GREAT LAKES ICE COVER PUBLICATIONS from the NOAA GREAT LAKES ENVIRONMENTAL RESEARCH LABORATORY 1974 – 2016

For more information on any of these publications, contact: pubs@glerl.noaa.gov

ADAMS, C.E., Jr. Estimating water temperatures and time of ice formation on the Saint Lawrence River. *Limnology and Oceanography* 21(1):128-137 (1976). http://www.glerl.noaa.gov/pubs/fulltext/1976/19760009.pdf

ASSEL, R.A. Great Lakes ice cover, winter 1973-74. NOAA Technical Report ERL 325-GLERL-1. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 52 pp. (1974). http://www.glerl.noaa.gov/ftp/publications/tech_reports/erl-325-glerl-01/tr-erl325-glerl-01.pdf

ASSEL, R.A. Great Lakes Ice Cover, Winter 1972-73. NOAA Technical Memorandum NOS LSC D 7. NOS Lake Survey Center Limnology Division, Detroit, MI (1974).

ASSEL, R.A. Great Lakes ice thickness prediction. *Journal of Great Lakes Research* 2(2):248-255 (1976). http://www.glerl.noaa.gov/pubs/fulltext/1976/19760007.pdf

ASSEL, R.A. A computerized ice concentration data base for the Great Lakes. NOAA Data Report ERL GLERL-24. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 28 pp. (1983). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-024/dr-024.pdf

ASSEL, R.A. Description and analysis of a 20-year (1960-79) digital ice-concentration database for the Great Lakes of North America. *Annals of Glaciology* 4:14-18 (1983).

ASSEL, R.A. Lake Erie regional ice cover analysis: Preliminary results. NOAA Technical Memorandum ERL GLERL-048. NOAA, Great Lakes

Environmental Research Laboratory, Ann Arbor, MI, 33 pp. (1983). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-048/tm-048.pdf

ASSEL, R.A. Impact of global warming on Great Lakes ice cycles. In *The Potential Effects of Global Climate Change on the United States: Appendix A - Water Resources.* U.S. EPA Office of Policy, Planning and Evaluation, Washington, DC, 5.1-5.30 pp. (1989). http://www.glerl.noaa.gov/pubs/fulltext/1989/19890008.pdf

ASSEL, R.A. An ice-cover climatology for Lake Erie and Lake Superior for the winter seasons 1897-1898 to 1982-1983. *International Journal of Climatology* 10:731-748 (1990). http://www.glerl.noaa.gov/pubs/fulltext/1990/19900009.pdf

ASSEL, R.A. Implications of CO2, global warming on Great Lakes ice cover. *Climatic Change* 18(4):377-395 (1991). http://www.glerl.noaa.gov/pubs/fulltext/1991/19910007.pdf

ASSEL, R.A. A computer tutorial for Great Lakes ice cover climatology. Proceedings, 48th Annual Eastern Snow Conference, Guelph, Ontario, Canada, June 5-7, 1991, 267-272 pp. (1992). http://www.glerl.noaa.gov/pubs/fulltext/1992/19920016.pdf

ASSEL, R.A. Long term trends in Laurentian Great Lakes ice cover. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 5 pp. (1994). http://www.glerl.noaa.gov/pubs/fulltext/1994/19940007.pdf

ASSEL, R.A. The 1997 ENSO Event and Implications for North American Laurentian Great Lakes Winter Severity and Ice Cover. *Geophysical Research Letters* 25(7):1031-1033 (1998). http://www.glerl.noaa.gov/pubs/fulltext/1998/19980016.pdf

ASSEL, R.A. Chapter 6. Great Lakes Ice Cover. In *Potential Climate Change Effects on Great Lakes Hydrodynamics and Water Quality.* D.C.L. Lam and W.M. Schertzer (eds.). American Society of Civil Engineers, Reston, VA, 6.1-6.21 pp. (1999). http://www.glerl.noaa.gov/pubs/fulltext/1999/19990016.pdf

ASSEL, R.A. An Electronic Atlas of Great Lakes Ice Cover, Winters 1973-2002. NOAA Atlas. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI (2003). http://www.glerl.noaa.gov/data/ice/atlas

ASSEL, R.A. Great Lakes ice cover, first ice, last ice, and ice duration. NOAA Technical Memorandum GLERL-125. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 49 pp. (2003). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-125

ASSEL, R.A. Lake Erie ice cover climatology -- basin averaged ice cover: winters 1898-2002. NOAA Technical Memorandum GLERL-128. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 15 pp. (2004). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-128

ASSEL, R.A. Computerized National Weather Service Great Lakes ice reports for winter seasons 1899-1970. NOAA Technical Memorandum GLERL-130. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 31 pp. (2004). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-130

