

**Education**

B.S., Anthropology, Michigan State University (1978)  
 M.S., Geology, Michigan State University (1984)  
 Ph.D., Geology, Michigan State University (1989)

**Expertise**

Geoarchaeology & Geomorphology  
 Environmental Geology & Hydrology  
 Computer Mapping & GIS

**Certification**

Pennsylvania DOT:  
 Geoarchaeology

**Professional Affiliations**

Geological Society of America  
 Society for American Archaeology  
 American Cultural Resources Association  
 Conference on Michigan Archaeology.

Dr. Monaghan has been a professional geologist and geoarchaeologist over 20 years. He is currently an Associate Research Scientist at the Glenn Black Laboratory at Indiana University and consults on CRM projects throughout the Midwest, East, and Mid-Atlantic regions. His research interest include regional and site depositional history, sedimentology, and buried archaeological site exploration. Currently, his research has focused on how large-scale Holocene climate cycles effect alluviation, human settlement and prehistoric site taphonomy. Extensively trained in Quaternary and Holocene studies, including the sedimentology and mineralogy of fluvial, lacustrine and glacial deposits, Dr. Monaghan has carried out research on sites throughout the Midwest and Northeast. He has authored more than 50 CRM reports or academic publications and commonly presents his work at regional and national conferences. Specifically interested in Holocene environmental change and its effect on prehistoric human adaptation, he has designed and carried out regional and site-specific scaled research projects for both industry and academia. Over the past decade, he has designed deep test strategies for regionally significant pipeline and highway projects that have led to the discovery of many buried, stratified, prehistoric sites. Dr. Monaghan has undertaken geological and geoarchaeological investigations for projects in such diverse areas as the Great Lakes in Michigan and New York, the Hudson, Lehigh, and Delaware valleys, and the Chesapeake-Delaware Bay area. He has a long-term professional association with Michigan State University for prehistoric research in Michigan's Saginaw Valley. His forthcoming monograph, *Exploration for Buried Archaeological Sites in the Great Lakes Region: Michigan as a Case Study*, with Dr. W. A. Lovis, will represent the seminal work on deep testing results, methods, and guidelines for alluvial settings in Michigan.

**Selected Project Experience**

- **Buried Site Location in Michigan (1999-2001).** Drs. Monaghan and W.A. Lovis of Michigan State University received a two-year \$150,000 grant through Federal Highway Enhancement Funds to write a monograph describing the state of deep testing in Michigan and aid the Michigan DOT in establishing standards for buried site exploration. A major part of the project was to develop a GIS model predicting buried site locations in Michigan.
- **Marquette Viaduct project Phase I-III, Bay City, Michigan. (2000)** Dr. Monaghan cooperated with Michigan State University to design and implement the geoarchaeological phases of the project. A major facet of his work was to establish the stratigraphy and depositional history for over 4,000 years of occupation represented within an evolving lacustrine, fluvial, and alluvial landscape.
- **Hickory Bluff Site, Dover, Delaware (1998).** Dr. Monaghan and Daniel Hayes cooperated with Parsons-Engineering Sciences to design and implement the geomorphic and pedologic study for the project. An important aspect of their work was to distinguish cultural from natural pit-like features using geochemical, pedological, and geological methods.
- **Great Lakes Gas Pipeline Project Michigan (1990-1994).** Dr. Monaghan worked closely with Great Lakes Research Associates to design and coordinate the geoarchaeological studies during all phases of the 300-mile-long Great Lakes Gas Pipeline. His work led to discovery of four buried sites.
- **Empire Pipeline Project, New York (1991-1994).** Dr. Monaghan worked with Commonwealth Cultural Resources Group and Geoarchaeological Research Associates to design and implement a deep test strategy and were instrumental to the successful completion of the geoarchaeological work during excavation on four large archaeological sites.

