

**Virginia H. Dale**

Research Professor, Department of Ecology and Evolutionary Biology, University of Tennessee (UT)  
and School of Natural Resources, UT Institute of Agriculture, Knoxville, TN  
Corporate Fellow Emeritus, Oak Ridge National Laboratory, Oak Ridge, TN

Email: [vdale@utk.edu](mailto:vdale@utk.edu),

Websites: <http://eeb.bio.utk.edu/people/virginia-dale/>  
<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)  
Research Associate, Three3 Inc, Knoxville, TN (2018-2021)  
Director, Center for BioEnergy Sustainability, Oak Ridge National Laboratory  
(<http://cbes.ornl.gov/>), 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: [Engage INFEWS: 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 CO<sub>2</sub> 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/>  
**Drax Independent Advisory Board on Sustainable** 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)  
<http://fews.tennessee.edu> and <https://www.ornl.gov/content/ut-ornl-shepherd-us-china-transdisciplinary-environmental-research-network>  
 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 (FEWESTERN)" (05/15/2017 - 12/31/2021)  
 Host researcher for the JASON's Geology Module <https://www.jason.org/> and  
<https://www.jason.org/geology-tectonic-fury>, 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 [Intergovernmental Panel on Climate Change Scientific Assessment](#) 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 and 1999

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 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 (<https://aforr.info>), member 1999 to present, Chair 2005-2021, Representative for the Nature Conservancy 2022-2024

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. Dale, V.H. (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. Dale, V.H. 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. <https://www.nap.edu/catalog/9983/global-change-ecosystems-research>
4. Dale, V.H. 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, V.H. Dale, 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. <https://islandpress.org/book/road-ecology>
6. Dale, V.H. (editor) 2003. *Ecological Modeling for Resource Management*. New York: Springer-Verlag.  
[https://link.springer.com/book/10.1007/b97276?utm\\_medium=affiliate&utm\\_source=commission\\_junction&utm\\_campaign=3\\_nsn6445\\_brand\\_PID100357191&utm\\_content=de\\_textlink](https://link.springer.com/book/10.1007/b97276?utm_medium=affiliate&utm_source=commission_junction&utm_campaign=3_nsn6445_brand_PID100357191&utm_content=de_textlink)
7. 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.  
<https://www.springer.com/us/book/9780387238685>
8. National Research Council, Ecosystems Panel. 2006. *Assessing and Managing Ecological Impacts of Paved Roads*. National Academy Press, Washington, D.C.  
<http://www.nap.edu/catalog/11535.html>
9. Dale, V.H., 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. *Hypoxia in the Northern Gulf of Mexico*. New York: Springer.
10. National Research Council (Lave LB, Burke IC, Tyner WE, Dale VH, 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.  
<https://www.nap.edu/catalog/13105/renewable-fuel-standard-potential-economic-and-environmental-effects-of-us>
11. Crisafulli CM and Dale VH (editors). 2018. *Ecological Responses at Mount St. Helens: Revisited 35 years after the 1980 Eruption*. New York: Springer.  
<https://www.springer.com/us/book/9781493974498>

### Land-Use Change

1. Turner, M.G., R.H. Gardner, V.H. Dale, and R.V. O'Neill. 1988. Landscape pattern and spread of disturbance. Pp. 373-382 In M. Ruzicka, T. Hrnčiarova, 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, V.H. Dale, and R.V. O'Neill. 1989. Predicting the spread of disturbance across a heterogeneous landscape. *Oikos* 55:121-129.
3. Dale, V.H., 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. Dale, V.H. (ed.) 1990. Report of a workshop on using remote sensing to estimate land use change. ORNL\TM-11502, Oak Ridge, Tennessee.
5. Dale, V.H. 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., V.H. Dale, 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 Dale, V.H. 1992. Land Use Practices in Ouro Preto Do Oeste, Rondônia, Brazil. ORNL TM 12062, Oak Ridge, Tennessee.
8. Dale, V.H., 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. Dale, V.H., 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. Dale, V.H., and Pedlowski, M.A. 1992. Farming the forests. *Forum for Applied Research and Public Policy* 7:20-21.
11. Dale, V.H., 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. Dale, V.H., 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 In R. H. Gardner (ed.) Some Mathematical Questions in Biology. Providence, R.I.: American Mathematical Society.
13. Dale, V.H., R.V. O'Neill, M.A. Pedlowski, and F. Southworth. 1993. Causes and effects of land-use change in central Rondônia, Brazil. *Photogrammetric Engineering & Remote Sensing* 59:997-1005.
14. Dale, V.H., Pedlowski, M., O'Neill, R. and Southworth, F. 1993. DELTA: Na busca de alternativas para a Amazônia. *Ciência Hoje*. 16:61-64.
15. Dale, V.H., 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. Dale, V.H. 1994. Patterns of land-use change in south and southeast Asia and implications for global studies. Pp. 1-14 In 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. Dale, V.H., 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 In 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., Dale, V.H., Gosz, J.R., Lee, R.G., Pacala, S.W., and Shacak, M. 1994. Integrated regional models of forested regions. Pp. 120-142 In P. Groffman and G. Likens (ed.) Integrated Regional Models. New York: Chapman and Hall.
19. Dale, V.H., 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. Dale, V.H., 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 In (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., Dale, V.H. 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. Dale, V.H., Offerman, H., Frohn, R. and Gardner, R. 1995. Landscape characterization and biodiversity research. In (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., Dale, V.H., 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. Dale, V.H. and Pearson, S.M. 1997. Quantifying habitat fragmentation due to land-use change in Amazonia. Pp. 400-410 In (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., V.H. Dale, 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. Dale, V.H., 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. Dale, V.H. 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 Dale, V.H. 1998. What have we learned from large, infrequent disturbances? *Ecosystems* 1:493-496.
  30. Dale, V.H., Lugo, A. MacMahon, J. and Pickett, S. 1998. Ecosystem management in the context of large, infrequent disturbances. *Ecosystems* 1:546-557.
  31. Dale, V.H., 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.  
[http://scholarworks.csun.edu/bitstream/handle/10211.3/171052/Dale\\_et al-EcologicalApplications-2000.pdf?sequence=1](http://scholarworks.csun.edu/bitstream/handle/10211.3/171052/Dale_et al-EcologicalApplications-2000.pdf?sequence=1)
  32. Dale, V. H. and R. A. Haeuber. 2000. Perspectives on land use. *Ecological Applications* 10: 671-672.
  33. Mann, L. K., A. W. King, V. H. Dale, 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. Dale, V.H., 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. Dale, V.H., 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. Dale, V.H. 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 Dale V.H. 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, Dale, VH 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. Dale, V.H. 2001. Disturbance. Encyclopedia of Global Environmental Change. Volume Two: The Earth system: biological and ecological dimensions of global environmental change. Wiley. <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>
  41. Dale, V.H. 2001. Succession. Encyclopedia of Global Environmental Change. Volume Two: The Earth system: biological and ecological dimensions of global environmental change. Wiley. <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>
  42. Dale, V.H., 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 Dale, V.H. 2003. Estimating stand biomass in the Tamaulipan thornscrub of northeastern Mexico. *Annals of Forest Science* 59(8): 813-821.
  44. Dale, V.H., 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. Nívar, J., E. Méndez, Graciano, J., Dale, V., and Parresol, B. 2004. Biomass equations for shrub species of Tamaulipan thornscrub of northeastern Mexico. *Journal of Arid Environments* 59(4):657-674.
  46. Dale, V.H., Brown, S., Calderón, M.O., Montoya, A.S. and Martínez, R.E. 2005. Projected land-use change for the Eastern Panama Canal Watershed and its potential impact, Pages 337-345 IN (R. Harmon, ed.) *The Río Chagres, Panama: A Multidisciplinary Profile of a Tropical Watershed*, Springer, The Netherlands.
  47. Dale, V.H., D. Druckenbrod, L. Baskaran, M. Aldridge, M. Berry, C. Garten, L. Olsen, R. Efrogmson, and R. Washington-Allen. 2005. Vehicle impacts on the environment at different spatial scales: Observations in west central Georgia, USA. *Journal of Terramechanics* 42: 383-402.
  48. Theobald, D.M., T. Spies, J. Kline, B. Maxwell, N.T. Hobbs, V.H. Dale. 2005. Ecological support for rural land-use planning and policy. *Ecological Applications* 15(6): 1906-1914.
  49. Dale, V.H., S. Archer, M. Chang, and D. Ojima. 2005. Ecological impacts and mitigation strategies for rural land management. *Ecological Applications* 15(6): 1879-1892.
  50. Dale, V.H., D. Druckenbrod, L. Baskaran, C. Garten, L. Olsen, R. Efrogmson, and R.

- Washington-Allen, M. Aldridge, M. Berry. 2005. Analyzing land-use change at different scales in Central Georgia. Pages 1-4 *In* Proceedings of the 4th Southern Forestry and Natural Resource GIS conference. Athens, Georgia, Dec 16-18, 2004.
51. Efrogmson, R. A., V. H. Dale, L. M. Baskaran, M. Chang, M. Aldridge, and M. Berry. 2005. Planning transboundary ecological risk assessments at military installations. *Hum. Ecol. Risk Assess.* 11:1193-1215.
  52. Baskaran, L.M., V.H. Dale, R. A. Efrogmson, and W. Birkhead. 2006. Habitat modeling within a regional context: An example using gopher tortoise. *American Midland Naturalist* 155:335-351.
  53. Efrogmson, R.A., V.A. Morrill, V.H. Dale, T.F. Jenkins, and N.R. Giffen. 2009. Habitat disturbance at explosives-contaminated ranges. pp. 253-276 *In* Sunahara, G., J. Hawari, G. Lotufo, R. Kuperman, and G., J. Hawari (eds.) *Ecotoxicology of Explosives and Unexploded Ordnance*, CRC Press, Boca Raton, FL.
  54. M Scouvert, R Adams, M Caldas, VH Dale, B Mertens, V. Nedelec, P Pacheco, B Rihoux, EF Lambin. 2007. Causes of deforestation in the Brazilian Amazon: a Qualitative Comparative Analysis. *Journal of Land Use Science* 2(4):257-282.
  55. Efrogmson, R.A., H. I. Jager, V. H. Dale, and J. D. Westervelt. 2009. A framework for developing management goals for Species at Risk with examples from military installations in the United States. *Environ. Manage.* 44: 1163-1179. DOI 10.1007/s00267-009-9385-6
  56. Druckenbrod DL and VH Dale. 2012. Experimental response of understory plants to mechanized disturbance in an oak-pine forest. *Ecological Indicators* 15:181-187.
  57. Dale, V. H., S. Brown, R.A. Haeuber, N. T. Hobbs, N. Huntly, R. J. Naiman, W. E. Riebsame, M. G. Turner, and T. J. Valone. 2014. Ecological principles and guidelines for managing the use of land. Pages 279-298 *in* Ndubisi F (editor) *The Ecological Design and Planning Reader*, Island Press, Washington, DC.
  58. Efrogmson RA, Kline KL, Angelsen A, Verburg PH, Dale VH, Langeveld JW, McBride A. 2016. A causal analysis framework for land-use change and the potential role of bioenergy. *Land Use Policy* 59:516-527.
  59. Langeveld JWA, M Chordia, GA Oladosu, M Brandão, VH Dale, KL Kline, A Cowie. 2022. Towards an improved assessment of indirect land-use change: Evaluating common narratives, approaches, and tools. *IEA Bioenergy Task 43 - 48*.  
<https://task43.ieabioenergy.com/publications/towards-an-improved-assessment-of-indirect-land-use-change-evaluating-common-narratives-approaches-and-tools-tr2022-10/>