ASSEL, R.A. Classification of annual Great Lakes ice cycles: Winters of 1973-2002. *Journal of Climate* 18:4895-4905 (2005). http://www.glerl.noaa.gov/pubs/fulltext/2005/20050028.pdf

ASSEL, R.A. Great Lakes weekly ice cover statistics. NOAA Technical Memorandum GLERL-133. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 27 pp. (2005). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-133/

ASSEL, R.A. Conditional probability of December and January ice cover at selected Great Lakes shore sites. NOAA Technical Memorandum GLERL-134. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 31 pp. (2005). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-134/tm-134.pdf

ASSEL, R.A. Great Lakes ice cover climatology update: Winters 2003, 2004, and 2005. NOAA Technical Memorandum GLERL-135. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 21 pp. (2005).

http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-135/tm-135.pdf

ASSEL, R.A. Indicator: Lake Erie ice cover. In *State of the Strait: Status and Trends of Key Indicators.* J.H. Hartig, M.A. Zarull, J.H. Ciborowski, J.E. Gannon, E. Wilke, G. Norwood, and A. Vincent (eds.). Great Lakes Institute for Environmental Research, Occasional Publication No. 5, University of Windsor, Ontario, Canada, 102-104 pp. (2007). http://www.glerl.noaa.gov/pubs/fulltext/2007/20070044.pdf

ASSEL, R.A. Contemporary Lake Superior ice cover climatology. In *State of Lake Superior.* M. Munawar and I.F. Munawar (eds.). Aquatic Ecosystem Health and Management Society, Ecovision World Monograph Series, Canada, 51-66 pp. (2009). http://www.glerl.noaa.gov/pubs/fulltext/2009/20090048.pdf

ASSEL, R.A., D.E. Boyce, B.H. DeWitt, J.H. Wartha, and F.A. Keyes. Summary of Great Lakes weather and ice conditions, winter 1977-78. NOAA Technical Memorandum ERL GLERL-026. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI (1979). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-026/tm-026.pdf

ASSEL, R.A., T.E. CROLEY, and K. Schneider. Computer visualization of long-term average Great Lakes temperature and ice cover. *Journal of Great Lakes Research* 20(4):771-782 (1994). http://www.glerl.noaa.gov/pubs/fulltext/1994/19940004.pdf

ASSEL, R.A., K. CRONK, and D.C. NORTON. Recent trends in Laurentian Great Lakes ice cover. *Climatic Change* 57:185-204 (2003). http://www.glerl.noaa.gov/pubs/fulltext/2003/20030001.pdf

ASSEL, R.A., S. Drobot, and T.E. CROLEY II. Improving 30-day Great Lakes ice cover outlooks. *Journal of Hydrometeorology* 5(4):713-717 (2004). http://www.glerl.noaa.gov/pubs/fulltext/2004/20040016.pdf

ASSEL, R.A., S. Drobot, and T.E. CROLEY II. Improving monthly Great Lakes ice cover outlooks. NOAA Technical Memorandum GLERL-129. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 22 pp. (2004). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-

ASSEL, R.A., and L.R. HERCHE. Ice-on dates, ice-off dates, and ice duration for lakes and rivers with long-term records. Proceedings, 14th International Ice Symposium, Rotterdam, Netherlands, July 27-31, 1998. Potsdam, New York, 147-151 pp. (1998). http://www.glerl.noaa.gov/pubs/fulltext/1998/19980017.pdf

ASSEL, R.A., J.E. Janowiak, D. Boyce, C. O'Connors, F.H. QUINN, and D.C. NORTON. Laurentian Great Lakes ice and weather conditions for the 1998 El Nino winter. *Bulletin of the American Meteorological Society* 81(4):703-717 (2000). http://www.glerl.noaa.gov/pubs/fulltext/2000/20000001.pdf

ASSEL, R.A., J.E. Janowiak, D.C. NORTON, and C. O' Connors. Climate perspective of the 1997-98 Laurentian Great Lakes ice cover. Proceedings, 10th Symposium on Global Change Studies, 79th Annual Meeting of the American Meteorological Society, Dallas, TX, January 10-15, 1999, 73-76 pp. (1999). http://www.glerl.noaa.gov/pubs/fulltext/1999/19990015.pdf

ASSEL, R.A., J.E. Janowiak, S. Young, and D. Boyce. Winter 1994 weather and ice conditions for the Laurentian Great Lakes. *Bulletin of the American Meteorological Society* 77(1):71-88 (1996). http://www.glerl.noaa.gov/pubs/fulltext/1996/19960001.pdf

ASSEL, R.A., and D.C. NORTON. A comparison of Great Lakes winter severity and ice cover--winter 1990 vs. the historical record. Proceedings, 1990 Annual Meeting of the Eastern Snow Conference, Guelph, Ontario, Canada, June 6, 1990, 143-154 pp. (1990). http://www.glerl.noaa.gov/pubs/fulltext/1990/19900010.pdf

ASSEL, R.A., and D.C. NORTON. Visualizing Laurentian Great Lakes ice cycles. *EOS Transactions* 82(7):83 (2001).