**Selected Publications**

- Lovis, W.A., K.C. Egan, G.W. Monaghan, and B.A. Smith, 2001. Wetland and Emergent Horticultural Economies in the Upper Great Lakes: A new Perspective from the Schultz Site. *American Antiquity* 66:615-632
- Monaghan, G.W. 2002. Geology and Geoarchaeology of the Marquette Viaduct Relocation Project Sites 20BY28 and 20 BY387, Bay City Michigan. In: *A Bridge to the Past: the Post Nipissing Archaeology of the Marquette Viaduct Replacement Project Sites 20BY28 and 20BY387*. W.A. Lovis [ed.], Michigan State University, East Lansing.
- Monaghan, G.W., 1993 Geology of the Third Street Bridge, Bay City, Michigan. In *Archaeological Investigations at Sites 20BY77-79 at the Third Street Bridge Replacement, Bay City, Michigan*, W. Lovis.[ed] Michigan Cultural Resource Series 3, M-DOT, Lansing, Michigan
- Monaghan G.W. and Hayes, D.R., 1998. Millennial-Scale patterns to Middle-to-Late Holocene Alluviation in the Great Lakes and Mid Atlantic Regions, USA., *Geol. Soc. Am. Programs with Abstracts*, 30, 7.
- Monaghan G.W. and Hayes, D.R. 1997 Archaeological Site Burial: A Model for site Formation within the Middle-to-Late Holocene Alluvial Settings of the Great Lakes. *Taming the Taxonomy: Towards a New Understanding of Great Lakes Prehistory*, Joint Ontario Archaeological Society and Midwest Archaeology Conference, pg 12.
- Monaghan, G.W., Lovis, W.A. and Fay, L. 1986. The Nipissing transgression in the Thumb Area of Michigan: *Canadian Journal Earth Sciences*, 23:1851-1854
- Monaghan, G.W., and Schaetzl, R., 1994. Geology and Geochemistry of the Study area. In: *Phase III investigations at the Shiawassee River and Bear Creek Sites, Saginaw County, Michigan*. M.C. Branstner and M.J. Hambacker [eds] Great Lakes Research Associates, Williamston, MI., pp. 5-32.

## Selected Additional Experience

### *Geoarchaeological and CRM:*

- FEMA Levee Replacement Project, Saginaw County, Michigan Phase I-II testing (2003)
- Corp of Engineers Proposed Dredge Material Management Placement Site Phase I deep testing and survey Bay and Saginaw County, Michigan (2003)
- Spaulding and Bay City Wetland Replacement Project, Bay and Saginaw Counties, Michigan (2003)
- Leicester Sewer Extension Project, Genesee River, Livingston County, New York (2002-2003)
- Butler's Bluff PaleoIndian Survey, Northampton County, Virginia (2000)
- Brook Run Jasper Quarry, Culpeper County, Virginia, Phase III data recovery (2000-02)
- US-131 S-Curve Bridge Replacement Project, Grand Rapids, Michigan. (1999-2000)
- Shiawassee National Wildlife Refuge Cultural Resources Planning Project (1999)
- Vector Pipeline Phase I Survey, southern Michigan (1998-1999)
- Tristate Pipeline Phase I-II Survey, southern Michigan (1998-1999)
- Geology of Ambassador Bridge Welcome Center, Detroit, Mich. (1997)
- EPA-CERT and Related Projects, Bay City, Bay County, Michigan (1994-96)
- Geomorphic investigations of Hiawatha National Forest, Mich. (1994-2001)
- Geoarchaeological investigations in Lehigh and Delaware River Valley Columbia Gas Corporation 1278 Pipeline Corridor, Pennsylvania (1993-94)
- Excavations at Marquette Viaduct, Fletcher Site, Bay City, Mich (1989)
- Excavations at Schultz Site, Saginaw, Mich (1990-91)
- Liberty Bridge Replacement Project, Bay City, Mich (1983-84)
- Demial Road Bridge Replacement Project, Frankenmuth, Mich (1981-82)

### *Teaching:*

- College of Natural Sciences, Michigan St. Univ. 1987)
- Department Geology, Michigan St. Univ. (1981-86).

## Additional Selected Publications

- Cline, J.S, G.W. Monaghan and D.R. Hayes, 2001, *Archaeological and Geological Evaluations at Butler's Bluff, Northampton, County, Virginia*. Report prepared for Virginia Department of Historic Resources, Richmond, VA., 32 p
- Demeter, C.S., and Monaghan, G.W., 1997, *A Phase II/III prehistoric Site Evaluation of the Ambassador Bridge/Detroit Welcome Center, Detroit, Michigan*. Commonwealth Cultural Resources Group, Inc, Jackson, MI., 47 p..
- Demeter, C.S., G.W. Monaghan, and M.J. Hambacher 2000. *A Phase I archaeological Evaluation of the Crotty Street Mitigation Wetland: The Green Point/Schultz II (20SA1) Site,*

*City of Saginaw, Saginaw County, Michigan*. Report R-0344, Commonwealth cultural Resources Group, Jackson, Michigan.

