

CURRICULUM VITAE
OWEN THOMAS BURNEY

PO Box 359

Mora, NM 87732

EDUCATION

Ph.D. in Silviculture. March 2011. Forestry and Natural Resources Department, Purdue University. West Lafayette, IN. *Dissertation:* Terpene biosynthesis and growth allocation of Pacific Northwest conifers. Advisor: Dr. Douglass Jacobs.

M.S. in Silviculture. April 2002. Department of Forest Science, Oregon State University, Corvallis, OR. *Thesis:* The effects of fertilization, vegetation control, stock size, and soil moisture on shoot and root development of Douglas-fir (*Pseudotsuga menziesii*) seedlings. Advisor: Dr. Robin Rose.

B.S. in Forest Resources. August 1997. Warnell School of Forest Resources, University of Georgia, Athens, GA. *Emphasis:* Forest Biology and Timber Management. Advisor: Dr. Bruce Bongarten.

PROFESSIONAL AND RESEARCH EXPERIENCE

Assistant/Associate Professor and Superintendent. September 2012 - current. *Forestry and natural resources research.* John T. Harrington Forestry Research Center. New Mexico State University. Mora, NM.

- Establish and maintain short-term and long-term research projects with focuses on forest regeneration, nursery systems, tree improvement, and ecophysiology in both domestic and international programs.
- Supervise containerized nursery production (over 150,000 seedlings per year).
- Manage budgets (>\$500,000), three research greenhouses, and a 50-hectare forest biology research facility.
- Supervise and evaluate research and support staff.

University Development Specialist. August 2011 - June 2012. *Development of forestry, natural resources, and agricultural faculties at Kabul University in Afghanistan.* Strengthening Afghan Agricultural Faculties. International Programs in Agriculture, Purdue University. Kabul, Afghanistan.

- Prepare agricultural faculty members to successfully complete MS and PhD degrees in the US and India.
- Conduct workshops for faculty in the areas of plant physiology, nursery operations, forest management, computer programs, and research development.
- Provide guidance in the renovation of undergraduate syllabuses and curriculums across departments.
- Establishment of a forest nursery lab (greenhouse, shadehouse, and bare-root nursery) for educational and research purposes.

Graduate Research Assistant (Ph.D. Program). August 2008 - March 2011. *Hardwood regeneration and western conifer regeneration research.* Hardwood Tree Improvement and Regeneration Center. Forestry and Natural Resources Department, Purdue University. West Lafayette, IN.

Research Projects

- Hardwood restoration on reclaimed mine lands. (Indiana)
- Influence of fertilization and soil pH on hybrid American chestnut (*Castanea dentata*) morphology and physiology. (Indiana)
- Establishment and monitoring of successful native hardwood plantings for endangered Indiana bat habitat. (Indiana)

Operations Manager. April 2008 - August 2008. *Forest certification, conservation, and sustainability.* Center for Family Forests. American Forest Foundation. Washington, DC.

- Coordinate with state forest agencies to meet qualifications for PEFC (Program for the Endorsement of Forest Certification) through modifications in forest practices and regulations.
- Manage inspector training program for American Tree Farm System (ATFS).
- Provide technical support in the development of an online ATFS database.
- Establish initial GIS database for ATFS.
- Assist in the development of carbon aggregate pilot projects.

Research Associate/Consultant. May 2006 - July 2008. *Develop, analyze, and report on forest regeneration and silviculture research projects.* Forestry and Natural Resources Department, Purdue University. West Lafayette, IN.

Research Projects

- Influence of density reduction on growth response, stem quality, and understory dynamics in pole-size hardwood stands. (Indiana)
- Nursery cultural techniques to facilitate restoration of koa (*Acacia koa*) competing with exotic kikuyu grass in a dry tropical forest in Hawai'i, USA. (Hawai'i)

Research and Monitoring Specialist. October 2003 - April 2006. *Initiate, administer, and analyze research and monitoring projects aimed at addressing forest management and policy concerns for private and public forest lands in Oregon.* Oregon Department of Forestry. Salem, OR.

