## Virginia H. Dale

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Corporate Fellow Emeritus, Oak Ridge National Laboratory, Oak Ridge, TN

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https://www.virginiadale.info/

## **Degrees:**

B.A. in Mathematics, University of Tennessee, Knoxville, 1974 (with honors)

M.S. in Mathematics with a minor in Ecology, University of Tennessee, Knoxville, 1975

Ph.D. in Mathematical Ecology (a Special Individual Ph.D. Program), University of Washington, Seattle, 1980

Overview: Virginia is interested in environmental decision making, ecosystem management in the context of large disturbances and climate change, quantifying progress toward sustainability of agricultural landscapes and energy systems, and plant succession (building from her 40+ years of observations at Mount St. Helens since the 1980 eruption). She was among the members of the international science community who contributed to the Intergovernmental Panel on Climate Change Scientific Assessment that in 2007 received with Al Gore the Nobel Peace Prize. She has served on national scientific advisory boards for five agencies of the United States and several committees of the National Academies of Science. She and her husband helped design their energy efficient house that uses passive solar, geothermal power, and many repurposed materials. She also is a Trustee for the Tennessee Chapter of The Nature Conservancy and was elected to the Tennessee state Board of the Sierra Club.

#### **Positions:**

Research professor, Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN (1993 to present)

Research professor, School of Natural Resources, University of Tennessee Institute of Agriculture, Knoxville, TN (2007 to present)

Environmental Sciences Division, Oak Ridge National Laboratory, 1984-present (Research Scientist 1984-1994, Associate Director 1994-1996, Senior Scientist 1996-2002, Corporate Fellow 2003 to 2017, Corporate Fellow Emeritus 2018- present)

Director, Center for BioEnergy Sustainability, Oak Ridge National Laboratory (<a href="http://cbes.ornl.gov/">http://cbes.ornl.gov/</a>), 2009-2017

Group Leader, Landscape Ecology and Regional Analysis Group, Environmental Sciences Division, Oak Ridge National Laboratory (2005-2017)

University of Puget Sound, Department of Biology (Instructor, 1982-1983)

Pacific Lutheran University, Assistant Professor, Departments of Biology and of Mathematics, 1981-1982 (sabbatical replacement)

Oregon State University, Forest Research Laboratory (Research Associate, 1980-1981)

Research assistant, University Washington, Seattle, 1977-79

Research assistant, Oak Ridge National Laboratory, 1975

## **Current Projects:**

• PI on proposal funded by the National Science Foundation on "Synthesizing concepts about succession, disturbances, and indicators based on long-term research at Mount St. Helens" under

- the Opportunities for Promoting Understanding through Synthesis: Core Research Synthesis (OPUS:CRS) (01/01/2022 12/31/2023)
- Co-PI on proposal funded by the National Science Foundation with the lead being the University
  of Idaho: <a href="Engage INFEWS">Engage INFEWS</a>: A Research Coordination Network for Community and Stakeholder
  Engagement Critical to Food, Energy, and Water Systems

### **Service to Professional Societies:**

Ecological Society of America (Life member):

- Member-at-Large of Governing Board, 1995-1997
- Nominating Committee 1997
- Finance Committee, 1995-1998
- Membership Committee 1995-1998
- Land Use Committee, chair, 1996-1999
- Program Committee 1998-1999
- Board of Professional Certification 1999-2001, Chair 1999-2000
- Certified Senior Ecologist 1996-2008
- Rapid Response Team 2005-2010.
- ESA Workshops, Symposia, Field Trips, and Forums Organized by VH Dale:
  - ✓ Symposium on "Changing Patterns of Landscapes" for Ecology Society of America Annual Meeting, Ohio State University, August 10 14, 1987
  - ✓ Symposium on "The Effect of Land Use Change on Atmospheric CO2 Concentration" at the Annual Ecological Society of America Meeting in Toronto, Canada, August 7, 1989
  - ✓ Discussion on "Ecological Principles of Land-Use Dynamics in the United States," Ecological Society of America Annual meeting, Albuquerque, New Mexico, August 12, 1997.
  - ✓ Symposium on "Ecological principles of land management and their implications" at the Annual Ecological Society of America Meeting in Baltimore, Maryland, August 6-10, 1998.
  - ✓ Symposium on Ecological Recovery at Mount St. Helens, August 2004 meeting of the Ecological Society of America, Portland, OR.
  - ✓ Field trip to Mount St. Helens, August 2012 meeting of the Ecological Society of America, Portland, OR.
  - ✓ Issues Forum in Ecological Applications on "Perspectives on Land Use," 2000.
  - ✓ Organized and led field trip to Mount St. Helens for August 2017 and 2023 annual meetings

U.S. Regional Association of the International Association for Landscape Ecology (IALE):

- Chair 2000-2002
- Nominations Committee: 2004
- Organized and led field trip to Mount St. Helens, July 2015 meeting of the World Congress of IALE, Portland, OR.

Sigma Xi, The Scientific Research Society (Life member)

• Chair of East Tennessee Chapter: 1987

### **Selected Professional Activities:**

Delta Independent Science Board, member, 2020 to present. The Delta ISB is charged with reviewing all scientific research, monitoring, and assessment programs that support adaptive management of the Delta of the Sacramento and San Joaquin Rivers. For more

information about the Delta ISB, see https://deltacouncil.ca.gov/

<u>Drax Independent Advisory Board on Sustainable</u> Biomass, Member, 2019-present

Oak Ridge Institute for Continued Learning, Instructor, 2020-present

Steering Committee: US-China Transdisciplinary Environmental Research Network sponsored by the National Science Foundation grant to the University of Tennessee (2017-2020) <a href="http://fews.tennessee.edu">http://fews.tennessee.edu</a> and <a href="https://www.ornl.gov/content/ut-ornl-shepherd-us-china-transdisciplinary-environmental-research-network">https://www.ornl.gov/content/ut-ornl-shepherd-us-china-transdisciplinary-environmental-research-network</a>

Co-PI on EAGER proposal funded by the National Science Foundation to the University of Tennessee Institute of Agriculture on "US-China Food-Energy-Water Systems Transdisciplinary Environmental Research Network (FEWSTERN)" (05/15/2017 - 12/31/2021)

Host researcher for the JASON's Geology Module <a href="https://www.jason.org/geology-tectonic-fury">https://www.jason.org/geology-tectonic-fury</a>, which won the CODiE award in 2010 for the "Nation's Best K-12 Instructional Solution, Best Online Instructional Solution and Best Education Game or Simulation." Keynote speaker for Jason Learning Conference 2018.

National Academy committees:

- Committee on Economic and Environmental Impacts of Increasing Biofuels Production, 2010 to 2011
- U.S. National Committee on the Scientific Committee on Problems of the Environment (SCOPE), 2000-2009, Chair: 2005-2009
- Ecological Impacts of Road Density, 2001-2005
- Ecosystems Panel, 1997-2000
- Review team for Brazilian Institutions, 1992

Environmental Protection Agency Scientific Advisory Board:

- Charter Board, 2006 to 2008
- Chair of Hypoxia Review Panel, 2006-2007
- Ecological Processes and Effects Committee, 1992-1997, 2000-2006 (Chair: 2002-2006)
- Research Strategies Advisory Committee, 1995-1997
- Executive Committee, 2000-2007
- Chair of review of EPA's report on the Environment, 2004

National Environmental Observation Network (NEON)

- Member of NEON Science, Technology and Education Advisory Committee, 2008 to 2014
- Workshop on land use and habitat alteration (Co-Chair), August 2004

Science Advisory Committee of the Grand Canyon Monitoring and Research Center 2001-2004

USDA Forest Service: Committee of Scientists (1997-1999)

https://www.fs.usda.gov/emc/nfma/includes/cosreport/Committee%20of%20Scientists%20Report.htm

Editor in Chief: Environmental Management (2002-2014)

Editorial Board member:

- Ecological Indicators
- Ecological Economics
- Ecosystems

## • Environmental Reviews

## **Selected Awards:**

Distinguished Landscape Ecologist awarded by the United States Regional Association of the International Association for Landscape Ecology 2013

National Biodiesel Board "Eye on Biodiesel" Innovation Award 2012

CODiE Award for "Best Science or Health Curriculum" from the Software and Information Industry Association for the JASON curriculum, "Operation: Tectonic Fury" May 2011

VH Dale was among the members of the international science community that contributed to the <u>Intergovernmental Panel on Climate Change Scientific Assessment</u> that in 2007 received with Al Gore the Nobel Peace Prize.

International Technical Communications Competition of the Society of Technical Communication:

- for a book Award of Merit 2007
- for a scholarly/professional journal Award of Merit 2003
- for a Scholarly/Professional Article Award of Distinguished 1992
- for a Scholarly/Professional Article Award of Excellence 1991

The 2006 Distinguished Scientist for Oak Ridge National Laboratory.

YWCA of Knoxville, TN, Tribute to Women, Finalist in Science/Technology Category, 2006 2004 Distinguished Alumnae, Harpeth Hall School, Nashville, Tn.

