

CURRICULUM VITAE

David C. Culver
Department of Environmental Science
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1. Education:

B.A. in Biology with Honors, Grinnell College, 1966

Ph.D. in Biology, Yale University, 1970 (Dissertation: *Analysis of Simple Cave Communities*, Advisor: Thomas L. Poulson)

2. Positions Held:

Ford Foundation Postdoctoral Fellow in Population Biology at the University of Chicago (1970-1971)

Assistant Professor of Biological Sciences at Northwestern University (1971-1975)

Visiting Associate Professor of Human Ecology, Harvard University (1975)

Associate Professor of Biological Sciences at Northwestern University (1975-1980)

Professor of Biological Sciences at Northwestern University (1980-1981)

Professor of Ecology and Evolutionary Biology at Northwestern University (1981-1987)

Professor of Biology at American University, Washington, D.C. (1987-2011)

Professor of Environmental Science at American University, Washington, D.C. (2008 – 2015)

Associate Researcher at Karst Research Institute ZRC SAZU, Postojna, Slovenia (2008 – present)

Professor Emeritus of Environmental Science at American University, Washington, D.C. (2016 – present)

3. Major Administrative Experience:

Associate Chair, Department of Biological Sciences, Northwestern University (1976-1978)

Chair, Department of Ecology and Evolutionary Biology, Northwestern University (1981-1984)

Chair, Department of Biology, American University (1987 - 1995)

Coordinator, Environmental Studies Program, American University (1994 – 1997, 1999 - 2003)

President, Karst Waters Institute (1998 – 2002)

Associate Dean for Academic Affairs, College of Arts and Sciences, American University (1997 - 1999)

Chair, Self-Study Steering Committee for Middle States Reaccreditation, American University (2002 - 2004)

Acting Chair, Department of Chemistry, American University (2006 – 2007)

Associate Dean for Science, College of Arts and Sciences, American University (2006 - 2009)

Academic Integrity Code Coordinator, College of Arts and Sciences, American University (2013 - 2015)

4. Honors, Professional Activities:

Fellow National, 2011, The Explorers Club

Fellow, 2011, American Association for the Advancement of Science

Faculty/Administrator Distinguished Service Award, 1993, American University

Faculty Distinguished Service Award, 2004, American University

Honorary Life Member, 1995, National Speleological Society

Fellow, National Speleological Society

Board of Directors, Karst Waters Institute, 1991 to 2005, Executive Vice President, 2005- 2007

Board of Directors, Cave Conservancy Foundation, 1998 to 2004

Member, Virginia Cave Board, 1998-2002, 2003-2013

Vice-President and Council Member, Societe internationale de Biospéologie, 2001 to 2006

Honorary Member, International Society of Subterranean Biology, 2016 to present

Member:

Explorers Club

National Speleological Society

International Society of Subterranean Biology

Patronymic species:

Antrobia culveri Hubricht—a snail

Lirceus culveri—an isopod

Pseudotremia culveri Shear—a millipede

Sphalloplana culveri Kenk—a flatworm

Stygobromus culveri Holsinger—an amphipod

Trichodrilus culveri Cook—an aquatic worm

5. Editorial Responsibilities:

Biology Editor, **Bulletin of the National Speleological Society**, 1972-1975

Special Editor, **Bulletin of the National Speleological Society** issue on regressive evolution, 1985

Editor, **Stygologia**, an international journal of groundwater research, 1989-1993

Co-Editor (with J.R. Holsinger) **Hydrobiologia** issue on biogeography of subterranean crustaceans, 1994

Co-Editor (with H. Wilkens and W. Humphreys) **Subterranean Ecosystems**. In *Ecosystems of the World* series of Elsevier Press, 2000.

Co-Editor (with L. Deharveng, J. Gibert, and I.D. Sasowsky) **Mapping Subterranean Biodiversity/Cartographie de la biodiversité souterraine**. Karst Waters Institute Special Publication 6, 2001.

Co-Editor (with W.K. Jones and J.S. Herman) **Epikarst**, Karst Waters Institute Special Publication 9, 2004.

Co-Editor (with W.B. White) **Encyclopedia of Caves**, Academic/ Elsevier Press, 2005.

Co-Editor (with F. Gabrovšek, A. Kranjc, and I.D. Sasowsky) **Time in Karst**. Karst Waters Institute Special Publication 12, 2007.

Co-Editor (with J. Gibert) **Freshwater Biology** special issue on assessing and conserving groundwater biodiversity, 2009.

Co-Editor (with W.B. White) **Encyclopedia of Caves. Second Edition**. Elsevier Press, 2012.

Special Editor, **Acta Carsologica**, special issue on carbon and boundaries in karst, 2013.

6 Symposia Organized:

Regressive Evolution, National Speleological Society, Frankford, Ky., July, 1984.

Karst Waters Institute planning meeting, Charles Town, W.Va. , October, 1988 (with J.E. Mylroie).