Research Projects

- Harvesting effects on stream temperature and riparian function. (Oregon)
- Development of the Stand Growth Assessment Tool, a software program that examines how a forest stand is growing in relation to stand growth model estimates in the absence of Swiss needle cast. (Oregon)
- Stand structure development and wildlife relationships. (Oregon)
- Implementation monitoring of newly adopted structure-based management plan. (Oregon)

Assistant Reforestation Forester. October 2002 - October 2003. *Management and research development for reforestation efforts and pre-harvest stand management activities on 300,000 acres in the Tillamook District State Forest.* Oregon Department of Forestry. Tillamook, OR.

Research Project

- Influence of sulfometuron methyl application on conifer seedling root development. (Oregon)

Consultant. August 2002 - September 2002. *Design and monitor live oak (Quercus virginiana) restoration projects.* Georgia Department of Natural Resources. Sapelo Island, GA.

Research Project

- Relationship of overstory shade and tree shelters on the success of live oak (*Quercus virginiana*) restoration on upland maritime forests. (Georgia)

Consultant. June 2001 - November 2001. *Data collection and analysis on herbicide experiments throughout the Pacific Northwest.* BASF Corporation. Redding, CA.

Research Project

- Five-year conifer growth and associated vegetation development following site preparation with Chopper® herbicide in advance of fall and spring planting at high elevation in the PNW Cascades. (Washington, Oregon, California)

Graduate Research Assistant (M.S. Program). September 1999 - April 2002. *Western conifer forest regeneration research.* Vegetation Management Research Cooperative, Department of Forest Science, Oregon State University. Corvallis, OR.

Research Projects

- Effects of up to five years of consecutive weed control and delayed weed control on Douglas-fir and other PNW conifer species. (Oregon)
- Effects of fertilization, vegetation control, and sulfur on Swiss needle cast and growth of coastal Douglas-fir saplings. (Oregon)

Arborist Assistant. November 1998 - March 1999. *Arboricultural operations.* Tillitski. Athens, GA.

Forest Technician. August 1998 - November 1998. *Assisted in research focusing on the use and effects of paper mill sludge as a soil amendment for loblolly pine.* Warnell School of Forestry and Natural Resources, University of Georgia. Athens, GA.

Research Internship. January 1998 - July 1998. *Vegetative propagation research for loblolly pine.* MeadWestvaco. Summerville, SC.

Laboratory and Technician Aide. July 1996 - October 1997. *Maintenance and data collection for projects involving alternatives to methyl bromide use in forest nurseries.* US Forest Service. Athens, GA.

RESEARCH INTERESTS

My research interests focus on forest nursery technologies, tree improvement, and eco-physiology of young forest trees to facilitate ecological restoration and/or commercial reforestation.

PUBLICATIONS

Pinto JR, **Burney OT**, Sloan JL, Ervan G (2020) Physiological and morphological responses of *Pinus ponderosa* seedlings to moisture limitations in the nursery and their implications for restoration. *Forests*. In preparation.

Crow TM, Hufford KM, **Burney OT** (2020) Plant performance predicted by genetic variation and ecological distance in important restoration shrub species *Cercocarpus montanus*. *Restoration Ecology*. Submitted.

Atalar F, Beyazoglu O, Fernald AS, **Burney OT**, VanLeeuwen DM, Cram DS (2020) A case study of runoff and sediment yield in areas subjected to different forest thinning operations in a northern New Mexico forest. *Journal of Soil and Water Conservation*. Submitted.

Jacobs DF, Davis AS, Dumroese RK, **Burney OT** (2020) Nursery cultural techniques facilitate restoration of *Acacia koa* competing with invasive grass in a dry tropical forest. *Forests*. Submitted.

Dixit A, Kolb T, **Burney OT** (2020) Provenance geographical and climatic characteristics influence budburst phenology of southwestern ponderosa pine seedlings. *Forests*. Accepted.

