

VITA 22/12/2017

DWIGHT ALAN BROWN
Department of Geography,
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Minneapolis, MN 55455
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Born: August 15, 1936; Aledo, Illinois

Degrees: B.S. 1963 Western Illinois University
M.A. 1965 The University of Kansas
Ph.D. 1968 The University of Kansas

Dissertation: "Erosion and Morphometry of Small Watersheds in Eastern Puerto Rico,"
Unpublished Ph.D. Thesis, University of Kansas, 1968.

Academic Experience:

1966 - 71 Assistant Prof. of Geography, University of Minnesota
1971 - 85 Associate Prof. of Geography, University of Minnesota
1978 - 81 Chairman, Department of Geography, Univ. of Minnesota
1985 – 2006 Professor of Geography, University of Minnesota
1985 Acting Dir., Water Resources Research Center, U. of MN
1990 - 92 Director of Undergraduate Studies, Dept. of Geog., Univ. of Minn.
2006 – Professor Emeritus of Geography, University of Minnesota

Professional Society Memberships: Assoc. Am. Geographers, Am. Assoc. for the
Advancement of Science, Am. Quaternary Research Assoc., Society for Phytolith Research.

Honors and awards

Appointed Associate Fellow of the Center for Great Plains Study, University of Nebraska

Teaching Interests:

- Biogeography of the Global Garden (Geog. 1403),
- Water Resources, Individuals and Institutions (Geog. 5444),
- Quaternary Landscape Evolution (Geog. 5441),
- Geographic Analysis of Environmental Systems and Global Change (Geog. 5565).

Current Research:

Dynamics of Grasses in the Midcontinent Plains (not currently funded).

- Atlas of dominant grasses of the Midcontinent Plains. The top 40 species are being mapped by 17 soil landscape types and their close taxonomic relatives at continental and global scales.
- Modeling the spatial dynamics of native grass populations in the Midcontinent Plains. This project examines environment, plant attribute, and population dynamics explanations of native grassland patterns through the use of Monte Carlo diffusion methods and Neural Network analysis. The actual processes that contribute to the spatial arrangement of grasses must be determined to understand how grassland biogeography changes over time. These change processes must eventually become a part of the baseline starting point for assessment of human impacts on environment.
- Implications of differences in grass species morphology for reestablishment under future climates.
- Biogeography textbook.

Publications: (* indicates invited or peer reviewed papers)