UT-Battelle Significant Event Award for contributions to the U.S. National Assessment of Climate Variability and Change, 2000

Top Citizen of Oak Ridge, 1999

YWCA of Knoxville, TN Tribute to Women, Finalist in Science/Technology Category, 1999 YWCA of Oak Ridge, TN Night of Tribute Award for Health, Science and Technology, 1999

Hammer Award from Vice President Al Gore for work on the Southern Appalachian

Assessment that was a "contribution to building a government that works better and costs less," 1997

Distinguished and Sustained Scientific Achievement Award, Association for Women in Science, East Tennessee Chapter, 1994

Northwest Sci. Association, 1979, recipient award

Research Corp., 1982,

Earthwatch, 1982-83,

National Geographic Society, 1989

## **Community Service**

Washington Native Plant Society, Seattle, 1982-8 (Chair of conservation committee), 2020-2023

Environmental Quality Advisory Board for the City of Oak Ridge, 1986-89 (Chair)

Citizens for Quality Growth, Oak Ridge, 1989-90 (Chair).

Advocates for the Oak Ridge Reservation (<a href="https://aforr.info">https://aforr.info</a>), member 1999 to present, Chari 2005-2021

Tennessee Citizens for Wilderness Planning, Life Member

Sierra Club, Life member, Tennessee Chapter Executive Board member and chair of Land Management Committee 2021-2024

The Tennessee Chapter of The Nature Conservancy, Board member 2021-2024

**Publications (11 books, 286 articles and chapters, and 21 reports and book reviews): (VH Dale was formerly VD Adams)** 

### **Books**

- 1. <u>Dale, V.H.</u> (editor). 1994. *Effects of Land Use Change on Atmospheric CO<sub>2</sub> Concentrations: Southeast Asia as a Case Study.* New York: Springer-Verlag. https://link.springer.com/book/10.1007%2F978-1-4613-8363-5
- 2. <u>Dale, V.H.</u> and English, M.R. (editors). 1999. *Tools to Aid Environmental Decision Making*. New York: Springer-Verlag.
- 3. National Research Council, Ecosystems Panel. 2000. *Global Change Ecosystems Research*. National Academy Press, Washington, D.C. <a href="https://www.nap.edu/catalog/9983/global-change-ecosystems-research">https://www.nap.edu/catalog/9983/global-change-ecosystems-research</a>
- 4. <u>Dale, V.H.</u> and Haeuber, R.A. (editors). 2001. *Applying Ecological Principles to Land Management*. New York: Springer-Verlag.
- 5. Forman, R.T., D. Sperling, J. Bissonette, A. Clevenger, C. Cutshall, <u>V.H. Dale</u>, L. Fahrig, R. France, C. Goldman, K. Heanue, J. Jones, F. Swanson, T. Turrentine, and T. Winter. 2003. *Road Ecology: Science and Solutions*. Island Press. <a href="https://islandpress.org/book/road-ecology">https://islandpress.org/book/road-ecology</a>
- 6. <u>Dale, V.H.</u> (editor) 2003. *Ecological Modeling for Resource Management*. New York: Springer-Verlag. <a href="https://link.springer.com/book/10.1007/b97276?utm\_medium=affiliate&utm\_source=commission">https://link.springer.com/book/10.1007/b97276?utm\_medium=affiliate&utm\_source=commission</a> junction&utm\_campaign=3\_nsn6445\_brand\_PID100357191&utm\_content=de\_textlink
- Dale, V.H., Swanson, F.J., and Crisafulli, C.M. (editors). 2005. Ecology Response to the 1980 Eruption of Mount St. Helens. New York: Springer. <a href="https://www.springer.com/us/book/9780387238685">https://www.springer.com/us/book/9780387238685</a>
- 8. National Research Council, Ecosystems Panel. 2006. *Assessing and Managing Ecological Impacts of Paved Roads*. National Academy Press, Washington, D.C. <a href="http://www.nap.edu/catalog/11535.html">http://www.nap.edu/catalog/11535.html</a>
- 9. <u>Dale, V.H.</u>, C. Kling, J.L. Meyer, J. Sanders, H. Stallworth, T. Armitage, D. Wangsness, T.S. Bianchi, A. Blumberg, W. Boynton, D.J. Conley, W. Crumpton, M.B. David, D. Gilbert, R.W. Howarth, R. Lowrance, K. Mankin, J. Opaluch, H. Paerl, K. Reckhow, A.N. Sharpley, T.W. Simpson, C. Snyder, and D. Wright. 2010. <u>Hypoxia in the Northern Gulf of Mexico</u>. New York: Springer.
- National Research Council (Lave LB, Burke IC, Tyner WE, <u>Dale VH</u>, Halvorsen KE, Hill JD, Kaffka SR, Klasing KC, McGovern SJ, Miranowski JA, Patrinos A, Schnoor JL, Schweikhardt DB, Selfa TL, Sohngen BL and Soria JA), 2011. *Renewable Fuel Standard: Potential Economic* and Environmental Effects of U.S. Biofuel Policy. National Academy Press, Washington, D.C. <a href="https://www.nap.edu/catalog/13105/renewable-fuel-standard-potential-economic-and-environmental-effects-of-us">https://www.nap.edu/catalog/13105/renewable-fuel-standard-potential-economic-and-environmental-effects-of-us</a>
- 11. Crisafulli CM and <u>Dale VH</u> (editors). 2018. *Ecological Responses at Mount St. Helens: Revisited 35 years after the 1980 Eruption.* New York: Springer. <a href="https://www.springer.com/us/book/9781493974498">https://www.springer.com/us/book/9781493974498</a>

# **Land-Use Change**

Turner, M.G., R.H. Gardner, <u>V.H. Dale</u>, and R.V. O'Neill. 1988. Landscape pattern and spread of disturbance. Pp. 373-382 <u>In</u> M. Ruzycka, T. Hrnciarova, and L. Miklos, eds. Proc. VIIIth International Symposium on Problems of Landscape Ecological Research. Vol. 1. Institute of Experimental Biology and Ecology, CBES SAS, Bratislava, CSSR.

- 2. Turner, M.G., R.H. Gardner, <u>V.H. Dale</u>, and R.V. O'Neill. 1989. Predicting the spread of disturbance across a heterogeneous landscape. *Oikos* 55:121-129.
- 3. <u>Dale, V.H.</u>, L.K. Mann, R.J. Olson, D.W. Johnson, and K.C. Dearstone. 1990. The influence of past land use on the Walker Branch forest. *Landscape Ecology* 4:211-224.
- 4. <u>Dale, V.H.</u> (ed.) 1990. Report of a workshop on using remote sensing to estimate land use change. ORNL\TM-11502, Oak Ridge, Tennessee.
- 5. <u>Dale, V.H.</u> 1990. Strategy for monitoring the effects of land use change on atmospheric CO<sub>2</sub> concentrations. In Proceedings of "Global Natural Resource Monitoring and Assessments: Preparing for the 21st Century," Venice, Italy, September 25-30, 1989. American Society for Photogrammetry and Remote Sensing, Bethesda, MD. Vol I: 422-431.
- 6. Frohn, R., <u>V.H. Dale</u>, and B. Jimenez. 1990. Colonization, road development and deforestation in the Brazilian Amazon Basin of Rondônia. ORNL\TM 11470, Oak Ridge, Tennessee.
- 7. Pedlowski, M.A. and <u>Dale, V.H.</u> 1992. Land Use Practices in Ouro Preto Do Oeste, Rondônia, Brazil. ORNL TM 12062, Oak Ridge, Tennessee.
- 8. <u>Dale, V.H.</u>, R.V. O'Neill, F. Southworth, and F. Loureiro. 1992. Analyzing simulated patterns of land-use change. Proceedings of the ASPRS/ACSM/RT '92 Convention on "Monitoring and Mapping Global Change" Washington, D.C., August 3-6, 1992. Vol 5, pp. 284-293.
- 9. <u>Dale, V.H.</u>, M.A. Pedlowski, R.V. O'Neill, and F. Southworth. 1992. Modeling socioeconomic and ecologic aspects of land use change: A case study of central Rondônia. Proceedings of the Second International Symposium on Environmental Studies of Tropical Rain Forests FOREST'92. May 24-29, Rio de Janeiro, Brazil.
- 10. <u>Dale, V.H.</u>, and Pedlowski, M.A. 1992. Farming the forests. *Forum for Applied Research and Public Policy* 7:20-21.
- 11. <u>Dale, V.H.</u>, Houghton, R.A., Grainger, A., Lugo, A.E., and Brown, S. 1993. Emissions of greenhouse gases from tropical deforestation and subsequent uses of the land. Pp. 215-261 IN Sustainable Agriculture and the Environment in the Humid Tropics, Washington, D.C.: National Academy Press.
- 12. <u>Dale, V.H.</u>, Southworth, F., O'Neill, R.V., Rosen, A. and Frohn, R. 1993. Simulating spatial patterns of land-use change in Rondonia, Brazil. Pp. 29-56 <u>In</u> R. H. Gardner (ed.) Some Mathematical Questions in Biology. Providence, R.I.: American Mathematical Society.
- 13. <u>Dale, V.H.</u>, R.V. O'Neill, M.A. Pedlowski, and F. Southworth. 1993. Causes and effects of landuse change in central Rondônia, Brazil. *Photogrammetric Engineering & Remote Sensing* 59:997-1005.
- 14. <u>Dale, V.H.</u>, Pedlowski, M., O'Neill, R. and Southworth, F. 1993. DELTA: Na busca de alternativas para a Amazônia. *Ciência Hoje*. 16:61-64.
- 15. <u>Dale, V.H.</u>, O'Neill, R.V., Southworth, F. and Pedlowski, M.A. 1994. Modeling effects of land management in the Brazilian settlement of Rondônia. *Conservation Biology* 8:196-206.
- 16. <u>Dale, V.H.</u> 1994. Patterns of land-use change in south and southeast Asia and implications for global studies. Pp. 1-14 <u>In</u> V.H. Dale (ed.) Effects of Land Use Change on Atmospheric CO<sub>2</sub> Concentrations: Southeast Asia as a Case Study. New York: Springer-Verlag.
- 17. <u>Dale, V.H.</u>, Brown, S., Flint, E.P., Hall, C.A.S., Iverson, L.R., and Uhlig, J. 1994. Estimating CO<sub>2</sub> flux from tropical forests. Pp. 365-374 <u>In</u> V.H. Dale (ed.) Effects of Land Use Change on Atmospheric CO<sub>2</sub> Concentrations: Southeast Asia as a Case Study. New York: Springer-Verlag.
- 18. Pickett, S., Burke, I., <u>Dale, V.H.</u>, Gosz, J.R., Lee, R.G., Pacala, S.W., and Shacak, M. 1994. Integrated regional models of forested regions. Pp. 120-142 <u>In</u> P. Groffman and G. Likens (ed.) Integrated Regional Models. New York: Chapman and Hall.
- 19. <u>Dale, V.H.</u>, Pearson, S.M., Offerman, H.L., and O'Neill, R.V. 1994. Relating patterns of land-use change to faunal biodiversity in the Central Amazon. *Conservation Biology* 8: 1027-1036.
- 20. Gardner, R.H., King, A.W. and Dale, V.H. 1994. Interactions between forest harvesting,