Sloan JL, **Burney OT**, Pinto JR (2020) Drought-conditioning of *Populus tremuloides* seedlings during nursery production modifies seedling anatomy and physiology. *Frontiers in Plant Science*, doi: 10.3389/fpls.2020.557894

Howe AA, Landhäuser SM, **Burney OT**, Long JN, Violett RD, Mock KE (2020) Exploring seedling-based aspen (*Populus tremuloides*) restoration near range limits in the Intermountain West, USA. *Forest Ecology and Management* 476:118470

Thyroff EC, **Burney OT**, Mickelbart MV, Jacobs DF (2019) Unraveling shade tolerance and plasticity of semi-evergreen oaks: insights from maritime forest live oak restoration. *Frontiers in Plant Science*, doi: 10.3389/fpls.2019.01526

Thyroff EC, **Burney OT**, Jacobs DF (2019) Herbivory and competing vegetation interact as site limiting factors in maritime forest restoration. *Forests*, 10(11), 950; doi:10.3390/f10110950

Howe AA, Landhäuser SM, **Burney OT**, Long JN, Mock KE (2019) Regional differences in aspen (*Populus tremuloides* Michx.) seedling response to an established nursery protocol. *New Forests*, 51:367-378 doi: 10.1007/s11056-019-09727-8

Shalizi MN, Goldfarb B, **Burney OT**, Shear TH (2019) Effects of five growing media and two fertilization levels on polybag-raised Camden whitegum (*Eucalyptus benthamii* Maiden & Cambage) seedling morphology and drought hardiness. *Forests* 10(7), 543; doi:10.3390/f10070543

Kolb T, Dixit A, **Burney OT** (2019) Challenges and opportunities for maintaining Ponderosa pine forests in the southwestern United States. *Tree Planters' Notes* 62(1-2):104-112.

Rose K, Parsons T, Sloan J, **Burney OT** (2018) Examples of using subirrigation systems for both growing and storing seedlings. *Tree Planters' Notes* 58(2):12-19.

Hubbel KL, Ross-Davis AL, Pinto JR, **Burney OT**, Davis AS (2018) Toward sustainable cultivation of *Pinus occidentalis* Swartz in Haiti: effects of alternative growing media and containers on seedling growth and foliar chemistry. *Forests* 9(422), doi:10.3390/f9070422

Shalizi MN, Groninger JW, Khurram S, Ruffner CM, **Burney OT** (2018) Data on ecological associations and stand structure of chilgoza pine (*Pinus gerardiana* Wall. ex D. Don) in Afghanistan. *Data in Brief* 18:939-946.

Shalizi MN, Khurram S, Groninger JW, Ruffner CM, **Burney OT** (2018) Indigenous knowledge and stand characteristics of a threatened tree species in a highly insecure area: Chilgoza pine in Afghanistan. *Forest Ecology and Management* 413:1-8.

Burney OT, Jacobs DF (2018) Species selection – A fundamental silvicultural tool to promote forest regeneration under high animal browsing pressure. *Forest Ecology and Management* 408:67-74.

Khurram S, **Burney OT**, Morrissey RC, Jacobs DF (2017) Bottles to trees: plastic beverage bottles as an alternative nursery growing container for reforestation in developing countries. *Plos One* 12(5): e0177904.

Burney OT, Redente EF, Lambert CE (2017) Plant growth in amended molybdenum mine waste rock. *Environmental Science and Pollution Research* 24(12):11215-11227.

Burney OT, Mexal JG, Aldrete A, Alvarez Reyes R, Prieto Ruiz JA (2015) México—Addressing challenges to reforestation. *Journal of Forestry* 113 (4):404-413.

Burney OT, Brown SH, Bentson KP, Hacker WD (2014) Forestry and tree planting in New Mexico. *Tree Planters' Notes* 57(1):4-12.

Burney OT, Jacobs DF (2013) Ungulate herbivory of boreal and temperate forest regeneration in relation to seedling mineral nutrition and secondary metabolites. *New Forests* 44 (5):753-768.

Burney OT, Jacobs DF (2012) Terpene production and growth of three Pacific Northwest conifers in response to simulated browse and varying nutrient availability. *Trees* 26(4):1331-1342.

