

Phycology Section, Patrick Center for Environmental Research

Publications

[Scientific Publications](#)

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Scientific Publications (*= peer reviewed)

2016

Rowell, H.C., M.D. Enache, R. Quinlan, A.J. Smith, J.A. Bloomfield, **D.F. Charles**, and S.W. Effler. Quantitative paleolimnological inference models applied to a high-resolution biostratigraphic study of lake degradation and recovery, Onondaga Lake, New York (USA). *Journal of Paleolimnology* 55(3): 241-258. 2016.

Hausmann, S., D.F. Charles, J. Gerritsen, and T.J. Belton. A diatom-based condition gradient (BCG) approach for assessing impairment and developing nutrient criteria for streams. *Science of the Total Environment* 562: 914-927. 2016.

Horwitz, R.J., A. Tuccillo, **D. F. Charles**, S. Neiffer, and T.J. Belton. Validation of a macroinvertebrate-based index of nutrient status in streams using macroinvertebrate, water chemistry, and diatom data. *Northeastern Naturalist* (accepted for publication). 2016.

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Sutherland, S.W., **F.W. Acker**, J.A. Bloomfield, C.W. Boylen, **D.F. Charles**, R.A. Daniels, L.W. Eichler, J.L. Farrell, R.S. Feranec, M.P. Hare, S.L. Kanfoush, R.J. Preall, S.O. Quinn, H.C. Rowell, W.F. Schoch, W.H. Shaw, C.A. Siegfried, T.J. Sullivan, D.A. Winkler, and S.A. Nierzwicki-Bauer. Brooktrout Lake case study: Biotic recovery from acid deposition 20 years after the 1990 Clean Air Act Amendments. *Environmental Science and Technology* 49: 2665-2674. 2015.

Over 50 authors, including **Sonja Hausmann**. Looking forward through the past: Identification of 50 priority research questions in palaeoecology. *Journal of Ecology* 102 (1): 256-267. 2015. DOI [10.1111/1365-2745.12195/pdf](https://doi.org/10.1111/1365-2745.12195/pdf).

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Herlihy, A. T., N. C. Kamman, J. C. Sifneos, **D. F. Charles**, **M. D. Enache**, and R. J. Stevenson. 2013. Using multiple approaches to develop nutrient criteria for lakes in the conterminous USA no access. *Freshwater Science* Volume 32(2), pp. 367-384. June 2013. DOI: [10.1899/11-097.1](https://doi.org/10.1899/11-097.1)

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***Enache, M. D.**, D. F. Charles, T. J. Belton & C. W. Callinanc. 2012. Total phosphorus changes in New York and New Jersey lakes (USA) inferred from sediment cores. *Lake and Reservoir Management*, Volume 28, Issue 4, 2012. DOI [10.1080/07438141.2012.737410](https://doi.org/10.1080/07438141.2012.737410).

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Morales, E. A., & E. Fernández. 2009. Estudios ficológicos en Bolivia: vacíos de información y base para trabajos futuros [Phycological studies in Bolivia: information gaps and a basis for future research]. 1er Congreso Boliviano de Botánica. October 29-30, 2009. Cochabamba, Bolivia.

Morales, E. A., E. Fernández, & R. Lücking. 2009. Estudio preliminar de hongos liquenizados de las localidades de Pasorapa y Omereque, Provincia Campero, Departamento de Cochabamba, Bolivia [A preliminary study of lichenized fungi from the localities of Pasorapa and Omereque, Campero Province, Department of Cochabamba, Bolivia]. 1er Congreso Boliviano de Botánica. October 29-30, 2009. Cochabamba, Bolivia.

Morales, E. A., & I. Trujillo. 2009. Diatomeas epilíticas (Bacillariophyta) del río Rocha, Departamento de Cochabamba, Bolivia. [Epilithic diatoms (Bacillariophyta) from the Rocha River, Department of Cochabamba, Bolivia]. 1er Congreso Boliviano de Botánica. October 29-30, 2009. Cochabamba, Bolivia.