Biogeography of Subterranean Crustacea, Crustacean Society, Charleston, SC, June, 1992 (with D.W. Fong and J.R. Holsinger).

Karst Geomicrobiology and Redox Chemistry, Karst Waters Institute, Colorado Springs, Colo., February 1994 (with J.M. Herman and A.N. Palmer).

Conservation and Protection of the Biota of Karst, Karst Waters Institute, Nashville, Tenn., February 1997.

Mapping Subterranean Biodiversity, Karst Waters Institute, Moulis, France, March 2001 (with J. Gibert and L. Deharveng).

Mapping Cave Resources, Karst Waters Institute and Missouri Department of Conservation, Kirkwood, Missouri, May 2003 (with W.R. Elliott).

Epikarst, Karst Waters Institute, Sheperdstown, W.Va., October 2003 (with W.K. Jones and J.M. Herman).

Joint US-Slovenian workshop on long-term ecological studies in Slovenian karst, October 2006 (with T. Pipan).

Time in Karst, Karst Waters Institute, Postojna, Slovenia, March 2007 (with T. Pipan).

Shallow Subterranean Habitats, International Society of Subterranean Biology, Postojna, Slovenia, August 2010 (with T. Pipan).

Carbon and Boundaries in Karst, Carlsbad, NM, January 2013 (with D.W. Fong)

International Conference on Subterranean Biology, Fayetteville, AR, June 2016

7. Refereed Journal Articles:

Christiansen, K.A., and D.C. Culver. 1968. Geographical variation and evolution in *Pseudosinella hirsuta*. **Evolution** 22:237-255.

Christiansen, K.A., and D.C. Culver. 1969. Geographical variation and evolution in *Pseudosinella violenta*. **Evolution** 23:602-621.

Culver, D.C., and J.R. Holsinger. 1969. Preliminary observations on sex ratios in the subterranean amphipod genus *Stygonectes* (Gammaridae). **American Midland Naturalist** 82:631-633.

- Poulson, T.L., and D.C. Culver. 1969. Diversity in terrestrial cave communities. **Ecology** 50:153-158.
- Culver, D.C. 1970. Analysis of simple cave communities. I. Caves as islands. **Evolution** 24:463-474.
- Culver, D.C. 1970. Analysis of simple cave communities: niche separation and species packing. **Ecology** 51:949-958.
- Culver, D.C., and T.L. Poulson. 1970. Community boundaries: faunal diversity around a cave entrance. **Annales de Speleologie** 25:853-860.
- Holsinger, J.R., and D.C. Culver. 1970. Morphological variation in *Gammarus minus* Say (Amphipoda, Gammaridae) with emphasis on subterranean forms. **Postilla** no. 146, 24p.
- Culver, D.C. 1971. Analysis of simple cave communities. III. Control of abundance. **American Midland Naturalist** 85:173-187.
- Culver, D.C. 1971. Caves as archipelagoes. **National Speleological Society, Bulletin** 33:97-100.
- Culver, D.C., and T.L. Poulson. 1971. Oxygen consumption and activity in closely related amphipod populations from cave and surface habitats. **American Midland Naturalist** 85:74-84.
- Levins, R., and D.C. Culver. 1971. Regional coexistence and competition between rare species. **National Academy of Sciences (U.S.), Proceedings** 68:1246-1248.
- Culver, D.C. 1972. A niche analysis of Colorado ants. **Ecology** 53:125-131.
- Culver, D.C. 1973. Feeding behavior of the salamander *Gyrinophilus porphyriticus* in caves. **International Journal of Speleology** 7:229-245.
- Culver, D.C. 1973. Competition in spatially heterogeneous systems: an analysis of simple cave communities. **Ecology** 54:102-110.
- Culver, D.C., Holsinger, J.R., and R.A. Baroddy. 1973. Toward a predictive cave biogeography: the Greenbrier Valley as a case study. **Evolution** 27:689-695.
- Culver, D.C. 1974. Species packing in Caribbean and north temperate ant communities. **Ecology** 55:974-988.
- Culver, D.C. 1974. Competition between Collembola in a patchy environment. **Revue de Ecologie et Biologie du Sol** 11:533-540.
- Culver, D.C. 1975. The interaction of predation and competition in cave stream communities. **International Journal of Speleology** 7:229-245.
- Culver, D.C. 1976. The evolution of aquatic cave communities. **American Naturalist** 110:949-957.
- Beattie, A.J., and D.C. Culver. 1977. Effects of mound nests of the ant *Formica obscuripes* on the surrounding vegetation. **American Midland Naturalist** 97:390-399.
- Culver, D.C., and A.J. Beattie. 1978. Myrmecochory in *Viola*: dynamics of seed-ant interactions in some West Virginia species. **Journal of Ecology** 66:53-72.
- Culver, D.C. 1979. Cave communities and statistical inference: a reply. **American Naturalist** 112:160-161.
- Beattie, A.J., and D.C. Culver. 1979. Neighborhood size in *Viola*. **Evolution** 33:1226-1229.
- Beattie, A.J., Culver, D.C., and R.J. Pudlo. 1979. Interactions between ants and the diaspores of some common spring flowering herbs in West Virginia. **Castanea** 44:177-186.
- Smallwood, J. and D.C. Culver. 1979. Colony movements of some North American ants. **Journal of Animal Ecology** 48:373-382.
- Culver, D.C., and A.J. Beattie. 1980. The fate of *Viola* seeds dispersed by ants. **American Journal of Botany** 67:710-714.
- Culver, D.C., and T.J. Ehlinger. 1980. The effects of microhabitat size and competitor size on two cave isopods. **Brimleyana** No. 4:103-113.
- Heithaus, E.R., Culver, D.C., and A.J. Beattie. 1980. Models of some ant plant mutualisms. **American Naturalist** 116:347-361.
- Pudlo, R.J., Beattie, A.J., and D.C. Culver. 1980. Population consequences of changes in an ant-seed mutualism in *Sanguinaria canadensis*. **Oecologia** 146:32-37.
- Culver, D.C. 1981. On using Horn's Markov succession model. **American Naturalist** 117:572-574.
- Culver, D.C. 1981. Some implications of competition for cave stream communities. **International Journal of Speleology** 11:49-62.
- Beattie, A.J., and D.C. Culver. 1981. The guild of myrmecochores in the herbaceous flora of West Virginia forests. **Ecology** 62:107-115.
- Culver, D.C., and T.J. Ehlinger. 1982. Determinants of size of two subterranean isopods *Caecidotea cannulus* and *Caecidotea holsingeri* (Isopoda: Asellidae). **Polskie Archiwum Hydrobiologii** 29:463-470.
- Beattie, A.J., and D.C. Culver. 1982. Inhumation: how ants and other invertebrates help seeds. **Nature** 297:627.