1. George Jenks and Dwight Brown, 1966, Three-dimensional Map Construction, *Science*, 154:857-864 and cover. Reprinted in *Reprographics*, July, 1967, Vol. 5, No. 7, 8-16.*
2. D. A. Brown and D. S. Simonett, 1967, Integration and Locational Change in the Australian Electricity Industry: 1951-1965, *Economic Geography*, 43:283-302.*
3. D. Brown, 1969, Minnesota Milk Production, 1965 (Map of the issue and Commentary), *Minnesota Geographer*, 21:, No. 2, April 1969, 26-27.
4. D. S. Simonett, and D. Brown, 1969, Possible Uses of Radar on Spacecraft in Contributing to Antarctic Mapping, Crevasses, Sea Ice, and Mass Budget Studies, *Proceedings, 7th Congress International Association Quaternary Research*, Vol. 16, 1969.*
5. D. Brown, 1971, Kentucky Solution Cuesta Revisited: An Alternative Explanation, *Proceedings, Association of American Association Geographers*, 3:39-41.*
6. D. Brown, 1971, Stream Channels and Flow Relations, *Water Resources Research*, 7:304-310.*
7. D. Brown, 1971, An Approximation of Eolian Sediment Transport Potential in the United States, *Proceedings, Association of American Geographers*, 1974, Vol. 6, 3-5.*
8. D. Brown, M. Meyer, J. Ulliman, R. Eller J. Gamble, S Prestin and D. Trippler, 1973, ERTS-1 Applications to Minnesota Land Use Mapping, *Symposium on Significant Results Obtained from the Earth Resources Technology Satellite-1, Technical Presentations Sec. B*, March, 1973, 991-997. Also Published as *MLMIS Report no 12A*.
9. Joseph E. Sizer and D. Brown, 1974, ERTS-1 Role in Land Management and Planning in Minnesota, *Third Symposium on Significant Results Obtained from the Earth Resources Technology Satellite-1, Technical Presentations Sec. A*, 1974, 1:341-350.*
10. D. Brown (with sections by various cooperators), 1973, Application of ERTS-1 Imagery to State-Wide Land Information System in Minnesota, N.A.S.A./ERTS-1 Program, Six-Month Progress Report: January to June, 1973, for Minnesota State Planning Agency and Center for Urban and Regional Affairs, Joseph E. Sizer, principal investigator, 43 pp., U.S. Commerce Department, *N.T.I.S. Document No. E73-10821*.
11. D. Brown, J. Harrington, T. Isley, D. Soehren, J. Smiley, and E. Stern) 1975, Wildlife Habitat Change and Seasonal Cultivation, *M.L.M.I.S. Report no. 5012*, 20 pp.
12. D. Brown, J. Gibson, D. Pile, and R. Warwick, 1975, Mapping Twin Cities Minnesota Metropolitan Area Land Use with ERTS-1 Imagery, *M.L.M.I.S. Report 5013*, 11 pp. plus folded map. (Map reprinted in NASA special publication 360, *Mission to the Earth: LANDSAT Looks at the World*, 1976 and also in a reduced black and white version by INTERDESIGN for the Metropolitan Waste Control Commission.
13. D. Brown, (with Skaggs, Smiley, and Stern) Monitoring Surface Water Dynamics in Minnesota, *M.L.M.I.S. Report 5014*, 1975, 46 pp. plus folded map.
14. D. Brown and R. Skaggs 1974, (with contributions by S. Prestin) Remote Sensing Applications to Hydrology in Minnesota, in Space Science Center, University of Minnesota Report, June 30, 1974, A Study of Minnesota Forests and Lakes Using Data from the Earth Resources Technology Satellites, pp. 81-195.
15. D. Brown, 1974, Applications of ERTS-1 Imagery to State-Wide Land Information System in Minnesota, NASA/ERTS-1 Program Final Report: July 1, 1972-December 31, 1974, for Minnesota State Planning Agency and Center for Urban and Regional Affairs, Joseph E. Sizer, Principal Investigator, 11 pp.
16. D. Brown and R. Skaggs, 1976, Remote Sensing Applications to Hydrology in Minnesota, Space Science Center, University of Minnesota Report, 66 pp.