Nierzwicki-Bauer, S. A., **F. A. Acker**, R. Bombard, **D. F. Charles**, R. Daniels, L. W. Eichler, J. Farrell, J. P. Harrison, B. Momen, S. Percent, W. H. Shaw, J. W. Sutherland, D. Winkler, & C. W. Boylen. 2009. A fifteen year dataset on chemistry and biota in Adirondack lakes: trends and future directions. NYSERDA Environmental Monitoring, Evaluation, and Protection Conference, Albany, NY, Oct 14-15, 2009.

Ren, L., & M. Potapova. 2009. Representatives of the genus *Proschkinia* from the Chihuahuan Desert, New Mexico (poster). 20th North American Diatom Symposium, Iowa Lakeside Lab, Milford, IA, September 23-27, 2009.

Thomas, R. L., D. J. Velinsky, **D. F. Charles**, & C. K. Sommerfield. 2009. Tidal marshes in the Delaware Estuary: Historical reconstruction of chemical loadings and ecosystem effects. 20th Biennial Conference of the Coastal and Estuarine Research Federation, Portland, OR, November 1-5, 2009. (Poster)

Trujillo, I., & **E. A. Morales**. 2009. Utilizaci3n de diatomeas epil3ticas (algas, Bacillariophyta) como indicadores de eutrofizaci3n en el r3o Rocha, Cochabamba [Use of epilithic diatoms (algae, Bacillariophyta) as indicators of eutrophication in the Rocha River, Cochabamba]. 1er Congreso Boliviano de Bot3nica. October 29-30, 2009. Cochabamba, Bolivia. p. 29.

2008

Charles, D. F., F. A. Acker, P. A. Bukaveckas, W. H. Shaw, C. W. Boylen, & S. A. Nierzwicki-Bauer. 2008. Phytoplankton assemblage response to decreasing acidic deposition in Adirondack Mountain lakes. Northeast Natural History Conference X, Albany, NY, April 17-18, 2008. (Presented by C. Boylen)

***Charles, D. F.**, J. K. Crawford, **S. E. Hamsher** & **J. T. Zalack**. 2008. Diatom-based approaches to develop nutrient criteria for streams in the Mid-Atlantic region of the eastern USA. 20th International Diatom Symposium, Dubrovnik, Croatia, September 7-13, 2008.

Charles, D. F., A. Tuccillo, & T. Belton. 2008. Tiered Aquatic Life Use (TALU) evaluation of New Jersey's Diatom Trophic Index (TDI). NJ DEP workshop on development of NJ TALU using diatoms, Trenton, NJ, December 11, 2008.

Enache, M. D., D. F. Charles, T. J. Belton & C. W. Callinan. 2008. Diatom-based paleolimnological reconstruction of European settlement impact on lakes in New York and New Jersey, USA. 20th International Diatom Symposium, Dubrovnik, Croatia, September 7-13, 2008.

Enache, M. D., E. A. Morales, & **M. Potapova**. 2008. New and rare diatoms (Bacillariophyceae) from lakes in the U.S.A. International Diatom Symposium, September 7-13, 2008. Dubrovnik, Croatia. Poster.

Fern3ndez, E., & **E. A. Morales**. 2008. Estudios ficol3gicos en Bolivia: Vac3os de informaci3n y bases para trabajos futuros. VIII Congreso de Ficolog3a de Am3rica Latina y El Caribe/VI Reuni3n Iberoamericana de Ficolog3a. August 25-29, 2008. Lima, Peru.

Horwitz, R. J., **D. Velinsky**, & **D. Charles**. The Manatawny Creek Dam removal study. Invited presentation at symposium on dam removal. State College, PA. May 2008.

Maldonado, M., M. Pouilly, J. Camacho, F. Acosta, C. Fernandez, M. Cadima, & **E. A. Morales**. 2008. Caracterizaci3n ecol3gica de ambientes acu3ticos de la cuenca del r3o It3nez (Bolivia) [Ecological characterization of aquatic habitats in the It3nez River watershed (Bolivia)]. II Congreso Boliviano de Ecolog3a. April 17-19, 2008. Cochabamba, Bolivia.