- Culver, D.C., and A.J. Beattie. 1983. Effects of ant mounds on soil chemistry and vegetation patterns in a Colorado montane meadow. **Ecology** 64:485-492.
- Beattie, A.J., and D.C. Culver. 1983. The nest chemistry of two seed-dispersing ant species. **Oecologia** 56:99-103.
- Turnbull, C.L., and D.C. Culver. 1983. The timing of seed dispersal in *Viola nuttallii*: attraction of dispersers and avoidance of predators. **Oecologia** 59:360-365.
- Culver, D.C. 1985. Trophic relationships in aquatic cave environments. **Stygologia** 1:43-53.
- Fong, D.W., and D.C. Culver. 1985. A reconsideration of Ludwig's differential migration hypothesis of regressive evolution. **National Speleological Society, Bulletin** 47:123-127.
- Culver, D.C., and D.W. Fong. 1986. Why all cave animals look alike. **Stygologia** 2:208-216.
- Culver, D.C. 1987. Eye morphometrics of cave and spring populations of *Gammarus minus*. **Journal of Crustacean Biology** 7:136-147.
- Culver, D.C. 1987. The role of gradualism and punctuation in cave adaptation. **International Journal of Speleology** 16:17-32.
- Christiansen, K.A., and D.C. Culver. 1987. Biogeography and the distribution of cave Collembola. **Journal of Biogeography** 14:459-477.
- Vawter, A.T., D.W. Fong, and D.C. Culver. 1987. Negative phototaxis in surface and cave populations of the amphipod *Gammarus minus* (Amphipoda: Gammaridae). **Stygologia** 3:83-88.
- Hanzawa, F.M., A.J. Beattie, and D. C. Culver. 1988. Directed dispersal: demographic analysis of an ant-seed mutualism. **American Naturalist** 131:1-13.
- Jones, R.T., and D.C. Culver. 1989. Evidence for selection on sensory structures in a cave population of *Gammarus minus* (Gammaridae). **Evolution** 43:688-693.
- Culver, D.C., T.C. Kane, D.W. Fong, R. Jones, M.A. Taylor, and S.C. Sauereisen. 1990. Morphology of cave organisms - is it adaptive? **Memoires de Biospeologie** 17:3-16.
- Kane, T.C., and D.C. Culver. 1991. The evolution of troglobites - *Gammarus minus* (Amphipoda: Gammaridae) as a case study. **Memoires de Biospeologie** 18:3-14.
- Culver, D.C., D.W. Fong, and R.W. Jernigan. 1991. Species interactions in cave stream communities: experimental results and microdistribution effects. **American Midland Naturalist** 126:364-379.
- Kane, T.C., D.C. Culver, and R.T. Jones. 1992. Genetic structure of morphologically differentiated populations of the amphipod *Gammarus minus*. **Evolution** 46:272-278.
- Jones, R., D.C. Culver, and T.C. Kane. 1992. Are parallel morphologies of cave organisms the result of similar selection pressures? **Evolution** 46:353-365.
- Culver, D.C., and J.R. Holsinger. 1992. How many species of troglobites are there? **National Speleological Society, Bulletin** 54:79-80.
- Sarbu, S., T.C. Kane, and D.C. Culver. 1993. Genetic and morphological differentiation of populations of *Gammarus minus* (Amphipoda) in a small karst basin in Virginia. **American Midland Naturalist** 129:145-152.
- Culver, D.C., R.W. Jernigan, J. O'Connell, and T.C. Kane. 1994. The geometry of natural selection in cave and spring populations of the amphipod *Gammarus minus* Say (Crustacea: Amphipoda). **Biological Journal of the Linnean Society** 52:49-67.
- Fong, D.W., and D.C. Culver. 1994. Fine-scale biogeographic differences in the Crustacean fauna of a cave stream. **Hydrobiologia** 287:29-37.
- Culver, D.C., and D.W. Fong. 1994. Small scale and large scale biogeography of subterranean crustacean faunas of the Virginias. **Hydrobiologia** 287:3-9.
- Jernigan, R.W., D.C. Culver, and D.W. Fong. 1994. The dual role of selection and evolutionary history as reflected in genetic correlations. **Evolution** 48:587-596.
- White, W.B., D.C. Culver, J.S. Herman, T.C. Kane, and J.E. Mylroie. 1995. Karst lands. **American Scientist** 83:450-459.
- Fong, D.W., T.C. Kane, and D.C. Culver. 1995. Vestigialization and loss of nonfunctional characters. **Annual Review of Ecology and Systematics** 26:249-268.
- Christman, M.C., R.W. Jernigan, and D.C. Culver. 1997. A comparison of two models for estimating phylogenetic effect on trait variation. **Evolution** 51:262-266.
- Culver, D.C., H.H. Hobbs III, M.C. Christman, and L.L. Master. 1999. Distribution map of caves and cave animals in the United States. **Journal of Cave and Karst Studies** 61:139-140.