17. D. Brown, M. Roller, J. Kenna, J. Smiley, and L. Cavalier, 1976. *Land Cover Change in the Mesabi Range 1969-1975, M.L.M.I.S. Report 5020.*
18. D. Brown, 1977, A Working River, *Design Quarterly*, 101/102:16-17.*
19. D. Brown, R. Warwick, L. Cavalier, and M. Roller, 1977, The Persistence and Condition of Douglas County, Minnesota Lakes, *M.L.M.I.S. Rep. 5021*, 43p.
20. D. Brown, R. Warwick and R. Skaggs, 1977, Reconnaissance Analysis of Lake Condition in East Central Minnesota, *M.L.M.I.S. Report 5022*, 17 pp. plus folded color map.
21. D. Brown, 1984, Prospects and Limits of a Phytolith Key for Grasses in the Central United States, *Journal of Archaeological Science*, 11:345-368.*
22. D. Brown and P. Gersmehl, 1985, Migration Models for Grasses in the American Midcontinent, *Annals Assoc. Am. Geog.*, September, 1985, 383-394.*
23. D. Brown, 1986, Geographic and Taxonomic Aspects of Research Design for Opal Phytolith Analysis in the Midcontinent Plains, in I. Rovner, ed., *Phytolitheria Occasional Paper*. Proceedings of the 1984 Phytolith Research Workshop, pp. 89-102.*
24. D. Brown, 1986, Taxonomy of a Midcontinent Grasslands Phytolith Key, in I. Rovner, ed., *Phytolitheria Occasional Paper*. Proceedings of the 1984 Phytolith Research Workshop, 1986, pp. 67-86.*
25. P. Gersmehl and D. Brown, 1986, The Declining Advantage of the Muscatine Silt Loam and the Dixification of the Midwest, *Journal of Geography*.*
26. P. Gersmehl and D. Brown, 1986, The Regional Validity of the Idea of Soil Productivity, *Annals, Assoc. of Am. Geographers*.*
27. C. Gersmehl, J. Drake, and D. Brown, 1986, *Minnesota Water: A Geographical Perspective*, WRRRC Public Report #4.
28. P. Gersmehl and D. Brown Physical Features of the Twin Cities Area, 1986, (two trips), in T. Baerwald and K. Harrington, *Twin Cities Field Trip Guide*, AAG , 138-163.
29. E. Garvey, P. Gersmehl, and D. Brown, 1986, *Minnesota Water Rights and Regulation*, WRRRC Public Report #5.*
30. K. Anderson, J. Corbett, C. Gersmehl, D. Brown, and P. Gersmehl, 1986, Cell Size and Simulation Modeling of Water Resources at a Regional Scale, in B. J. Nieman, Jr., ed., *Proceedings, Urban and Regional Information Systems Association*, 1:203-213.
31. D. Brown, C. Gersmehl, J. Drake, and R. Skaggs, 1987, *Crop Production Response to Moisture Supply in Minnesota*, Water Resources Research Center, Special Report 9.
32. D. Brown and P. Gersmehl, Editors. 1987. *File structure design and data specifications for water resources geographic information systems*, Water Resources Research Center, Special Report 10, 404pp (with 15 separately authored chapters, co-author of 5)
 - Chapter 1. D. Brown and P. Gersmehl, Introduction: toward water resources analysis with geographic information systems
 - Chapter 2. P. Gersmehl, D. Brown, and K. Anderson, File structure and cell size considerations for a water resources GIS
 - Chapter 6. P. Gersmehl, K. Anderson, R. Greene, N. Dunning, C. Gersmehl, and D. Brown, Hydrologic classification of land cover.
 - Chapter 12. D. Brown, K. Anderson, and P. Gersmehl, Hydrographic data for a water resources GIS.
 - Chapter 15. P. Gersmehl and D. Brown, Conclusions and summary of recommendations for a water resources geographic information system.

38. R. Skaggs, and D. Brown, 1987, *Relationship Between Climate and the Mean Annual Flow of the Mississippi River at Saint Paul, Minnesota*, Water Resources Research Center, Special Report 11.
39. K. Anderson, J. Corbett, N. Dunning, C. Gersmehl, R. Greene, P. Gersmehl, and D. Brown, 1987, *Twin Cities Surface Water Simulation Modeling Demonstration*, Water Resources Research Ctr., Spec. Report 12.
40. D. Brown and P. Gersmehl, 1987, Maintaining Relational Accuracy of Geocoded Data in Environmental Modeling, *GIS '87 - San Francisco*, the Second Annual International Conference, Vol. 1:266-275. D.
41. P. Gersmehl, and D. Brown, 1988, File Structure Requirements for Regional Scale Water Resources Analysis, *Proceedings of the International Geographical Information Symposium*, Washington, D.C. III:137-147.
42. D. Brown, 1989, Physiological and Morphological problems for dispersal and survival of grasses in a changing environment, p 25-38 in G. P. Malanson, Ed., *Natural Areas Facing Climate Change*, SPB Academic, The Hague.*
43. R. Skaggs and D. Brown, 1989, Climate and Flow of the Mississippi River at St. Paul, p.19-26 in P. Brezonik Ed., *Proceedings of Workshop on Drought*, Nov. 1988, Water Resources Res. Center, Univ of Minn., St. Paul.*
44. P. Gersmehl, Bryan Baker, and Dwight Brown, 1989, Land management effects on innate soil erodibility: A potential complication for compliance planning, *Journal of Soil and Water Conservation*, 44:417-420.*
45. D. Brown and P. Gersmehl, 1989, Geographic Information Systems, Data, and Water Resources, *Jour. Minn. Acad. Sci*, 55:14-17. Special Issue on Minnesota Water Resources.*
46. P. Gersmehl, and D. Brown, 1991, Regional differences in the usefulness of a soil productivity index, *Jour. Soil and Water Conservation*. 379-382.*
47. P. Gersmehl, and D. Brown, 1992, Observation, in R. Abler, M. Marcus, and J. Olson, Eds., *Geography's Inner Worlds*, pp 77-98, Rutgers Univ. Press, New Brunswick, pp 77-98.*
48. D. Brown, 1993, Early Nineteenth-Century Grasslands of the Midcontinent Plains, *Annals of the Association of American Geographers*. 83:589-612.*
49. D. Brown and K. Brown. 1996. Landscape Restoration Implications of Native Grass Pattern Evolution in Northern Plains Landscapes. *Restoration & Management Notes*, 14:140-147.*
50. D. Brown 1996. Living in the Biosphere: Production, Pattern, Population and Diversity. Published by Association of American Geographers, Commission on College Geography 2. . 123 pages. ISBN: 0-89291-231-6
51. D. Brown. 1996. Biological Resource Geographies. (Supporting text materials for item published with the above item). Published by Association of American Geographers, Commission on College Geography 2. . 31 pages.
52. D. Brown 1996. Living in the Biosphere: Production, Pattern, Population and Diversity. Student version. Module published by Association of American Geographers Commission on College Geography 2. . 73 pages. ISBN: 0-89291-231-4
53. D. Brown with supplements from other CCG2 workshop participants. 1998 Living in the Biosphere: Production, Pattern, Population, and Diversity published on the Web by University of Texas, Austin with HTML conversion by Jennifer Goett and Tony Kirvan,. At URL:

54. Kloiber, S.M., T.H. Anderle, P.L. Brezonik, L. Olmanson, M.E. Bauer, and D. A. Brown. 2000. Trophic state assessment of lakes in the Twin Cities (Minnesota, USA) region by satellite imagery. *Archiv für Hydrobiologie Advances in Limnology*. 55:137-151.*
55. Hudson, John C. and Dwight A. Brown. 2000. RETHINKING GRASSLAND REGIONALISM. 29 pages, including 13 maps, two figures, and 1 table. In Acrobat PDF format.
<http://cla.umn.edu/grasslands/RGR1.htm>
56. Brown, D. A. and K. C. Chang. 2001. *Artificial neural networks, paradigms, and western wheatgrass geography*. 13 pages, including 9 figures, and 2 tables. In Acrobat PDF format.
57. Brown, K. D. and D. A. Brown. 2001. Landscape disturbance effects on tallgrass species patterns: the implications for landscape planning and design, 17 pages, 6 figures, and 4 tables. In Acrobat PDF format.
57. Brown, D. A. and K. C. Chang. 2001. Pattern of abundance simulation model: a multiple unit dispersion simulation system, 12 pages in Acrobat PDF format.
58. Susy S. Ziegler Gary M. Pereira and Dwight A. Brown. 2003. Embedded Scales in Biogeography. in R. McMaster and E. Sheppard, eds. *Scale and Geographic Inquiry: Nature, Society, and Method*. Blackwell Press (in press).
59. Brown, D., P. Gersmehl, and S. Ziegler, 2003. *Biogeography of the Global Garden*. Kendall Hunt. ISBN 0-7575-0568-6. 286 pages + 3 color plates and CDROM
- 60.. Brown, D., P. Gersmehl, and S. Ziegler, 2007.. *Biogeography of the Global Garden. Second Ed* Kendall Hunt. ISBN 978-0-7575-4570-2. 320 pages + 6 color plates and CDROM
61. Brown, D. 2010. "Biome: Midlatitude Grassland." *Encyclopedia of Geography*. 2010. SAGE Publications. 1 Oct. 2010.
62. Brown, D. 2015. Environmental Limitations and Morphological Adaptations of Grasses on the Midcontinent Plains: A guide for reestablishment
Click link below for free download: <http://grasslandatlas.com/>
63. Brown, D. 2017. Grassland Ecosystems, in Douglas Richardson, Editor-in-Chief, *The International Encyclopedia of Geography: People, the Earth, Environment, and Technology*. Wiley-

Other Papers:

Twenty three **invited lectures** in 18 departments and 15 colleges or institutes.
 Thirty-four **papers presented to professional societies**, including American Assoc. for the Advancement of Science, The Minnesota Academy of Science, the Assoc. American Geographers, American Quaternary Research Assoc, U.S. Landscape Ecology Symposium.
 Requested **research presentations to government** groups the Metropolitan Area Resources Commission, the Arrowhead Regional Development Commission, the Minnesota State Legislature, House Appropriations Committee, and the Minnesota State Planning Agency.