Mays, S. J., D. F. Charles, & P. Palmer. 2008. The Academy of Natural Sciences on-line phyecological resources. 47th Northeast Algal Symposium, April 18 - 20, 2008, Durham, NH.

Morales, E. A., V. Chvez, & I. Trujillo. 2008. Exploraciones preliminares de la diversidad de diatomeas (Bacillariophyta) en Bolivia. VIII Congreso de Ficologa de Amrica Latina y El Caribe/VI Reunin Iberoamericana de Ficologa. August 25-29, 2008. Lima, Peru.

Morales, E. A., & L. Ector. 2008. Exploration de la diversit et de la taxinomie des Fragilariales en Amrique du Nord. 27me Colloque de lAssociation des Diatomistes de langue Franaise. September 1-4, 2008. Dijon, France.

Morales, E. A., M. B. Edlund, & S. A. Spaulding. 2008. Small fragilarioid diatoms (*Bacillariophyceae*) morphologically similar to *Pseudostaurosira (Fragilaria) elliptica*. 20th International Diatom Symposium. September 7-13, 2008. Dubrovnik, Croatia.

Morales, E. A., E. Fernndez, & P. Kociolek. 2008. Estudio preliminar de las diatomeas (Bacillariophyta) de Sehuencas, Parque Nacional Carrasco, Departamento de Cochabamba, Bolivia. VIII Congreso de Ficologa de Amrica Latina y El Caribe/VI Reunin Iberoamericana de Ficologa. August 25-29, 2008. Lima, Peru.

Morales, E. A., J. P. Kociolek, & E. Fernndez. 2008. A preliminary assessment of the diversity of epilithic diatoms (*Bacillariophyceae*) from Bolivian cloud forests, South America. 20th International Diatom Symposium. September 7-13, 2008. Dubrovnik, Croatia.

Rioual, P., & **E. A. Morales.** 2008. Araphid diatom (*Bacillariophyta*) diversity in Lake Sihailongwan, Jilin Province, Northeast China. 20th International Diatom Symposium. September 7-13, 2008. Dubrovnik, Croatia.

Tuccillo, A., R. Horwitz, & D. F. Charles. 2008. Application of a benthic macroinvertebrate nutrient biotic index (NBI) to New Jersey streams and a comparison to benthic diatom indices. North American Benthological Society 56th Annual Meeting, Salt Lake City, UT, May 25-30, 2008.

2007

Charles, D. F., S. Hamsher & J. Zalack. 2007. Diatom indicators of nutrients in the Mid-Atlantic region. 8th Annual Mid-Atlantic NPS/TMDL/WQS/WQM Training Workshop, Ocean City, MD, May 21-24, 2007.

Charles, D. F., F. A. Acker, P. A. Bukaveckas, W. H. Shaw, C. W. Boylen, & S. A. Nierzwicki-Bauer. 2007. Response of phytoplankton assemblages to decreasing acidic deposition in Adirondack mountain lakes (New York, USA). 30th Congress of the International Association of Theoretical and Applied Limnology (SIL), Montreal, Quebec, Canada, August 12-18, 2007.

Charles, D. F., D. Mellott & M. Potapova. 2007. Computer applications and electronic resources for diatom research at the Academy of Natural Sciences. North American Diatom Symposium, University of Michigan Biological Station, Douglas Lake, MI, September 12-16, 2007.

Charles, D. F. 2007. New approaches for using diatoms as indicators of nutrient conditions in rivers and streams. Biology Department seminar. The Ohio University, Athens, OH, March 8-10, 2007. Invited and hosted by Dr. Morgan Vis. Also had several meeting with honors and undergraduate students.

Charles, D. F. 2007. The science of nutrients: Diatoms as nutrient indicators in rivers and streams. Nutrient Forum. Sponsored by the US EPA and the PA Department of Environmental Protection. Philadelphia Visitor's Center, October 4, 2007.

Charles, D. F. Presentation to Academy Board of Trustees. Phycology / ANSP Diatom research, April 18.

