KURT L. SCHMUDE, Ph.D.

CURRENT POSITION

Professor and Senior Scientist

Department of Natural Sciences and Lake Superior Research Institute University of Wisconsin - Superior 801 N. 28th Street, Superior, Wisconsin 54880

EDUCATION

Ph.D.	University of Wisconsin-Madison.	1992.	Entomology. Min	nor: Ac	quatic Ecology (Distributed)
M.S.	University of Wisconsin-Madison.	1984.	Entomology.			

B.S. University of Wisconsin-Oshkosh. 1982. Biology. Emphases: Zoology, Ecology.

SCIENTIFIC AND PROFESSIONAL INVOLVEMENT

Society of Freshwater Science Entomological Society of Washington (DC)
American Entomological Society Michigan Entomological Society
Entomological Society of America Dragonfly Society of America
Coleopterists Society

EMPLOYMENT HISTORY

2017- Professor - Department of Natural Sciences, UW-Superior

Present Teach courses in Environmental Science, Medical Terminology, Parasitology, Entomology, and Aquatic Entomology.

- 2012- Associate Professor Department of Natural Sciences, UW-Superior
- 2017 Teach courses in Environmental Science, Medical Terminology, Parasitology, Entomology, and Aquatic Entomology.
- 2007- Assistant Professor Department of Natural Sciences, UW-Superior
- 2012 Teach courses in Environmental Science, Medical Terminology, Parasitology, Entomology, and Aquatic Entomology.
- 2005- Senior Scientist Lake Superior Research Institute (LSRI), UW-Superior. FUNDED PROJECTS present Analyzed benthic macroinvertebrate samples from sites within the Area of Concern along the western shoreline of Lake Michigan in Wisconsin and Illinois to determine the health of the community. Client U.S.G.S.
 - Co-principle investigator on a project that will establish a permanent monitoring framework that will enable the Wisconsin DNR to assess current and future conditions in its nearshore areas of Lake Superior. Collect and analyze macroinvertebrate communities. Client U.S. EPA.
 - Surveyed streams for rare and endangered species of aquatic invertebrates throughout Wisconsin. Part of a large project to predict the occurrence of target species based on water quality and river characteristics. Client Wisconsin Department of Natural Resources (WI DNR).
 - Surveyed numerous state-owned properties throughout Wisconsin and documented the aquatic macroinvertebrate communities present. Information was used to manage the aquatic resources of these properties. Client WI DNR.
 - Analyzed benthic macroinvertebrate samples from streams in southwestern WI as part of a large study to develop water quality monitoring protocols for WI with the intent of including the data in the development of national standards. Client WI DNR.

- Surveyed ephemeral pond throughout northern Wisconsin and taxonomically analyzed the aquatic macroinvertebrate fauna that was collected to determine the status and community composition of ephemeral ponds in WI. Client WI DNR.
- Processed macroinvertebrate samples from streams in the Upper Midwest and western U.S. as part of the National Rivers and Streams Assessment (U.S. EPA). Clients WI DNR and Great Lakes Environmental Center
- Sampled and analyzed macroinvertebrate communities in wetland estuaries along the south shore of Lake Superior to assist in determining overall health of these natural communities. Client Wisconsin Coastal Management Program.
- Processed and analyzed benthic macroinvertebrate samples for a continual project that is assessing the effects of petroleum effluents on a stream and a harbor in Lake Superior, WI. Client WI DNR.
- Managed several surveys that documented (with GIS technology) the invasive species of plants occurring in Wisconsin state forests and other properties. Client WI DNR.
- Analyzed benthic macroinvertebrate samples from the Great Lakes as part of the long-term, biological monitoring and surveillance program conducted by the Great Lakes National Program Office of the U.S. Environmental Protection Agency.
- Surveyed peatlands and bogs throughout Wisconsin and taxonomically analyzed the aquatic macroinvertebrate fauna that was collected to determine the status of peatland species in WI. Client WI DNR.
- Taxonomically analyzed benthic macroinvertebrate samples collected from Chequamegon Bay, Lake Superior and compared the results to a similar study conducted in 1977. Client WI DNR.
- Managed a survey that documented (with GIS technology) rare and endangered species of plants within the Apostle Island National Park. Client National Park Service.
- Work with regional tribal organizations and watershed districts to assess water quality of aquatic habitats using aquatic macroinvertebrates.
- Assist numerous regional organizations and consulting firms by processing macroinvertebrate samples or providing Quality Assurance on taxonomy of aquatic macroinvertebrates.
- Associate Scientist Lake Superior Research Institute (LSRI), UW-Superior. FUNDED PROJECTS
 Surveyed and taxonomically analyzed the aquatic macroinvertebrate fauna in the Niagara Escarpment of Door County, the Wolf River Geographic Management Unit, the Flambeau River and Peshtigo River State Forests, the Chippewa County Forest, and the Chequamegon and Nicolet National Forests all within Wisconsin. Clients included the WI DNR, and the Chippewa County Foresty Department.
 - Analyzed benthic macroinvertebrate samples from the Great Lakes as part of the long-term, biological monitoring and surveillance program being conducted by the Great Lakes National Program Office of the U.S. Environmental Protection Agency.
 - Designed, implemented, processed samples, and analyzed data for the 2nd year of a study that examined the impacts of leachate from a closed landfill on the benthic macroinvertebrate fauna of an impacted stream/wetland in Rhinelander, WI. Client WI DNR.

