WHC-EP-0592, Westinghouse Hanford Company, Richland, WA
- Sackschewsky, M.R., G.I. Baird, D.S. Landeen, J.L. Downs, and W.H. Rickard. 1992. Vascular Plants of the Hanford Site. WHC-EP-0554, Westinghouse Hanford Company, Richland, WA.
- Sackschewsky, M.R. 1992. Biological Assessment for Rare and Endangered Plant Species, Related to CERCLA characterization activities. WHC-EP-0526, Westinghouse Hanford Company, Richland, WA.
- Sackschewsky, M.R. and D.S. Landeen. 1992. Fiscal Year 1991 100 Areas CERCLA Ecological Investigations. WHC-EP-0448, Westinghouse Hanford Company, Richland, WA.
- Sackschewsky, M.R.; J.C. Chatters; S.O. Link; and C.A. Brandt. 1991. Protective Barrier Development Program: Test Plan for Plant Community Dynamics. WHC-EP-0380. Westinghouse Hanford Co., Richland, WA.
- Sackschewsky, M.R.; C.J. Kemp; L.L. Cadwell; M.E. Thiede; and W.J. Waugh. 1991. Status Report for the Small-Tube Lysimeter Facility, FY 1990. WHC-EP-0381. Westinghouse Hanford Co., Richland, WA.



Relyea, J.F.; M.R. Sackschewsky; and W.J. Waugh. 1990. Small-Tube Lysimeter Facility Status Report for Fiscal Year 1989. WHC-EP-0297. Westinghouse Hanford Company, Richland, WA.

### **Professional Presentations:**

Downs JL, MR Sackschewsky, and KA Gano. 2007. "Revisiting Restoration at Hanford: A Summary and Review." Joint Conference of SERNW (Society for Ecological Restoration, NW Chapter) and PNW SWS, Yakima, WA. PNNL-SA-57193.

Sackschewsky MR, and RE Durham. 2007. "Sagebrush Habitat Restoration on Hanford: Lessons Learned." Abstract submitted to NW Society for Ecological Restoration & Pacific NW Society of Wetland Scientists Joint Meeting, Yakima, WA. PNNL-SA-55528.

Duberstein CA, MA Simmons, MR Sackschewsky, and JM Becker. 2007. "Ramifications of Sage Sparrow Habitat Relationships on Shrub-Steppe Restoration." Presented by Corey A Duberstein at Society of Ecological Restoration International (NW Chapter), Yakima, WA on September 26, 2007. PNNL-SA-55529.

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Sackschewsky, M. R. and R. E. Durham. 2003. "Restoration Efforts After Wildfire at Hanford." Repairing Pacific Northwest Rangelands – Reality Checks and Realistic Tools. The 32<sup>nd</sup> Annual Pacific Northwest Range Management Shortcourse. Spokane, WA. PNNL-SA-38356, Pacific Northwest National Laboratory, Richland, WA.

Durham, R. E. and M. R. Sackschewsky. 2002. "Cheating the Odds in Sagebrush Restoration." Ecological Society of America, Tucson, AZ. PNNL-SA-36067, Pacific Northwest National Laboratory, Richland, WA.

Tzemos, S. M.R. Sackschewsky, and G. R. Bilyard. 2002. "EQPT: Ecological Quality Profiling Tool." 2002 ESRI Users Conference, San Diego, CA. PNNL-SA-36741, Pacific Northwest National Laboratory, Richland, WA.

Lewinsohn JS, R. Alan Black and Sackschewsky MR. 2001. "Germination Ecology of *Astragalus Sclerocarpus* and *Astragalus Succumbens* in South-Eastern Washington." Ecological Society of America, Madison WI, August 2001. PNNL-SA-35136, Pacific Northwest National Laboratory, Richland, WA.

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