Charles, D. F., F. A. Acker, P. A. Bukaveckas, W. H. Shaw, C. W. Boylen, & S. A. Nierzwicki-Bauer. 2007. Response of phytoplankton assemblages to decreasing acidic deposition in Adirondack mountain lakes. (Poster). EMAP Conference - Environmental Monitoring, Evaluation, and Protection in New York: Linking Science and Policy, NYSERDA (New York State Energy Research and Development Authority), November 15-16.

Flinders, C. A., D. F. Charles, O. Gibb, D. D. Hart, R. J. Horwitz, R. L. Thomas, D. J. Velinsky & J. Zalack. 2007. Controlling lotic periphyton using pulsed flows in the Jackson River: Spatial effects of a planned and natural pulsed flow event on biomass. North American Benthological Society 55th Annual Meeting, June 3-8, 2007, Columbia, SC.

Hart, D. D., J. Ashley, A. Bednarek, R. Brown, K. Bushaw-Newton, D. F. Charles, R. J. Horwitz, J. Pizzuto & D. J. Velinsky. 2007. Dam removal: Research needs for guiding effective conservation strategies. Same meeting as above.

Hondula, K., D. F. Charles & M. Potapova. 2007. An investigation of the freshwater diatom genus *Reimeria*: Distinctions between *Reimeria sinuata* and *Reimeria uniseriata*. North American Diatom Symposium, University of Michigan Biological Station, Douglas Lake, MI, September 12-16, 2007.

Horwitz, R. J., D. F. Charles, C. A. Flinders, D. D. Hart, D. H. Keller, R. L. Thomas, D. J. Velinsky & J. Zalack. 2007. Controlling lotic periphyton using pulsed flows in the Jackson River: Effects of high flow refuges on periphyton biomass during a pulsed flow experiment. North American Diatom Symposium, University of Michigan Biological Station, Douglas Lake, MI, September 12-16, 2007.

Potapova, M. 2007. A new diatom genus based on *Achnanthes kriegeri* Krasske. 19th North American Diatom Symposium. Douglas Lake, MI, September 12-16, 2007.

Potapova, M. & K. Ponader. 2007. The diversity of Sellaphoraceae in rivers and springs of the Southeastern United States. 19th North American Diatom Symposium. Douglas Lake, MI, September 12-16, 2007.

Potapova, M. 2007. River algae: Taxonomy and use for environmental assessments. Association of Mid-Atlantic Aquatic Biologists, Cacapon State Park. Berkeley Springs, WV, April 4-5, 2007.

Spaulding, S. A., D. Lubinski, M. Potapova, J. Thompson, J. Kinsey, & **M. Edlund.** 2007. Developing a web-based identification guide and ecological resource for diatoms of western North America. 19th North American Diatom Symposium. Douglas Lake, MI, September 12-16, 2007.

Thomas, R. L., D. F. Charles, C. A. Flinders & D. J. Velinsky. 2007. A multi-year study of periphyton dynamics in the Jackson river: Patterns of biomass and community structure and the relationship to physico-chemical conditions. 19th North American Diatom Symposium. Douglas Lake, MI, September 12-16, 2007.

Zalack, J. T. & D. F. Charles. 2007. Changes in the Jackson River, VA: Effects of management techniques on algal biomass and taxonomic composition. Same NADS meeting as above.

2005

Morales, E. A. & S. E. Hamsher. 2005. Girdle band structure in the fragilarioid genera *Staurosira* and *Staurosirella* (Bacillariophyceae). 44th North East Algal Society Symposium, Rockport, ME. Pages 25-26.

Potapova, M. G. 2005. What can and what cannot be done with the NAWQA algal dataset? 14th NAWQA Taxonomy Workshop, ANSP, Philadelphia, PA, January, 2005.

Potapova, M. G. & D. F. Charles. 2005. Diatom metrics for monitoring eutrophication in US rivers. American Society of Limnology and Oceanography 2005 Aquatic Sciences Meeting, Salt Lake City, Utah, February 20-25, 2005.

2004

Boylen, C.W., J.W. Sutherland, D.A. Winkler, D.F. Charles, F. W. Acker, J.A. Bloomfield, S.O. Quinn, and S.A. Nierzwicki-Bauer. 2004. Changing nutrient chemistries in Adirondack lakes prompt changes in phytoplankton. American Society of Limnology and Oceanography, Savannah, GA, June 13-18, 2004.