Provided expert taxonomic identifications for the following projects:

- midge larvae (Chironomidae) from streams along the north shore of Lake Superior for Minnesota's biocriteria-development project Minnesota DNR.
- macroinvertebrates from Lake Superior and its tributaries for several U.S. EPA projects.
- macroinvertebrates for a project that assessed the effects of creosote contamination in a stream in

- Superior, WI private consulting firm.
- macroinvertebrates for the Bad River Tribe of Indians, and the Oneida Tribe of Indians, WI, for their environmental monitoring programs.
- Assistant Scientist Lake Superior Research Institute (LSRI), UW-Superior. FUNDED PROJECTS
 Designed a study, and processed and analyzed samples that determined the impacts of deicing compounds from the Milwaukee County Airport, WI, on the benthic macroinvertebrate fauna of an impacted creek. Client U.S.G.S.
 - Designed, implemented, processed the samples, and analyzed the data for a study that examined the impacts of leachate from a closed landfill on the benthic macroinvertebrate fauna of an impacted creek, river, and wetland in Rhinelander, WI. Client WI DNR
 - Five separate studies that involved processing and expert identification of aquatic macroinvertebrates to determine community composition for several streams impacted by various perturbations in Wisconsin. Client WI DNR.
 - Three separate studies that involved processing and expert identification of macroinvertebrates to determine the community composition at several contaminated sites within the Duluth-Superior Harbor of Lake Superior. Client Minnesota Pollution Control Agency.
 - Involved in three separate projects that determined the effects of *Bacillus thuringiensis* var. *israelensis* (Bti) and methoprene on nontarget aquatic macroinvertebrates in Minnesota wetlands. Client Metropolitan Mosquito Control District.
 - Determined the effects of vertical retaining walls and rock riprap along shorelines of lakes on the macroinvertebrate community to assist the Wisconsin DNR in developing a shoreline enhancement policy for landowners. Client WI DNR.
 - Surveyed and/or identified the aquatic macroinvertebrates of the Brule River State Forest, Black River State Forest, Meadow Valley Wildlife Area, and the Lake Superior Watershed in Wisconsin for rare and endangered species and communities. Client WI DNR.
 - Processed benthic macroinvertebrate samples and identified organisms for an Ecological Risk Assessment study on a contaminated site in Ashland Harbor, Lake Superior. Client private consulting firm.
- 1992- Associate Researcher Lake Superior Research Institute (LSRI), UW-Superior
- 1995 Processed samples and identified macroinvertebrates from the Duluth Superior Harbor of Lake Superior for Characterization of Contamination and Coastal Zone Management projects. Client WI DNR.

Determined effects and fate of contaminants in aquatic environments. The chemicals listed below were studied in a pond/mesocosm system as separate 1-2 year projects funded by the U.S. EPA.

- diflubenzuron (insect growth regulator): 1992
- trifluralin (herbicide): 1994-1995
- nonylphenol (industrial surfactant): 1993-1994
- zinc: 1993-1994
- fluoranthene (polycyclic aromatic hydrocarbon, PAH): 1994

Processed benthic samples and identified macroinvertebrates to determine the effects of a benzene spillage from a train derailment in the Nemadji River, Superior, WI. Client - private consulting firm.

PUBLICATIONS

- Burlakova, L.E., K.E. Kovalenko, K.L. Schmude, R.P. Barbiero, A.Y. Karatayev, and B.M. Lesht. 2017.

 Development of new indices of Great Lakes water quality based on profundal benthic ommunities. Journal of Great Lakes Research.
- Trebitz, A., G. Shepard, V. Brady, K. Schmude. 2015. The non-native faucet snail (Bithynia tentaculata) makes the leap to Lake Superior. Journal of Great Lakes Research 41: 1197-1200.