- landscape heterogeneity, and species persistence. Pages 65-75 In D.C. LeMaster and R.J. Sedjo, eds. Modeling Sustainable Forest Ecosystems. Proceedings of a 1992 workshop in Washington, D.C. Published by American Forests, Washington, D.C.
- 21. <u>Dale, V.H.</u>, O'Neill, R.V., Southworth, F. and Pedlowski, M.A. 1994. Modeling effects of land management in the Brazilian settlement of Rondônia. Pages 242-252 <u>In</u> (D. Ehrenfeld, ed) Readings from Conservation Biology: The Landscape Perspective. The Society for Conservation Biology and Blackwell Science, Inc., Cambridge, Mass.
- 22. Kern, R.A., <u>Dale, V.H.</u> Beachamp, J.J. 1994. The effect of elevation, light and water availability on the growth of Sierran conifer seedlings. Bulletin of the Ecological Society of America 75:2.
- 23. <u>Dale, V.H.</u>, Offerman, H., Frohn, R. and Gardner, R. 1995. Landscape characterization and biodiversity research. <u>In</u> (T.J.B. Boyle and B. Boontawee, ed.) Measuring and Monitoring Biodiversity in Tropical and Temperate Forests. Center for International Forestry Research, Bogor, Indonesia.
- 24. O'Neill, R.V., Hunsaker, C.T., Jones, D., Klopatek, J.M., <u>Dale, V.H.</u>, Turner, M.G., Gardner, R.H., and Graham, R. 1995. Sustainability at landscape and regional scales. Pages 137-144 **In** M. Munzsinghe and W. Shearer (ed.) Defining and Measuring Sustainability. The United National University and The World Bank, Washington, D.C.
- 25. <u>Dale, V.H.</u> and Pearson, S.M. 1997. Quantifying habitat fragmentation due to land-use change in Amazonia. Pp. 400-410 <u>In</u> (W.F. Laurance and R.O. Bierregaard, ed.) Tropical Forest Remnants: Ecology, Management and Conservation of Fragmented Communities. Chicago: The University of Chicago Press.
- 26. Pedlowski, M.A., <u>V.H. Dale</u>, M.A.T. Matricardi, and E.P. da Silva Filho. 1997. Patterns and impacts of deforestation in Rondônia, Brazil. *Landscape and Urban Planning* 38: 149-157.
- 27. <u>Dale, V.H.</u>, King, A.W., Mann, L.K., Washington-Allen, R.A., and McCord. R.A. 1998. Assessing land-use impacts on natural resources. Environmental Management 22:203-211.
- 28. <u>Dale, V.H.</u> and P.D. Parr. 1997. Preserving DOE's research parks. *Issues in Science and Technology*. XIV(2): 73-77. https://www.jstor.org/stable/43311760?refreqid=excelsior%3Ade25edf2a732116a0d05a2e03593f5a9&seq=1
- 29. Turner, M.G. and <u>Dale, V.H.</u> 1998. What have we learned from large, infrequent disturbances? *Ecosystems* 1:493-496.
- 30. <u>Dale, V.H.</u>, Lugo, A. MacMahon, J. and Pickett, S. 1998. Ecosystem management in the context of large, infrequent disturbances. *Ecosystems* 1:546-557.
- 31. <u>Dale, V. H.</u>, S. Brown, R.A. Haeuber, N. T. Hobbs, N. Huntly, R. J. Naiman, W. E. Riebsame, M. G. Turner, and T. J. Valone. 2000. Ecological principles and guidelines for managing the use of land. *Ecological Applications* 10: 639-670. <a href="http://scholarworks.csun.edu/bitstream/handle/10211.3/171052/Dale\_etal-EcologicalApplications-2000.pdf?sequence=1">http://scholarworks.csun.edu/bitstream/handle/10211.3/171052/Dale\_etal-EcologicalApplications-2000.pdf?sequence=1</a>
- 32. <u>Dale, V. H.</u> and R. A. Haeuber. 2000. Perspectives on land use. *Ecological Applications* 10: 671-672.
- 33. Mann, L. K., A. W. King, <u>V. H. Dale</u>, W. W. Hargrove, R. Washington-Allen, L. Pounds, T.A. Ashwood. 1999. The role of soil classification in geographic information system modeling of habitat pattern: Threatened calcareous ecosystems. *Ecosystems* 2:524-538.
- 34. <u>Dale, V.H.</u>, A.W. King, L.K. Mann, and T.L. Ashwood. 2000. Contributions of spatial information and models to management of rare and declining species. In (M.J. Hill and R.J. Aspinall, Editors) Spatial Information for Land Management, Gordon and Breach Science Publishers, Lausanne, Switzerland. Pages 159-172.
- 35. Dale, V.H. and Parr, P. 2000. Richardson acts to save DOE's research parks. Issues in

- Science and Technology. Spring: 28.
- 36. <u>Dale, V.H.</u>,S. Brown, R. A. Haeuber, N. T. Hobbs, N. Huntly, R. J. Naiman, W. E. Riebsame, M. G. Turner, and T. J. Valone. 2001. Ecological Guidelines for Land Use and Management. Pages 3-36 In (V. H. Dale and R. A. Haeuber, editors). Applying Ecological Principles to Land Management. Springer Verlag: New York.
- 37. <u>Dale, V.H.</u> 2001. Applying Ecological Guidelines for Land Management to Farming in the Brazilian Amazon. Pages 213-215 In (V. H. Dale and R. A. Haeuber, editors). Applying Ecological Principles to Land Management. Springer Verlag: New York.
- 38. Haeuber, R. and <u>Dale V.H.</u> 2001. New directions in land management: Incorporation of ecological principles. Pages 316-330 In (V. H. Dale and R. A. Haeuber, editors), Applying Ecological Principles to Land Management. Springer Verlag: New York.
- 39. Pedlowski, MA, <u>Dale, VH</u> and Matricardi, E.A.T. 1999. A Criação de Áreas Protegidas e os Limites da Conservação Ambiental em Rondônia. *AMBIENTE E SOCIEDADE* 2(5)93-108.
- 40. <u>Dale, V.H.</u> 2001. Disturbance. Encyclopedia of Global Environmental Change. Volume Two: The Earth system: biological and ecological dimensions of global environmental change. Wiley. <a href="https://www.wiley.com/en-us/Encyclopedia+of+Global+Environmental+Change%2C+Volume+2%2C+The+Earth+System%3A+Biological+and+Ecological+Dimensions+of+Global+Environmental+Change-p-9780470853610">https://www.wiley.com/en-us/Encyclopedia+of+Global+Environmental+Change%2C+Volume+2%2C+The+Earth+System%3A+Biological+and+Ecological+Dimensions+of+Global+Environmental+Change-p-9780470853610</a>
- 41. <u>Dale, V.H.</u> 2001. Succession. Encyclopedia of Global Environmental Change. Volume Two: The Earth system: biological and ecological dimensions of global environmental change. Wiley. <a href="https://www.wiley.com/en-us/Encyclopedia+of+Global+Environmental+Change%2C+Volume+2%2C+The+Earth+System%3A+Biological+and+Ecological+Dimensions+of+Global+Environmental+Change-p-9780470853610">https://www.wiley.com/en-us/Encyclopedia+of+Global+Environmental+Change%2C+Volume+2%2C+The+Earth+System%3A+Biological+and+Ecological+Dimensions+of+Global+Environmental+Change-p-9780470853610</a>
- 42. <u>Dale, V. H.</u>, Fortes, D. T., and Ashwood, T. L. 2002. A landscape transition matrix approach for land management. Pages 265-293 In (J. Liu and W. Taylor, ed.) Integrating Landscape Ecology into Natural Resource Management. Cambridge University Press.
- 43. Navar, J., Mendez, E. and <u>Dale, V.H.</u> 2003. Estimating stand biomass in the Tamaulipan thornscrub of northeastern Mexico. *Annals of Forest Science* 59(8): 813-821.
- 44. <u>Dale, V.H.</u>, Brown, S., Calderón, M.O., Montoya, A.S. and Martínez, R.E. 2003. Estimating baseline carbon emissions for the Eastern Panama Canal Watershed. Mitigation and Adaptation Strategies for Global Change 8(4): 323-348
- 45. Návar, J., E. Méndez, Graciano, J., <u>Dale, V.</u>, and Parresol, B. 2004. Biomass equations for shrub species of Tamaulipan thornscrub of northeastern Mexico. *Journal of Arid Environments* 59(4):657-674.
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### **Presentations (incomplete list):**

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EcoSummit 2000, Nova Scotia, Canada, June 18-22, 2000

National Conference on Science, Policy, and the Environment at the National Academy of Sciences, Dec. 7-8, 2000 in Washington, D.C.