- Dunham, S.B., Taylor, K.C., and Monaghan, G.W., 1999, *Phase II investigations at Site 20Br47 and Phase I deep testing at the Coldwater River Tristate Pipeline Project, Branch County Loop, Girard Township, Branch County, MI*. Commonwealth Cultural Resources Group, Jackson, MI., 47 p.
- Hayes, D.H., and Monaghan, G.W., 1999. Geoarchaeological Investigations Along Rock Creek: Variable Landscape and Archaeological Site Formation Within Evolving Prehistoric and Human Environments. *Paper presented at the Society for American Archaeologists Annual Meeting, Chicago, IL*.
- Hayes, D.H. and Monaghan, G.W., 1998. The down and dirty approach to a variable archaeological record: a geomorphological framework for archaeological site formation, preservation, and discovery in the James and Potomac River basins. Presented at the Society of American Archaeologists, Seattle, WA.
- Hayes, D.H. and Monaghan, G.W., 1998. Geoarchaeological Investigations Along Rock Creek: Variable Landscape and Archaeological Site Formation Within Evolving Prehistoric and Human Environments. Presented at the Mid-Atlantic Archaeologic Society Meeting, Cape May, New Jersey.
- Hayes, D.H., and Monaghan, G.W., 1997. Archaeological site Burial during the Holocene: A case Study approach to the Mid-Atlantic. Presented at Third International conference on Soils, Geomorphology and Archaeology.
- Hambacker, M.J., Dunham, S.B., and Monaghan, G.W., 1998, The US-31 highway project: recent investigations at the Spoonville, and other Middle and Late Woodland occupations in the lower Grand River Valley, Ottawa County, Michigan. Presented at Midwest Archaeology Conference., Muncie, IN.
- Lovis, W.A., Holman, M.B, Monaghan, G.W., and Skowronek, R.K., 1994, Archaeology, geology, and paleoecology: perspectives on regional research design in the Saginaw Bay region of Michigan. In *Great Lakes Archaeology and Paleoecology: Exploring Interdisciplinary Initiatives for the Nineties*. R.I. MacDonald [ed], Quaternary Sciences Institute, University Waterloo, Waterloo, Ontario, pp 81-94.
- Lovis, W.A., Egan, K.C., Monaghan, G.W., Smith, B.A., Prah, E.J., 1996, Environment and Subsistence at the Marquette Viaduct Local of the Fletcher Site In *Investigating the Archaeological Record of the Great Lakes States*. Edited by M.B. Holman, J.G. Brashler, and K.E. Parker, New Issues Press, Western Mich. Univ., Kalamazoo, MI, pp 251-306.
- Lovis, W.A., G.W. Monaghan, and J.A. Robertson 2001. *Landscape Change and the Late Archaic Occupation of the Lower Saginaw River in Bay City* Paper presented at the 2001 Midwest Archaeological Conference Symposium on Archaic Research in the Upper Midwest October 2001, LaCrosse, WI.
- Monaghan, G.W. 1996. The Physiographic and Geologic Background and Phase I Deep Testing for Archaeological Sites in the US-23 Project Area . In: *Cultural resources investigations: US-23 Corridor and Alternatives, Arenac, Bay and Iosco Counties, Michigan*. Hambacher, M, Dunham, S., Branstner, T., and Branstner, M. [eds] Great Lakes Report # 96-02 Williamston, Michigan.

