

Brenda J. Asmus

Curriculum Vita

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SUMMARY

- Experienced in biological and chemical water quality monitoring
- Proficient in macroinvertebrate and fish identification
- Skilled in stream stability assessments and Rosgen's Stream Classification System
- Possess understanding of Total Maximum Daily Load (TMDL) impaired water assessment and problem identification

EDUCATION

University of Minnesota, Saint Paul, Minnesota

Masters of Science, Water Resources Science, *expected graduation May 2007*

Co-Advisors: Dr. James Perry II and Dr. Leonard Ferrington, Jr.

Thesis: *Assessing the relationship between channel stability, habitat quality, and Indices of Biotic Integrity for fish and macroinvertebrates*

Selected Coursework: Stream and River Ecology; Restoration Ecology; Limnology; Aquatic Insects, Habitats and Pollution; Geographic Information Systems; Statistics

GPA: 3.93 *to date*

Saint Olaf College, Northfield, Minnesota

Bachelor of Arts; Major: Biology. Concentration: Environmental Studies

Biology Semester in Tamil Nadu, South India

Selected Coursework: Biology, Lake Ecology, Chemistry, Genetics, Calculus

University of Wisconsin-Stevens Point

Natural Resource Semester in Australia/New Zealand

RESEARCH EXPERIENCE

Research Assistant / Research Specialist (Summer)

Department of Fisheries, Wildlife, and Conservation Biology

University of Minnesota, St Paul, MN, May – August 2005; May 2006 – present

Crew leader for EPA STAR grant research project. Investigated relationship between physical indicators of channel stability and biotic communities.

Research Assistant

Department of Entomology

University of Minnesota, St Paul, MN August 2005 – June 2006

Contracted by the Minnesota Pollution Control Agency to sort and identify wetland macroinvertebrates to lowest taxonomic level resolvable. Slide mounted chironomid larvae. Managed and archived Access database.

RESEARCH EXPERIENCE (*continued*)

Lab Assistant

Department of Entomology, Department of Fisheries, Wildlife and Conservation Biology
University of Minnesota, St Paul, MN September 2004 – May 2005
Sorted macroinvertebrate and surface floating pupal exuvia (SFPE) for Minnehaha
Creek and riparian forest harvest projects.

Biological Monitoring Intern

Minnesota Pollution Control Agency, May – August 2004
Collected fish community, habitat, and water chemistry data for state water quality
monitoring program. Data entered into Access database.

Volunteer Field Assistant

Center for Ecology and Hydrology, Wool, Dorset, United Kingdom July – August 2003
Assisted Doctoral candidate in collection of stream fish for invasive species project.

Volunteer Researcher

St. Olaf College Biology Semester in Tamil Nadu, South India August – December 1991
Designed experiment to test fuel efficiency of conventional and modified chulas in
rural village. Conducted interviews with local farmers to determine interest in
natural pest control and water conservation strategies.

RELATED SKILLS

Biological and Chemical Monitoring

- Field collection of fish and macroinvertebrates; transect data for habitat.
- Operate backpack and stream shocker equipment.
- Measure water chemistry using Sonde meter and titration techniques.
- Lab analysis of Total Suspended Solids and turbidity.

Stream Classification and Stability Assessments

- Skilled in Rosgen Stream Classification, channel stability assessments, and characterizing stages of channel evolution.
- Use digital laser level to measure stream cross-sections and longitudinal profiles.
- Validate infield indicators of bank full elevation using regional hydraulic curves.

Identification of Fish and Macroinvertebrates

- Proficient in identifying native and exotic fish species, aquatic insects, gastropods and leeches found in Minnesota streams and wetlands.

Macroinvertebrate Photography

- Digitally photograph macroinvertebrates for leeches and snails identification key.
- Use Photoshop to adjust contrast and size for website application.

CONFERENCE PRESENTATIONS

Assessing the physical integrity of streams.

Oral presentation given at Minnesota Water 2006 and Annual Water Resources Joint Conference. Brooklyn Center, MN. October 24, 2006

Assessing the relationship between channel stability, habitat quality and fish communities.

Oral presentation given at the 70th Annual Soil Science Society of America International Meeting. Indianapolis, IN. November 16, 2006

Predicting Channel Erosion in a Lacustrine Basin Using Stream Geomorphology Metrics.

Oral presentation given on behalf of author Joseph Magner at the 70th Annual Soil Science Society of America International Meeting. November 16, 2006

TEACHING EXPERIENCE

Guest Lecturer, Departments of Entomology and Forest Resources

University of Minnesota, St Paul, MN, May 2005 – November 2006

Lectured graduate and undergraduate courses.

English Instructor

Gram Language English School, Taipei Taiwan, ROC, November 1995 – November 1996

Designed curriculum and taught courses for classroom and individual settings for business personnel and grade school students.

GRANTS AND FELLOWSHIPS

Bonestroo, Rosene, Anderlik, and Associates Travel Grant, 2006

Graduate School Tuition Fellowship, 2004 and 2005

APPOINTMENTS

Alternate Commissioner, City of Crystal, Minnesota

Shingle Creek Watershed Management Commission, January 2004 – present

Co-Vice President and Curriculum Committee Representative

Water Resources Students in Action, University of Minnesota, September 2004 - present

PROFESSIONAL ORGANIZATIONS

- Soil Science Society of America
- North American Benthological Society

UNIVERSITY MEMBERSHIPS

Chironomid Research Group

University of Minnesota, September 2004 – present

Weekly discussion of scientific articles and demonstration of lab protocols for the family Chironomidae.

Water Quality Team,

University of Minnesota, September 2004 – present

Weekly meetings to discuss student research projects and give presentations.

TMDL Research Group,

University of Minnesota, November 2004 – present

Monthly meetings to discuss EPA STAR grant objectives and progress. Discuss Future research needs in impaired waters assessments and Total Maximum Daily Loads.

WORKSHOPS ATTENDED

Stream Assessment and Monitoring

Minnesota Department of Natural Resources, August 2006

Project Wet and Wild Science Education Training

Minnesota Department of Natural Resources, October 2005

TMDL Stakeholder Process

Minnesota Environmental Partnership, October 2004

Aquatic Plant Identification Workshop

University of Minnesota Extension Service, August 2004

Wetland Plant Identification Workshop

University of Minnesota Extension Service, August 2004