### Climate Change

1. Graham, R.L., M.L. Turner, and V.H. Dale. 1989. CO<sub>2</sub>-induced climate change and forest resources. Pp. 243-242 *In* Proceedings of the Second US-USST Symposium on Air Pollution Effects in Vegetation, Gatlinburg, Tenn., September 1988. *USFS General Technical Report*.
2. Dale, V.H. and J.F. Franklin. 1989. Potential effects of climate change on stand development in the Pacific Northwest. *Canadian Journal of Forest Research* 19:1581-1590.
3. Graham, R.L., M.G. Turner, and V.H. Dale. 1990. Increasing CO<sub>2</sub> and climate change: effects on forests. *BioScience* 40(8): 575-587.
4. Post, W.M., Peng, T.-H., Emanuel, W., King, A.W., Dale, V.H., and DeAngelis, D.L. 1990. The global carbon cycle. *American Scientist* 78(4): 310-326.
5. Franklin, J.F., F.J. Swanson, M.E. Harmon, D.A. Perry, T.A. Spies, V.H. Dale, A. McKee, W.K. Ferrell, S.V. Gregory, J.D. Lattin, T.D. Schowalter, and D. Larson. 1992. Pp. 244-257 *In* R.L. Peters and T.E. Lovejoy, ed. *Effects of global climatic change on forests in northwestern North America. The Consequences of the Greenhouse Effect for Biological Diversity*. Yale University

- Press.
6. Franklin, J.F., F.J. Swanson, M.E. Harmon, D.A. Perry, T.A. Spies, V.H. Dale, A. McKee, W.K. Ferrell, J.E. Means, S.V. Gregory, J.D. Lattin, T.D. Schowalter, and D. Larson. 1991. Effects of global climatic change on forests in northwestern North America. *Northwest Environmental Journal* 7(2):233-254.
  7. Dale, V.H. and H.M. Rauscher. 1994. Assessing impacts of climate change on forests: the state of biological modeling. *Climatic Change* 28:65-90.
  8. Dale, V.H. and H.M. Rauscher. 1994. Assessing impacts of climate change on forests: the state of biological modeling. Pages 65-90 In K.D. Frederick and N.J. Rosenberg (eds.) *Assessing the Impacts of Climate Change on Natural Resource Systems*. Boston: Kluwer Academic Publishers.
  9. Joyce, L.A., J. Aber, S. McNulty, V. Dale, A. J. Hansen, L. Irland, R. P. Neilson, K. Skog. 2001. Forests. Pages 489-524 IN *Climate Change Impacts: The Potential Consequences of Climate Variability and Change*, A report of the National Assessment Synthesis Team of the U. S. Global Change Research Program, Cambridge University Press, Cambridge, UK.
  10. Dale, V.H., Joyce, L.A., McNulty, S., and Neilson, R.P. 2000. The interplay between climate change, forests, and disturbances. *Science of the Total Environment* 262:201-204.
  11. Dale, V.H., L.A. Joyce, S. McNulty, R.P. Neilson, M.P. Ayres, M.D. Flannigan, P.J. Hanson, L.C. Irland, A.E. Lugo, C.J. Peterson, D. Simberloff, F.J. Swanson, B.J. Stocks, and B.M. Wotton. 2001. Forest disturbances and climate change. *BioScience* 51(9):723-734.
  12. Hansen, A.J., R.P. Neilson, V.H. Dale, C. Flather, L. Iverson, D.J. Currie, P. Bartlein. 2001. Global change in forests: responses of species, communities, and biomes. *BioScience* 51(9): 765-779.
  13. Hansen, A. and V.H. Dale. 2001 Biodiversity in United States forests under global climate change. *Ecosystems* 4:161-163.
  14. Dale, VH, KO Lannon, ML Tharp, DG Hodges, and J Fogel. 2009. Effects of climate change, land-use change, and invasive species on the ecology of the Cumberland Forests. *Canadian Journal of Forest Research* 39:467-480.
  15. Dale, VH, ML Tharp, KO Lannon and DG Hodges. 2010. Modeling Transient Response of Forests to Climate Change. *Science of the Total Environment*. 408:1888-1901.  
<http://dx.doi.org/10.1016/j.scitotenv.2009.11.050>
  16. Hodges, Donald G., Jonah Fogel, Virginia H. Dale, Karen O. Lannon and M. Lynn Tharp. 2010. Economic effects of projected climate change on outdoor recreation in Tennessee. In: *Global Change and Forestry: Economic and Policy Impacts and Responses*, J. Gan, S. Grado, and I.A. Munn, editors. Nova Science Publishers, Inc., Hauppauge NY. pp. 17-32.
  17. Joyce L, DD Breshears, VH Dale, R Malmshemer, RN Sampson, B Sohngen, C Woodall. 2014. Forests. Chapter 7 *In* *Climate Change Impacts in the United States*. The Third National Climate Assessment. JM Melillo, TC Richmond, GW Yohe (eds.) US Global Change Research Program 175-194.
  18. Dale, VH, Hughes MJ, Hayes DJ. 2015. Climate change and the future of natural disturbances in the central hardwood region. Pages 355-370 in Greenberg, C. and Collins, B. (Editors) "Natural Disturbances and Historic Range of Variation: Type, Frequency, Severity, and Post-Disturbance Structure in Central Hardwood Forests" Springer: New York.
  19. Bartell S, Barnthouse LW, Landis GW, von Stackelberg K, Dale VH. 2024. Scientists react to the US Fifth National Climate Assessment. *Integrated Environmental Assessment and Management* 2(2): 1–6.

### **Relationship between Climate Change and Land Use**

1. Dale, V.H., Houghton, R.A., Hall, C.A.S. 1991. Estimating the effects of land use change on

- global atmospheric CO<sub>2</sub> concentrations. *Canadian Journal of Forest Research* 21:87-90.
2. Dale, V.H. 1995. Integrated assessment and the relation between land-use change and climate change. Pages 75-77 in Proceedings of the Third Japan-U.S. Workshop on Global Change Modeling and Assessment: Improving Methodologies and Strategies. Honolulu, Hawaii, Octo 25-27, 1994. Office of Earth Science and Technology, Research and Development Bureau, Science and Technology Agency, Tokyo, Japan.
  3. Dale, V.H. and A.W. King. 1996. Implications of uncertainty in land-use change for global terrestrial CO<sub>2</sub> flux. Pp. 284-293 In (E. Korpilahti, H. Mikkela, and T. Salpnen, editors) Caring for the Forest: Research in a Changing World. International Union of Forestry Research Organizations XX World Congress Report, Vol II. Gummerus Printing, Jyväskylä, Finland.
  4. Dale, V.H. 1997. The relationship between land-use change and climate change. *Ecological Applications* 7:753-769.

### **Environmental Economics**

1. Jones, D., Dale, V.H., Beauchamp, J.J., Pedlowski, M.A., O'Neill, R.V. 1995. Farming in Rondônia. *Resource and Energy Economics* 17: 155-188.
2. Dale, V.H., Russell, C. S., Hadley, M., Kane, M. and Gregory, R. 1997. Applying multi-attribute utility techniques to environmental valuation: Forest ecosystem study. Beijer Discussion Paper No. 103, Beijer International Institute of Ecological Economics, The Swedish Academy of Sciences.
3. Russell, C., Dale, V., Lee, J., Jensen, M.H., Kane, M., Gregory, R. 2001. Experimenting with multi-attribute utility survey methods in a multidimensional valuation problem. *Ecological Economics* 36: 87-108.

### **Agricultural Sustainability**

1. Dale VH and Polasky S. 2007. Measures of the effects of agricultural practices on ecosystem services. *Ecological Economics* 64:286-296.  
<https://www.sciencedirect.com/science/article/abs/pii/S0921800907003035>
2. Dale VH, Kline KL, Kaffka SR, and Langeveld JWA. 2013. A landscape perspective on sustainability of agricultural systems. *Landscape Ecology* 28(6): 1111-1123.  
[https://www.academia.edu/es/23800408/A\\_landscape\\_perspective\\_on\\_sustainability\\_of\\_agricultural\\_systems](https://www.academia.edu/es/23800408/A_landscape_perspective_on_sustainability_of_agricultural_systems)
3. Kanter DR, Musumba M, Wood SLR, Palm C, Antle J, Balvanera P, Dale VH, Havlik P, Kline KL, Scholes RJ, Thornton P, Tittonell P, Andelman S. 2018. Evaluating agricultural trade-offs in the age of sustainable development. *Agricultural Systems* 163:73-88.  
<https://doi.org/10.1016/j.agsy.2016.09.010>
4. Eichler Inwood SE, Lopez-Ridaura S, Kline KL, Gerard B, Gardeazabal Monsalve A, Govaerts B, Dale VH. 2018. Assessing sustainability in agricultural landscapes: a review of approaches. *Environmental Review* 26(3): 299–315. <https://doi.org/10.1139/er-2017-0058>
5. Eichler Inwood SE and Dale VH. 2019. State of apps targeting management for sustainability of agricultural landscapes. A review. *Agronomy for Sustainable Development*.  
<https://doi.org/10.1007/s13593-018-0549-8>
6. Dale VH, Kline KL, Parish ES, Eichler SE. 2019. Engaging stakeholders to assess landscape sustainability. *Landscape Ecology* 34(6): 1199-1218. DOI: 10.1007/s10980-019-00848-1.  
<http://link.springer.com/article/10.1007/s10980-019-00848-1>
7. Kline KL, Ramirez LF, Sum C, López Ridaura S, Dale VH. 2020. Enhance indigenous agricultural systems to reduce migration. *Nature Sustainability* 3: 74–76. <https://rdcu.be/b08LL>

8. Eichler SE, Kline KL, Ortiz-Monasterio I, Lopez-Ridaura S, Dale VH. 2020. Rapid appraisal using landscape sustainability indicators for Yaqui Valley, Mexico. *Environmental and Sustainability Indicators* 6: 100029. <https://doi.org/10.1016/j.indic.2020.100029>
9. Dale VH, Kline KL, López Ridaura S, Eichler, SE, Ortiz-Monasterio, I, and Ramirez, LF. 2020. Towards sustainable landscapes: Lessons from agricultural systems in Northwestern Mexico and the Western Highlands of Guatemala. *Futures* 124: 102647. <https://doi.org/10.1016/j.futures.2020.102647>
10. Zhuang J, Sun H, Saylor G, Yu G, Kline KL, Dale VH, Jin M, Yu G, Fu B, Löffler FE. 2021. Food-energy-water crises in the United States and China: Commonalities and asynchronous experiences support the integration of global efforts. *Environmental Science and Technology* 155(3), 1446-1455. <https://dx.doi.org/10.1021/acs.est.0c06607>