Burney OT, Davis AS, Jacobs DF (2012) Phenology of foliar and volatile terpenoid production for *Thuja plicata* families under differential nutrient availability. *Environmental and Experimental Botany* 77(1):44-52.

Burney OT, Jacobs DF (2011) Ungulate herbivory of regenerating conifers in relation to foliar nutrition and terpenoid production. *Forest Ecology and Management* 262(9):1834-1845.

Burney OT, Jacobs DF (2009) Influence of sulfometuron methyl application on conifer root development. *New Forests* 37:85-97.

Burney OT, Wing MG, Rose R (2007) Microsite influences on variability in Douglas-fir seedling development. *Western Journal of Applied Forestry* 22(3):156-162.

TECHNICAL REPORTS/PROCEEDINGS

Lauriault LM, Ray I, Pierce C, **Burney OT**, Flynn RP, Marsalis MA, O'Neill MK, West M (2015) The 2015 New Mexico Alfalfa Variety Test Report. Las Cruces, NM: Agricultural Experiment Station and Cooperative Extension Service, New Mexico State University.

Lauriault LM, Ray I, Pierce C, **Burney OT**, Flynn RP, Marsalis MA, O'Neill MK, Owen CK (2014) The 2014 New Mexico Alfalfa Variety Test Report. Las Cruces, NM: Agricultural Experiment Station and Cooperative Extension Service, New Mexico State University.

Burney OT, Jacobs DF (2012) Influence of mineral nutrition on susceptibility and recovery of planted seedlings to ungulate browse. In: Riley LE, Pinto JR, Dumroese RK (eds) *National Proceedings: Forest and Conservation Nursery Associations*. Fort Collins (CO): USDA Forest Service, Rocky Mountain Research Station. Proceedings RMRS-P-62:27-31.

INTERNAL REPORTS – CHEVRON/EPA/NEW MEXICO EMNRD

Burney OT, Redente EF, Lambert CE (2016) Early design action: Spring Gulch waste rock greenhouse study. 122 pp.

PRESENTATIONS (SELECTIONS SINCE 2012)

Pinto JR, **Burney OT**, Sloan JL (2019) "Overcoming limiting factors to seedling establishment: physiological, morphological, spatial, and temporal tactics", Special symposia: "Soils, seedlings, and societies: addressing limiting factors to increase post-planting growth and survival." Society for Ecological Restoration, 8th World Conference on Ecological Restoration: Restoring Land, Water & Community Resilience, Cape Town, South Africa. (Invited)

Burney OT, Sloan JL, Pinto JR (2018) "The role of nurseries to meet dry forest restoration needs", Eastside seedling characteristics and quality for optimum field performance, Western Forestry and Conservation Nursery Association, Coeur d'Alene, Idaho. (Invited)

Burney OT (2018) "Are we losing our forests in the southwestern US?", 2018 Seminar Series, Purdue University, West Lafayette, Indiana. (Invited)

Burney OT, Sloan JL, Pinto JR (2018) "The role of nurseries to meet forest restoration needs", 2018 Seminar Series, Northern Arizona University. Flagstaff, Arizona. (Invited)

Pinto JR, **Burney OT**, Sloan JL (2017) "Understanding seedling physiology to optimize seedling success", Special symposia: Integration of science, application, and practice in updating the model of seedling selection for restoration. Society for Ecological Restoration, 7th World Conference on Ecological Restoration: Linking Science and Practice for a Better World, Iguassu, Brazil. (Invited)

Burney OT, Sloan JL, Pinto JR (2017) "Nursery conditioning seedlings for improved dry site performance", 3rd Restoring Forest Congress: Regeneration and ecosystem functions for the future, International Union of Forest Research Organizations, Lund, Sweden. (Accepted)

Burney OT, Sloan JL, Pinto JR (2017) "Drought-conditioning during nursery production influences physiology and resource allocation of *Populus tremuloides* and *Pinus ponderosa* seedlings", Conference on Forest Regeneration in Changing Environments, International Union of Forest Research Organizations, Corvallis, Oregon. (Accepted)