Healthy Ecosystems, Healthy People: Linkages between biodiversity, ecosystem health, and human health organized by the International Society for Ecosystem Health (ISEH) and Conservation International, on June 6-10, 2002 in Washington, D.C.

EPA Regional/ORD Science Topic Workshop on Critical Ecosystems, June 17-20, 2002 at Keystone, Colorado

The American Society of Testing and Materials (ASTM International) Biological Effects and Environmental Fate Committee symposium on Landscape Ecology and Wildlife Habitat Evaluation Critical information for Ecological Risk Assessment, Land-use Management Activities, and Biodiversity Enhancement Practices. April 7-9, 2003, Kansas City, KS

34th conference of the Ecological Society of Germany, Austria and Switzerland (GfÖ), Eco-complexity and dynamics of the cultural landscape, Giessen, Germany, Sept. 13-17, 2004

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- Relating the Science of Land Use to Decision Making: Strategies and Opportunities, Transatlantic Land Use Conference, Washington DC, September 2007.
- Success=Balance, 2007 Women in Science Symposium, Knoxville, TN, October 15-16, 2007.
- Conference on Ecological Dimensions of Biofuels, Plenary Talk by VH Dale on "Interactions between biofuel choices and landscape dynamics and land use." Washington, DC, March 10, 2008.
- Workshop on Historical Range of Variability and Climate Change sponsored by the USDA Forest Service and The Nature Conservancy, April 2008, Lansdon, Virginia.
- Studying, Modeling and Sense Making of Planet Earth, University of the Aegean, Mytilene, Lesvos, Greece, June 1-6, 2008.
- "Pathways toward Sustainable Bioenergy" in Howard Baker Center's Energy and Environment speaker series. 2011.
- Keynote talk at the annual meeting of the Tennessee Chapter of the Sierra Club at Pickett State Park on "Environmental Effects of Climate Change in Tennessee" and discussed bioenergy and other options for reducing greenhouse gas emissions, 2012.
- Ecological Society of Mexico annual meeting March 18-22, 2013, in Villahermosa, Mexico.
- University of Georgia's Bioenergy Systems Research Institute (BSRI) retreat that focused on "Sustainability and Bioenergy Systems" 2013.
- Conference on Invasion Biology, Ecology and Management Conference in Lexington, KY "Land use in the context of species' invasions, climate change, and energy choices." 2013
- 4th Pan-American Congress on Plants and Bioenergy in Guelph, Canada. "Opportunities to Design Biofuel Systems for Multiple Environmental Services and Socioeconomic Benefits." 2014.
- 2nd Annual Women in STEM Research Symposium 2016 at the University of Tennessee:

  <a href="http://cfwstem.weebly.com/symposium.html">http://cfwstem.weebly.com/symposium.html</a>. The title of her talk was "From Disturbance to Sustainability: Following Interesting Questions and Fun Opportunities."</a>
- Baker Center for Public Policy's Environment and Energy Forum at the University of Tennessee, 2016. Her talk was on "Opportunities and costs of wood-based bioenergy."
- International Society of Ecological Modelling (ISEM) Global Conference Townsend University in Maryland see <a href="http://www.isemconference.com/">http://www.isemconference.com/</a> 2016 "Tradeoffs in sustainability assessment."
- US-China Food-Energy-Water Systems Transdisciplinary Environmental Research Network in Nashville, TN, presentation on "Environmental Challenges and Opportunities in the Food-Energy-Water Nexus" December 6-8, 2017
- Jason Learning National Teacher's Conference, Washington, DC, June 27, 2018 "From suburbia to ski bum to succession."
- Bioenergy and Natural Systems, June 14, 2018 New York Institute of Technology's 13th Annual Energy Conference, Old Westbury, New York
- Summit on Realizing the Circular Carbon Economy, organized by US DOE/BETO & USDA, July 2018, Golden, Colorado.
- Rome meeting of IEA Bioenergy Task 43 joint workshop with FAO, Oct 11-12, 2018, Rome, Italy "Interactive Posters Enhance Communication and Learning about Productive Paths toward Sustainable Bioenergy"

- China-US Joint Symposium on Advances in Critical Needs for the Nexus of Food, Energy, and Water Systems October 24-25, 2018, Yixing, Jiangsu Province, China
- Anthromes, CO2 and Terrestrial Carbon Session 9: How do we bring people & equity into C-cycle science? Presentation by VH Dale on "Stakeholder engagement to address concerns & opportunities related to the carbon cycle" by Leah Jones-Crank, Jamie Trammell, Meghna Babbar-Sebens, Andrew Kliskey, Anna-Maria Marshal, Paula Williams, Keith Kline, & Virginia Dale. <a href="https://doi.org/10.52843/cassyni.28r8vy">10.52843/cassyni.28r8vy</a> March 29, 2023, Potomac, Maryland.

## Symposia speaker

Society of American Foresters, Symposium on Forest Models, Portland, Oregon, 1983 New England Section of the Society of American Foresters, Worchester, Massachusetts, 1984 International Society of Ecological Modelling Symposium on Plant Growth Models, Fort Collins, Colorado, 1984

Ecology Society of America Annual Meeting, "Changing Patterns of Landscapes," Ohio State University, August 10-14, 1987

American Chemical Society, "Biogeochemistry of CO<sub>2</sub> and the Greenhouse Effect," LosAngeles, California, September 25-30, 1988

Global Natural Resource Monitoring and Assessments: Preparing for the 21st Century," Venice, Italy, September 25-30, 1989.

International Association of Landscape Ecology, "Forest Management Policy and Forest Landscapes," Ottawa, Canada, July 21-25, 1991

Ecological Society of America meeting, "Theoretical Approaches for Predicting Spatial Effects in Ecological Systems," San Antonio, Tx., August 4-8, 1991

Resources for the Future workshop on Integrated Assessments of the Social, Economic and Environmental Consequences of Climate Change", March 1993

American Association for Geographers symposium on Land Use in Amazonia, San Francisco, Calif., March 29-31, 1994

Women in Science and Technology Conference, Oak Ridge, Tenn., April 7-8, 1994

Integrated Assessment: Key Policy Issues, a workshop sponsored by DOE, June 28-29, 1994, Washington, D.C.

International Society of Ecological Modelling Symposium on Risk Assessment, Knoxville, Tenn., August 7-10, 1994

Association of Ecosystem Research Centers, November 14, 1994, Washington, D.C.

Ecological Society of America session on Long-Term Ecological Research, Snowbird, Utah, August 1995.

International Union of Forest Research Organizations (IUFRO) World Conference International Session on "Modeling Forests in a Complex Environment", Finland, August 6-12, 1995.

United Nations Symposium on Biodiversity, Jakarta, Indonesia, Nov. 3-8, 1995.

Workshop on "The Contribution of Adaptive Ecologic, Economic Modeling and Assessment for Sustainable Development in the Role of Stakeholders" jointly funded by the United Nations Environmental Programme (UNEP) and the Scientific Committee on Problems of the Environment (SCOPE), Boston, Mass., August 2-3, 1996.

Workshop on "Tools to Aid Environmental Decision Making" sponsored by the NSF National Center for Environmental Decision Making Research, Knoxville, Tn, Oct. 29-30, 1996.

NSF National Center for Ecological Analysis and Synthesis Symposium on "Synthesis in Ecology: Applications, Opportunities and Challenges," Santa Barbara, Cal., Nov. 18-20, 1996.