### **Ecological Studies Relating to Social Science**

1. Southworth, F., Dale, V.H., O'Neill, R.V. 1991. Contrasting patterns of land use in Rondonia, Brazil: simulating the effects on carbon release. *International Social Sciences Journal* 130: 681-698.
2. Schiller, A., C. T. Hunsaker, M. A. Kane, A. K. Wolfe, V. H. Dale, G. W. Suter, C. S. Russell, G. Pion, M. H. Jensen, and V. C. Konar. 2001. Communicating ecological indicators to decision makers and the public. *Conservation Ecology* 5(1)19. [online] <http://www.consecol.org/vol5/iss1/art19>
3. Bierregaard, R. and Dale, V.H. 1996. Islands in an everchanging sea: The ecological and socioeconomic dynamics of Amazonian rainforest fragments. Pages 187-204 In (J. Schelhas and R. Greenberg, ed.) *Forest Patches in Tropical Landscapes*. Island Press, Washington, D.C.
4. Frohn, R.C., K.C. McGwire, V.H. Dale and J.E. Estes. 1996. Using satellite remote sensing analysis to evaluate a socio-economic and ecological model of deforestation in Rondônia, Brazil. *International Journal of Remote Sensing* 17:3233-3255.
5. Dale, V.H., M. Aldridge, T. Arthur, L. Baskaran, M. Berry, M. Chang, R. Efroymsen, C. Garten, C. Stewart, and R. Washington-Allen. 2006. Bioregional planning in Central Georgia. *Futures* 38(4): 471-489. [https://www.esd.ornl.gov/programs/SERDP/RSim/pubs/Dale\\_bioregional\\_planning\\_2006.pdf](https://www.esd.ornl.gov/programs/SERDP/RSim/pubs/Dale_bioregional_planning_2006.pdf)
6. Wolfe AK, VH Dale, T Arthur and L Baskaran. 2017. Ensuring that ecological science contributes to natural resource management using a Delphi-derived approach. Chapter 6 in (MJ Paolisso, Ed.) *Participatory Modeling in environmental decision-making: Methods, tools, and applications*. Springer: New York, pages 103-124. [https://link.springer.com/chapter/10.1007/978-3-319-25053-3\\_6](https://link.springer.com/chapter/10.1007/978-3-319-25053-3_6)
7. Kliskey, A., Williams, P., Dale, V.H., Schelly, C., Marshall, A., Griffith, D., Eaton, W., Floress, K., Gagnon, V., Oxarango-Ingram, J. 2021 Thinking big and thinking small: A conceptual framework for best practices in community and stakeholder engagement in food, energy, and water systems. *Sustainability* 13, 2160. <https://doi.org/10.3390/su13042160> <https://www.mdpi.com/2071-1050/13/4/2160/pdf>
8. Gagnon, V.S., Schelly, C., Lytle, W., Kliskey, A., Dale, V.H., Marshall, A., Rodriguez, L.F., Williams, P., Price, M.W., Redd, E.A., & Noodin, M.A. 2022. Enacting boundaries or building bridges? Language and engagement in food-energy-water systems science. *Socio Ecol Pract Res*. <https://rdcu.be/cLHKu>.

9. Vukomanovic J, Smart LS, Koch J, Dale VH, Plassin S, Byrd KB, Beier C, Wilson M, Doyon F. 2023. Translating stakeholder narratives for modeling in landscape ecology. *Landscape Ecology* 38: 2453–2474. <https://doi.org/10.1007/s10980-023-01724-9>.

### **Forest Conservation**

1. Hemstrom, M., and V. Adams. 1982. Modeling long-term succession in the Pacific Northwest. In J. Means (ed.), *Forest Succession and Stand Development in the Northwest*. Forest Research Laboratory, Oregon State University, Corvallis, Oregon.
2. Dale, V.H., M. Hemstrom, and J. Franklin. 1984. The impact of disturbance frequency on forest succession in the Pacific Northwest. *Proceedings of the 1983 Society of American Foresters Annual Convention*. pp. 300-304.
3. Dale, V.H., and S. McLaughlin. 1984. Forest growth trends in the eastern United States: Empirical and modeling approaches. University of Maine College of Forestry Technical Note No. 93. pp. 31-40.
4. Dale, V., M. Hemstrom, and J. Franklin. 1986. Modeling the long-term effects of disturbances on forest succession, Olympic Peninsula, Washington. *Canadian Journal of Forest Research* 16:56-67.
5. Dale, V.H., and T.W. Doyle. 1987. The role of stand history in assessing forest impacts. *Environmental Management* 11(3):351-357.
6. Dale, V.H. 1987. Using a model of forest community dynamics for decision making. *Proceedings of the 1987 Forestry Issues Conference*. Pennsylvania State University, University Park, Pennsylvania. March 9-11, 1987.
7. Dale, V., and R. Gardner. 1987. Assessing regional impacts of growth declines using a forest succession model. *Journal of Environmental Management* 24:83-93.
8. Pastor, J., R.H. Gardner, V.H. Dale, and W.M. Post. 1987. Successional changes in nitrogen availability as a potential factor contributing to spruce declines in boreal North America. *Canadian Journal of Forest Research* 17:1394-1400.
9. Dale, V.H. 1989. Modeling the effects of air pollution on regional forest development: Factors to consider for South East Asia. In *Proceedings from "Workshop to Design an Acid Deposition Policy Model for South-East Asia."* Bangkok, Thailand, November 13-17, 1989.
10. Dale, V.H., R.H. Gardner, D.L. DeAngelis, C. Eagar, and J.W. Webb. 1991. Elevation-mediated effects of balsam woolly adelgid on southern Appalachian spruce-fir forests. *Canadian Journal of Forest Research* 21:1639-1648.
11. Offerman, H., Dale, V., Pearson, S., Bierregaard, R. and O'Neill, R. 1995. Effects of forest fragmentation on neotropical fauna: current research and data availability. *Environmental Reviews* 3(2): 191-211.
12. Turner, M.G., V.H. Dale, and E.H. Everham. 1997. Fires, hurricanes and volcanoes: comparing large disturbances. *BioScience* 47:758-768.
13. Dale, V.H. 1998. Managing forests as ecosystems: A success story or a challenge ahead? Pages 50-68 In (M.L. Pace and P.M. Groffman, editors). *Successes, Limitations, and Frontiers in Ecosystem Ecology*. New York: Springer-Verlag.
14. Committee of Scientists. 1999. Sustaining the people's lands: recommendations for stewardship of the national forests and grasslands into the next century. U.S. Department of Agriculture, Washington, D.C., USA. <https://www.fs.usda.gov/emc/nfma/includes/cosreport/Committee%20of%20Scientists%20Report.htm>
15. Johnson, K.N., Agee, J., Beschta, R., Dale, V., Hardesty, L., Long, J., Nielsen, L., Noon, B., Sedjo, R., Shannon, M., Trosper, R., Wilkinson, C. and Wondolleck, J. 1999. Sustaining the

- people's lands: recommendations for stewardship of the national forests and grasslands into the next century. *Journal of Forestry* 97(5): 6-12.
16. Dale, V. H., Agee, J., Long, J., and Noon, B. 1999. Ecological sustainability is fundamental to managing the national forests and grasslands. *Bulletin of the Ecological Society of America*. 80(3): 207-209.
  17. Dale, V.H. and S. M. Pearson. 1999. Modeling the driving factors and ecological consequences of deforestation in the Brazilian Amazon. Pages 256-276 In (D. L. Mladenoff and W. B. Baker, editors) *Advances in Spatial Modeling of Forest Landscape Change*. Cambridge University Press.
  18. Dale, V. 2003. Opportunities for using ecological models for resource management. Pages 3-22 In Dale, V.H. (editor) *Ecological Modeling for Resource Management*. New York: Springer-Verlag.
  19. Dale, V.H. 2011. The role of disturbance in seasonally dry tropical forest landscapes. Pages 75-97 In McShea, J., S. Davies, N. Bhumpakphan (Editors) *The Ecology and Conservation of Seasonally Dry Forests in Asia*. Washington, DC: Smithsonian Institution Scholarly Press.
  20. Kline KL, Dale VH. 2020. Protecting biodiversity through forest management: Lessons learned and strategies for success. *International Journal of Environmental Sciences & Natural Resources*. 26(4): 556194. <https://dx.doi.org/10.19080/IJESNR.2020.26.556194>
  21. Parish ES, Dale V, Davis M, Davis R, Efrogmson, M Hilliard, H Jager, K Kline, F Xie. 2021. An indicator-based approach to sustainable management of natural resources. Chapter 13 in J Dunn and P Balaprakash (editors) *Data Science Applied to Sustainability Analysis*, Elsevier. ISBN-10: 0128179767, ISBN-13: 978-0128179765.

### **Evaluating Conservation Effectiveness**

1. O'Neill, R.V., J.R. Krummel, R.H. Gardner, G. Sugihara, B. Jackson, D.L. DeAngelis, B.T. Milne, M.G. Turner, B. Zygmunt, S.W. Christensen, V.H. Dale, and R.L. Graham. 1988. Indices of landscape pattern. *Landscape Ecology* 1:153-162.
2. Dale, V.H. 1997. Criteria and indicators for assessing sustainability of forest management: conservation of biodiversity. *Bulletin of the Ecological Society of America* 78:291-292.
3. Stork, N.E., T.J.B. Boyle, V. Dale, H. Eeley, B. Finegan, M. Lawes, N. Manokaran, R. Prabhu, and J. Soberon. 1997. Criteria and indicators for assessing sustainability of forest management: conservation of biodiversity. Center for International Forestry Research Working Paper No. 17. Bogor, Indonesia.
4. Dale, V.H. and O'Neill, R.V. 1999. Tools for assessing environmental conditions, In (Dale, V.H. and English, M.R., editors) *Tools to Aid Environmental Decision Making*. New York, Springer-Verlag.
5. English, M.R., Dale, V.H., Van Riper-Geibig, C. and Ramsey, W.H. 1999. Overview. Pages 1-31 in (Dale, V.H. and English, M.R., editors) *Tools to Aid Environmental Decision Making*. New York, Springer-Verlag.
6. English, M. E. and Dale, V.H. 1999. Next steps in designing and implementing analytic tools for decision making, In (Dale, V.H. and English, M.R., editors) *Tools to Aid Environmental Decision Making*. New York, Springer-Verlag.
7. Dale, V.H. and Beyeler, S.C. 2001. Challenges in the development and use of ecological indicators. *Ecological Indicators* 1(1): 3-10.
8. Peacock, A. D., S. J. MacNaughton, J. M. Cantu, V. H. Dale and D. C. White. 2002. Soil microbial biomass and community composition along an anthropogenic disturbance gradient within a longleaf pine habitat. *Ecological Indicators* 1(2):113-122.