- Hervant, F., J. Mathieu, and D.C. Culver. 1999. Comparative responses to severe hypoxia and subsequent recovery in closely related amphipod populations (*Gammarus minus*) from cave and surface habitats. **Hydrobiologia** 392:197-204.
- Culver, D.C., H.H. Hobbs III, and J.E. Mylroie. 1999. Alabama: a subterranean biodiversity hotspot. **Journal of the Alabama Academy of Science** 70:96-103.
- Culver, D.C., L.L. Master, M.C. Christman, and H.H. Hobbs III. 2000. Obligate cave fauna of the 48 contiguous United States. **Conservation Biology** 14:386-401.
- Culver, D.C., and B. Sket. 2000. Hotspots of subterranean biodiversity in caves and wells. **Journal of Cave and Karst Studies** 62:11-17.
- Christman, M.C., D.C. Culver, H.H. Hobbs III, and L.L. Master. 2000. Reply: distribution map of caves and cave animals in the United States. **Journal of Cave and Karst Studies** 62:185.
- Culver, D.C. 2001. The dark zone. **The Sciences** 41(2):30-35.
- Herman, J.W., D.C. Culver, and J. Salzman. 2001. Groundwater ecosystems and the service of water purification. **Stanford Environmental Law Journal** 20:479-495.
- Christman, M.C., and D.C. Culver. 2001. The relationship between cave biodiversity and available habitat. **Journal of Biogeography** 28:367-380.
- Krow, S., and D.C. Culver. 2001. Gaps in sampling cave fauna. **Mémoires de Biospéologie** 28:127-133.
- Culver, D.C., and B. Sket. 2002. Biological monitoring in caves (Biološko zasledovanje stanja (monitoring) v jamah). **Acta Carsologica** 31:55-64.
- Culver, D.C., M.C. Christman, W.R. Elliott, H.H. Hobbs III, and J.R. Reddell. 2003. The North American obligate cave fauna: regional patterns. **Biodiversity and Conservation** 12:441-468.
- Culver, D.C., M.C. Christman, B. Sket, and P. Trontelj. 2004. Sampling adequacy in an extreme environment: species richness patterns in Slovenian caves. **Biodiversity and Conservation** 13:1209-1229.
- Schneider, K., and D.C. Culver. 2004. Estimating subterranean species richness using intensive sampling and rarefaction curves in a high density cave region in West Virginia. **Journal of Cave and Karst Studies** 66:39-45.
- Culver, D.C., M.C. Christman, I. Šereg, P. Trontelj, and B. Sket. 2004. The location of terrestrial species-rich caves in a cave-rich area. **Subterranean Biology** 2:27-32.
- Christman, M.C., D.C. Culver, M. Madden, and D. White. 2005. Patterns of endemism of the eastern North American cave fauna. **Journal of Biogeography** 32:1441-1452.
- Pipan, T., and D.C. Culver. 2005. Estimating biodiversity in the epikarstic zone of a West Virginia cave. **Journal of Cave and Karst Studies** 67:103-109.
- Culver, D.C., L. Deharveng, A. Bedos, J.J. Lewis, M. Madden, J.R. Reddell, B. Sket, P. Trontelj, and D. White. 2006. The mid-latitude biodiversity ridge in terrestrial cave fauna. **Ecography** 29:120-128.
- Pipan T., Christman M.C. and D.C. Culver. 2006. Dynamics of epikarst communities: microgeographic pattern and environmental determinants of epikarst copepods in Organ Cave, West Virginia. **American Midland Naturalist** 156:75-87.
- Culver, D.C., T. Pipan, and S. Gottstein. 2006. Hypotelminorheic—a unique freshwater habitat. **Subterranean Biology** 4:1-8.
- Culver, D.C., and T. Pipan. 2007. What does the distribution of stygobiotic copepoda (Crustacea) tell us about their age? **Acta Carsologica** 36:87-92.
- Pipan, T., and D.C. Culver. 2007. Regional species richness in an obligate subterranean dwelling fauna—epikarst copepods. **Journal of Biogeography** 34:854-861.
- Pipan, T., and D.C. Culver. 2007. Copepod distribution as an indicator of epikarst system connectivity. **Hydrogeology Journal** 15:817-822.
- Pipan, T., and D.C. Culver. 2007. Epikarst communities: biodiversity hotspots and potential water tracers. **Environmental Geology** 53:265-269.
- Simon, K.S., T. Pipan, and D.C. Culver. 2007. A conceptual model of the flow and distribution of organic carbon in caves. **Journal of Cave and Karst Studies** 69:279-284
- Zagmajster, M., D.C. Culver, and B. Sket. 2008. Species richness patterns of obligate subterranean beetles in a global biodiversity hotspot - effect of scale and sampling intensity. **Diversity and Distributions** 14:95-105.