Cary Conference on "Use of Ecological Principles," Millbrook, New York, May 5-10, 1997

- Ecological Society of America Symposium on "Advances in Spatial Modeling of Forest Landscape Change," Albuquerque, New Mexico, August 10-14, 1997.
- Strategic Environmental Research and Development Program Annual meeting symposium on Ecosystem Management, December 1997, Washington, D.C.
- Ecological Society of America Symposium on "Landscape Effects of Roads," Baltimore, Maryland, August 6-10, 1998.
- Ecological Society of America Symposium on "Ecological Principles of Land Management and their Implications," Baltimore, Maryland, August 6-10, 1998.
- Policy Forum, Society of American Foresters, Washington, D.C., October 14, 1998.
- American Association for the Advancement of Science, Anaheim, California, Jan. 22-27, 1999.
- American Association of Geographers, Honolulu, Hawaii, March 1999.
- National Conference on Environmental Decision Making, Knoxville, Tn., April 1999.
- Appalachian Laboratory Opening Ceremony Symposium: "Watershed and Landscape Ecology: Future Directions and Opportunities," Frostburg, Maryland, April 12, 1999.
- Women in Science and Technology Conference, April 15-16, 1999, Oak Ridge, Tennessee.
- Symposium on "Microcomputer Applications in Population Modeling and Viability Analysis" at the 4<sup>th</sup> Microcomputer Applications in Fish and Wildlife Management Conference, Lake Tahoe, NV, October 24-27, 1999.
- Views from the Ridge: Considerations for Planning at the Landscape Scale, sponsored by the Pacific Northwest Research Station, USDA Forest Service, Vancouver, Washington, Nov. 2-4, 1999.
- Symposium on "Urban landscape ecology" at the 15<sup>th</sup> Annual US Landscape Ecology Symposium, Fort Lauderdale, Fl., April 15-19, 2000.
- Mount St. Helens 20<sup>th</sup> Anniversary Symposium, Vancouver, Wa, May 15, 2000.
- Global Change in Forests: Interactions among Biodiversity, Climate, and Land Use, Ecological Society of America Symposium, Snowbird, Utah, August 6-10, 2000.
- Workshop on "Land Use in Rural America" Yellowstone National Park, September 21-24, 2000.
- Workshop on "Climate Change and Species Survival: Implications for Conservation Strategies" at the headquarters of The World Conservation Union (IUCN) in Gland, Switzerland.
- Partners Along the Fall-Line: Sandhills Ecology and Ecosystem Management Workshop, Savanna River Ecology Laboratory, Aiken, SC, March 6-7, 2001
- "Top Ten Issues in Landscape Ecology" session at the 16<sup>th</sup> Annual Symposium on Landscape Ecology, Tempe Arizona, April 2001
- Workshop on "Community-based stewardship" at the August 2001 meeting of the Ecological Society of America in Madison, Wisconsin, August 2001.
- Symposium on "Extreme Event Analysis in Ecology" at the August 2001 meeting of the Ecological Society of America in Madison, Wisconsin, August 2001.
- Workshop on "Land Use" at the August 2001 meeting of the Ecological Society of America in Madison, Wisconsin, August 2001.
- Symposium on "Land Use" at the August 2002 meeting of the Ecological Society of America in Tucson, AR, August 2002.
- Pardee Symposium on "Geologic and Ecologic Responses to Landscape Disturbances" at the Geological Society of America, October 29, 2002 in Denver, Colorado.
- Symposium on Research in the region around Columbus, Georgia, October 28, 2002 in Columbus, GA.
- SERDP Symposium, December 2003, Washington, D.C.
- Symposium on Ecological Recovery at Mount St. Helens, August 2004 meeting of the Ecological Society of America, Portland, OR.
- Session on "Biodiversity Indicators and the 2010 target: scientific challenges" at the conference

on "Biodiversity: Science and Governance" sponsored by UNESCO, January 24-30, 2005, Paris, France.

Symposium on Ecological Indicators, Ecological Society of America in Montreal, Canada, August 2005.

Workshop on Valuation of Ecosystem Services in Agriculture, Kalamazoo, MI, October 27-28, 2005.

Hewlitt Workshop on Effects of Climate Change, Washington, D.C., May 8 and Nov 2, 2006 The Tennessee Nature Conservancy Workshop on the Cumberland Plateau and Mountains, Nashville, Tn, June 17-18, 2006

SERDP Symposium, November 2006

Overcoming Barriers to Effective Research Collaboration, All Scientists Team meeting of the Southern Research Station of the USDA Forest Service, January 2007

Success = Balance, All Scientists Team meeting of the Southern Research Station of the USDA Forest Service, January 2007

A systems perspective on climate change, National Leader Team of the USDA Forest Service, New Orleans, April 2007.

Landscape Genetics symposium at the International Association for Landscape Ecology in The Netherlands, July 2007.

Conference on Biomass 2008: Fueling Our Future conference, Presentation by VH Dale on "Designing Proactive Bioenergy Choices in a Landscape Context." Alexandria, Virginia, April 17-18, 2008.

Biomass 2009, Washington, DC. March 2009

US Chapter of the International Association for Landscape Ecology, Snowbird Utah, April 2009.

Paper presented by Don Hodges developed by VH Dale, ML Tharp, KO Lannon and DG Hodges titled "Modeling Transient Response of Forests to Climate Change" at the Annual meeting of the Southern Appalachian Man and the Biosphere (SAMAB) in Asheville, NC, on November 17-19, 2009.

International workshop "Adequacy of spatial data bases for conducting risk assessments of sustainable wood sourcing practices for the U.S. industrial wood pellet industry supplying European energy demand" in Athens, Georgia, May 2019.

US Industrial Pellet Association meeting, Miami, Fl, Oct. 8, 2019

Symposium on Mount St. Helens at annual meeting of the American Geophysical Union, San Francisco, Ca, December 12, 2019

International Association of Landscape Ecology – North American Chapter Session on Stakeholder Narratives and Environmental Change, May 11-14, 2020

Annual International Symposium- Towards Urban Sustainability, "Best Practices in Community and Stakeholder Engagement," Nov 15-17, 2021, Knoxville, TN

#### Testimony

<u>Adams, V.D.</u> 1982. Testimony. pp. 185-188. <u>In</u> Joint hearings before the Subcommittee on Forests, Family Farms and Energy of the Committee on Agriculture and the Subcommittee on Public Lands and National Parks of the Committee on Interior and Insular Affairs, U.S. House of Representatives, Ninety-seventh Congress, March 11, 1982. U.S. Government Printing Office, Washington, D.C. 510 p.

U.S. Senate and House of Representatives Joint Hearings before the Subcommittee on Forests Family Farms and Energy and the Subcommittee on Public Lands and National Parks, Washington, D.C., 1982

Washington Power System Supply Board, Seattle, Washington, 1982.

U.S. House of Representatives Resources Subcommittee Hearing on Forests and Forest Health,

Washington, D.C. March 16, 1999.

### Invited seminars

International Congress of Systematists and Evolutionary Biologists, Vancouver, Canada, 1980

Pacific Lutheran University, Tacoma, Washington, 1981

Oregon State University, Corvallis, Oregon, 1981, 1982, 1983

Evergreen State College, Olympia, Washington, 1982

University of Puget Sound, Tacoma, Washington, 1982

Environmental Sciences Division, Oak Ridge National Laboratory, 1983

Material Effects Research and Assessment Activities Review Meeting of the National Acid Precipitation Assessment Program, Burlington, Vermont, 1984

Forest Service Station, Raleigh, North Carolina, 1985

School of Forestry and Wildlife Resources, Virginia Polytechnic Institute and State

University, Blacksburg, Virginia, 1985

Southern Forest Experiment Station, Asheville, North Carolina, 1985

EPA Acid Deposition Assessment Staff, Washington, D.C., 1985

Northeastern Forest Service Experiment Station, Broomall, Pennsylvania, 1985

Workshop on "Problems and opportunities in modeling the effects of atmospheric deposition on forests," Charlottesville, Virginia, 1985

Second Annual Acid Rain Conference for the Southern Appalachians, Gatlinburg, Tennessee, 1985

Association of Southern University Biometricians 1985 Workshop on "Modeling the Acid Rain Impact", Chapel Hill, North Carolina, 1985

School of Forestry, University of Tennessee, Knoxville, Tennessee, 1986

Third Annual Acid Rain Conference for the Southern Appalachians, Gatlinburg, Tennessee, 1986

Economics of Eastern Hardwood Management, University Park, Pennsylvania, 1987

University of Tennessee, Knoxville, April 20, 1987, April 25, 1991; October 15, 1991, October 25, 1991

Overview of research on scaling issues to Erich Bretthauer, Acting Assistant Administrator, and others, Environmental Protection Agency, Washington, D.C., February 8, 1989

Seminar for Brazilian Environmental and Agro-Forestry Specialists, Sponsored by U.S.AID and Partners of the America, University of Tennessee, Knoxville, Tn., November 9, 1989

Workshop on "Designing an Acid Deposition Policy Model for South-East Asia," Bangkok, Thailand, November 13-17, 1989

High School Honors Program, ORNL, July 17, 1990

National Research Council's Committee on "Sustainable Agriculture in the Human Tropics", February 19-20, 1991

Walker Branch Symposium, Oak Ridge, Tn., March 1991 and 1992

Department of Environment, State of Rondonia, Porto Vehlo, Rondonia, Brazil, August 1991.

Department of Geographical Services, Rio de Janerio, Brazil August 1991.

Appalachian State University, January 1992.

USDA Forest Service, Washington, D.C., April 1992

Oak Ridge Management seminar, May 1992

American Society for Photogrammetry and Remote Sensing and the American Congress on Surveying and Mapping and Resource Technology, Washington, D.C., August 3-7, 1992

International Association of Impact Assessment, Washington, D.C., August 19-22, 1992 Sand County Foundation, Milwaukee, Wi, Sept. 16-17, 1992

Oak Ridge Science and Engineering Research Semester Series: November 1992, February 1993, November 1993, October 1997

Workshop on "USDA Forest Service's Global Change Program", U.S. Forest Service, Delaware, Ohio, Nov. 16-18, 1992

Department of Environment, State of Amazonia, Manaus, Amazonia, Brazil, August 1993.

Sand County Foundation, Greenbay, Wi, Jan. 30-31, 1994

Sustainable Biosphere Initiative workshop on "Vulnerability Studies," Raleigh, N.C., March 8-11, 1994

Forest Service meeting on Modeling Climate Change Impacts, New Hampshire, October 1994.