- Schmude, K.L., T.D. Ledder, T.H. Klubertanz, and J.J. Dimick. 2012. First report of the Neoephemeridae (Ephemeroptera) in Wisconsin. The Great Lakes Entomologist 45: 99-101.
- Barbiero, R.P., K. Schmude, B.M. Lesht, C.M. Riseng, and G.J. Warrens. 2011. Trends in *Diporeia* populations across the Laurentian Great Lakes, 1997-2009. Journal of Great Lakes Research. 37: 9-17.
- Stroom, K.T., K. Schmude, J. Snitgen, S.J. Lozano, T. Corry, and J.V. Scharold. 2010. New records and range extensions for several genera of Chironomidae from Lake Superior. Proceedings of the XV International Symposium on Chironomidae. pp. 184-195.
- Barbiero, R.P., K.L. Schmude, D.W. Schloesser, and M.B. Gaiancarlo. 2009. Benthos Diversity and Abundance. Aquatic Oligochaete Communities, pp. 69-73. *In:* Environment Canada and United State Environmental Protection Agency. State of the Great Lakes 2009. 437 pp.
- Schmude, K.L. 1999. Riffle beetles in the genus *Stenelmis* (Coleoptera: Elmidae) from warm springs in southern Nevada: new species, new status, and a key. Entomological News 110: 1-12.
- Liber, K., K.L. Schmude, and D.M. Rau. 1998. Toxicity of *Bacillus thuringiensis* var. *israelensis* to chironomids in pond mesocosms. Ecotoxicology 7: 343-354.
- Schmude, K.L., K. Liber, T.D. Corry, and F.S. Stay. 1999. Effects of 4-nonylphenol on benthic macroinvertebrates and insect emergence in littoral enclosures. Environmental Toxicology and Chemistry 18: 386-393.
- Schmude, K.L., J.J. Jennings, K.J. Otis, and R.R. Piette. 1998. Effects of habitat complexity on macroinvertebrate colonization of artificial substrates in north temperate lakes. Journal of the North American Benthological Society 17: 73-80.
- Crane, J.L., M. Schubauer-Berigan, and K.L. Schmude. 1997. Sediment assessment of hotspot areas in the Duluth/Superior Harbor. U.S. EPA, Great Lakes National Program Office. EPA-905-R97-020.
- Liber, K., K.L. Schmude, and T.D. Corry. 1996. Effects of the insect growth regulator diflubenzuron on insect emergence within littoral enclosures. Environmental Entomology 25: 17-24.
- O'Halloran, S.L., K. Liber, K.L. Schmude, T.D. Corry. 1996. Effects of diflubenzuron on benthic macroinvertebrates in littoral enclosures. Archives of Environmental Contamination and Toxicology 30: 444-451.
- Liber, K., D.J. Call, T.P. Markee, K.L. Schmude, M.D. Balcer, F.W. Whiteman, and G.T. Ankley. 1996. Effects of acid-volatile sulfide on zinc bioavailability and toxicity to benthic macroinvertebrates: a spiked-sediment field experiment. Environmental Toxicity and Chemistry 15: 2113-2125.
- Schmude, K.L., C.B. Barr, and H.P. Brown. 1992. *Stenelmis lignicola* and *Stenelmis xylonastis*, two new wood-inhabiting riffle beetles in North America (Coleoptera: Elmidae). Proceedings of the Entomological Society of Washington 94:580-594.
- Hilsenhoff, W.L. and K.L. Schmude. 1992. Riffle beetles of Wisconsin (Coleoptera: Dryopidae, Elmidae, Lutrochidae, Psephenidae) with notes on distribution, habitat, and identification. The Great Lakes Entomologist 25:191-213.
- Schmude, K.L. and W.L. Hilsenhoff. 1991. *Stenelmis maerkelii* Motschulsky and *S. vittipennis* Zimmermann as synonyms of *S. bicarinata* LeConte (Coleoptera: Elmidae). Proceedings of the Entomological Society of Washington 93: 756-759.
- Schmude, K.L. and H.P. Brown. 1991. A new species of *Stenelmis* (Coleoptera: Elmidae) found west of the Mississippi River. Proceedings of the Entomological Society of Washington 93: 51-61.
- Lillie, R.A., K.L. Schmude, and W.L. Hilsenhoff. 1987. Rediscovery of *Acanthametropus pecatonica* in the western Great Lakes region (Ephemeroptera: Siphlonuridae). The Great Lakes Entomologist 20: 85-86.