- Holsinger, J.R., J. Shafer, D.W. Fong, and D.C. Culver. 2008. *Gammarus cohabitatus*, a new species of subterranean amphipod crustacean (Gammaridae) from groundwater habitats in central Pennsylvania, USA. **Subterranean Biology** 6:31-41.
- Culver, D.C., and T. Pipan. 2008. Superficial subterranean habitats—gateway to the subterranean realm? **Cave and Karst Science** 35:5-12.
- Bonacci, O., T. Pipan, and D.C. Culver. 2009. A framework for karst ecohydrology. **Environmental Geology** 56:891-900.
- Gibert, J., and D.C. Culver. 2009. Assessing and conserving groundwater biodiversity: an introduction. **Freshwater Biology** 54:639-648.
- Culver, D.C., T. Pipan, and K. Schneider. 2009. Vicariance, dispersal, and scale in the subterranean aquatic fauna of karst regions. **Freshwater Biology** 54:919-929. (first published online in 2007)
- Gibert, J., D.C. Culver, M.-J. Dole-Oliver, F. Malard, M.C. Christman, and L. Deharveng. 2009. Assessing and conserving groundwater biodiversity: synthesis and perspectives. **Freshwater Biology** 54:930-941.
- Culver D.C., J.R. Holsinger, M.C. Christman, and T. Pipan. 2010. Morphological differences among eyeless amphipods in the genus *Stygobromus* dwelling in different subterranean habitats. **Journal of Crustacean Biology** 30:68-74.
- Zagmajster, M., D.C. Culver, M.C. Christman, and B. Sket. 2010. Evaluating the sampling bias in pattern of subterranean species richness – combining approaches. **Biodiversity and Conservation** 19:3035-3048.
- Pipan, T., N. Holt, and D.C. Culver. 2010. How to protect a diverse, poorly known, inaccessible fauna: identification of source and sink habitats in the epikarst. **Aquatic Conservation: Marine and Freshwater Ecosystems** 20:748-755.
- Simon, K.S., T. Pipan, T. Ohno, and D.C. Culver. 2010. Spatial and temporal patterns in abundance and character of dissolved organic matter in two karst aquifers. **Fundamental and Applied Limnology** 177:81-92.
- Culver, D.C. and T. Pipan. 2010. Climate, abiotic factors, and the evolution of subterranean life. **Acta Carsologica** 39:577-586.
- Pipan, T. H. López, P. Oromí, S. Polak, and D.C. Culver. 2011. Temperature variation and the presence of troglobionts in shallow subterranean habitats. **Journal of Natural History** 45:253-273.
- Culver, D.C., and T. Pipan. 2011. Redefining the extent of the aquatic subterranean biotope—shallow subterranean habitats. **Ecohydrology** 4:721-730.
- Culver, D.C., J.R. Holsinger, and D.J. Feller. 2012. The fauna of seepage springs and other shallow subterranean habitats in the mid-Atlantic Piedmont and Coastal Plain, U.S.A. **Northeastern Naturalist** 19 (Monograph 9):1-42.
- Pipan, T., and D.C. Culver 2012. Convergence and divergence in the subterranean realm: a reassessment. **Biological Journal of the Linnean Society** 107:1-14.
- Pipan, T., C. Fišer, T. Novak, and D.C. Culver. 2012. Fifty years of the hypotelminorheic: what have we learned? **Acta Carsologica** 42:275-285.
- Culver, D.C., P. Trontelj, M. Zagmajster and T. Pipan. 2012. Paving the way for standardized and comparable subterranean biodiversity studies. **Subterranean Biology** 10:43-50.
- Pipan, T., and D.C. Culver. 2013. Forty years of epikarst: what biology have we learned? **International Journal of Speleology** 42:225-233.
- Holsinger, J.R., D.C. Culver, D.A. Hubbard, Jr., W.D. Orndorff, and C.S. Hobson. 2013. The invertebrate cave fauna of Virginia. **Banisteria** 42:9-56.
- Pipan, T., and D.C. Culver. 2013. Organic carbon in shallow subterranean habitats. **Acta Carsologica** 42:291-300.
- Fišer, C., T. Pipan, and D.C. Culver. 2014. The vertical extent of groundwater metazoans: an ecological and evolutionary perspective. **Bioscience** 64:971-979.
- Culver, D.C., and T. Pipan. 2015. Shifting paradigms of the evolution of cave life. **Acta Carsologica** 44:415-425.
- Christman M.C., D.H. Doctor, M.L. Niemiller, D.J. Weary, J.A. Young, K.S. Zigler, and D.C. Culver. 2016. Predicting the occurrence of cave-inhabiting fauna based on features of the Earth surface environment. **PLoS ONE** 11: e0160408. doi:10.1371/journal.pone.0160408.
- Niemiller, M.L., M.L. Porter, J. Keany, H. Gilbert, D.C. Culver, D.W. Fong, C.S. Hobson, K.D. Kendall, and S.J. Taylor. 2017. Evaluation of eDNA for groundwater invertebrate detection and monitoring: a case study with endangered *Stygobromus* (Amphipoda: Crangonyctidae). **Conservation Genetics Methods** doi:10.1007/s12686-017-0785-2.