Brown, R.L., D. Hart, D. Velinsky, J. Pizzuto, D. Charles, R. Horwitz, T. Johnson, K. Skalak, D. Winter, T. Nightengale, J. Carr & J. McNair. 2004. Prioritizing sites for dam removal: how dam size translates to ecological impact. Ecological Society of America, Portland OR, August 1-6, 2004.

Charles, D.F., F.W. Acker, D.D. Hart, & C.W. Reimer. 2004. Regional-scale variation in diatom-water chemistry relationships in the eastern U.S. North American Benthological Society, Vancouver, BC, June 6-10, 2004

Charles, D. F., K. Sprouffske, E. A. Morales, M. Potapova, K. C. Ponader, D. M. Winter, C. Bell, P. Cotter, R. McCourt, D. Mellott, C. Ratnayaka, & D. Waterman. 2004. Academy of Natural Sciences online algae image resources. 18th International Diatom Symposium, Międzyzdroje, Poland, 2-7 September, 2004. p. 69.

Edlund, M. B., E. A. Morales & S. A. Spaulding. 2004. The type and taxonomy of *Fragilaria elliptica* Schumann, a widely misconstrued taxon. 18th International Diatom Symposium, Międzyzdroje, Poland, 2-7 September, 2004. p. 36.

Hamilton, P. & E. A. Morales. Fragilariales: On *Ulnaria* and its relationship to *Synedra* and *Fragilaria*. 13th NAWQA Taxonomy Workshop on Harmonization of Algal Taxonomy. December 2004. ANSP, Philadelphia, PA.

Manoylov, K. M. & E. A. Morales. 2004. *Staurosirella incognita* Morales et Manoylov sp. nov., a non-spiny species from North America, with an emended description of *Staurosirella* Williams et Round (Bacillariophyceae). 18th International Diatom Symposium, Międzyzdroje, Poland, 2-7 September, 2004. p. 127.

Morales, E. A. & M. Le. 2004. Taxonomía de la diatomea *Lacunicula sardiniensis* Lange-Bertalot, Cavacini, Tagliaventi et Alfinito y su relación con el género *Craticula* Grunow (Bacillariophyceae) [Taxonomy of the diatom *Lacunicula sardiniensis* Lange-Bertalot, Cavacini, Tagliaventi et Alfinito and its relationship with the genus *Craticula* Grunow (Bacillariophyceae)]. First Peruvian Phycological Congress/First South American Phycological Congress. Lima, Peru. p. 61.

Morales, E. A., D. F. Charles, K. Sprouffske, M. Potapova, K. C. Ponader, D. M. Winter, C. Bell, P. Cotter, R. McCourt, D. Mellott, C. Ratnayaka, & D. Waterman. 2004. Bases de datos en línea conteniendo fotografías electrónicas pertenecientes a la Academia de Ciencias Naturales de Filadelfia [On line databases containing electronic images from The Academy of Natural Sciences of Philadelphia]. First Peruvian Phycological Congress/First South American Phycological Congress. Lima, Peru. p. 31.

Morales, E. A., M. Potapova. & D. F. Charles. 2004. Las diatomeas bénticas como indicadores de la calidad del agua [Benthic diatoms as indicators of water quality]. Universidad Mayor de San Simón, Facultad de Ciencias y Tecnología, Cochabamba, Bolivia.

Morales, E. A. 2004. Current topics in diatom taxonomy and systematics. Bryn Athyn College, Bryn Athyn, PA. Invited Speaker.

Morales, E. A. 2004. Diatoms : Champions of the world. ANSP WINS Program. Philadelphia, PA.

Morales, E. A. & M. Le. 2004. *Lacunicula sardiniensis* Lange-Bertalot et al. (Bacillariophyceae) and its relationship with the genus *Craticula* Grunow. 43rd Northeast Algal Symposium. University of Connecticut, Avery Point, CT. p. 38.

Morales, E. A. 2004. Diatom science, some current aspects. ANSP Diversity of Life Workshop for School Teachers. Philadelphia, PA.