Schmude, K.L. and W.L. Hilsenhoff. 1986. Biology, ecology, larval taxonomy, and distribution of Hydropsychidae (Trichoptera) in Wisconsin. The Great Lakes Entomologist 19: 123-145.

REPORTS

- Schmude, K.L. 2016. Aquatic Macroinvertebrate Biotic Field Surveys and Taxonomy: Balsam Branch State Wildlife Area, Beaver Brook State Wildlife Area, Loon Lake State Wildlife Area, McKenzie Creek State Wildlife Area, Rice Beds Creek State Wildlife Area. Final Report to Natural Heritage Program, Division of Fish, Wildlife and Parks, Wisconsin Department of Natural Resources (WI DNR), Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2015. Aquatic Macroinvertebrate Field Surveys and Taxonomy: Van Loon State Wildlife Area, North Bend Bottoms State Wildlife Area, South Beaver Creek State Wildlife Area, Lakes Coulee State Wildlife Area, Tamarack Creek State Wildlife Area, Borst Valley State Wildlife Area, Chimney Rock State Wildlife Area. Final Report to Natural Heritage Program, Bureau of Endangered Resources, Wisconsin Department of Natural Resources (WI DNR), Madison, WI. LSRI, UW-S, Superior, WI.
- Eliot, A., M. Balcer, and K.L. Schmude, 2014. Implementing WI DNR's Lake Superior nearshore monitoring plan. RFP number: EPA-R5-GL2010-1. Final report to U.S. EPA Region 5, Great Lakes National Program Office, Chicago, IL.
- Schmude, K.L. 2013. Aquatic Macroinvertebrate Field Surveys and Taxonomy: Status Assessments of Aquatic Invertebrates Potentially Endangered or Threatened. Final Report. Submitted to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2012. Aquatic Macroinvertebrate Biotic Field Surveys and Taxonomy: Dewey Marsh State Wildlife Area, McMillan Marsh State Wildlife Area, George W. Mead State Wildlife Area, Upper Wolf River Springs/Streams/Ponds, Pike Wild River, Driftless Area Trout Streams Public Lands, Sheboygan River Area of Concern. Final Report to WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2012. Aquatic Macroinvertebrate Biotic Field Surveys and Taxonomy: Ephemeral Ponds in North Wisconsin. Final Report to WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2011. A Preliminary Evaluation of the Aquatic Macroinvertebrate Community of Newton Creek, Superior, Wisconsin Post Remediation. Report to WI DNR, Superior, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2011. Analysis of Macroinvertebrate Samples Collected from Hog Island Inlet Area, Superior, WI: June 24, 2011. Final Report to WI DNR, Ashland, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2011. Evaluation of the Aquatic Macroinvertebrate Fauna of the Middle Portion of the Sauk River, Stearns County, Minnesota, 2010. Final Report to Sauk River Watershed District, Sauk Centre, MN. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2010. Evaluation and Summary of the Aquatic Macroinvertebrate Fauna of the Sauk River, Todd County, Minnesota. Final Report to Sauk River Watershed District, Sauk Centre, MN. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2010. Aquatic macroinvertebrate biotic field surveys and taxonomy: Amsterdam Sloughs Wildlife Area, Bear Lake Remnant Fishery Area, Behning Creek Fishery Area, Crex Meadows Wildlife Area, Danbury Wildlife Area, Fish Lake Wildlife Area, Parker Creek Fishery Area, Sawyer Creek Fishery Area, Vernon Wildlife Area, Yellow River Fishery Area. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2010. Aquatic macroinvertebrate biotic field surveys and taxonomy: Kettle Moraine State Forest, Lodi Marsh State Wildlife Area, Mud Lake State Wildlife Area, Brule River State Forest, Douglas County Wildlife Area, Namekagon Barrens State Wildlife Area. Final Report to Natural Heritage Program, Bureau