- Pipan, T., and D.C. Culver. 2017. The unity and diversity of the subterranean realm with respect to invertebrate body size. **Journal of Cave and Karst Studies** 79:1-9.
- Mejía-Ortiz, L.M., T. Pipan, D.C. Culver, and P. Sprouse. 2018. The blurred line between photic and aphotic environments: a large Mexican cave with almost no dark zone. **International Journal of Speleology** 37:69-80.
- Pipan, T., D.C. Culver, F. Papi, and P. Kozel. 2018. Partitioning diversity in subterranean invertebrates: the epikarst fauna of Slovenia. **PLoS ONE** 13:e0185991.
- Pipan, T., M. Petrič, S. Šebela, and D.C. Culver. 2018. Analyzing climate change and surface-subsurface interactions using the Postojna Planina Cave System (Slovenia) as a model system. **Regional Environmental Change** doi.org/10.1007/s10113-018-1348-2.
- Gilbert, H. J. Keany, and D.C. Culver. 2018. Response of shallow subterranean freshwater amphipods to habitat drying. **Subterranean Biology** 28:15-28.
- Keany, J.M., M.C. Christman, M. Milton, K.L. Knee, H. Gilbert, and D.C. Culver. 2018. Distribution and structure of shallow subterranean aquatic arthropod communities in the parklands of Washington, D.C. **Ecology** 99:e2044.
- Mammola, S., E. Piano, P. Cardoso, P. Vernon, D. Dominguez-Viller, D.C. Culver, T. Pipan, and M. Isaia. 2019. Climate change going deep: the effects of global climatic alterations on cave ecosystems. **The Anthropocene Review** doi: 10.1177/2053019619851594.
- Kozel, P., T. Pipan, S. Mammola, D.C. Culver, and T. Novak. 2019. Distributional dynamics of a specialized subterranean community oppose the classical understanding of the preferred subterranean habitats. **Invertebrate Biology** doi: 10.1111/ivb.12254.

8. Book Chapters, Encyclopedia Chapters, and Conference Proceedings:

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- Mapping Subterranean Biodiversity/Cartographie de la biodiversité souterraine.** Karst Waters Institute Special Publication 6, Charles Town, W.Va.
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9. Books and Monographs:

- Holsinger, J.R., Baroody, R.A., and D.C. Culver. 1978. **The Invertebrate Cave Fauna of West Virginia**. Bull. W.Va. Speleological Survey, No. 7, Barrackville, W.Va. 82 pp.