Morales, E. A. 2004. Current trends in freshwater fragilarioid diatom classification with emphasis on *Fragilaria sensu lato*. 13th NAWQA Taxonomy Workshop on Harmonization of Algal Taxonomy. ANSP, Philadelphia, PA.

Pienitz R., Å%. Saulnier-Talbot, M.-A. Fallu, T. Laing, K. Ponader, K. Swadling & Ian Walker. 2004. Long-term climate stability in the QuÃ©bec-Labrador (Canada) region: Evidence from paleolimnological studies. Arctic Climate Impact Assessment (ACIA) International Symposium on Climate Change in the Arctic. Reykjavik, Iceland, 9-12 November 2004.

Ponader, K. C., D. F. Charles & T. J. Belton. 2004. Trophic diatom indices as tools for monitoring nutrients in New Jersey streams and rivers. North American Benthological Society, Vancouver, BC, Canada, June 2004.

Potapova, M. G. 2004. *Staurosirella* in the NAWQA counts: ecological analysis reveals problems with identification and taxonomy. 12th NAWQA Taxonomy Workshop, ANSP, Philadelphia, PA, February, 2004.

Potapova, M. G. 2004. *Synedra ulna* and related taxa: ecological data and occurrence in the NAWQA and ANSP counts. 13th NAWQA Taxonomy Workshop, ANSP, Philadelphia, PA, December 9-12, 2004.

Potapova, M. G., J. F. Coles, E. M. Giddings, & H. Zappia. 2004. Impact of urbanization on stream benthic algal assemblages in contrasting environmental settings, presented at the annual meeting of the North American Benthological Society, Vancouver, British Columbia, June 6-10, 2004.

Sprouffske, K. and P. J. Morris. Building internet databases for biodiversity informatics. REU Seminar Series. ANSP, Philadelphia, PA, USA.

2003

Acker, F., D. Winter & C. Grafe. 2003. Idaho database. 17th North American Diatom Symposium, Islamorada, FL.

Charles, D. F. 2003. Environment: managing natural resources (panel presentation). Looking forward 30 years: Celebrating the 30th Anniversary of the Adirondack Park Agency Act and Examining the Private Land Use and Development Plan. Lake Placid, NY, October 2-3, 2003.

Charles, D. F. & K. Ponader. 2003. Implementation of an algae indicator monitoring program for New Jersey streams. New Jersey Department of Environmental Protection, Trenton, NJ, November 5, 2003.

Charles, D. F., M. Potapova, K. C. Ponader & D. M. Winter. 2003. Diatom-based methods for assessing nutrient enrichment in Northern Piedmont rivers. North American Benthological Society, Athens, GA, May 27-31, 2003.

Charles, D. F., M. Potapova, K. Ponader & D. M. Winter. 2003. Quantifying diatom autecological characteristics using the USGS NAWQA dataset. 17th North American Diatom Symposium, Islamorada, Florida, October 21-26, 2003.

Charles, D. F., K. Sprouffske, P. R. Sweets, T. J. Sullivan & D. Winter. 2003. The diatom paleolimnology data cooperative (DPDC). (Poster presentation) 9th International Paleolimnology Symposium, Espoo, Finland, August 24-28, 2003.

Hagan E., C. A. Flinders, N. E. Saxe, D. J. Velinsky, D. F. Charles & R. L. Thomas. 2003. Ecological studies of algal communities in the Jackson River (Covington, VA): An assessment of stream health through multi-year nutrient and biomass monitoring. North American Benthological Society, Athens, Georgia, May 29, 2003.

Morales, E. A. & M. L. Vis. 2003. New diatom taxa from South America. 42nd Northeast Algal Symposium. Saratoga Springs, NY, USA.

Morales E. A. & M. Potapova. 2003. Taxonomical studies on selected fragilarioid taxa from the United States. 42nd Northeast Algal Symposium. Saratoga Springs, NY, USA.

Ponader, K., and D. F. Charles. 2003. Implementation of an algae indicator monitoring program for New Jersey streams. New Jersey Department of Environmental Protection, Trenton, NJ, November 5, 2003. Also presented as a seminar in PCER on November 4, 2003.