ASSEL, R.A., D.C. NORTON, and K.C. CRONK. A Great Lakes ice cover digital data set for winters 1973-2000. NOAA Technical Memorandum GLERL-121. NOAA, Great Lakes Environmental Research Laboratory, Ann

Arbor, MI, 45 pp. (2002).
http://www.glerl.noaa.gov/ftp/pubs/tech_reports/glerl-121

ASSEL, R.A., and F.H. QUINN. A historical perspective of the 1976-77 Lake Michigan ice cover. *Monthly Weather Review* 107(3):336-341 (1979).
http://www.glerl.noaa.gov/pubs/fulltext/1979/19790002.pdf

ASSEL, R.A., and J.M. RATKOS. A computer tutorial and animation of the normal ice cycle of the Laurentian Great Lakes of North America for 1960-1979. NOAA Technical Memorandum ERL GLERL-076. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 31 pp. (1991).
http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-076/tm-076.pdf

ASSEL, R.A., and D.M. Robertson. Changes in winter air temperatures near Lake Michigan, 1851-1993, as determined from regional lake-ice records. *Limnology and Oceanography* 40(1):165-176 (1995).
http://www.glerl.noaa.gov/pubs/fulltext/1995/19950019.pdf

ASSEL, R.A., D.M. Robertson, M.H. Hoff, and J.H. Selgeby. Climatic change implications from long-term (1823-1994) ice records for the Laurentian Great Lakes. *Annals of Glaciology* 21:383-386 (1995).
http://www.glerl.noaa.gov/pubs/fulltext/1995/19950020.pdf

ASSEL, R.A., and S. Rodionov. Laurentian Great Lakes ice cover teleconnections. Proceedings, 21st Annual Climate Diagnostics and Prediction Workshop, University of Alabama, Huntsville, Alabama, October 28-November 1, 1996. NOAA Climate Prediction Center and the Earth System Science Laboratory, 122-125 pp. (1997).
http://www.glerl.noaa.gov/pubs/fulltext/1997/19970007.pdf

ASSEL, R.A., and S. Rodionov. Atmospheric teleconnections for annual maximum ice cover on the Laurentian Great Lakes. *International Journal of Climatology* 18:425-442 (1998).
http://www.glerl.noaa.gov/pubs/fulltext/1998/19980001.pdf

ASSEL, R.A., C.R. Snider, and R. Lawrence. Great Lakes winter weather and ice conditions for 1982-83. NOAA Technical Memorandum ERL GLERL-055. NOAA, Great Lakes Environmental Research Laboratory, Ann

Arbor, MI, 43 pp. (1984).
http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-055/tm-055.pdf

ASSEL, R.A., C.R. Snider, and R. Lawrence. Comparison of 1983 Great Lakes weather and ice conditions with previous years. *Monthly Weather Review* 113:291-303 (1985).
http://www.glerl.noaa.gov/pubs/fulltext/1985/19850001.pdf

ASSEL, R.A., J. WANG, A.H. CLITES, and X. BAI. Analysis of Great Lakes ice cover climatology: Winters 2006-2011. NOAA Technical Memorandum GLERL-157. NOAA Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 26 pp. (2013).
http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-157/tm-157.pdf

BAI, X., and J. WANG. Atmospheric teleconnection patterns associated with severe and mild ice cover on the Great Lakes, 1963-2011. *Water Quality Research Journal of Canada, Special Issue on Physical Processes in Natural Waters* 47(3-4):421-435 (DOI:10.2166/wqrjc.2012.009) (2012).

BAI, X., J. WANG, J. Austin, D.J. SCHWAB, R.A. ASSEL, A.H. CLITES, J.F. BRATTON, M.C. COLTON, J. Lenters, B.M. LOFGREN, T. Wohlleben, S. Helfrich, H.A. VANDERPLOEG, L. LUO, and G.A. LESHKEVICH. A record-breaking low ice cover over the Great Lakes during winter 2011/2012: Combined effects of a strong positive NAO and La Nina. *Climate Dynamics*:27 pp. (DOI:10.1007/s00382-014-2225-2) (2014).

BAI, X., J. WANG, J. Austin, D.J. SCHWAB, R.A. ASSEL, A.H. CLITES, J.F. BRATTON, M.C. COLTON, J. Lenters, B.M. LOFGREN, T. Wohlleben, S. Helfrich, H.A. VANDERPLOEG, L. LUO, and G.A. LESHKEVICH. A record-breaking low ice cover over the Great Lakes during winter 2011/2012: Combined effects of a strong positive NAO and La Nina. *Climate Dynamics* 44(5-6):1187-1213 (DOI:10.1007/s00382-014-2225-2) (2015).