- Culver, D.C. 1982. **Cave Life**. Harvard Univ. Press, Cambridge, Mass., 189 pp.
- Holsinger, J.R., and D.C. Culver. 1988. **The Invertebrate Cave Fauna of Virginia and a Part of East Tennessee: Zoogeography and Ecology**. Brimleyana No. 14, Raleigh, N.C., 162 pp.
- Culver, D.C., T.C. Kane, and D.W. Fong. 1995. **Adaptation and Natural Selection in Caves**. Harvard Univ. Press, Cambridge, Mass., 223 pp.
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- Jones, W.K., D.C. Culver, and J.S. Herman [eds.]. 2004. **Epikarst**. Karst Waters Institute Special Publication 9, Charles Town, W.Va.
- Culver, D.C., and W.B. White [eds.]. 2005. **Encyclopedia of Caves**. Elsevier/Academic Press, Amsterdam.
- White, W.B., and D.C. Culver [eds.]. 2007. **Benchmark Papers in Karst Science**. Karst Waters Institute Special Publication 11, 2007, Leesburg, Va.
- Kranjc, A., F. Gabrovšek, D.C. Culver, and I.D. Sasowsky [eds.]. 2007. **Time in Karst**. Karst Waters Institute Special Publication 12, 2007, Leesburg, Va.
- Fong, D.W., D.C. Culver, H.H. Hobbs III, and T. Pipan. 2007. **The Invertebrate Cave Fauna of West Virginia, Second Edition**. Bull. W.Va. Speleological Survey, No. 16, Barrackville, W.Va. 163 pp.
- Culver, D.C., and T. Pipan. 2009. **Biology of Caves and Other Subterranean Habitats**. Oxford University Press, Oxford, U.K. 254 pp.
- White, W.B., and D.C. Culver [eds.]. 2012. **Encyclopedia of Caves. Second Edition**. Elsevier/Academic Press, Amsterdam.
- Culver, D.C., B. Debevec, M. Knez, G. Kovačič, A. Kranjc, J. Mulec, T. Pipan, M. Prelovšek, N. Ravbar, A. Semeja, T. Slabe, S. Šebela, and N. Zupan Hajna. 2012. **Karstology and Development Challenges on Karst. II. Construction, Tourism, Ecology, Protection**. ZRC Publishing, Ljubljana, Slovenia. 199 pp.
- Culver, D.C., and T. Pipan. 2014. **Shallow Subterranean Habitat[s]. Ecology, Evolution, and Conservation**. Oxford University Press, Oxford, UK.
- Hobbs, H.H. III, Olson, R.A., Winkler, E.G., and D.C. Culver [eds.]. 2017. **Mammoth Cave. A Human and Natural History**. Springer, Cham, Switzerland.
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- Culver, D.C., and T. Pipan. 2019. **Biology of Caves and Other Subterranean Habitats. Second Edition**. Oxford University Press, Oxford, U.K. 301 pp.

10. Technical Reports and Miscellanea:

- Culver, D.C., and I. Šereg. 2004. **Kenk's amphipod (*Stygobromus kenki* Holsinger) and other amphipods in Rock Creek Park, Washington, D.C.** 147 pp. Report to Rock Creek Park, National Capitol Region, National Park Service.
- Culver, D.C., and S.M. Chesnut. 2006. **Groundwater amphipods of the George Washington Memorial Parkway**. 61 p. Report to George Washington Memorial Parkway, National Capitol Region, National Park Service.
- Hutchins, B., and D.C. Culver. 2008. **Investigating rare and endemic pollution-sensitive subterranean fauna of vulnerable habitats in the NCR**. Report to National Capitol Region, National Park Service.
- Culver, D.C. 2016. 23rd international conference on subterranean biology. **Subterranean Biology** 19:65-85.
- Pipan, T., and D.C. Culver. 2016. Contributions to speleobiology appearing in *Acta Carsologica*. **Acta Carsologica** 45:123-129.
- Mammola, S., P. Cardoso, D.C. Culver, L. Deharveng, R.L. Ferreira, C. Fišer, D.M.P. Galassi, C. Griebler, S. Halse, W.F. Humphreys, M. Isaia, F. Malard, A. Martinez, O.T. Moldovan, M.L. Niemiller, M. Pavlek, A.S. P.S. Rebeleira, M. Souza-Silva, E.C. Teeling, J.J. Wynne, and M. Zagamajster. 2019. Scientists' warning on the conservation of subterranean ecosystems. **Bioscience** 69:641-650.