9. Dale, V.H., Beyeler, S.C., and Jackson, B. 2002. Understory indicators of anthropogenic disturbance in longleaf pine forests at Fort Benning, Georgia, USA. *Ecological Indicators* 1(3): 155-170.
10. Garten, C.T., T.L. Ashwood, and V.H. Dale. 2003. Effect of military training on indicators of soil quality at Fort Benning, Georgia. *Ecological Indicators* 3(3) 171-180.
11. Druckenbrod, D.L.; Dale, V.H. 2004. Sustaining the landscape: a method for comparing current and desired future conditions of forest ecosystems in the North Cumberland Plateau and Mountains. ORNL/TM-2004/314, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA.
12. Dale, V.H., Mulholland, P., Olsen, L. M., Feminella, J., Maloney, K., White, D. C., Peacock, A., and Foster, T. 2004. "Selecting a Suite of Ecological Indicators for Resource Management," *Landscape Ecology and Wildlife Habitat Evaluation: Critical Information for Ecological Risk Assessment, Land-Use Management Activities and Biodiversity Enhancement Practices, ASTM STP 1458*, L. A. Kapustka, H. Gilbraith, M. Luxon, and G. R. Biddinger, Eds., ASTM International, West Conshohocken, PA.
13. Olsen, L.M., Washington-Allen, R.A, and V.H. Dale. 2005. Time-series analysis of land cover using landscape metrics. *GIScience and Remote Sensing*. 42(3): 200-223.
14. Druckenbrod, D.L., V.H. Dale, and L.M. Olsen. 2006. Forest conservation in the Cumberland Plateau and Mountains: Assessing distribution and structure of landform forest associations. General Technical Report, USDA Forest Service, Southern Forest Research Station, Asheville, North Carolina, USA.
15. Olsen, L.M., Dale, V.H. and H.T. Foster. 2007. Landscape patterns as indicators of ecological change at Fort Benning, Georgia, USA. *Landscape and Urban Planning* 79(2):137-149.
16. Druckenbrod, D.L., V.H. Dale, and L.M. Olsen. 2007. Comparing current and desired ecological conditions at a landscape scale in the Cumberland Plateau and Mountains, USA. *Journal of Land Use Science* 1(1):169-189.
17. Klinger, T. and V. Dale. 2007. The promise and the challenge of cooperative conservation. *Frontiers in Ecology and the Environment* 5(2): 97-98.
18. Dale, V.H., Peacock, A.D, C.T Garten, E. Sobek, and A. Wolfe. 2008. Selecting indicators of soil, microbial, and plant conditions to understand ecological changes in Georgia pine forests. *Ecological Indicators* 8:81-827.
19. Foster, T., V.H. Dale, L.M. Olsen. 2009. Environmental management and policy using ecological indicators derived from archaeological and historical data. *IN The Archaeology of Anthropogenic Environments*. Publisher: Southern Illinois University.
20. Foster T, Olsen L, Dale V and Chen A. 2010 Studying the past for the future: Managing modern biodiversity for historic and prehistoric data. *Human Organization* 69(2): 149-157.

### **Science and Decision Making**

1. Olson, R.J., T. Boden, J. Solomon, V.H. Dale, and S. Christensen. 1988. Guidelines for computer-based information exchange. *In* Proceedings of Piecing the Puzzle Together: A Conference on Integrating Data for Decision Making. May 27-29, 1987. (L. Allison and R.J. Olson, ed.) National Governor's Association, Washington, D.C.
2. Post, W.M., Dale, V.H., DeAngelis, D.L., Mann, L.K., Mulholland, P.J., O'Neill, R.V., Peng, T.H., and Farrell, M.P. 1990. Formulating energy policies related to fossil fuel use: Critical uncertainties in the global carbon cycle. Pp. 77-95 *In* Global Change: A Southern Perspective. Proceedings of the 1990 Southeast Climate Symposium. Southeast Regional Climate Center, Clemson University, Columbus, S.C.
3. English, M.R. and Dale, V.H. 1996. The National Center for Environmental Decision-Making Research: Tools to improve environmental decision making processes. Proceedings of the Air and Waste Management Association Meeting, Nashville, Tenn. June 23-26, 1996.

4. Dale, V.H. 1996. The National Center for Decision-Making Research. *Bulletin of the Ecological Society of America* 77(2):78-79.
5. Kickert, R.N., Dale, V.H., and McCord, RA. 1996. Spatial Ecological Risk Simulation of U.S. Department of Energy lands applied to military lands. *Simulation* 66(4): 263-264.
6. Dale, V.H., T. Ashwood, A.W. King, L.K. Mann, and R.N. Kickert. 1996. Assessment of Training Impacts on Ecological Resources. Proceedings of workshop on "The contribution of adaptive ecological economic modeling and assessment for sustainable development and the roles of stakeholders," Boston, Mass., July 31- August 4, 1996.
7. Dale, V.H. 2002. Science and decision making. Pages 139-152 *In* R. Costanza and S.E. Jorgensen, ed. *Understanding and Solving Environmental Problems in the 21<sup>st</sup> Century: Toward a New, Integrated hard problem science*. Elsevier, The Netherlands.
8. Rykiel, E.J., J. Berkson, V.A. Brown, W. Kerwitt, I. Peters, M. Schwartz, J. Schogren, D. Van der Molen, R. Blok, M. Borsuk, R. Bruins, K. Cover, V. Dale, J. Dew, C. Etnier, L. Fanning, F. Felix, M. Nordin, Hasan, H. Hong, A.W. King, N. Krauchi, K. Lubinsky, J. Olson, J. Onigkeit, G. Patterson, K.S. Rajan, P. Reichert, K. Sharma, V. Smith, M. Sonnenschein, R. St-Louis, D. Stuart, R. Supalla, and H. van Latesteijn. 2002. Science and decision making. Pages 153-166 *In* R. Costanza and S.E. Jorgensen, ed. *Understanding and Solving Environmental Problems in the 21<sup>st</sup> Century: Toward a New, Integrated hard problem science*. Elsevier, The Netherlands.
9. Dale, V., C. Rewerts, W. Van Winkle, M. Harwell, M. Vasiesich, and S. Hodapp. 2003. Barriers to the use of ecological models in decision making. Pages 109-124 *In* Dale, V.H. (editor) *Ecological Modeling for Resource Management*. New York: Springer-Verlag.
10. Gustafson, E., J. Nestler, L. Gross, K. Reynolds, D. Yaussy, T. Maxwell, and V. Dale. 2003. Evolving approaches and technologies to enhance the role of ecological modeling in decision making. Pages 135-166 *In* Dale, V.H. (editor) *Ecological Modeling for Resource Management*. New York: Springer-Verlag.
11. Dale, V. 2003. New directions in ecological modeling for resource management. Pages 310-320 *In* Dale, V.H. (editor) *Ecological Modeling for Resource Management*. New York: Springer-Verlag.
12. Dale, V.H., F.J. Swanson, and C.M. Crisafulli. 2005. Ecological Perspectives on Environmental Management Following the 1980 Eruption of Mount St. Helens. Pages 277-286 *In* Dale, V.H., Swanson, F.J., and Crisafulli, C.M. (editors) *Ecology Responses to the 1980 Eruption of Mount St. Helens*. New York: Springer-Verlag.
13. Dale, V.H., G.R. Biddinger, M.C. Newman, J.T. Oris, G.W. Suter, T. Thompson, T.M. Armitage, J.L. Meyer, R.M. Allen-King, G.A. Burton, P.M. Chapman, L.L. Conquest, I.J. Fernandez, W.G. Landis, L.L. Master, W.J. Mitsch, T.C. Mueller, C.F. Rabeni, A.D. Rodewald, J.G. Sanders, I.L. van Heerden. 2008. Enhancing the ecological risk assessment process. *Integrated Environmental Assessment and Management* 4(3):306-313.
14. Costanza R, K Chichakly, V Dale, S Farber, D Finnigan, K Grigg, S Heckbert, I Kubiszewski, H Lee, S Liu, P Magnuszewski, S Maynard, N McDonald, R Mills, S Ogilvy, PL Pert, J Renz, L Wainger, M Young, CR Ziegler (2014) Simulation games that integrate research, entertainment, and learning around ecosystem services. *Ecosystem Services* 10:195-201.  
<https://www.sciencedirect.com/science/article/abs/pii/S221204161400117X?via%3Dihub>
15. Dale VH, HI Jager HI, AK Wolfe, RA Efrogmson (2018) Risk and resilience in an uncertain world. *Frontiers in Ecology and the Environment* 16(1):3.  
<http://onlinelibrary.wiley.com/doi/10.1002/fee.1759/full>
16. Jager HI, R Novello, VH Dale, A Villnas, K Rose (2018) Unnatural hypoxic regimes. *Ecosphere* 9(9):e02408.10.1002/ecs2.2408 <http://dx.doi.org/10.1002/ecs2.2408>  
<https://esajournals.onlinelibrary.wiley.com/doi/10.1002/fee.1759>

17. Norgaard RB, JA Wiens, SB Brandt, EA Canuel, TK Collier, VH Dale, HJS Fernando, TL Holzer, JR Lund, SN Luoma, and VH Resh. 2021. Preparing Scientist, Policymakers, and Managers for a Fast-Forward Future. San Francisco Estuary and Watershed Science 19(2). Retrieved from <https://escholarship.org/uc/item/40x3z74k>  
<https://doi.org/10.15447/sfews.2021v19iss2art2>

### **Ecological modeling**

1. Adams, V.D., D.L. DeAngelis, and R.A. Goldstein. 1975. Analysis of the time delay in a host-parasite model. ORNL Report, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
2. Swartzman, G., and V. Adams. 1979. Simulating the effects of increased temperature in a plankton ecosystem. NUREG Report CR-0974, Nuclear Regulatory Commission, Washington, D.C.
3. Adams, V., D.L. DeAngelis, and R.A. Goldstein. 1980. Stability analysis of the time-delay in a host-parasitoid model. *Journal of Theoretical Biology* 83:43-62.
4. Dale, V.H., and G.L. Swartzman. 1984. Simulating the effects of increased temperature in a plankton ecosystem: A case study. Pages 395- 428 In E. Shubert (ed.), *Algae as Ecological Indicators*. Academic Press.
5. Dale, V., and M. Hemstrom. 1984. Documentation of CLIMACS: Computer Linked Integrative Model for Assessing Community Structure. USDA Forest Service Research Paper PNW-327.
6. Dale, V.H., T.W. Doyle, and H.H. Shugart. 1985. A comparison of tree growth models. *Ecological Modelling* 29:145-169.
7. Johnson, D.W. and V.H. Dale. 1986. Nitrogen cycling models and their utility in simulating forest harvesting. Proceedings of the May 1986 meeting of IEA, Toronto, Canada.
8. Dale VH. 1987. Using a model of forest community dynamics for decision making. Economics of Eastern Hardwood Management, University Park, Pennsylvania, 1987
9. Dale, V.H., H.I. Jager, R.H. Gardner, and A.E. Rosen. 1988. Using sensitivity analysis to improve predictions of broad-scale forest development. *Ecological Modelling* 42:165-178.
10. Franklin, R.L.A., R.H. Gardner, V.H. Dale, and P.S. White. 1988. PLOTSAM: A Simulation of Systematic and Random Sampling. Oak Ridge National Laboratory TM-10670, Oak Ridge, Tennessee.
11. Gardner, R.H., V.H. Dale, and R.V. O'Neill. 1989. Error propagation and uncertainty in process modeling. In R.K. Dixon, R.S. Meldehl, G.A. Ruark, and W.G. Warren (ed.s) *Process Modeling of Forest Growth Responses to Environmental Stress*. Timber Press: Portland, OR. pp. 208-219.
12. Dale, V.H., R.L.A. Franklin, W.M. Post, and R.H. Gardner. 1991. Sampling ecological information: Choice of sample size. *Ecological Modelling* 57:1-10.
13. Dale, V.H. and W. Van Winkle. 1998. Models provide understanding, not belief. *Bulletin of the Ecological Society of America* 79(2): 169-170.
14. Van Winkle, W. and V.H. Dale. 1998. Model interactions. *Bulletin of the Ecological Society of America* 79(4): 257-259.
15. Dale, V.H., F. Akhtar, M. Aldridge, L. Baskaran, M. Berry, M. Chang, R. Efrogmson, C. Garten, E. Lingerfelt, C. Stewart. 2008. Modeling impacts of land-use on quality of air, water, noise, and habitats for a five county region in Georgia. *Ecology and Society*. 13(1) [online]. URL: <http://www.ecologyandsociety.org/vol13/iss1/art10/>