BAI, X., J. WANG, Q. Liu, D. Wang, and Y. Liu. Severe ice conditions in the Bohai Sea, China and mild ice conditions in the Great Lakes during the 2009/2010 winter: Links to El Nino and a strong negative Arctic Oscillation. *Journal of Applied Meteorology and Climatology* 50:1922-1935

(DOI:10.1175/2011JAMC2675.1) (2011).

BAI, X., J. WANG, C.E. SELLINGER, A.H. CLITES, and R.A. ASSEL. The impacts of ENSO and AO/NAO on the interannual variability of Great Lakes ice cover. NOAA Technical Memorandum GLERL-152. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 44 pp. (2010). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-152/tm-152.pdf

BAI, X., J. WANG, C.E. SELLINGER, A.H. CLITES, and R.A. ASSEL. Interannual variability of Great Lakes ice cover and its relationship to NAO and ENSO. *Journal of Geophysical Research* 117(C03002):25 pp. (DOI:10.1029/2010JC006932) (2012).

BELETSKY, D., H. HU, J. WANG, and N. HAWLEY. Modeling thermal structure, circulation, and ice in Lake Erie. Proceedings, 22nd IAHR International Symposium on Ice 2014, Singapore, August 11-15, 2014. International Association of Hydro-Environment Engineering and Research, 449-451 pp.
(2014). http://www.glerl.noaa.gov/pubs/fulltext/2014/20140053.pdf

BELETSKY, R., D. BELETSKY, N. HAWLEY, and J. WANG. Interannual variability of winter circulation and ice in Lake Erie. Proceedings, 22nd IAHR International Symposium on Ice 2014, Singapore, August 11-15, 2014. International Association of Hydro-Environment Engineering and Research, 905-907 pp.
(2014). http://www.glerl.noaa.gov/pubs/fulltext/2014/20140055.pdf

BOLSENGA, S.J. Short note. Preliminary observations on the daily variation of ice albedo. *Journal of Glaciology* 18(80):517-521 (1977).

BOLSENGA, S.J. On the use of multispectral radar to define certain characteristics of Great Lakes ice. NOAA Technical Memorandum ERL GLERL-017. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 11 pp. (1978).
http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-017/tm-017.pdf

BOLSENGA, S.J. Photosynthetically active radiation transmission through ice. NOAA Technical Memorandum ERL GLERL-018. NOAA, Great Lakes

Environmental Research Laboratory, Ann Arbor, MI, 48 pp. (1978). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-018/tm-018.pdf

BOLSENGA, S.J. Solar altitude effects on ice albedo. NOAA Technical Memorandum ERL GLERL-025. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 43 pp. (1979). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-025/tm-025.pdf

BOLSENGA, S.J. New observations on the daily variations of natural ice albedo. NOAA Technical Memorandum ERL GLERL-027. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 36 pp. (1980). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-027/tm-027.pdf

BOLSENGA, S.J. Radiation transmittance through lake ice in the 400-700 nm range. *Journal of Glaciology* 27(95):57-66 (1981).

BOLSENGA, S.J. Spectral reflectances of snow and freshwater ice from 340 through 1100 nm. *Journal of Glaciology* 29(102):296-305 (1983).

BOLSENGA, S.J. Note on certain diurnal variations in the albedo of snow and ice. In *Seasonal Snowcovers: Physics, Chemistry, Hydrology.* H.G. Jones and W.J. Orville-Thomas (eds.). D. Reidel Publishing Company, Norwell, MA, 141-150 pp. (1987).

BOLSENGA, S.J. Nearshore Great Lakes ice cover. *Cold Regions Science and Technology* 15:99-105 (1988).

BOLSENGA, S.J. Report. A review of Great Lakes ice research. *Journal of Great Lakes Research* 18(1):169-189 (1992). http://www.glerl.noaa.gov/pubs/fulltext/1992/19920003.pdf

BOLSENGA, S.J., M.S. Evans, H.A. VANDERPLOEG, and D.C. NORTON. PAR transmittance through thick, clear freshwater ice. *Hydrobiologia* 330:227-230 (1996).

BOLSENGA, S.J., J.E. Gannon, G. Kennedy, D.C. NORTON, and C.E. Herdendorf. ROV dives under Great Lakes ice. *Cold Regions Science and Technology* 16:89-93 (1989).

BOLSENGA, S.J., and G.M. GREENE. Techniques to measure the spectral reflectance of ice. Proceedings, Ocean Optics VII, SPIE--The International Society for Optical Engineering, Bellingham, WA, 384-391 pp. (1984).