11. External Funding:

May 1971 to November 1973, NSF- "Competition in Patchy Environments".
 April 1976 to October 1985, NSF- "Evolutionary Ecology of Seed-Ant Interactions" (with A.J. Beattie).
 May 1985 to February 1992, NSF - "Genetic Analysis of Regressive Evolution".
 February 1987 to January 1990, NSF - "The Role of Competition in Cave Stream Communities".
 October 1988, Cave Conservancy of the Virginias -"Karst Waters Institute Planning Conference".
 October 1988, The Conservation Fund, -"Karst Waters Institute Planning Conference".
 June 1990, The Nature Conservancy, - "Biological Assessment of 'The Cedars', Lee County, Virginia" (through Karst Waters Institute)
 October 1990 to June 1991, The Nature Conservancy - "Biological Inventory of West Virginia Cave Communities" (through Karst Waters Institute)
 June 1997 to February 2000, The Nature Conservancy – “Subterranean Biodiversity in North America” (through Karst Waters Institute)
 June 2000 to June 2004, Cave Conservancy of the Virginias – “Center for Subterranean Biodiversity” (through Karst Waters Institute)
 August 2000 to June 2004, National Park Service – “Ken’s Amphipod in Rock Creek Park”
 January 2001 to December 2001, Virginia Department of Conservation and Recreation – “Virginia Cave Invertebrates” (through Karst Waters Institute)
 June 2002 to September 2003, Nature Serve—“Mapping California Subterranean Fauna” (through Karst Waters Institute)
 May 2002 to December 2003, Nature Serve—“Assigning G-ranks to Subterranean Species” (through Karst Waters Institute)
 October 2003 to October 2006, National Park Service – “Rare Groundwater Amphipods in George Washington Memorial Parkway
 June 2002 to June 2007, West Virginia Department of Natural Resources—“West Virginia Cave Invertebrates” (through Karst Waters Institute)
 October 2005 to January 2007, National Science Foundation—“US-Slovenia LTER Planning Meeting”
 May 2006 to December 2008, National Park Service—“Investigating Rare and Endemic Pollution Sensitive Subterranean Fauna of Vulnerable Habitats in NCR”
 March 2007 to April 2009—Cave Conservancy of the Virginias—“Cave Species Descriptions in the Virginias”
 June 2007 to June 2009 Maryland/DC Chapter, The Nature Conservancy—“Fauna of Dripping Water in Caves as Monitors of Cave Ecosystem Health”
 March 2012 to March 2013—United States Geological Survey (through University of the District of Columbia)—“Biological Inventory of Seepage Springs and Vernal Pools—Small Isolated Wetlands—in Parks of National Capital East (NPS)”
 September 2013 to March 2015—Appalachian Land Conservation Cooperative—“Classification and Georeferencing Cave/Karst Resources across the Appalachian LCC”
 January 2014 to present—National Parks Service—National Capital East—“A Survey of the Fauna of Seepage Springs in National Capital Parks East (NACE)”

12. Short Courses and Workshops

Cave Biology Field Camps (1991-1998), an annual short course for recreational cavers, supported by Cave Conservancy of the Virginias.
 Cave Fauna Protection and Conservation (1994, 1998), a workshop for conservation professionals, supported by The Nature Conservancy.
 Aquatic Cave Biology Field Camp (1999), a workshop for volunteers assessing aquatic cave biodiversity in Virginia National Forest, supported by the U.S. Forest Service.
 Cave Fauna Monitoring (2001), a workshop for conservation professionals, supported by The Nature Conservancy
 Long-Term Ecological Research in Slovenia (NSF sponsored workshop), Postojna, Slovenia, October 2006

13. Ph.D. and M.S. Students Supervised

Hogan, M.E. 1977. Arboreal foraging by ants. (M.S.)
 Herbers, J.M. 1978. Evolution of the caste system in *Formica obscuripes*. (Ph.D.)
 Ehlinger, T.J. 1979. The effect of size on competition among cave isopods. (M.S.)
 Janis, P. 1979. The pattern and proportion of myrmecochory in a north temperate forest. (M.S.)

- Smallwood, J. 1981. The frequency, causes, and consequences of colony emigrations by seed-dispersing forest ants. (Ph.D.)
- Fong, D.W. 1984. Quantitative genetic analysis of structural reduction in the amphipod *Gammarus minus* Say. (Ph.D.)
- Turnbull, C.L. 1984. The dynamics of an association between *Viola nuttallii* Pursh and its seed dispersers, *Myrmica discontinua* Weber and *Formica podzolica* Francoeur. (Ph.D.)
- Iranmanesh, K. 1989. Higher order interactions among the cave crustaceans of Greenbrier Valley, West Virginia. (M.S.)
- Jones, R. 1990. Evolution of the cave and spring populations of the amphipod *Gammarus minus*. (Ph.D.)
- Zeit, L.B. 1993. The effect of temperature and water level variations on the distribution and abundance of aquatic invertebrates in two cave streams and their resurgence. (M.S.)
- Carlson, K.R. 1994. The effects of human visitation on terrestrial cavernicolous arthropods. (M.S.)
- Popa, R. 1996. The dual role of convergent natural selection and evolutionary history in the morphology of *Gammarus minus* populations. (M.S.)
- Schneider, K. 2003. Biogeography of the subterranean invertebrate fauna of West Virginia. (M.S.)
- Keany, J. 2016. Investigating the physico-chemical niche of obligate subterranean amphipods and isopods in shallow subterranean waters of the DC metro area. (M.S.)
- Papi, F. 2016. Ecological studies of epikarst communities in Alpine and Pre-Alpine caves. Co-advisor with T. Pipan. University of Nova Gorica, Slovenia. (Ph.D.)

14. Post-doctoral Fellows and Research Associates

- Daniel W. Fong (1985-1990)
- Thomas C. Kane (1986-1987)
- A. Thomas Vawter (1985-1986)
- Maja Zigmajster (2008-2010)

15. Curriculum Development

- New B.A. in Ecology and Evolutionary Biology, Northwestern University, 1981-82
- Revised M.S. in Biology, American University, 1987-88
- New B.A. in Environmental Studies, American University, 1991-92
- New M.S. in Environmental Science, American University, 1993-95