Strategic Environmental Research and Development Program review by Science Advisory

Board: January 1995 in San Francisco, California; June 2001 in

Washington, DC; and September 2001 in Falmouth, Massachusetts

Strategic Environmental Research and Development Program Science Meeting, May 1995 and 1996, Fort Belvoir, Virginia and May 14 and May 28, 1997 and May 20, 1998 in Washington, DC

University of Tennessee, October 1995, Knoxville, Tn.

Utah State University, March 1997, Logan, Utah.

Montana State University, November 1998, Bozeman, Montana.

Fort Benning, Georgia, January 14, 1999.

USDA Committee of Scientist presentation to the Forest Service, March 17, 1999, Washington, D.C.

Science Advisory Board of the Strategic Environmental Research and Development Program, Washington, D.C. October 20, 1999.

The Environmental Law Institute Senior Ecologist seminar, May 11, 2000, Washington, DC.

The U.S. Environmental Protection Agency's Office of Water seminar, May 11, 2000, Washington, DC.

Ohio State University, November 2, 2000

Virginia Polytechnic Institute, Blacksburg, Virginia, April 2001

University of Illinois in Chicago, April 2001

Panama Canal Authority, Panama City, Panama, April 2001 and March 2002

US Agency for International Development, Panama City, Panama, March 2002

University of Washington, School of Forestry, Seattle, Wa., March 2003

University of Michigan, School of Environment and Natural Resources, Ann Arbor, Mi., March 2003

New York Botanical Garden, May 2003

University of Queensland, July 2003

Forestry Department, University of Tennessee, February 2004.

Computer Science and Ecology and Evolutionary Biology, University of Tennessee, February 2005

Workshop on Climate Change Impacts at a Regional Scale: How good is the science? October 3 - 4, 2005, Oak Ridge National Laboratory

"Road Ecology: Science and Solutions" lead-in lecture for Summer School organised by the Complutense University in El Escorial: Environmental Treatment of Infrastructures for Transport. Challenges, Opportunities and Solutions for a More Efficient and Profitable Environmental Integration, July 16-20, 2007 in Spain

"Designing Sustainable Options for Bioenergy Crops". American Institute of Chemical Engineers (AIChE) Annual Meeting. Nashville, Tennessee, 2009

- "Sustainability Concerns in Developing Countries." Petronas Renewable Energy Laboratory. Battelle Columbus, Ohio, 2009
- "Analysis of Bioenergy Sustainability Research" via live Internet. Southern Research Station for the USDA Forest Service. Auburn, Alabama, 2009
- "Sustainability Considerations in Bioenergy Development" at ORNL to representatives from the French biofuel industry, 2009.
- "Modeling Transient Response of Forests to Climate Change". Southern Appalachian Man and the Biosphere (SAMAB). Asheville, North Carolina, 2009.
- "Ecological Sustainability Considerations in Bioenergy Development". National Council for Air and Stream Improvement (NCASI). Chattanooga, Tennessee, 2009.
- "The Energy, Climate Change, Land-Use Nexus" U.S. Chapter of the International Association of Landscape Ecology, Snowbird, Utah, 2009.
- National Academies' Roundtable on Science and Technology for Sustainability Washington, D.C., 2010.
- "Bioenergy Sustainability Research at ORNL". Joint US-UK Biofuels Sustainability Workshop at the National Renewable Energy Laboratory (NREL), 2010.
- "Bioenergy: The Issue of Sustainability in the Southeastern U.S." meeting on "Advances in Bioenergy: A Southern States Briefing," Knoxville, Tennessee, 2010.
- "Earth, Wind, & Fire in the 21st Century," US Chapter of the International Association of Land Ecology symposia: Athens, Georgia, 2010.
- "Indicators for Assessing Environmental Impacts of Biofuels," National Academy of Sciences Committee on Economic and Environmental Impacts of Increasing Biofuel Production, 2010.
- "Next Steps for Carbon Accounting," The Time Value of Carbon and Carbon Storage: Implications for GHG Analysis and Policy Design Meeting. Washington, D.C., 2010.
- "Sustainability: the issues and the opportunities" at the Wood-to-Energy Roadmap Sustainability Forum. Hot Springs, Arkansas, 2010.
- "Regional changes in water quality associated with switchgrass feedstock production." A Community in Ecosystem Services (ACES). Phoenix, Arizona, 2010.
- Virginia Dale presented "Bioenergy Sustainability Research at ORNL" for the participants in the Joint US-UK Biofuels Sustainability Workshop at the National Renewable Energy Laboratory (NREL). 2010.
- "Undergraduate Research Conference at the Interface of Biology and Mathematics" conducted by the National Institute for Mathematical and Biological Synthesis (NIMBioS) in Knoxville, TN (http://www.nimbios.org/education/undergrad\_conf2010). 2010.
- National Academies' Roundtable on Science and Technology for Sustainability in Washington, D.C. 2010.
- "Environmental Effects of Large-Scale Algal Fuel Production" to the National Research Council Committee on Sustainable Development of Algal Biofuels. 2011.
- Presentation to 500 5th-8th grade students and teachers at the Glenville State College, WV on behalf of The Jason Project. http://www.jason.org/ 2011.
- Presentation for the State of Kentucky Division of Renewable Energy and the Department for the Energy Development and Independence. 2011.
- The University of Tennessee on "Sustainability indicators for bioenergy" for the Sustainable Technology Through Advanced Interdisciplinary Research (STAIR) weekly seminar. 2011.
- Sustainability indicators for bioenergy" Sustainable Technology Through Advanced Interdisciplinary Research (STAIR) weekly seminar. University of Tennessee. Knoxville, 2011.

- "Opportunities to design biofuel systems for multiple environmental services" at the symposium on "Sustainable Biofuels in the Nearer Term" at the University of Minnesota, 2012.
- "Tennessee's Changing Climate" at One Earth, One Choice in Knoxville, TN, 2012
- "Global Sustainable Biofuels (GSB) Workshop on Future Sustainable Bioenergy Research" at ORNL, 2013.
- "Environmental and Socioeconomic Indicators for Sustainability of Energy Innovation" at the Association for Environmental Studies and Sciences (AESS) conference in the session on "Energy Poverty, Disruption and Scarcity" in Pittsburg, PA, 2013.
- BETO Peer Review in Alexandria, VA, 2013. The peer review documentation and corresponding presentations are at the DOE Biomass Technologies website: https://www2.eere.energy.gov/biomass/peer\_review2013/Portal/portal.html
- "Selecting and Deploying Indicators for Sustainability of Bioenergy Systems" at the annual symposium of the US chapter of the International Association of Landscape Ecologists in Austin, TX, 2013
- "From Disturbance to Sustainability" to the Department of Forestry, Wildlife and Fisheries at the University of Tennessee, Knoxville, TN, 2013.
- The 9th Biennial Short Rotation Woody Crops Operations Working Group met in Oak Ridge and Knoxville, Tennessee, presented "Environmental and Socioeconomic Indicators for Bioenergy Sustainability as Applied to Short Rotation Woody Crops" 2013.
- Bioenergy Futures: Technical Feasibility Meets Social Sustainability Workshop, at Michigan State University. 2012.
- University of Tennessee 2012 From Grow to Go: A Biomass Field Day in Vonore, TN. 2012.
- China-US Eco-Partnership Workshop on Land Use Change: An Opportunity for Agricultural Sustainability in Shenyang, China, on "Opportunities to Design Biofuel Systems for Multiple Environmental Services and Socioeconomic Benefits" 2013
- Special Forum for China-US Eco-Partnership for Environmental Sustainability at China Agricultural University in Beijing, China, on "Opportunities to Design Bioenergy Systems" 2013
- Global Sustainable Bioenergy (GSB) and Latin America Caribbean and Africa (LACAf) projects joint-meeting in Atibaia, Brazil. Dale spoke on "Assessing bioenergy sustainability using measurable and meaningful indicators." 2013
- "Risks and Opportunities Related to Energy Use and Development in Tennessee" at the North American meeting of the Society of Environmental Toxicology and Chemistry (SETAC) in a session on "Ecological Risk and Impacts Relevant to Tennessee and the Region" in Nashville, TN. 2013
- "Bioenergy Sustainability: Research Needs and Deployment Possibilities" at the 2013 China-US Ecopartnership Annual Conference in Gatlinburg, TN.
- "Environmental Effects of Climate Change in Tennessee" to the Environmental Law Seminar at Oak Ridge Institute for Continued Learning. 2013
- "Assessing bioenergy sustainability using measurable and meaningful indicators" at the Transatlantic Trade in Wood for Energy: A Dialogue on Sustainability Standards and Greenhouse Gas Emissions Workshop in Savannah, Georgia, hosted by the Pinchot Institute for Conservation. 2013.
- UTIA (UT Institute of Agriculture) Familiarization Workshop and Poster Session, ORNL, 2014. "Including Bioenergy in Sustainable Landscape Designs" at the annual meeting of Northeast
  - Woody/Warm-season Biomass Consortium (NEWBio) [AFRI-CAP project] http://www.newbio.psu.edu/, New York, 2013.