BOLSENGA, S.J., G.M. GREENE, and K.M. HINKEL. Nearshore Great Lakes ice statistics. NOAA Technical Memorandum ERL GLERL-069. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 42 pp. (1988). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-069/tm-069.pdf

BOLSENGA, S.J., C.E. Herdendorf, and D.C. NORTON. Spectral transmittance of lake ice from 400-850 nm. *Hydrobiologia* 218:15-25 (1991).

BOLSENGA, S.J., and H.A. VANDERPLOEG. Estimating photosynthetically available radiation into open and ice-covered freshwater lakes from surface characteristics; a high transmittance case study. *Hydrobiologia* 243/244:95-104 (1992). http://www.glerl.noaa.gov/pubs/fulltext/1992/19920022.pdf

BOLSENGA, S.J., H.A. VANDERPLOEG, M.A. QUIGLEY, and G.L. FAHNENSTIEL. Operations for an under-ice ecology program. *Journal of Great Lakes Research* 14(3):372-376 (1988). http://www.glerl.noaa.gov/pubs/fulltext/1988/19880009.pdf

BOLSENGA, S.J., H.A. VANDERPLOEG, M.A. QUIGLEY, G.L. FAHNENSTIEL, and W.R. BURNS. Under ice ecology pilot program: Operations report and preliminary scientific results. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 46 pp. (1986).

CAMPBELL, J.E., A.H. CLITES, and G.M. GREENE. Measurements of ice motion in Lake Erie using satellite-tracked drifter buoys. NOAA Data Report ERL GLERL-030. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 28 pp. (1987). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-030/dr-030.pdf

CLITES, A.H., J. WANG, K.B. CAMPBELL, A.D. GRONEWOLD, R.A. ASSEL, X. BAI, and G.A. LESHKEVICH. Cold water and high ice cover on Great Lakes in spring 2014. *EOS* 95(34):305-306 (DOI:10.1002/2014EO340001) (2014).http://www.glerl.noaa.gov/pubs/fulltext/2014/20140042.pdf

CROLEY, T.E., II, and R.A. ASSEL. A one-dimensional ice thermodynamics model for the Laurentian Great Lakes. *Water Resources Research* 30(3):625-639 (1994).

DERECKI, J.A., and F.H. QUINN. Natural regulation of the Great Lakes by ice jams: A case study. Proceedings, Fourth Workshop on Hydraulics of River Ice, Montreal, Quebec, Canada, June 19-20, 1986, F-4.1-F-4.2.4 pp. (1986). http://www.glerl.noaa.gov/pubs/fulltext/1986/19860010.pdf

DERECKI, J.A., and F.H. QUINN. Record St. Clair River ice jam of 1984. *Journal of Hydraulic Engineering* 112(12):1182-1194 (1986). http://www.glerl.noaa.gov/pubs/fulltext/1986/19860008.pdf

DeWitt, B.H., D.F. Kahlbaum, D.G. Baker, J.H. Wartha, F.A. Keyes, D.E. Boyce, F.H. QUINN, R.A. ASSEL, A. Baker-Blocker, and K.M. Kurdziel. Summary of Great Lakes weather and ice conditions, winter 1978-79. NOAA Technical Memorandum ERL GLERL-031. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 123 pp. (1980). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-031/tm-031.pdf

FUJISAKI, A., J. WANG, X. BAI, G.A. LESHKEVICH, and B.M. LOFGREN. Model-simulated interannual variability of Lake Erie ice cover, circulation, and thermal structure in response to atmospheric forcing, 2003-2012. *Journal of Geophysical Research* 118:19 pp. (DOI:10.1002/jgrc.20312) (2013).

FUJISAKI, A., J. WANG, H. HU, D.J. SCHWAB, N. HAWLEY, and Y.R. Rao. A modeling study of ice-water processes for Lake Erie applying coupled ice-circulation models. *Journal of Great Lakes Research* 38(4):585-599 (DOI:10.1016/j.jglr.2012.09.021) (2012). http://dx.doi.org/10.1016/j.jglr.2012.09.021

GREENE, G.M. Breakup of ice cover occurs early on St. Lawrence River in 1981. *Coastal Oceanography and Climatology News* 4:2-3 (1981).

GREENE, G.M. Simulation of ice-cover growth and decay in one dimension on the upper St. Lawrence River. NOAA Technical Memorandum ERL GLERL-036. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 82 pp. (1981). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-036/tm-036.pdf

GREENE, G.M. Forecasting ice-cover freeze-up, growth, and breakup on the St. Marys River. NOAA Technical Memorandum ERL GLERL-047. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 82 pp. (1983). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-047/tm-047.pdf

GREENE, G.M. Freeze-up, breakup, and date of maximum ice thickness for the St. Lawrence River--1971-81. NOAA Data Report ERL GLERL-027. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 19 pp. (1984). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-027/tm-027.pdf

GREENE, G.M., and S.I. Outcalt. A simulation model of river ice-cover thermodynamics. *Cold Regions Science and Technology* 10:251-262 (1985).