### **Bioenergy Sustainability**

1. Kline, KL, Oladosu GA, Wolfe AK, Perlack RD, Dale VH, McMahon M. 2007. Biofuel feedstock assessment for selected countries. ORNL/TN-2007/224. [www.osti.gov/servlets/purl/974620-giaAAN/](http://www.osti.gov/servlets/purl/974620-giaAAN/)

2. Dale VH. 2007. A landscape design for bioenergy feedstocks, US-China Workshop on Environmental Aspects of Bioenergy Production and Sustainability, Knoxville, TN, September 2007.
3. Kline, KL and Dale, VH. 2008. Biofuels, causes of land-use change, and the role of fire in greenhouse gas emissions. *Science* 321:199. <https://www.osti.gov/biblio/986805-biofuels-causes-land-use-change-role-fire-greenhouse-gas-emissions>
4. Robertson, GP, VH Dale, OC Doering, SP Hamburg, JM Melillo, MM Wander, WJ Parton, PR Adler, JN Barney, RM Cruse, CS Duke, PM Fearnside, RF Follett, HK Gibbs, J Goldemberg, DJ Mladenoff, D Ojima, MW Palmer, A Sharpley, L Wallace, KC Weathers, JA Wiens, and WW Wilhelm. 2008. Sustainable Biofuels Redux, *Science* 322(5898): 49–50. DOI: 10.1126/science.1161525.
5. Kline KL, VH Dale, R Lee, and P Leiby. 2009. In Defense of Biofuels, Done Right. *Issues in Science and Technology* 25(3): 75-84. <https://issues.org/kline/>
6. Dale, V, K Kline, P Mulholland, M Downing, R Graham, and L Wright (2009) “Selecting Metrics for Sustainable Bioenergy Feedstocks” in the Proceedings of the Second Workshop. Beijing, October 15-17, 2008, China-US Joint Research for Ecosystem and Environmental Change [Pages 49-53, published by the Institute for a Secure and Sustainable Environment, University of Tennessee].
7. Hecht, AD, D Shaw, R Bruins, V Dale, K Kline, A Chen. 2009. Good policy follows good science: Using criteria and indicators for assessing sustainable biofuels production. *Ecotoxicology* 18(1):1-4. <https://link.springer.com/article/10.1007%2Fs10646-008-0293-y>
8. CBES (Center for BioEnergy Sustainability, Oak Ridge National Laboratory). 2009. Land-Use Change and Bioenergy: Report from the 2009 workshop, ORNL/CBES-001, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy and Oak Ridge National Laboratory, Center for Bioenergy Sustainability (<http://www.ornl.gov/sci/besd/cbes.shtml>).
9. Kline, K. L., V. H. Dale, A. Grainger. 2010. Challenges for Bioenergy Emission Accounting. *Science E-Letter* (2 March 2010) <http://www.sciencemag.org/cgi/eletters/326/5952/527>
10. Dale, VH, K. Kline, J. Wiens, and J. Fargione. 2010. Biofuels: Implications for Land Use and Biodiversity. Ecological Society of America. <http://esa.org/biofuelsreports/>.
11. Dale VH, R Lowrance, P Mulholland, P Robertson. 2010. Bioenergy Sustainability at the Regional-Scale. *Ecology and Society* 15(4): 23. [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/art23/>
12. Dale, VH, R Efroymson, and K Kline. 2010. Using a Broad-scale Perspective to Address Changes in Land, Climate, and Energy. The Climate-Energy Nexus: Proceedings of the 2009 China-US Joint Research for Ecosystem and Environmental Change, pages 52-55, published by the Institute for a Secure and Sustainable Environment, University of Tennessee.
13. Kline KL, GA Oladosu, VH Dale, and AC McBride. 2011. Scientific analysis is essential to assess biofuel policy effects: In response to the paper by Kim and Dale on “Indirect land use change for biofuels: Testing predictions and improving analytical methodologies.” *Biomass and Bioenergy* 35:4488-4491. <http://dx.doi.org/10.1016/j.biombioe.2011.08.011>
14. Dale, VH, KL Kline, LL Wright, RD Perlack, M Downing, RL Graham. 2011. Interactions among bioenergy feedstock choices, landscape dynamics and land use. *Ecological Applications* 21(4):1039-1054. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/09-0501.1>
15. McBride, A, VH Dale, L Baskaran, M Downing, L Eaton, RA Efroymson, C Garten, KL Kline, H Jager, P Mulholland, E Parish, P Schweizer, and J Storey. 2011. Indicators to support environmental sustainability of bioenergy systems. *Ecological Indicators* 11(5) 1277-1289. <https://www.sciencedirect.com/science/article/abs/pii/S1470160X11000276?via%3Dihub>
16. Dale VH, Efroymson RA and Kline KL. 2011. The land use – climate change – energy nexus. *Landscape Ecology* 26(6):755-773. <https://link.springer.com/article/10.1007/s10980-011-9606-2>

17. Parish ES, Hilliard M, LM Baskaran, VH Dale, NA Griffiths, PJ Mulholland, A Sorokine, ME Downing, R Middleton, NA Thomas. 2012. Multimetric spatial optimization of switchgrass plantings across a watershed. *Biofuels, Bioprod. Bioref.* 6(1):58-72.  
<https://www.onlinelibrary.wiley.com/doi/abs/10.1002/bbb.342>
18. Dale, VH and KL Kline. 2013. Modeling for integrating science and management. Pages 209-240 In D.G. Brown, D. T. Robinson, N. H. F. French, and B.C. Reed (editors), *Land Use and the Carbon Cycle: Advances in Integrated Science, Management, and Policy*, Cambridge University Press.
19. Dale VH and KL Kline. 2013. Issues in using landscape indicators to assess land changes. *Ecological indicators* 28:91-99 <http://dx.doi.org/10.1016/j.ecolind.2012.10.007>
20. Dale VH, RA Efroymson, KL Kline, MH Langholtz, PN Leiby, GA Oladosu, MR Davis, ME Downing, MR Hilliard. 2013. Indicators for assessing socioeconomic sustainability of bioenergy systems: A short list of practical measures. *Ecological Indicators* 26:87-102  
<http://dx.doi.org/10.1016/j.ecolind.2012.10.014>
21. Efroymson RA, Dale VH, Bielicki J, McBride A, Smith R, Parish E, Schweizer P, Kline KL, Shaw D. 2013. Environmental indicators of biofuel sustainability: What about context? *Environmental Management* 51(2): 291-306. DOI: 10.1007/s00267-012-9983-6  
<https://link.springer.com/article/10.1007%2Fs00267-012-9907-5>
22. Parish ES, , RA Efroymson, VH Dale, KL Kline, AC McBride, T Johnson, MR Hilliard, HI Jager, JM Bielicki. 2013. Comparing scales of environmental effects from gasoline and ethanol production. *Environmental Management* 51(2): 307-338.  
<https://link.springer.com/article/10.1007%2Fs00267-012-9983-6>
23. Patton-Mallory M, KE Skog, VH Dale. 2013. Integrated forest biorefineries: Sustainability considerations for forest biomass feedstocks. In (L. Christopher, ed.) *Integrated Forest Biorefineries*. Royal Society of Chemistry, London, England, pp. 38-55. DOI:  
<https://doi.org/10.1039/9781849735063>.
24. Dale, VH, MH Langholtz, BM Wesh, and LM Eaton. 2013. Environmental and socioeconomic indicators for bioenergy sustainability as applied to Eucalyptus. *International Journal of Forestry Research* Volume 2013, Article ID 215276.  
<https://onlinelibrary.wiley.com/doi/full/10.1111/gcbb.12359>
25. Dale VH, Kline KL, Perla D, Lucier A. 2013. Communicating about bioenergy sustainability. *Environmental Management* 51(2): 279-290. DOI: 10.1007/s00267-012-0014-4  
<https://rd.springer.com/article/10.1007%2Fs00267-012-0014-4>
26. Kline KL, Singh N, Dale VH. 2013. Cultivated hay and fallow/idle cropland confound analysis of grassland conversion in the Western Corn Belt. *Proceedings of the National Academy of Sciences* 110(31): [www.pnas.org/cgi/doi/10.1073/pnas.1306646110](http://www.pnas.org/cgi/doi/10.1073/pnas.1306646110)
27. Efroymson RA, VH Dale. 2015. Environmental indicators for sustainable production of algal biofuels. *Ecological Indicators* 49: 1-13.  
<https://www.sciencedirect.com/science/article/abs/pii/S1470160X14004609?via%3Dihub>
28. Dale B, Anderson J, Brown R, Csonka S, Dale VH, Herwick G, Jackson R, Jordan N, Kaffka S, Kline K, Lynd L, Malmstrom C, Ong R, Richard T, Taylor C, Wang M. 2014. Take a Closer Look: Biofuels Can Support Environmental, Economic and Social Goals. *Environmental Science & Technology* 48(13): 7200-7203. <https://pubs.acs.org/doi/pdf/10.1021/es5025433>
29. Dale VH, Parish ES and Kline KL. 2014. Risks to global biodiversity from fossil-fuel production exceed those from biofuel production. *Biofuels, Bioproducts and Biorefining* 9(2):177-189.  
<https://onlinelibrary.wiley.com/doi/abs/10.1002/bbb.1528>
30. Pollesch N, VH Dale. 2015. Applications of aggregation theory to sustainability assessment. *Ecological Economics* 114: 117-127.