Sachen, K., C. A. Firth, N. E. Saxe, C. A. Flinders, F. Acker & D. F. Charles. An ecological study of algal communities in the Jackson River (Covington, VA): Spatial and temporal trends in the taxonomic composition of algal assemblages. North American Benthological Society, Athens, Georgia, May 29, 2003.

Sprouffske, K. 2003. Phyco-AIDE Program: algal indicators and data exploration, presented as NAWQA CyberSeminar. July.

Sprouffske, K., D. F. Charles, P. R. Sweets, T. J. Sullivan, and D. Winter. 2003. The Diatom paleolimnology data cooperative (DPDC). 17th North American Diatom Symposium, Islamorada, Florida, October 21-26, 2003.

Winter, D. M. & D. F. Charles. 2003. Influence of dams and impoundments on diatom assemblages at 16 sites in Southeastern Pennsylvania, Northern Maryland and Northern Delaware. 17th North American Diatom Symposium, Islamorada, Florida, October 21-26, 2003.

2002

Acker, F. 2002. Modern cyanobacteria taxonomy: report on a workshop by Jeff Johnsen to the ANSP, PCER Phycology Section.

Charles, D. F. 2002. Algal research and ecological synthesis, ANSP and NAWQA co-operative agreement: overview. NAWQA Leadership Team meeting, Philadelphia, PA., February 6, 2002.

Charles, D. F. & F. W. Acker. 2002. Phytoplankton assemblages in lakes studied by the Adirondack Effects Assessment Program. Northeast Natural History Conference VII., April 25-26, 2002.

Charles, D. F. & F. W. Acker. 2002. Phytoplankton assemblages in lakes studied by the Adirondack Effects Assessment Program. 9th Annual Conference on the Adirondacks, Saranac Lake, NY, May 2002.

Charles, D. F. & F. W. Acker. 2002. Phytoplankton. Adirondack Effects Assessment Program Workshop, Sagamore Hotel and Darrin Fresh Water Institute, Boulton Landing, NY, June 18-20, 2002.

Charles, D. F. & M. Potapova. 2002. Calibration sets for quantifying ecological characteristics of river algae: habitat variability and spatial scale. North American Benthological Society, Pittsburgh, PA, June 2002.

Charles, D. F., M. Potapova, K. Ponader. & D. Winter. 2002. Diatom-based methods for assessing nutrient enrichment in rivers of the Northern Piedmont Ecoregion (USA). 17th International Diatom Symposium, Ottawa, Canada, August 2002.

Morales, E. A. 2002. New fresh and brackish water fragilarioid diatoms from the United States. 41st Northeast Algal Symposium. University of New Hampshire, Durham.

Morales, E. A. 2002. Current topics in diatom taxonomy. The Academy of Natural Sciences of Philadelphia/Sigma-Xi Seminar Series. Philadelphia, PA.

Morales, E. A. & A. Jasinski. 2002. Morphological studies in the *Gomphonema parvulum* complex: evidence of cryptic species? 17th International Diatom Symposium, Ottawa, Canada, August 25-31, 2002.

Morales, E. A. 2002. Crítica de los esquemas de clasificación actuales de las diatomeas fragilarioideas de aguas continentales [A critique of current freshwater fragilarioid diatom classification]. VI Latin American Phycological Congress/IV Panamerican Phycological Reunion. Ponce, Puerto Rico.

Morales, E. A. 2002. Métodos taxonómicos utilizados para el análisis de muestras colectadas para NAWQA (National Water Quality Assessment Program) [Taxonomic methods used in the analysis of algal samples collected as part of the National Water Quality Assessment

Program (NAWQA). VI Latin American Phycological Congress/IV Panamerican Phycological Reunion. Ponce, Puerto Rico.

Morales, E. A. 2002. Diatom taxonomy and related issues, ANSP and NAWQA co-operative agreement. NAWQA Leadership Team meeting, Philadelphia, PA., February 6, 2002.

Morales, E. A. & A. Jasinski. 2002. Estudios morfológicos en el complejo *Gomphonema parvulum* [Morphological studies in the *Gomphonema parvulum* complex]. VI Latin American Phycological Congress/IV Panamerican Phycological Reunion. Ponce, Puerto Rico.