Invited Book Reviews:

- William C. McGinnies and Brian J. Goldman, eds., *Arid Lands in Perspective*, Univ. AZ Press, in *Jour. Range Management*, Jan., 1970.
 Merlin Lawson, *The Climate of the Great American Desert*, University of Nebraska Press, in *Annals, Association of American Geographers*, December, 1977.
 A. G. Smith, A. M. Harley, and J. C. Briden, *Phanerozoic Palecontinental World Maps*, in *The American Cartographer*, (October 1984, 11:185.

- J. T. Teller and L. Clayton, eds. *Glacial Lake Agassiz*, Geological Assoc. of Canada Sp. Pub. 26, in *The Professional Geographer* 1985, 37:25-4.
- Stephen C. Porter, ed. *Late Quaternary Environments of the United States vol. 1, The Late Pleistocene*, Minneapolis: The University of Minnesota Press, 1983. xiv and 407 pp., maps, diags. and biblio. \$45 cloth (ISBN 0-8166-1169-6), in *The Professional Geographer*, 1985, 37:246.
- Herbert E. Wright, Jr., ed. *Late Quaternary Environments of the United States vol. 2, The Holocene*, Minneapolis: The Univ. of Minnesota Press, 1983. xvii and 277 pp., maps, diags. and biblio. \$45 cloth (ISBN 0-8166-1171-8), in *The Professional Geographer*, 1985, 37:246.
- (with Phil Gersmehl) R. S. Bradley, *Quaternary Paleoclimatology*, Winchester, MA, 1985, ix and 472 pp., maps, diagrams, and biblio., \$50, cloth, in *The Professional Geographer*, 1986, 38:108.
- Neil Roberts, *The Holocene: an Environmental History*, Basil Blackwell, 1989. x and 227 pp., maps, diags., index and biblio. \$60, cloth in *Annals of the Association of American Geographers*, 1991, 81:359-361.
- E. C. Pielou, *After the Ice Age*, in *Annals Association of American Geographers*, 82:727-8.
- Raymond Bradley and Philip Jones, eds. 1992. *Climate since AD 1500*, London: Routledge, Chapman & Hall, vii and 679 pp. maps, diags., graphs, index, and refs. \$100.00 cloth. in *Annals of the Association of American Geographers*, 1993, 83:718-719.

Grants and Awards:

1. 1968-70 University of Minnesota Graduate School, \$4,092, Reconnaissance Techniques for Surface Water Resources Analysis
2. 1971-73 University of Minnesota Graduate School, \$2,724, Magnitude, Frequency, Direction, and Timing of Wind Energy in the U.S.
3. 1972-74 N.A.S.A., ERTS-1 funding of the Minnesota State Planning Agency, University of Minnesota Center for Urban and Regional Affairs Cooperative Proposal, \$107,946, Application of ERTS-1 Imagery to Minnesota Land Information
4. 1972-76 N.A.S.A., through University of Minnesota Space Science Center, \$39,452, Remote Sensing Applications to Surface Water Hydrology (with Skaggs)
5. 1975-76 State Planning Agency, Center for Urban and Regional Affairs, University of Minnesota Cooperative Proposal - to N.A.S.A., \$47,442, LANDSAT investigation
6. 1976-77 University of Minnesota Graduate School, \$940, Classification of Biogenic Opal in Soils for Reconstruction of Environmental History in the Prairie.
7. 1976-77 (with Gersmehl and Hsu) University of Minnesota, Educational Development Grant, \$12,133, to develop hands-on-computer instructional packages for geography courses.
9. Fall, 1976 Quarter leave to study Grasslands Environmental Reconstruction
10. 1977-78 (with Hsu) University of Minnesota, Educational Development Grant, \$5,959
11. 1980-82 National Science Foundation, \$23,973, Paleogeography of Grasslands Vegetation.
12. May, 1983 CLA Travel Grant for AAAS meetings in Detroit
13. July, 1983 EDP grant (with Gersmehl, Skaggs, and Andrews) for map and soil monolith displays. \$1740.
14. June 16-July 31, 1984 Summer-Research Fellowship to write on historic views and the character of presettlement grasslands of the midcontinent plains.
15. July 1, 1985-June 30, 1987, Development of Minnesota Water Management System. Contract with Minnesota Department of Natural Resources, \$325,000. (Other investigators include Skaggs, Gersmehl, Baker, Pfannkuch, and Nieber.)
16. March-Sept. 1985, Minnesota Water Resources Issues. A project to develop a WRRC public report on the physical basics behind Minnesota's water resource issues. CURA has provided a research assistant for this project.
17. 1985-86 Minnesota Water Rights (with P. Gersmehl), WRRC. funding.
18. 1985 Woksape Project (with P. Gersmehl).
19. 1986-87 Farmland Marginality, funded by CURA. \$7000