- Kurt L. Schmude, Ph.D.
 - of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2010. Evaluation of Water Quality in the Bois Brule River System, Douglas County, Wisconsin using Aquatic Macroinvertebrates: Spring 2009. Report to WI DNR, Superior, WI Office. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2009. Aquatic macroinvertebrate field surveys and taxonomy: lotic invertebrate statewide rare animal status determinations. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- O'Halloran, S., A. Eliot, and K. Schmude. 2008. Lake Superior Coastal Wetland and Stream Monitoring Project: 2007-2008. University of Wisconsin-Lake Superior Research Institute. Final Report to Wisconsin Coastal Management Program. 76 pp + appendices.
- Schmude, K.L. 2008. Aquatic macroinvertebrate taxonomy. Peatland Study: status determinations of statewide rare animals. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Balcer, M., Schmude, K., TenEyck, M., 2008. Biological Data from GLNPO's Great Lakes Open Water Surveillance Program 2001-2006. Report to Great Lakes National Program Office, U.S. EPA.
- Schmude, K.L. 2006. Survey of the aquatic macroinvertebrate community in Chequamegon Bay, Lake Superior, Wisconsin (Spring 2006) and comparison to 1977 study. Report to WI DNR, Bayfield, WI. LSRI, UW-Superior, Superior, WI.
- Schmude, K.L. 2006. Aquatic macroinvertebrate taxonomy. Peatland Study: status determinations of statewide rare animals. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Balcer, M., Schmude, K., TenEyck, M., 2006. Biological data from GLNPO's Great Lakes open water surveillance program 2001-2005. Report to Great Lakes National Program Office, U.S. EPA.
- Schmude, K.L. 2004. Aquatic macroinvertebrate biotic field surveys and taxonomic analysis. Peatland Study: status determinations of statewide rare animals. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2004. Aquatic macroinvertebrate biotic field surveys and taxonomic analysis: Peshtigo River State Forest, and Peshtigo River. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2003. Survey of forest-sensitive dragonflies within the Chequamegon and Nicolet National Forests in Wisconsin: Spring/Summer 2003. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2002. Aquatic macroinvertebrate biotic field surveys and taxonomic analysis: Chippewa County Forest. Report submitted to the Chippewa County Forestry & Parks Department, Chippewa Falls, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2001. Aquatic macroinvertebrate biotic field surveys and taxonomy: Flambeau River State Forest–Year 2000. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2000. Aquatic macroinvertebrate biotic field surveys and taxonomy: Wolf River GMU Year 2000. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.

- Schmude, K.L. 2000. Aquatic macroinvertebrate biotic field surveys and taxonomy: Niagara escarpment Final Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 2000. Analysis of macroinvertebrate samples collected November 1999 from Newton Creek, Superior, WI and re-analysis of previous macroinvertebrate data for Newton Creek. Report submitted to Short Elliot Hendrickson Inc., Chippewa Falls, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 1999. Aquatic macroinvertebrate biotic field surveys and taxonomy: Wolf River GMU. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 1999. Analysis of the macroinvertebrate community in the Slaughterhouse Creek System and Pelican River, Rhinelander, Wisconsin Spring 1998. Final Report to Bureau of Remediation and Redevelopment, Wisconsin Dept. of Natural Resources. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 1999. Aquatic macroinvertebrate biotic field surveys and taxonomy: Meadow Valley Wildlife Area, Black River State Forest, Brule River State Forest, Wolf River Geographic Management Unit (GMU), Niagara Escarpment. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 1999. Aquatic macroinvertebrate biotic field surveys and taxonomy: Brule River State Forest rearing chironomid larvae. Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Schmude, K.L. 1999. Aquatic macroinvertebrate biotic field surveys and taxonomy: Wolf River GMU. Final Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.
- Balcer, M.D., K.L. Schmude, and J. Snitgen. 1999. Long-term effects of the mosquito control agents *Bti (Bacillus thuringiensis israelensis)* and methoprene on non-target macroinvertebrates in wetlands in Wright County, Minnesota (1997-1998). Final Report to Metropolitan Mosquito Control District, St. Paul, MN. LSRI, UW-S, Superior, WI.
- Call, D., M. TenEyck, I. Ndbari, D. Fritsche, D. Brooke, K. Schmude, and M. Balcer. 1998. Toxicity evaluation of sediments from Chequamegon Bay, Lake Superior, at Ashland, Wisconsin. Final Report to Short Elliott Hendrickson Inc (SEH). LSRI, UW-S, Superior, WI.
- Schmude, K.L. and M.D. Balcer. 1997. Effects of the mosquito control agents Bti (*Bacillus thuringiensis israelensis*) and methoprene on non-target macroinvertebrates in wetlands in Wright County, Minnesota (1997). Final Report to Metropolitan Mosquito Control District, St. Paul, MN. LSRI, UW-S, Superior, WI.
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- Schmude, K.L. 1995. Rare aquatic macroinvertebrate (insects) survey of the Northern Highland American Legion State Forest (NHALSF). Final Report to Natural Heritage Program, Bureau of Endangered Resources, WI DNR, Madison, WI. LSRI, UW-S, Superior, WI.