Morales, E. A., M. G. Potapova, & D. F. Charles. 2002. Utilización de diatomeas benthicas para la evaluación de la calidad del agua en ríos de los EE.UU. [The use of benthic diatoms in the evaluation of water quality in USA rivers]. VI Latin American Phycological Congress/IV Pan-American Phycological Reunion. Ponce, Puerto Rico.

Morales, E. A., M. Potapova & D. F. Charles. 2002. Development of diatom-based water quality indicators in the NAWQA program. VI Latin American Phycological Congress, September 2002, Ponce, Puerto Rico.

Ponader, K. C., D. F. Charles & T.J. Belton. 2002. Development on algal indicators for monitoring eutrophication in New Jersey streams. Biology seminar, Bryn Athyn College, Pennsylvania, April 2002.

Ponader, K. C., D. F. Charles & T. J. Belton. 2002. Development of algal indicators for monitoring eutrophication in New Jersey streams. North American Benthological Society, Pittsburgh, PA, June 2002.

Ponader, K. C., D. F. Charles & T. J. Belton. 2002. Benthic diatoms as indicators of nutrient levels in New Jersey streams. 17th International diatom symposium, Ottawa, Canada, August 2002.

Ponader, K. C., D. F. Charles & T. J. Belton. 2002. Diatomes benthiques indicatrices des taux de nutriment dans les rivières du New Jersey. 21^e Pme Colloque de l'Association des Diatomistes de Langue Française (ADLaF). Nantes, France, September 2002.

Potapova, M. 2002. Analysis of NAWQA algal data: development of nutrient indicators and evaluation of sample types. NAWQA CyberSeminar, November 2002.

Potapova, M. 2002. Analysis of the NAWQA algal data. NAWQA Leadership Team meeting, Philadelphia, PA., February 6, 2002.

Potapova, M. & D. F. Charles. 2002. Choice of substrate type for water quality assessment using benthic algae. North American Benthological Society, Pittsburgh, PA, June 2002.

Potapova, M. & D. F. Charles. 2002. Potential use of rare diatoms as environmental indicators in USA rivers. 17th International Diatom Symposium, Ottawa, Canada, August 2002.

Potapova, M. & D. F. Charles. 2002. Choice of substrate type for water quality assessment using benthic algae. North American Benthological Society, Pittsburgh, PA, June 2002.

Sprouffske, K. 2002. Computer applications supporting the analysis of NAWQA algal data. NAWQA Leadership Team meeting, Philadelphia, PA., February 6, 2002.

Winter, D. M., D. F. Charles & M. Potapova. 2002. Benthic diatoms in Manatawny Creek, southeastern Pennsylvania: temporal variability and the effects of dam removal. 17th International Diatom Symposium, Ottawa, Canada, August 2002.

Wynn, K. H. & F. Acker. 2002. Integrated assessment of instream impacts associated with urbanization in the Eagle River watershed, Colorado. Annual Water Resources Conference, Philadelphia, PA, November 2002.

1999-2001

Acker F. W. & D. Winter. 2001. 50+ Years of diatom studies on the lower Guadalupe River, Texas. 16th North American Diatom Symposium, Ely, MN.

Charles, D. F. 2001. European diatom database initiative: final workshop. ECRC, University College London, July 23 - 24. Invited as an Advisor to EDDI and made presentation on DPDC project.

Charles, D. F. 2000. Use of diatom algae to monitor river and stream water quality. Pennsylvania Department of Environmental Protection Biologists meeting, Stroud Water Research Center, November 2, 2000.

Charles, D. F. 1999. Algae as water-quality indicators in the eastern USA. Part of symposium on Algae as Environmental Indicators: Past, Present and Future, XVI International Botanical Congress, Saint Louis, MO, August 6, 1999. Invited speaker.

Charles, D. F. 1999. Large-scale variation in diatom assemblages in eastern US rivers and implications for water quality monitoring. Department of Geology, University of Delaware, Newark, DE. September 9, 1999.

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