HAGMAN, B.B. An analysis of Great Lakes ice cover from satellite imagery. NOAA Technical Memorandum ERL GLERL-9. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI (1976). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-009/tm-009.pdf

HAGMAN, B.B. On the use of microwave radiation for Great Lakes ice surveillance. NOAA Technical Memorandum ERL GLERL-13. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 11 pp. (1976). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-013/tm-013.pdf

HINKEL, K.M. Ice-cover growth rates at nearshore locations in the Great Lakes. NOAA Technical Memorandum ERL GLERL-044. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 35 pp. (1983).

http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-044/tm-044.pdf

LESHKEVICH, G.A. Great Lakes ice cover, winter 1974-75. NOAA Technical Report ERL 370-GLERL 11. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 39 pp. (1976).

LESHKEVICH, G.A. Great Lakes ice cover, winter 1975-76. NOAA Technical Memorandum ERL GLERL-12. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 35 pp. (1977). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-012/tm-012.pdf

LESHKEVICH, G.A. Categorization of northern Green Bay ice cover using LANDSAT-1 digital data--A case study. NOAA Technical Memorandum ERL GLERL-33. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 19 pp. (1981). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-033/tm-033.pdf

LESHKEVICH, G.A. Lake Superior ice cycle - 1979. Master's thesis, University of Michigan, AnnArbor, 75 pp. (1982). (plus animation)

LESHKEVICH, G.A. Machine classification of freshwater ice types from Landsat-1 digital data using ice albedos as training sets. *Remote Sensing of Environment* 17:251-263 (1985).

LESHKEVICH, G.A. Non-Lambertian reference panel effect on spectral reflectance measurements of freshwater ice. *International Journal of Remote Sensing* 9(4):825-832 (1988).

LESHKEVICH, G.A., D.J. SCHWAB, and G.C. MUHR. Satellite environmental monitoring of the Great Lakes: A review of NOAA's Great Lakes CoastWatch Program. *Photogrammetric Engineering and Remote Sensing* 59(3):371-379 (1993).

LESHKEVICH, G.A. Satellite mapping of Great Lakes ice cover. Proceedings, First Moderate Resolution Imaging Spectroradiometer (MODIS) Snow and Ice Workshop, Greenbelt, MD, September 13-14, 1995. NASA Goddard Space Flight Center, Greenbelt, MD, 87-91 pp. (1995).

LESHKEVICH, G.A., D.W. Deering, T.F. Eck, and S.P. Ahmad. Diurnal patterns of the bi-directional reflectance of fresh-water ice. *Annals of Glaciology* 14:153-157 (1990).

LESHKEVICH, G.A., and S.V. Nghiem. Radar remote sensing of Great Lakes ice cover. Proceedings, 2002 IEEE International Geoscience and Remote Sensing Symposium and the 24th Canadian Symposium on Remote Sensing, Toronto, Canada, June 24-28, 2002. Institute of Electrical and Electronics Engineers, Inc., Piscataway, NJ, 1 pp. (2002). http://www.glerl.noaa.gov/pubs/fulltext/2002/20020009.pdf

LESHKEVICH, G.A., and S.V. Nghiem. Recent anomalies in Great Lakes ice cover based on statistical analysis and observation. 2004 IEEE International Geoscience and Remote Sensing Symposium, Anchorage, AK, September 20-24, 2004. IEEE, 1 pp. (2004). http://www.glerl.noaa.gov/pubs/fulltext/2004/20040022.pdf

LESHKEVICH, G.A., and S.V. Nghiem. Algorithm development for operational satellite SAR classification and mapping of Great Lakes ice cover. Proceedings, OceanSAR 2006 - Third Workshop on Coastal and Marine Applications of SAR, St. John's, Newfoundland, Canada, October 25, 2006, 3 pp. (2006). http://www.glerl.noaa.gov/pubs/fulltext/2006/20060051.pdf

LESHKEVICH, G.A., and S.V. Nghiem. Satellite SAR remote sensing of Great Lakes ice cover. Part 2: Ice classification and mapping. *Journal of Great Lakes Research* 33:736-750 (2007). http://www.glerl.noaa.gov/pubs/fulltext/2007/20070042.pdf

LESHKEVICH, G.A., and S.V. Nghiem. Using satellite radar data to map and monitor variations in Great Lakes ice cover. 2009 IEEE Radar Conference, Pasadena, CA, May 4-8, 2009. IEEE, 3 pp. (2009). http://www.glerl.noaa.gov/pubs/fulltext/2009/20090021.pdf

LESHKEVICH, G.A., and S.V. Nghiem. Great Lakes ice classification using satellite C-band SAR multi-polarization data. *Journal of Great Lakes Research* 39(Supplement 1):55-64 (DOI:10.1016/j.jglr.2013.05.003) (2013).