- <https://www.sciencedirect.com/science/article/abs/pii/S0921800915000968>
31. Dale VH, RA Efroymsen, KL Kline, and M Davitt. (2015) A framework for selecting indicators of bioenergy sustainability. *Biofuels, Bioproducts & Biorefining* 9(4): 435-446.  
<https://onlinelibrary.wiley.com/doi/abs/10.1002/bbb.1562>
  32. Dale VH, Kline KL, Marland G, Miner RA. 2015. Ecological objectives can be achieved with wood-derived bioenergy. *Frontiers in Ecology and the Environment* 13(6): 297-299.  
<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/15.WB.011>
  33. Joly CA, Huntley BJ, LM Verdade LM, Dale VH, Mace G, Muok B, Ravindranath NH. 2015. Biofuel impacts on biodiversity and ecosystem services. Chapter 16 in (Souza GM and Joly CA, editors) Scientific Committee on Problems of the Environment (SCOPE) Rapid Assessment Process on Bioenergy and Sustainability, Paris, France.  
<http://bioenfapesp.org/scopebioenergy/index.php/chapters>
  34. Parish ES, Dale VH, English BC, Jackson SW, Tyler DD. 2016. Assessing multimetric aspects of sustainability: Application to a bioenergy crop production system in East Tennessee. *Ecosphere* 7(2):e01206. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.1206>
  35. Dale VH, KL Kline, MA Buford, TA Volk, CT Smith, I Stupak. 2016. Incorporating bioenergy into sustainable landscape designs. *Renewable & Sustainable Energy Reviews* 56:1158-1171.  
<http://authors.elsevier.com/sd/article/S1364032115014215>
  36. Smith, CT et al. (including Kline KL, Parish ES, and Dale VH). 2015. Mobilizing Sustainable Bioenergy Supply Chain, Inter-Task Project Synthesis Report, *IEA Bioenergy ExCo:2015:04*  
<http://www.ieabioenergy.com/publications/mobilizing-sustainable-bioenergy-supply-chains/>
  37. Kline KL, Msangi S, Dale VH, Woods J, Souza G, Osseweijer P, Clancy J, Hilbert J, Mugeru H, McDonnell P, Johnson F. 2017. Reconciling food security and bioenergy: priorities for action. *Global Change Biology Bioenergy* 9(3):557-576.  
<https://onlinelibrary.wiley.com/doi/full/10.1111/gcbb.12366>
  38. Pollesch N and Dale VH. 2016. Normalization in sustainability assessment: Methods and implications. *Ecological Economics* 130:195-208.  
<http://dx.doi.org/10.1016/j.ecolecon.2016.06.018>
  39. Dale VH, Parish ES, Kline KL. 2016. Lessons from the forest. Pages 18-22 in *World Biomass*, DCM Productions, United Kingdom. [World Biomass 2016/2017 – DCM Productions \(dcm-productions.co.uk\)](http://www.worldbiomass2016.com/)
  40. Berndes, Göran, Bob Abt, Antti Asikainen, Annette Cowie, Virginia Dale, Gustaf Egnell, Marcus Lindner, Luisa Marelli, David Paré, Kim Pingoud and Sonia Yeh. 2016. Forest biomass, carbon neutrality and climate change mitigation. From Science to Policy 3. European Forest Institute, Finland.  
<http://www.alphagalileo.org/AssetViewer.aspx?AssetId=116589&CultureCode=en>
  41. Hanssen SV, Duden AS, Junginger HM, Dale VH, van der Hilst F. 2017. Wood pellets, what else? Greenhouse gas parity times of European electricity from wood pellets that are produced in the south-eastern United States using different softwood feedstocks. *Global Change Biology Bioenergy* 9(9): 1406-1422. DOI: 10.1111/gcbb.12426.  
<http://onlinelibrary.wiley.com/doi/10.1111/gcbb.12426/abstract;jsessionid=B30A037BEAD04DD2AAB183FCCF524516.f02t04>
  42. Dale VH, KL Kline, ES Parish, AL Cowie, R Emory, RW Malmsheimer, R Slade, CT Smith, TB Wigley, NS Bentsen, G Berndes, P Bernier, M Brandão, H Chum, R Diaz-Chavez, G Egnell, L Gustavsson, J Schweinle, I Stupak, P Trianosky, A Walter, C Whittaker, M Brown, G Chescheir, I Dimitriou, C Donnison, A Goss Eng, KP Hoyt, JC Jenkins, K Johnson, CA Levesque, V Lockhart, MC Negri, JE Nettles, M Wellisch. 2017. Status and prospects for renewable energy using wood pellets from the southeastern United States. *Global Change Biology Bioenergy* 9: 1296-1305. doi: 10.1111/gcbb.12445.

- <http://onlinelibrary.wiley.com/doi/10.1111/gcbb.12445/full>
43. Efroymsen RA, VH Dale, MH Langholtz. 2017. Socioeconomic indicators for sustainable design and commercial development of algal biofuel systems. *Global Change Biology Bioenergy* 9:1005-1023. <https://onlinelibrary.wiley.com/doi/full/10.1111/gcbb.12359>
  44. Dale VH, Parish ES, Kline KL, Tobin E. 2017. How is wood-based pellet production affecting forest conditions in the southeastern United States? *Forest Ecology and Management* 396: 143-149. <http://dx.doi.org/10.1016/j.foreco.2017.03.022>
  45. Parish, ES, Dale VH, Tobin E, Kline KL 2017. Dataset of timberland variables used to assess forest conditions in two Southeastern United States' fuelsheds. *Data in Brief* 13: 278–290. <http://dx.doi.org/10.1016/j.dib.2017.05.048>.
  46. Duden AS, PA Verweij, HM Junginger, RC Abt, JD Henderson, VH Dale, KL Kline, D Karssenberg, JA Versteegen, APC Faaij, F van der Hilst. 2017. Modelling the impacts of wood pellet demand on forest dynamics in southeastern United States. *Biofuels, Bioproducts and Biorefining*. <http://onlinelibrary.wiley.com/doi/10.1002/bbb.1803/full>
  47. Fritsche, UR, G Berndes, AL Cowie, VH Dale, KL Kline, FX Johnson, H Langeveld, N Sharma, H Watson, J Woods. 2017. Energy and land use. Working Paper for the UNCCD Global Land Outlook. Prepared for UNCCD and IRENA.
  48. Parish ES, Dale VH, Kline KL Abt RC. 2017. Reference scenarios for evaluating wood pellet production in the Southeastern United States. *WIREs Energy and Environment*. e259. doi: 10.1002/wene.259. <http://onlinelibrary.wiley.com/doi/10.1002/wene.259/epdf>
  49. Parish ES, Dale VH, Kline KL. 2017. Has pellet production affected SE US forests? World Biomass. DCM Productions, United Kingdom. Pages 38-42. [www.dcm-productions.co.uk](http://www.dcm-productions.co.uk)
  50. Souza G, Ballester MVR, Cruz CHB, Chum H, Dale B, Dale VH, Fernandes E, Foust T, Karp A, Lynd L, Maciel R, Milanez A, Nigro F, Osseweijer P, Verdade L, Victoria R, Van Der Wielen L. 2017. The role of bioenergy in a climate-changing world. *Environmental Development* 23:57-64. <http://www.sciencedirect.com/science/article/pii/S2211464516302755>
  51. Efroymsen RE, M Langholtz, K Johnson, C Negri, A Turhollow, K Kline, I Bonner, V Dale. 2017. Chapter 14 – Synthesis, Interpretation, and Strategies to Enhance Environmental Sustainability IN U.S. Department of Energy. 2016 Billion-Ton Report: Advancing Domestic Resources for a Thriving Bioeconomy, Volume 2: Environmental Sustainability Effects of Select Scenarios from Volume 1. RA Efroymsen, MH Langholtz, KE Johnson, and BJ Stokes (Eds.), ORNL/TM-2016/727. Oak Ridge National Laboratory, Oak Ridge, TN. 640p. doi 10.2172/1338837. <https://energy.gov/eere/bioenergy/downloads/2016-billion-ton-report-volume-2-environmental-sustainability-effects>
  52. Dale VH, Kline KL, Richard TL, Karlen DL, Belden WW. 2018. Bridging biofuel sustainability indicators and ecosystem services through stakeholder engagement. *Biomass and Bioenergy* 114: 143-156. <https://doi.org/10.1016/j.biombioe.2017.09.016>  
<https://www.sciencedirect.com/science/article/pii/S0961953417303100>
  53. Parish ES, Herzberger AJ, Phifer CC, Dale VH. 2018. Transatlantic wood pellet trade demonstrates telecoupled benefits. *Ecology and Society* 23 (1): 28. [online] URL: <https://www.ecologyandsociety.org/vol23/iss1/art28/>
  54. Kline KL, Parish ES, Dale VH. 2018. The importance of reference conditions in assessing effects of bioenergy wood pellets produced in the southeastern United States. Pages 82-87 in *World Biomass 2018-2019*. DCM Productions, United Kingdom. <http://dcm-productions.co.uk/world-biomass-2018-2019/>
  55. Junginger M, Fritsche U, Mai-Moulin T, Thrän D, Thiffault E, Kline K, Dale V, Richard TL, Karlen DL, Belden WW, Hodges DG, Chapagain B, Watcharaanantapong P, Poudyal NC, Kulisic B, Lakhthar, I, Bouthillier L, White B, Krolík C, Barnabé S, Sutor C, Schaubach K, Horschig T. 2019. Measuring, governing and gaining support for sustainable bioenergy supply chains: Summary of