- Workshop at the International Maize and Wheat Improvement Center (commonly called by its Spanish acronym CIMMYT for Centro Internacional de Mejoramiento de Maíz y Trigo). "Environmental and Socioeconomic Indicators for Sustainability." 2013
- "Incorporating Bioenergy into Sustainable Landscape Designs" at the National Institute for Mathematics and Biological Synthesis (NIMBioS) at the University of Tennessee, Knoxville. 2014.
- Climate Change Science Institute on "Interdisciplinary Research in the Environmental Science Division: Selective History." 2014.
- Annual meeting National Council for Air and Stream Improvement (NCASI). South Carolina 2015.
- Ecological Society of America Annual Meeting special session on Long Term Ecological Research. 2015.
- Workshop on Land Use Change at the 2016 European Biomass Conference and Exhibit (EUBCE), Amsterdam. <a href="http://www.eubce.com/conference/parallel-events-workshops-and-project-meetings/workshops-project-meetings/the-world-needs-more-land-use-change.html">http://www.eubce.com/conference/parallel-events-workshops-and-project-meetings/workshops-project-meetings/the-world-needs-more-land-use-change.html</a>.
- Symposium on Watershed Scale Sustainability of Forest-Based Bioenergy Production in the Southeastern United States to be held in Raleigh, NC, 2016.
- Center for Renewable Carbon (CRC) outreach event at UT campus, March 28, 2018 CRC and CABLE Bioeconomy seminar on the Bioeconomy in East TN "What would constitute a sustainable bioeconomy for east Tennessee?" VH Dale
- Wood Bioenergy Conference, Atlanta, GA, April 14, 2018 "Effects of Wood Pellet Production on Forest Conditions in the Southeastern United States" by VH Dale
- Governing sustainability of bioenergy biomaterial and bioproduct supply chains from forest and agricultural landscapes in Copenhagen, Denmark, April 17-19, 2018 "Governance and issues related to wood-based pellet production in the Southeast United States" by VH Dale, KL Kline, ES Parish, Don Hodges, and Neelam Pouydal

US chapter of International Association of Landscape Ecology, Chicago, Il, April 11-14, 2018 Wood Bioenergy Conference, Atlanta, GA, April 14, 2018

26th European Biomass Conference & Exhibition (EUBCE), Copenhagen, Denmark, May 14-17, 2018

Appalachian State University, Sept. 29, 2018

Department of Ecological and Evolutionary Biology, University of Tennessee, October 17, 2018

# **Contributed Presentations**

Northwest Scientific Association annual meeting, 1979, 1980, 1981, 1982, 1983

Ecological Society of America annual meetings, 1979, 1980, 1981, 1982, 1984, 1985,

1986, 1987, 1988, 1989, 1994, 1995, 1996, 2014, 2016, 2018, 2020, and 2023

Mount St. Helens: One Year Later Symposium, Cheney, Washington, 1981

Mount St. Helens: Five Years Later Symposium, Cheney, Washington, 1985

Landscape Ecology Symposium, 1986, 1987, 1989, 1993, 2002, 2017, 2018

Annual meeting of the American Society of Zoologists, Nashville, Tennessee, 1986

Tennessee Technological State University, Cookeville, Tennessee, 1988

Global Natural Resource Monitoring and Assessments: Preparing for the 21st Century, Venice, Italy, September 25-30, 1989. Organized by IUFRO and FAO, 1989

Sixteenth Annual Natural Areas Conference, Knoxville, Tn., October 17-19, 1989

Sixth Annual Gatlinburg Acid Rain Conference, Gatlinburg, Tn., October 30-31, 1989

Forest Service workshop on "Regional and National Models for Global Change," Delaware, Ohio, November 16-18, 1992

National Center for Environmental Decision-Making Research Conference on Environmental Decision Making, Knoxville, Tennessee, May 1998.

15th Central Hardwood Forest Conference, Knoxville, TN, February 27 - March 1, 2006.

The White House Conference on Cooperative Conservation (August 2005) organized by the Council on Environmental Quality (CEQ) in St. Louis, Missouri, to enhance and integrate public and private land stewardship.

34th Annual SIM Conference in New Orleans, April 2012.

NimBIOS workshop (at the University of Tennessee, Knoxville) on "How well are the research needs of the conservation policy and resource management practitioner communities being met in Tennessee and Southern Appalachia?" December 4-6, 2017.

### Posters presented:

Ecological Society of America meeting in Toronto, Canada, August 6-10, 1989.

American Society of Agronomy meeting in Las Vegas, Nevada, October 15-20, 1989.

ARC-INFO annual meeting, California, May, 1990, 2005, AND 2006.

Ecological Society of America meeting in Albuquerque, New Mexico, August 10-14, 1997.

Partners in Environmental Technology 98 Technical Symposium and Workshop, 1996, 1998, 2000, 2002, 2003, 2004, and 2005 in Washington, DC.

Ecological Society of America meeting in Madison, WI, August 2001

"Bioenergy Sustainability" to highlight ongoing CBES research at the annual Science Advisory Board review of the ORNL Climate Change Science Institute (CCSI). 2014.

2016 AGU meeting

Virginia Dale, Keith Kline, and Latha Baskaran contributed to the session titled "Biofuel-induced land use change impacts on hydrology, water quality, and carbon and evapotranspiration dynamics."

Virginia presented on "Effects on Environmental and Socioeconomic Sustainability of Producing Ethanol from Perennial Grasses."

2017 AGU meeting session on "Carbon-negative Bioenergy"

Innovation at the Nexus of Food, Energy, and Water Systems (INFEWS) NSF Principal Investigator Workshop, May 2018 – "FEWSTERN: US-China Food-Energy-Water Systems" Jie (Joe) Zhuang, Timothy G. Rials, Gary S. Sayler, Virginia H. Dale, and Frank E. Löffler

# Presentations to general public

Seattle Zoological Society, Seattle, Wa. 1982

Washington Native Plant Society, Seattle and Bellingham, Wa. 1982

East Tennessee Wood Workers, Knoxville, Tn. 1989

First Presbyterian Church Adult Group, Oak Ridge, Tn. 1990

Cadet Girl Scout Troops of Oak Ridge, Tn. 1992, 1993

Rotary Club, Oak Ridge, Tn. 1992

Elementary and high school classes: > 40 talks (1980-present)

Oak Ridge High School Environmental Fair, 1992.

Girl Scouts of Knoxville, 1993

Harpeth Hall High School, Celebrating Women in Science, Nashville, Tn. 1994

University of Tennessee, October 1995

Knox County Inservice program for mathematics teachers, keynote speaker, August 1998

American Museum of Science and Energy, Earth Day Celebration, April 22, 1999

Anderson/Roane County Professional Society, June 9, 1999

Oak Ridge Unitarian Universalist Church, July 11, 1999

University of Tennessee Learning Center, Nov. 18, 1999

Mount St. Helens 20th anniversary, Portland Oregon, May 2000

Tennessee Citizens for Wilderness Planning, Rugby, TN, October 2005

Pint of Science event in Knoxville, Tn, May 2016

Symposium on "The value of a tree" at Appalachian State University in Boone, NC, 2016.

## Meetings attended (in addition to those at which presentations were given):

Environmental Protection Agency workshop on forest decline, Raleigh, North Carolina, 1984 German-American scientific exchange on forest damage assessment, Asheville, North Carolina, 1984

Conference on Management of International Biosphere Reserves, Gatlinburg, Tennessee, 1984 EPA Sponsored Workshop on Integrated Assessment Methodology, Washington, D.C., 1984 Eleventh Annual Scientific Research Meeting, National Park Service, Gatlinburg, Tennessee, 1985

IUFRO Conference on plant physiology, Knoxville, Tennessee, 1985Workshop on Array and Parallel Processing in Landscape Dynamics, Fort Collins, Colorado, 1986

Workshop on "Biological Response to Environmental Change" October 18-21, Woods Hole, Massachusetts, 1987

Briefing on the Long Term Ecological Research (LTER) program of the National Science Foundation, Washington, D.C., 1987

NSF sponsored workshop on "Forest Succession and Landscape History", Durham, North Carolina. January 28-31, 1988

Workshop on "Gypsy moth: bracing for the impact," sponsored by the East Tennessee Chapter of the Society of American Foresters, Knoxville, Tennessee, March 10, 1989

Workshop on "Land Use Changes in South and South-east Asia," San Juan, Puerto Rico, December 10-13, 1989

Workshop on "Public Participation in the National Forests," Knoxville, TN July 10, 1990 Workshop on "Modeling Global Climate Change" sponsored by the U.S. Forest Service, Tucson, Arizona, Nov. 13-15, 1990

Review of land use research sponsored by DOE, Urbana, Il., Feb. 11, 1991

U.S. Forest Service workshop on Modeling Global Change, Tucson, Ar., Nov. 13-15, 1990

Technologies for a Greenhouse Constrained Society, Oak Ridge, Tn., June 11-13, 1991

Workshop on "Forest Ecosystem Conceptual Models" U.S. Forest Service, Delaware, Ohio, June 2-3, 1992

Cary Conference on Integrated Regional Models, Millbrook, New York, Oct. 4-8, 1992

Forest Service Round-table on Ecosystem Management of Forest Plans, Rhinelander, Wi, Sept. 20-23, 1992

Workshop on integrated assessments, Pennsylvania State University, Oct. 19-21, 1992

Forest Policy Center Workshop on Forest Ecosystem Management at the Landscape Level, Oak Ridge, Tennessee, March 24-25, 1993

Opportunities for Future Cooperation in Achieving Sustainable Development in Amazonia and Appalachia, Knoxville, Tennessee, May 31- June 2, 1994

U.S.-Japan Workshop on Integrated Assessment, Honolulu, Hawaii, October 1994.