LESHKEVICH, G.A., and S.V. Nghiem. Great Lakes ice cover mapping with RADARSAT-2 SAR data. Science and Operational Applications Research (SOAR) RADARSAT-2 Data Use and Benefits Report. Canadian Space Agency, Saint-Hubert, Quebec, Canada, 3 pp. (2013). http://www.glerl.noaa.gov/pubs/fulltext/2013/20130020.pdf

LESHKEVICH, G.A., W. Pichel, P. Clemente-Colon, R. Carey, and G. Hufford. Analysis of coastal ice cover using ERS-1 SAR data. *International Journal of Remote Sensing* 16(17):3459-3479 (1995).

Magnuson, J.J., D.M. Robertson, B.J. Benson, R.H. Wynne, D.M. Livingstone, T. Arai, R.A. ASSEL, R.G. Barry, V. Card, E. Kuusisto, N.G. Granin, T.D. Prowse, K.M. Stewart, and V.S. Vuglinski. Historical trends in lake and river ice cover in the Northern Hemisphere. *Science* 289:1743-1746 (2000). http://www.glerl.noaa.gov/pubs/fulltext/2000/2000015.pdf

Nghiem, S.V., and G.A. LESHKEVICH. Great Lakes Winter Experiment 2002 (GLAWEX 2002). Synthetic aperture radar applications to ice-covered lakes and rivers. NASA, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, 10 pp. (2003). http://www.glerl.noaa.gov/pubs/fulltext/2003/20030005.pdf

Nghiem, S.V., and G.A. LESHKEVICH. Satellite SAR remote sensing of Great Lakes ice cover, Part 1. Ice backscatter signatures at C Band. *Journal of Great Lakes Research* 33:722-735 (2007). http://www.glerl.noaa.gov/pubs/fulltext/2007/20070043.pdf

NORTON, D.C., R.A. ASSEL, D. MEYERS, B.A. HIBNER, N. MORSE, P.J. TRIMBLE, K. CRONK, and M. RUBENS. Great Lakes ice data rescue project. NOAA Technical Memorandum GLERL-117. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 63 pp. (2000). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-117

QUINN, F.H. Lake ice. In *IFYGL Atlas--Lake Ontario Summary Data.* C.F. Jenkins (ed.). NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 139-161 pp. (1980).

QUINN, F.H., R.A. ASSEL, D.E. Boyce, G.A. LESHKEVICH, C.R. Snider,

and D. Weisnet. Summary of Great Lakes weather and ice conditions, winter 1976-77. NOAA Technical Memorandum ERL GLERL-020. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 141 pp. (1978). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-020/tm-020.pdf

QUINN, F.H., R.A. ASSEL, and D.W. GASKILL. An evaluation of the climatic impact of the Niagara ice boom relative to air and water temperature and winter severity. NOAA Technical Memorandum ERL GLERL-30. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 31 pp. (1980). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-030/tm-030.pdf

QUINN, F.H., R.A. ASSEL, and D.W. GASKILL. An evaluation of the impact of the Niagara River ice boom on the air temperature regime at Buffalo, New York. *Journal of Applied Meteorology* 21(3):342-349 (1982). http://www.glerl.noaa.gov/pubs/fulltext/1982/19820002.pdf

RODIONOV, S., and R.A. ASSEL. Laurentian Great Lakes ice cover and atmospheric teleconnection patterns: A decision-tree analysis. Proceedings, Eighth Conference on Climate Variations, Denver, CO, September 13-17, 1999. American Meteorological Society, Boston, MA, 38-43 pp. (1999). http://www.glerl.noaa.gov/pubs/fulltext/1999/19990017.pdf

RODIONOV, S., R.A. ASSEL, and L.R. HERCHE. Tree-structured modeling of the relationship between Great Lakes ice cover and atmospheric circulation patterns. *Journal of Great Lakes Research* 27(4):486-502 (2001). http://www.glerl.noaa.gov/pubs/fulltext/2001/20010011.pdf

ROGERS, J.C. Evaluation of techniques for long-range forecasting of air temperature and ice formation. NOAA Technical Memorandum ERL GLERL-008. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 24 pp. (1976). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-008/tm-008.pdf

ROGERS, J.C. Long-range forecasting of maximum ice extent on the Great Lakes. NOAA Technical Memorandum ERL GLERL-007. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 15 pp. (1976).

http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-007/tm-007.pdf

ROGERS, J.C., B.H. DeWitt, and D. Dixon. Operational ice forecast for the Little Rapids Cut. NOAA Technical Memorandum ERL GLERL-4. NOAA, Great Lakes Environmental Research Laborator, Ann Arbor, MI, 17 pp. (1975). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-004/tm-004.pdf

Rumer, R.R., Jr., W.F. Bialas, F.H. QUINN, R.A. ASSEL, and D.W. GASKILL. Niagara River ice boom: Effects on environment. *Journal of Technical Topics in Civil Engineering* 109:105-116 (1983).