- Objective 3: Understanding positions and underlying motivations of stakeholder groups relative to their perceptions of bioenergy. IEA Bioenergy. <http://itp-sustainable.ieabioenergy.com/wp-content/uploads/2019/06/Intertask-Sustainability-O3-summary-26.3.2019.pdf>
56. Dimitriou I, Berndes G, Englund O, Brown M, Busch G, Dale V, Devlin G, English B, Goss K, Jackson S, Kline KL, McDonnell K, McGrath J, Mola-Yudego B, Murphy F, Negri MC, Parish ES, Ssegane H, Tyler D. 2019. Lignocellulosic Crops in Agricultural Landscapes: Production systems for biomass and other environmental benefits – examples, incentives, and barrier. IEABioenergy. <https://www.ieabioenergy.com/wp-content/uploads/2019/01/TR2018-05.pdf>
  57. Hodges DG, Chapagain B, Watcharaanantapong P, Poudyal NC, Kline KL, Dale VH. 2019. Opportunities and attitudes of private forest landowners in supplying woody biomass for renewable energy. *Renewable and Sustainable Energy Reviews* 113: 109205. <https://doi.org/10.1016/j.rser.2019.06.012>
  58. Hodges DG, Chapagain B, Watcharaanantapong P, Poudyal NC, Kline KL, Dale VH. 2019. Dataset of forest landowner survey to assess interest in supplying woody biomass in two southeastern United States fuelsheds. *Data in Brief* 27:104674 <https://doi.org/10.1016/j.dib.2019.104674>
  59. Dale VH, Kline KL, Hodges DG, Chapagain B, Watcharaanantapong P, Poudyal NC. 2019. Perspectives of Family Forest Owners Regarding Wood-Based Bioenergy. *World Biomass 2019-2020* (Oct 2019) Pages 42-47. <http://dcm-productions.co.uk/world-biomass-2019-2020/>
  60. Englund O, Dimitriou I, Dale VH, Kline KL, Mola - Yudego B, Murphy F, English B, McGrath J, Busch G, Negri MC, Brown M, Goss K, Jackson S, Parish ES, Cacho J, Zumpf C, Quinn J, Mishra SK. 2020. Progress and performance of multifunctional perennial bioenergy systems. *WIREs: Wiley Interdisciplinary Reviews* 9(5) <http://dx.doi.org/10.1002/wene.375>
  61. Parish ES, Baskaran L, Dale VH. 2021. Framework for assessing land management effects on species of concern: An example using wood pellet production and the gopher tortoise. *WIREs: Wiley Interdisciplinary Reviews* 10(1): e385. <https://onlinelibrary.wiley.com/doi/full/10.1002/wene.385>
  62. Dale VH, Baskaran L, Parish ES. 2020. Assessing effects on biodiversity from wood pellet production in the Southeastern United States. Pages 58-63 in *World Biomass 2020-2021*, <http://dcm-productions.co.uk/world-biomass-2020-2021/>
  63. Kline KL, Dale VH, Rose E, Tonn B. 2021. Effects of production of woody pellets in the southeastern United States on the Sustainable Development Goals. *Sustainability* 13:821. <https://www.mdpi.com/2071-1050/13/2/821>
  64. Vazhnik, V., Parish E.S., Dale V.H., Kline K.L., Richard, T.L. 2018. Emergent properties of sustainability: Using agroecosystem indicators within spatial and temporal frameworks. ASABE Annual International Meeting 1800439.(doi:10.13031/aim.201800439) <https://elibrary.asabe.org/abstract.asp?JID=5&AID=49088&CID=det2018&T=1>
  65. Kline KL, Dale VH, Rose E. 2021. Resilience lessons from SE US woody biomass supply chain to the Covid-19 pandemic. *Frontiers in Forests and Global Change* 4, 11 August 2021. <https://doi.org/10.3389/ffgc.2021.674138>.
  66. Dale VH, Kline KL. 2021. Effects on the Sustainable Development Goals of wood pellet production in the Southeastern United States. *World Biomass*. Pages 45-49 in [World Biomass 2021/2022 – DCM Productions \(dcm-productions.co.uk\)](http://dcm-productions.co.uk)
  67. Kline, KL and VH Dale. 2022. Role of sustainable biomass markets in forest conservation. Pages 66-75 in *World Biomass*. <https://dcm-productions.co.uk/world-biomass-2022-2023/>

### **Community Ecology**

1. Adams, V. 1983. Temporal partitioning of blooming phenology in *Pedicularis* on Mount

Rainier. *Canadian Journal of Botany* 61(3): 786-791.  
<https://www.nrcresearchpress.com/doi/10.1139/b83-088>

### **Effects of the Eruption and Recovery at Mount St. Helens**

1. Adams, V., and A.B. Adams. 1982. Initial recovery of the vegetation on Mount St. Helens. In S. A. C. Keller (ed.), *Mount St. Helens: One Year Later*. Eastern Washington University Press, Cheney, Washington, pp. 105-114.
2. Martin, D., L. Wasserman, and V. Dale. 1986. Influence of riparian vegetation on posteruptive survival of coho salmon fingerlings on the west-side streams of Mount St. Helens, Washington. *North American Journal of Fisheries Management* 6: 1-8.  
[https://doi.org/10.1577/1548-8659\(1986\)6<1:IORVOP>2.0.CO;2](https://doi.org/10.1577/1548-8659(1986)6<1:IORVOP>2.0.CO;2)
3. Dale, V.H. 1986. Plant recovery on the debris avalanche at Mount St. Helens. In S. A. C. Keller (ed.), *Mount St. Helens: Five Years Later*. Eastern Washington University Press, Cheney, Washington. pp. 208-214.
4. Adams, A.B., V.H. Dale, E. Smith, A.R. Kruckeberg. 1987. Plant survival, growth form and regeneration following the May 18, 1980, eruption of Mount St. Helens, Washington. *Northwest Science* 61:160-170.
5. Adams, A.B., and V.H. Dale. 1987. Comparisons of vegetative succession following glacial and volcanic disturbances. In D. E. Bilderback (ed.), *Mount St. Helens 1980: Botanical Consequences of the Explosive Eruptions*, University of California Press, Los Angeles. pp. 70-147.
6. Dale, V.H. 1989. Wind dispersed seeds and plant recovery on the Mount St. Helens debris avalanche. *Canadian Journal of Botany* 67: 1434-1441.  
<https://www.nrcresearchpress.com/doi/10.1139/b89-191>
7. Dale, V.H. 1991. Mount St. Helens. *National Geographic Research & Exploration* 7(3): 328-341.
8. Dale, V.H. 1992. Diversity impact and recovery at Mount St. Helens: a function of disturbance. *Northwest Environmental Journal* 8(1): 185-187.
9. Dale, V.H. 1992. Exotic seeds reduce biodiversity on the Mount St. Helens debris avalanche. *Northwest Environmental Journal* 8(1): 183-185.
10. Dale, V. H., J. Delgado-Acevedo, and J. MacMahon. 2005. Effects of modern volcanic impacts on Vegetation. Pages 227-249 In J. Marti and G. Ernst (editors) *Volcanoes and Environment*, Cambridge University Press, Cambridge.
11. Dale, V.H. and W.M. Adams. 2003. Plant establishment 15 years after the debris avalanche at Mount St. Helens, Washington. *The Science of the Total Environment* 313: 101-113.
12. Dale, V.H., F.J. Swanson, and C.M. Crisafulli. 2005. Disturbance, Survival, and Succession: Context for Understanding Ecological Responses to the 1980 Eruption of Mount St. Helens. Pages 3-12 In Dale, V.H., Swanson, F.J., and Crisafulli, C.M. (editors) *Ecology Responses to the 1980 Eruption of Mount St. Helens*. New York: Springer-Verlag.
13. Dale, V.H., D.R. Campbell, W.M. Adams, C.M. Crisafulli, V. Dains, P.M. Frenzen, and R. Holland. 2005. Plant Succession on the Mount St. Helen Debris-Avalanche Deposit. Pages 59-74 In Dale, V.H., Swanson, F.J., and Crisafulli, C.M. (editors) *Ecology Responses to the 1980 Eruption of Mount St. Helens*. New York: Springer-Verlag.
14. Crisafulli, C.M., F.J. Swanson, and V.H. Dale. 2005. Overview of Ecological Responses to the Eruption of Mount St. Helens – 1980-2005. Pages 287-300 In Dale, V.H., Swanson, F.J., and Crisafulli, C.M. (editors) *Ecology Responses to the 1980 Eruption of Mount St. Helens*. New York: Springer-Verlag.
15. Dale, V.H., C.M. Crisafulli and F.J. Swanson. 2005. 25 years of ecological change at Mount St. Helens. *Science* 308: 961-962. <https://science.sciencemag.org/content/308/5724/961.full>
16. Dale, V.H. and C.M. Crisafulli. 2018. Ecological Responses to the 1980 Eruption of Mount St.

Helens: Key Lessons and Remaining Questions. Chapter 1 in Crisafulli, C.M. and Dale, V.H. (editors). *Ecological Responses at Mount St. Helens: Revisited 35 years after the 1980 Eruption*. New York: Springer.

17. Dale, V.H. and E.M. Denton. 2018. Plant succession on the Mount St. Helens debris-avalanche deposit and the role of nonnative species. Chapter 8 in Crisafulli, C.M. and Dale, V.H. (editors). *Ecological Responses at Mount St. Helens: Revisited 35 years after the 1980 Eruption*. New York: Springer.

### **Pedagogy**

1. Dale VH and KL Kline. 2017. Interactive Posters: A valuable means for enhancing communication and learning about productive paths toward sustainable bioenergy. *Biofuels, Bioproducts and Biorefineries* 11(2): 243-246. <http://onlinelibrary.wiley.com/doi/10.1002/bbb.1753/epdf>
2. Dale VH. 2018. Careers in applied ecology at Federally Funded Research and Development Centers (FFRDCs). *Frontiers in Ecology and the Environment* 16(10): 605-606. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.1978>
3. Dale VH, Post M, and Norby R. 2021. Jerry S. Olson (1928-2021). *Bulletin of the Ecological Society of America* 102 (3) e01879. <https://doi.org/10.1002/bes2.1879>

### **Landscape Ecology**

1. Gardner, R.H., M.G. Turner, and V.H. Dale. 1989. Predicting across scales: a report on the workshop "Predicting across scales: theory development and testing." *Bulletin of the Ecological Society of America* 70: 153-155.
2. R.H. Gardner, R.G. O'Neill, M.G. Turner, and V.H. Dale. 1989. Quantifying scale dependent effects of animal movement with simple percolation models. *Landscape Ecology* 3:217-228. <https://link.springer.com/article/10.1007%2FBF00131540>
3. Turner, M.G., R.H. Gardner, and V.H. Dale. 1989. Predicting across scale: theory development and testing. *Landscape Ecology* 3:245-252. <https://link.springer.com/article/10.1007/BF00131542>
4. Dale, V.H., R.H. Gardner, and M.G. Turner. 1989. Predicting across scales: Comments of the guests editors of *Landscape Ecology*. *Landscape Ecology* 3:147-152.
5. Turner, M.G. and Dale, V.H. 1990. Modeling landscape disturbance. In M.G. Turner and R.H. Gardner (ed.) *Quantitative Methods in Landscape Ecology*. Springer-Verlag, New York. pp. 323-351.
6. Gardner, R.H., V.H. Dale, R.V. O'Neill, and M.G. Turner. 1991. A percolation model of ecological flows. In *Landscape Boundaries: Consequences for Biotic Diversity and Ecological Flows*, F. di Castri and A.J. Hansen (eds.), Springer-Verlag, N.Y., pp. 259-269.
7. Pearson, S.M., Dale, V.H. and Offerman, H.L. 1994. Fragmentation of habitats used by neotropical migratory birds in southern Appalachians and the neotropics. *Proceedings from Symposium on Application of Landscape Concepts to Forest Ecosystem Management at the Society of American Foresters National Convention, Indianapolis, In, Nov 7-10, 1993*.
8. Noon, B.R. and V.H. Dale. 2002. Broad scale ecological science and its applications. Pages 34-52 In (K. Gutzwiller, ed.) *Applying Landscape Ecology in Biological Conservation*. New York: Springer-Verlag.
9. Dale, V.H., and B.R. Noon. 2004. What is a landscape and how is one studied? In Gucinski, H., Miner, C., and Bittner, B. (editors) *Proceedings Views from the ridge--considerations for planning at the landscape scale*. Gen. Tech. Rep. PNW-GTR-596. Portland, OR U.S. Department of Agriculture. Forest Service, Pacific Northwest Research Station.