20. 1987-88 Curricular materials for interdisciplinary geographic information systems course. (with Joan Nassauer), funded by EDP \$2700
21. 1988-89 GIS scale change, paradigm shifts and attribute error, Funded by the Graduate School. \$8000.
22. 1989-90 Sabbatical leave. To Model Patterns of Abundance of Midcontinent Native Grasses.
23. 1993-1994 Graduate School Grant in Aid to develop a pilot data base design to study environmental relations of native grass distributions. (granted, about \$11,000)
24. 1994 Spring. Single quarter leave, spring of 1994 to do an atlas of native grasses based on the data base developed under the Graduate School Grant in Aid.
25. 2000 Fall. Single semester sabbatical.

College and University Service:

- 1976-80 Member, Senate Educational Policy Committee
- 1979-80 SCEP representative on University Committee on Budget Review and Biennial Report
- 1981-82 CLA Committee on Student Services
- 1982-89 Member, Water Resources Research Center Advisory Board
- 1982-86 CLA computer committee
- 1983-86 Senate Committee on Physical Plant and Space Allocations
- 1984-86 CLA committee on CLA Distinguished Teacher Awards and Morse-Amoco Award
- 1984 University review committee of The Water Resources Research Center
- 1984-87 CLA College Assembly
- 1984-87 CLA Council on Curriculum Instruction and Advising
- 1985-86 CLA Curriculum Policy Committee
- 1988-90 Member of Water Resources Subcommittee of University Technical Advisory Committee on Natural Resources.
- 1985, 1989-1991 Univ. Minnesota Delegate to Universities Council on Water Resources.
- 1989 UCOWR Annual meeting planning committee (Local arrangements).
- 1993-96 Executive Committee, Water Resources Science graduate program
- 1995-96 Program planning Committee for Water '96 Symposium
- 1995-96 CLA Assembly
- 1998 CLA Program Review for semester conversion committee
- 1998-2000 CLA Assembly
- 1999-2000 CLA Course Review Committee

Other Professional Service:

- 1975-77 Mapping Advisory Committee, State Planning Agency.
- 1978 Invited participant in Spring Hill Conference on Water Resource Planning for Minnesota.
- 1977 Invited participant in Wenner-Gren Foundation conference on LANDSAT applications for anthropology in non-Western cultures, New York.
- 1977 Invited participant in National Science Board Regional forum on Public Participation in Science Policy, October, 25, Minneapolis, MN
- 1990-91 Stream Network Information Systems Committee, State Planning Agency.
- 1991 Minnesota Environmental Quality Board Committee on Water Resources Research
- 1995 Participate in CCG2 workshop at Clark Univ. in June, 1995 and served on the panel evaluating the landuse curricular materials.
- 1995-96 Authored the curricular unit *Living in the Biosphere* for CCG2 project on Human Dimensions of Global Change. The unit includes Computer-based student activities, extensive background readings, and Instructor Guide, and overhead and animated computer display supporting materials. To be published by the AAG.