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- Monaghan, G.W. 1995. Deep Testing results for in the Broadway-Washington corridor Project Area., in., *Cultural resources investigations: Broadway-Washington corridor project area, Bay City, Michigan*. Hambacher, M, Dunham, S., and Branstner, M [eds] Great Lakes Report # 95-21 submitted to H.N.T.B. Michigan, Inc. East Lansing,
- Monaghan, G.W., 1990. Systematic variation in the clay-mineral composition of till sheets: Evidence for the Erie Interstade in the Lake Michigan Basin. In *Late Quaternary history of the Lake Michigan Basin*, A.F. Schneider and G.S. Fraser [eds], Geol. Soc. America, Special Paper 30.
- Monaghan, G.W., 1996. Physiographic and Geologic Background and Phase I Deep Testing for Archaeological Sites in the US-31 Project Area. In: *Cultural resources investigations: US-31 Corridor and Alternatives, Allegan, Ottawa, and Muskegon Counties, Michigan*. Hambacher, M, Dunham, S., Branstner, T., and Branstner, M., [eds] Great Lakes Report # 96-05 submitted to Michigan DOT, Lansing.
- Monaghan, G.W., 1995. Geomorphic and Physiographic Setting. in: 1991 Great Lakes Gas transmission limited Partnership Pipeline Expansion Projects: Phase III investigations at the Vogalar Site (20Sa1021), Saginaw County, Michigan (FERC docket no. CP89-892-000). M.C. Branstner and M.J. Hambacher [eds] Great Lakes Report #95-02.
- Monaghan, G.W., 1989, Systematic variation in Clay-mineral Composition of Wisconsinan Age Till Sheets in the Lake Michigan Basin. [Ph.D. Thesis], Department of Geological Sciences Michigan State University, 79 p.
- Monaghan, G.W., 1988, Clay-mineral composition of tills in the Lake Michigan basin. in Larson, G.J. and Monaghan, G.W., Wisconsinan and Holocene Stratigraphy in Southwestern Michigan. Midwest Friends of the Pleistocene 35th Field Conference, Michigan State University. p. 25-34.
- Monaghan, G.W., 1984. Drift Stratigraphy of the Lake Michigan and Saginaw Ice Lobes, South-central Michigan. [M.S. Thesis], Geological Sciences, Mich. State Univ.
- Monaghan, G.W. and Fay, L. 1989. Geology of Weber Site I. In *Archaeological Investigations at the Weber I and Weber II Sites*, W. Lovis [ed], Michigan Cultural Resources Investigations Series, Volume 1. Lansing, Michigan.
- Monaghan, G.W., D.H. Hayes, 2000. Geoarchaeological Investigations at Hickory Bluff: Site Formation and Preservation within a Changing Holocene Landscape presented at the 65rd Annual Meeting of the Society for American Archaeology; Philadelphia, Pennsylvania
- Monaghan, G.W., and Hayes, D.H. 2001. Archaeological Site Burial: A Model for Site Formation Within Middle-To-Late Holocene Alluvial Settings of the Great Lakes and Mid-Atlantic Regions, USA. Geological Society of America. Programs with Abstracts.
- Monaghan, G.W., and Hayes, D.H. 2002. The Geoarchaeology of the Converse Site: Discovery, Taphonomy, and Depositional History. Paper presented at the Society for American Archaeology Annual Meeting, Denver CO.
- Monaghan, G.W., and Hayes, D.H., 1994, Geoarchaeology. in: *Stage III Archaeological investigations at Whitney Creek Site (ANR-39; AO37-01-0024) Genesee County, NY*, J.A. Robertson, K.C. Egan, and D.J. Weir [ed], Commonwealth Cultural Resources Group, Inc, Jackson, MI, pg. 1-35.
- Monaghan, G.W., and Hayes, D.H., 1994, Geoarchaeology. in: *Stage III Archaeological investigations at Arc Site (ANR-29; AO37-10-0004) Genesee County, New York*, J.A. Robertson, K.C. Egan, and D.J. Weir [ed], Commonwealth Cultural Resources Group, Inc, Jackson, MI, pg. 1-38.
- Monaghan, G.W. and Hayes, D.H., 1994, Site Geomorphology and Geoarchaeology. in: *Stage III Archaeological investigations at Zinselmeier No. 1 Site (ANR-222; AO69-15-0026) Ontario County, New York*, D.J. Weir [ed], Commonwealth Cultural Resources Group, Inc, Jackson, MI, pg. 1-36.
- Monaghan, G.W. and Hayes, D.H., 1994, Geoarchaeology. in: *Stage III Archaeological investigations at McVicker Site, Ontario County, NY*, edited by J Robertson, K. Egan, and D. Weir [ed], Commonwealth Cultural Resources Group, Inc, Jackson, MI, pg. 1-36.
- Monaghan, G.W., Gephart, G., and Larson, G.J., 1986. Drift stratigraphy of the Lake Michigan Ice Lobe, southwestern Michigan: *Geol. Soc. Am. Bulletin*, 97:324-328.
- Monaghan, G.W., and Hansel, A.K. 1990. Evidence for the intra-Glenwood (Mackinaw) low-water phase of glacial Lake Chicago: *Canadian Journal of Earth Science*, 27:1236-1241
- Monaghan, G.W. and Larson, G.J., 1985. A computerized groundwater resources information system: *Groundwater*, 23(2):233-240.
- Monaghan, G.W. and Larson, G.J., 1986. Drift stratigraphy of the Saginaw Lobe, south-central Michigan: *Geol. Soc. Am. Bulletin*, 97:329-334.
- Monaghan, G.W., Larson, G.J., Forstater, D.W., and Sorensen, H.O. 1983. Selected Geologic Maps of Kalamazoo County, Michigan: County Geologic Map Series -- Kalamazoo, Michigan DNR, Geologic Survey Division, Lansing, MI.