SCHNEIDER, K., R.A. ASSEL, and T.E. CROLEY. Normal water temperature and ice cover of the Laurentian Great Lakes: A computer animation, data base, and analysis tool. NOAA Technical Memorandum ERL GLERL-81. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 47 pp. (1993).
http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-081/tm-081.pdf

SCHNEIDER, K., R.A. ASSEL, and T.E. CROLEY. Normal temperature and ice cover of the Great Lakes. Second Thematic Conference on Remote Sensing for Marine and Coastal Environments, New Orleans, LA, January 31-February 2, 1994, 325-335 pp. (1994).
http://www.glerl.noaa.gov/pubs/fulltext/1994/19940009.pdf

SLEATOR, F.E. Ice thickness and stratigraphy at nearshore locations on the Great Lakes (English units). NOAA Data Report ERL GLERL-1-1. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 434 pp. (1978).
http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-001/

SLEATOR, F.E. Ice thickness and stratigraphy at nearshore locations on the Great Lakes (metric units). NOAA Data Report ERL GLERL-1-2. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 434 pp. (1978).

Smith, R.E.H., J.F. CAVALETTO, B.J. EADIE, and W.S. GARDNER. Growth and lipid composition of high Arctic ice algae during the spring

bloom at Resolute, Northwest-Territories, Canada. *Marine Ecology Progress Series* 91:1 (1993).

VanCleave, K., J. Lenters, J. WANG, and E. Verhamme. A regime shift in Lake Superior ice cover, evaporation, and water temperature following the warm El Nino winter of 1997-98. *Limnology and Oceanography* 59(6):1889-1898 (DOI:10.4319/lo.2014.59.6.1889) (2014).http://www.glerl.noaa.gov/pubs/fulltext/2014/20140058.pdf

VANDERPLOEG, H.A., S.J. BOLSENGA, G.L. FAHNENSTIEL, J.R. LIEBIG, and W.S. GARDNER. Plankton ecology in an ice-covered bay of Lake Michigan: utilization of a winter phytoplankton bloom by reproducing copepods. *Hydrobiologia* 243/244:175-183 (1992). http://www.glerl.noaa.gov/pubs/fulltext/1992/19920023.pdf

WANG, J., R.A. ASSEL, S. WALTERSCHEID, A.H. CLITES, and X. BAI. Great Lakes ice climatology update: Winter 2006-2011. Description of the digital ice cover dataset. NOAA Technical Memorandum GLERL-155. NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, MI, 37 pp. (2012). http://www.glerl.noaa.gov/ftp/publications/tech_reports/glerl-155/tm-155.pdf

WANG, J., X. BAI, A. FUJISAKI-MANOME, H. HU, and D. BELETSKY. Great Lakes ice and climate research and forecast. Proceedings, 22nd IAHR International Symposium on Ice 2014, Singapore, August 11-15, 2014. International Association of Hydro-Environment Engineering and Research, 48-55 pp. (2014). http://www.glerl.noaa.gov/pubs/fulltext/2014/20140054.pdf

WANG, J., X. BAI, H. HU, A.H. CLITES, M.C. COLTON, and B.M. LOFGREN. Temporal and spatial variability of Great Lakes ice cover, 1973-2010. *Journal of Climate* 25(4):1318-1329 (DOI:10.1175/2011JCLI4066.1) (2012). http://journals.ametsoc.org/doi/pdf/10.1175/2011JCLI4066.1

WANG, J., X. BAI, G.A. LESHKEVICH, M.C. COLTON, A.H. CLITES, and B.M. LOFGREN. Severe ice cover on Great Lakes during winter 2008-2009. *EOS Transactions* 91(5):41-42 (2010). http://www.glerl.noaa.gov/pubs/fulltext/2010/20100005.pdf

WANG, J., H. HU, and X. BAI. Modeling Lake Erie ice dynamics: Process studies. Proceedings, 20th Annual IAHR International Symposium on Ice, Lahti, Finland, June 14-18, 2010. IAHR, AIRH, 17 pp. (2010). http://www.glerl.noaa.gov/pubs/fulltext/2010/20100033.pdf

WANG, J., H. HU, D.J. SCHWAB, G.A. LESHKEVICH, D. BELETSKY, N. HAWLEY, and A.H. CLITES. Development of the Great Lakes ice circulation model (GLIM): Application to Lake Erie in 2003-2004. *Journal of Great Lakes Research* 36:425-436 (2010). http://www.glerl.noaa.gov/pubs/fulltext/2010/20100032.pdf