### **Environmental Security**

1. King, W.C. and V. Dale. 2003. What in the World Is worth fighting for? Using models for

environmental security. Pages 289-309 In Dale, V.H. (editor) Ecological Modeling for Resource Management. New York: Springer-Verlag.

2. Dale, V.H., S. Bartell, R. Brothers, and J. Sorenson. 2004. Systems approach to environmental security. *EcoHealth* 1:119-123.

### **EPA Science Advisory Board Reports**

1. U.S. EPA Science Advisory Board. 1995. Ecosystem Management: Imperative for a Dynamic World. Science Advisory Board. U.S. Environmental Protection Agency, Report No. EPA-SAB-EC-95-003, Science Advisory Board, Washington, D.C. Prepared by the Ecological Processes and Effects Committee, Environmental Futures Subcommittee. Chair: Kenneth L. Dickson. Members: William E. Cooper, Virginia Dale, Mark A. Harwell, Robert J. Huggett, Anne McElroy, Frederic K. Pfaender, William H. Smith, Terry F. Young. Science Advisory Board Staff: Stephanie Sanzone
2. US.EPA Science Advisory Board. 1995. Beyond the Horizon: Using Foresight to Protect the Environmental Future.
3. U.S. EPA Science Advisory Board. 1997. Review of Environmental Goals for America; A review by the Environmental Goals Subcommittee of the Science Advisory Board. U.S. Environmental Protection Agency, Report No. EPA-SAB-EC-97-007, Science Advisory Board, Washington, D.C. Chair: Genevieve M. Matanoski. Members: Stephen L. Brown, Richard J. Bull, Virginia Dale, Mark A. Harwell, James H. Johnson, Jr., Carol A. Johnston, Paul J. Lioy, Morton Lippman, Joe L. Mauderly, Paulette Middleton, Maria T. Morandi, M. Granger Morgan, Ishwar P. Murarka, Barbara Petersen, Emil A. Pfitzer, James Price, Verne A. Ray, James E. Watson, Jr. Liaison: Ernest E. McConnell. Designated Federal Official: John R. Fowle III.
4. U.S. EPA Science Advisory Board. 2001. Planning for Ecological Risk Assessment: Developing Management Objectives: An SAB Report.
5. U.S. EPA Science Advisory Board. 2002. An SAB Report: A Framework for Assessing and Reporting on Ecological Condition. Report EPA-SAB-EPEC-02.
6. U.S. EPA Science Advisory Board 2002. Toward Integrated Environmental Decision Making. Report EPA-SAB-EC-00-011 (see [www.epa.gov/sab](http://www.epa.gov/sab))
7. U.S. EPA Science Advisory Board. 2005. Review of Critical Ecosystem Assessment Model (CrEAM). (Chair of Review Panel: V.H. Dale).
8. U.S. EPA Science Advisory Board. 2006. Review of Geographic Information Screening System Tool (GISST). (Chair of Review Panel: V.H. Dale).  
<http://yosemite.epa.gov/sab/sabproduct.nsf/36a1ca3f683ae57a85256ce9006a32d0/723b2fd462231abb85256e9a00437e11!OpenDocument>
9. U.S. EPA Science Advisory Board. 2007. Review of Ecological Risk Assessment. (Chair of Review Panel: V.H. Dale).  
<http://yosemite.epa.gov/sab/sabproduct.nsf/d21b76bff879fa0a8525735a00766807/7dd07944e6422e9a85256d27004cc903!OpenDocument>
10. U.S. EPA Science Advisory Board. 2007. Hypoxia in the Northern Gulf of Mexico: An Update by the EPA Science Advisory Board. (EPA-SAB-08-003) (Chair of Review Panel: V.H. Dale).  
<https://www.epa.gov/ms-htf/hypoxia-northern-gulf-mexico-update-epa-science-advisory-board>

### **Reports for the Strategic Environmental Research and Development Program**

William D. Goran, Teresa Aden, Harold E. Balbach, Beverly Collins, Virginia Dale, Theresa Davo, Patrick J. Guertin, John Hall, Rose Kress, David Price, and Pete Swiderek, Technical Report, 15 Apr 2002, USACERL, Champaign, IL, Report Number ERDC SR-02-1

**Book Reviews**

1. Dale, V.H. 1992. The Amazon: A timeless battleground. *Forum for Applied Research and Public Policy* 7(3): 124-125.
2. Dale, V.H. 1993. Sustainable land uses in the Amazon. *Ecology* 74:1288.
3. Dale, V.H. 1993. Sustaining the tropics. *Forum for Applied Research and Public Policy* 9(1):141-142.
4. Dale, V.H. 2004. Succession. *Ecology* 85(1): 294.

**Editorials**

1. Dale, V.H., Barrett, G.W., Carpenter, A.T., Hinkle, C.R., Mitch, W.J., Pitelka, L.F. 2000. ESA's professional certification program: Let's make it work. *Bulletin of the Ecological Society of America* 81(4): 255-257.
2. Hinkle, C.R., Barrett, G.W., Carpenter, A.T., Dale, V.H., Johnson, W.C., Klopatek, J.M., Mitch, W.J. 2001. ESA's professional certification program: It is working! *Bulletin of the Ecological Society of America* 82(4): 217.
3. Dale, V.H. 2002. *Environmental Management* fosters enhanced communication through cross disciplinary studies. *Environmental Management* 29:1-2.
4. Dale V.H. (2010) *Environmental Management* welcomes a new face and reinforces its focus on science-based stewardship. *Environmental Management* 45:1243-1243.

**General Public**

1. Dale, V.H. 1991. Circles of Death. *Cumberland Journal* 1:16-17, 30.
2. Dale, V.H. 1992. The recovery of Mount St. Helens. *The World and I*. June: 262-267.

**Children's Book**

1. Dale VH and Kline KL. 2019. **Adventures of Lion.**

**Presentations (incomplete list):****Plenary speaker**

- U.S. Regional Association of the International Association of Landscape Ecology, East Lansing, , March 19, 1998
- International Association of Landscape Ecology, Colorado, July 1999
- 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

Southern Forestry and Natural Resources GIS Conference, Athens, Georgia, Dec. 16-17, 2004

First symposium of the Brazilian Chapter of the International Association of Landscape Ecologists, Caxambu, Brazil, Nov. 21, 2005

Advances in Threat Assessment and Their Application to Forest and Rangeland Management, <http://www.threats.forestencyclopedia.net/-71209#71209>, Boulder, CO, July 2006.

A landscape design for bioenergy feedstocks, US-China Workshop on Environmental Aspects of Bioenergy Production and Sustainability, Knoxville, TN, September 2007

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: <http://cfwstem.weebly.com/symposium.html>. The title of her talk was “From Disturbance to Sustainability: Following Interesting Questions and Fun Opportunities.”

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 <http://www.isemconference.com/> 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, CO<sub>2</sub> 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. [10.52843/cassyni.28r8vy](https://doi.org/10.52843/cassyni.28r8vy) March 29, 2023, Potomac, Maryland.

Department of Ecology and Evolutionary Biology at the University of Tennessee – September 1, 2023, departmental seminar titled “Ecological Recovery & Resource Management Since the 1980 Eruption of Mount St. Helens” begins at the 6:28 mark on the recording here: [Link to Dr. Dale Seminar, 9/1](#)

#### Symposia speaker

Society of American Foresters, Symposium on Forest Models, Portland, Oregon, 1983

New England Section of the Society of American Foresters, Worcester, 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," Los Angeles, 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.  
Hewlett 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  
Symposium on “Landscape Sustainability Science: Linking Landscape Pattern, Ecosystem Services, and Human Well-being” at annual meeting of IALE-NA. Presentation by Dale and Kline is titled “Stakeholder engagement fosters progress toward sustainability,” Oklahoma City, Oklahoma, April 2024  
FEWSUS International Symposium of “Food-Energy-Water Bioeconomies for Net-Zero

Transition” Knoxville, TN March 2024. Presentation by VH Dale, KL Kline, ES Parish, EJ Trammell, JL Jones-Crank, P. Williams, M Babbar-Sebens, VH Dale, A Marshall, A Kliskey titled “Stakeholder Engagement improves Decision Making in Food-Energy-Water Systems that support the Bioeconomy”

### Testimony

- Adams, V.D. 1982. Testimony. pp. 185-188. In 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](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](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. <http://www.eubce.com/conference/parallel-events-workshops-and-project-meetings/workshops-project-meetings/the-world-needs-more-land-use-change.html>.
- 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  
and September 2024

Contributed Presentations (incomplete)

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.  
15<sup>th</sup> 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.  
34<sup>th</sup> 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 – "FEWESTERN: 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 (incomplete)

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  
 University of Tennessee Arboretum Society - 2023.

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, 1985  
 Workshop 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, Kent, Ohio)
- Elsie Denton, 2022 - present

*Masters Students:*

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

*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 (University of Tennessee)

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](http://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: <https://news.yahoo.com/renowned-scientist-returns-mount-st-120000065.html> 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

#### Newsletter

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

<https://www.fs.fed.us/emc/nfma/includes/cosreport/Committee%20of%20Scientists%20Report.htm>

[http://www.eenews.net/tv/video\\_guide/1409](http://www.eenews.net/tv/video_guide/1409)

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

Oak Ridge National Laboratory

Center for BioEnergy Sustainability <http://www.ornl.gov/sci/besd/cbes.shtml>

<https://www.ornl.gov/staff-profile/virginia-h-dale>

<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: <http://eeb.bio.utk.edu/people/virginia-dale/>

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

Jason Learning STEM role model: [http://www.jason.org/virginia-](http://www.jason.org/virginia-dale?utm_source=Marketing+Leads+from+Constant+Contact&utm_campaign=3d52b6f95b-d52b6f95b-EMAIL_CAMPAIGN_2017_09_21&utm_medium=email&utm_term=0_a6b927c33a-3d52b6f95b-10854893)

[dale?utm\\_source=Marketing+Leads+from+Constant+Contact&utm\\_campaign=3d52b6f95b-](http://www.jason.org/virginia-dale?utm_source=Marketing+Leads+from+Constant+Contact&utm_campaign=3d52b6f95b-d52b6f95b-EMAIL_CAMPAIGN_2017_09_21&utm_medium=email&utm_term=0_a6b927c33a-3d52b6f95b-10854893)

[EMAIL\\_CAMPAIGN\\_2017\\_09\\_21&utm\\_medium=email&utm\\_term=0\\_a6b927c33a-3d52b6f95b-10854893](http://www.jason.org/virginia-dale?utm_source=Marketing+Leads+from+Constant+Contact&utm_campaign=3d52b6f95b-d52b6f95b-EMAIL_CAMPAIGN_2017_09_21&utm_medium=email&utm_term=0_a6b927c33a-3d52b6f95b-10854893)

Virginia's energy efficient house: <https://hickorycreeksanctuary.wordpress.com/>

Sustainable agriculture: <https://youtu.be/jKr38-kwmRs>

Climate change: <https://mavensnotebook.com/2021/10/26/feature-preparing-scientists-and-policy-makers-for-a-future-under-climate-change/>