Burney OT (2017) "Assisted Migration – A Southwestern US Perspective", Western Forestry and Conservation Nursery Association and the Pacific Northwest Reforestation Council, Corvallis, OR. (Invited)

Howe AA, Landhäuser SM, **Burney OT**, Violett RD, Mock KE (2017) "A seedling-based approach to aspen restoration", Conference on High Altitude Restoration, Society of Ecological Restoration, Ft. Collins, Colorado. (Accepted)

Burney OT (2016) "The target plant concept: a post-fire restoration perspective", Association for Fire Ecology Conference - Beyond Hazardous Fuels: Managing fire for social, economic, and ecological benefits. Tucson, Arizona. (Invited)

Burney OT (2016), “Forest seed - germoplasma forestal”, CONAFOR, Workshop - Taller de capacitación sobre germoplasma, medios de crecimiento, sistema de riego, formulación de nutrientes y diagnóstico fitosanitario. Merida, Yucatan, Mexico. (Invited)

Burney OT (2016) “Importance of reforestation and seed collection for post-fire restoration”, AMPF-SAF 24th Reunion, Society of American Foresters. Las Cruces, New Mexico. (Invited)

Burney OT (2015) “Evaluation of live oak forest regeneration dynamics to promote Maritime forest restoration in Coastal Georgia”, St Simons Land Trust (SSLT) - Maritime Forest Restoration, SSLT, St Simons, Georgia. (Invited)

Burney OT (2015) “The applications of the Target Plant Concept and Assisted Migration on post-fire restoration efforts”, Managing the post-fire environment in a time of change (US Forest Service, Dept. of Interior, The Nature Conservancy, SW Fire Consortium, Southern Rocky Mountains Fire Science Network), Santa Fe, New Mexico. (Invited)

Burney OT (2015) “JTH Forestry Research Center Update”, Society of American Foresters NM, Espanola, New Mexico. (Invited)

Burney OT (2014) “Bottles to trees: plastic beverage bottles as an alternative container type for seedling propagation in developing countries”, 2nd Restoring Forests Congress (IUFRO), Purdue University, Lafayette, Indiana. (Invited)

Burney OT (2014) “Biotic factors limiting outplanting success of the Target Plant”, Conference on Ecological and Ecosystem Restoration, Society of Ecological Restoration, New Orleans, Louisiana. (Accepted)

Burney OT (2013) “Seedlings of the Southwest”, 34th Intermountain Container Seedling Growers’ Association, University of Idaho/USFS, Moscow, ID. (Invited)

Burney OT (2012) “The Role of Seedling Nutrition on Ungulate Herbivore Patterns”, Nutrient Dynamics of Planted Forests, International Union of Forest Research Organizations, Vancouver, WA. (Invited)

GRADUATE COMMITTEES

Master's Thesis Committee Chair

Gokhan Ervan, New Mexico State University, “Evaluation of drought conditioned *Populus tremuloides* and *Pinus ponderosa* seedlings” (December 2016 – December 2018).

Doctoral Committee Member

Aalap Dixit, Northern Arizona University, “Challenges and opportunities for maintaining ponderosa pine forests in the southwestern U.S.” (September 2017 – present).

Master's Thesis Committee Member

Furkan Atalar, New Mexico State University, "Rainfall simulation on thinned, burned, and undisturbed forests in New Mexico" (September 2016 – May 2018).

Emily Thyroff, Purdue University, "Maritime forest restoration along the southern Atlantic coast" (September 2016 – October 2018).

Alex Howe, Utah State University, "Developing seedling-based restoration strategies for western aspen" (May 2015 – May 2018).

Bahar Yalcin, New Mexico State University, "Rainfall simulation on thinned, burned, and undisturbed forests in New Mexico" (September 2013 – December 2015).

Onur Beyazoglu, New Mexico State University, "Rainfall simulation on thinned, burned, and undisturbed forests in New Mexico" (September 2013 – December 2015).

Kyrstan Hubble, University of Idaho, "Alternative Media for Containerized Seedlings" (November 2013 – December 2015).