SERDP coordination meeting, Fort Steward, Georgia, January 1997.

Sigma Xi National Meeting, New Orleans, La, March 6-9, 1997.

Workshop on "Criteria and Indicators for Monitoring Biodiversity," Bogar, Indonesia, April 21-25, 1997.

Workshop on Information Infrastructure for environmental decision making, Gatlinburg, Tn.,

April 29-30, 1997.

Workshop on Ecosystem Management, sponsored by the Strategic Environmental Research and Development Program, Arlington, Virginia, June 2-5, 1997

SERDP Symposium, Washington D.C., December 1997, 1998 and 2000.

SERDP Ecosystem Management Project, Eglin Air Force Base, February 9-11, 1998

USDA Committee of Scientist meetings in Chicago (December 1997), Denver (January 22-23, 1998), Seattle (February 12-13, 1998), Atlanta (February 24-25,1998), Boston (March 31-April 1,1998), Albuquerque (April 14-15, 1998), Missoula (April 22-23, 1998), Boulder (May 27-29), Washington, D.C. (July 17, 1998), and Washington, D.C. (March 15-17, 1999).

National Research Council Ecosystems Committee, Portland, Or., December 1997

SERDP Ecosystem Management Project, Fort Benning, Georgia, June 1998; Washington D.C. August 1998; Fort Benning, Georgia, November 2000.

National Research Council Ecosystems Committee, Baltimore, MD, July 13-15 1998.

Science Review of The Nature Conservancy, National Center for Ecological Analysis and Synthesis, Santa Barbara, Ca., February 2001

Global Change Subcommittee of DOE's Biological and Environmental Research Advisory Committee, Washington, DC, March 26-27, 2001

EPA Science Advisory Board Ecological Processes and Effects Committee, July 2001, February 2003; June 2004; December 2005.

Koala Habitat Protection Workshop, Noosa, Australia, July 2003.

Science Advisory Committee of the Grand Canyon Monitoring and Research Center, July 31, 2001 in Denver, CO; Sept. 29 to Oct. 7, 2001 in the Grand Canyon, May 17-18 in Fort Collins, Co.

U.S. National Committee on the Scientific Committee on Problems of the Environment (SCOPE), Washington, DC March 2002

National Research Council Committee on Ecological Impacts of Road Density, Los Angeles in June 2002 and Seattle, WA in September 2002

Department of Energy Review of Biosphere II, Tucson, AR and Boulder, CO, January 2003 EPA Science Advisory Board Executive meetings, January 2003, September and December 2004, July and December 2005, June 2006.

Review of EPA's Draft Report on the Environment, Washington, DC, March 2003.

Workshop on Ecological Dimensions of Biofuels, Washington, DC, March 11-12, 2008.

# Advisor to Students (their current position)

Poster Doctoral students

• Dan Druckenbrod, 2006 (Longwood University)

#### PhD Students:

- Robert Frohn, 1996 PhD (deceased)
- Jill Caviglia, 1999 PhD (Salisbury University)
- Aaron Peacock, 2009 PhD (Haley & Aldrich Inc.)
- Jonah Fogel, 2010 PhD (University of Virginia Environmental resilience Institute)
- Nate Pollesch, 2016 PhD (US Environmental Protection Agency)
- Latha Baskaran, 2017 PhD (Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA)
- Esther Parish, PhD 2017 (ORNL)
- Sarah Eichler-Inwood, PhD 2018 (Kent State University, Salem, Ohio)
- Elsie Denton, 2022 present

### Masters Students:

- Robert Frohn, 1992 MS (deceased)
- Marcos Pedlowski, 1992 MS (Universidade Estadual do Norte Fluminense)
- Brad McRae, 1994 MS (deceased)
- Zachariah Seiden, 2014 MS
- Parker Maynard, 2022 -2024 MS

## Undergraduate students

- Jordan Smith, 1995
- J. Delgado, 1993
- Holly Offerman, 1994 (NASA)
- Wendy Adams, 2003 (The Conservation Fund)
- Carolyn Hoagland, 2010 (University of the South)
- Brad Wesh, 2012
- Asa Holland, 2015 (Peace Corps)
- Emma Tobin, 2015 (University of Tennessee)
- Allison Gonzalez 2022-2023

# Classes completed

ARC/INFO training, October 1989

Process communication, June 1993

DPL Decision analysis training, October 1993

Project Management, February 1994

Presenting data and information, March 2005

## Media Coverage of Dale's Work

# **Television**

Good Morning America - August 1983

Local Knoxville, Tn. station - August 1994, September 2004

Local East Lansing, Mi. station - March 1998

Local Portland, Oregon station - May 2000

## Video

Oak Ridge National Laboratory visitor center - filmed 1996

Gateway Welcome Center, Knoxville - filmed 1998

Michigan State Department of Natural Resources - filmed 1998

## Radio

KPLU for Public Radio, Tacoma Washington - August 1982

KUOW for Public Radio, Seattle, Washington - May 1983

Radio interview, Michigan public radio, 1989

Earth and Sky (National Public Radio) - May 1996

KPOO, Portland, Oregon - May 2000

WUOT, Knoxville public radio, May 2005

USA Radio Network, National Syndicated News, May 18, 2005

KNX-AM, Los Angeles, My 18, 2005

WTAG-AM, Boston, May 16, 2005

KPQ-AM, Seattle/Tacoma, May 18, 2005

WCXE-AM, Minneapolis, May 8, 2005

KAHI-AM, Sacramento, May 18, 2005

WLAC-AM, Nashville, May 18, 2005

KCMN-AM, Colorado Springs, May 18, 2005

KVEC-AM, San Luis Obispo, May 18, 2005

Garden Guys radio show (www.garden-guys.com), December 19, 2010

National Public Radio A1, May 2018

## **Newspapers**

Seattle Times - numerous articles, 1980 to 1984, 1999, 2005

Oregonian - front page article; 1983, other articles 1982-1984 and 1998

Arizona Star - August 1981, March 1999

Oak Ridger - numerous articles, 1984 -present

Knoxville News Sentinel - numerous articles, 1984-present

The New York Times - October 8, 1991; May 16, 2000

Washington Post - March 1999; May 2005

USA Today - March 1999

Newsday - May 2, 2000

The Columbian, Vancouver, Washington - May 16, 2000

The Chicago Sun Times - May 17, 2000

The Salt Lake Tribune - August 8, 2000

Noosa Journal Property Review - July 2003

Sunshine Coast Daily, Noosa, Australia - July 2003

Yahoo News and Tacoma News Tribune: <a href="https://news.yahoo.com/renowned-scientist-returns-mount-st-120000065.html">https://news.yahoo.com/renowned-scientist-returns-mount-st-120000065.html</a> July 31, 2022

### Scientific Journals

Environmental Science and Technology - December 1, 1998

Science - April 1989 and March 1999

National Defense - February 2004

Smithsonian - May 2005

Bulletin of the Ecological Society of America - July 2005

## <u>Newsletter</u>

Strategic Environmental Research and Development Program Information Bulletin, April 1999, June 2001, and September 2002

Oak Ridge National Laboratory Reporter. Dec. 2005, No. 73. Plan for the Cumberlands: Virginia Dale, Nature Conservancy team up to chart environmental course for plateau, range November 2005 (ornl.gov)

# Web Sites and blogs

The Report of the Land Use Committee of the Ecological Society of America:

https://www.esa.org/esa/science/reports/managing-land-use/

The Committee of Scientist Report for the Secretary of Agriculture

 $\underline{\text{https://www.fs.fed.us/emc/nfma/includes/cosreport/Committee\%20of\%20Scientists\%20Report.htm}$ 

http://www.eenews.net/tv/video\_guide/1409

Smithsonian Magazine: <a href="http://www.smithsonianmag.com/history/rising-from-the-ashes-77047181/">http://www.smithsonianmag.com/history/rising-from-the-ashes-77047181/</a>

Oak Ridge National Laboratory

Center for BioEnergy Sustainability <a href="http://www.ornl.gov/sci/besd/cbes.shtml">http://www.ornl.gov/sci/besd/cbes.shtml</a> <a href="https://www.ornl.gov/staff-profile/virginia-h-dale">https://www.ornl.gov/staff-profile/virginia-h-dale</a>

 $\underline{https://www.ornl.gov/content/ut-ornl-shepherd-us-china-transdisciplinary-environmental-research-network}$ 

https://www.ornl.gov/blog/ornl-review/virginia-dale-bioenergy-sustainability

RSim: RSim: A Regional Simulation to Explore Impacts of Resource Use and

Constraints (ornl.gov)

University of Tennessee: <a href="http://eeb.bio.utk.edu/people/virginia-dale/">http://eeb.bio.utk.edu/people/virginia-dale/</a>

Academia: https://virginiadale.academia.edu/

Jason Learning STEM role model: <a href="http://www.jason.org/virginia-">http://www.jason.org/virginia-</a>

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Virginia's energy efficient house: <a href="https://hickorycreeksanctuary.wordpress.com/">https://hickorycreeksanctuary.wordpress.com/</a>

Sustainable agriculture: <a href="https://youtu.be/jKr38-kwmRs">https://youtu.be/jKr38-kwmRs</a>

Climate change: <a href="https://mavensnotebook.com/2021/10/26/feature-preparing-scientists-">https://mavensnotebook.com/2021/10/26/feature-preparing-scientists-</a>

and-policy-makers-for-a-future-under-climate-change/