Nasir Shalizi, North Carolina State University, "Evaluation of alternative media mixes for forest nurseries in developing countries" (March 2013 – June 2015).

Safiullah Khurram, Purdue University, "Evaluation of plastic beverage bottles as an alternative growing container for forest nurseries in developing countries" (March 2013 – June 2015).

FUNDING

*TOTAL FUNDING FOR DR. OWEN BURNEY = \$6,453,363 (2012-2019)

Burney OT (Co-principal), Reid RK (Principal), Cespedes B (Co-principal), Conley C (Co-principal), "CREST Center for Forest Restoration Triangle".

Sponsoring Organization: National Science Foundation
\$5,000,000 (2019)

Burney OT (Principal), "Conservation of blister rust resistant southwestern white pine through clonal propagation".

Sponsoring Organization: NM Energy, Minerals, and Natural Resources Department
\$15,000 (2019)

Burney OT (Principal), "Tree improvement and forestation plan".

Sponsoring Organization: NM Energy, Minerals, and Natural Resources Department
\$8,000 (annually)
Total \$64,000 (2012-current)

Burney OT (Principal), “Defining seed transfer guidelines for ponderosa pine in a changing climate”.

Sponsoring Organization: US Department of the Interior, National Park Service
\$52,125 (2015)

Burney OT (Principal), “Evaluation of impacts of silvicultural operations water quality and quantity in New Mexico’s Forests”.

Sponsoring Organization: WRRRI – NMSU.
\$5,823 (2015)

Mock K (Principal), Burney OT (Co-principal), Landhäuser S (Co-principal), “New directions in aspen restoration for the intermountain west”.

Sponsoring Organization: Utah State University
\$195,683 (2015)

Burney OT (Principal), “Conservation of blister rust resistant southwestern white pine through clonal propagation”.

Sponsoring Organization: US Department of Agriculture/Forest Service.
\$7,500 (2014)

Burney OT (Principal), “Chevron Spring Gulch waste rock greenhouse study”.

Sponsoring Organization: ARCADIS US.
\$133,653 (2014)

Burney OT (Principal), “Forest Research” (Nursery Drought Conditioning, Mine Reclamation, Post-fire Restoration).

Sponsoring Organization: McIntire Stennis, USDA, US Forest Service.
\$30,000 (annually)
Total \$240,000 (2012-current)

Burney OT (Principal), “NM Forest Seedling Nursery Systems”.

Sponsoring Organization: NM Energy, Minerals, and Natural Resources Department.
\$47,040 (2019), \$38,383 (2018), \$47,760 (2017), \$57,840 (2016), \$59,094 (2015), \$49,671 (2014), \$51,500 (2013), \$49,588 (2012)
Total \$400,876

Burney OT (Principal), “Post-fire restoration via artificial regeneration”.

Sponsoring Organization: Santa Clara
\$132,300 (2016), \$81,073 (2015), \$23,667 (2014), \$24,025 (2014), \$45,783 (2012)
Total \$306,848

Burney OT (Principal), “Post-fire restoration via artificial regeneration”.

Sponsoring Organization: Ohkay Owingeh

\$15,000 (2013)

Lairault L (Principal), Burney OT (Co-principal), Ray I (Co-principal), Flynn R (Co-principal), O'Neill M (Co-principal), Marsalis M (Co-principal), "Fee-based alfalfa variety testing".

Sponsoring Organization: Multiple Seed Companies.

\$6,255 (2015), \$5,250 (2014), \$4,350 (2013)

Total \$16,855

APPLICABLE KNOWLEDGE, SKILLS, AND CERTIFICATIONS

- Associate Editor, New Forests (2020 – current)
- ArcGIS, SAS, Visual Basic language, Microsoft (Word, Excel, Access, PowerPoint)
- Yale University, Forest Stand Dynamics Course, Pack Forest, WA (2003)
- Society of American Foresters National Leadership Academy, Potomac, MD (2008)
- Certifications: prescribed burning, herbicide application, and helicopter safety
- FAA Remote Pilot Certificate (Drone Pilot)