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Education:

Ph.D., Oceanography, Scripps Institution of Oceanography, University of California, San Diego, 1984
M.S., Oceanography, Texas A&M University, 1980.
B.S., Mathematics, Biology, University of Pittsburgh, 1973.

Professional Experience:

Oceanographer, Pacific Marine Environmental Laboratory, 1989-present
Affiliate Faculty, University of Washington, School of Oceanography, 1991-present
Assistant Scientist, Woods Hole Oceanographic Institution, 1987-1989
Postdoctoral Scholar, Woods Hole Oceanographic Institution, 1985-1987
Postgraduate Research Geochemist, Scripps Institution of Oceanography, 1985
Peace Corps, 1973-1975.

Research Interests:

- 1.) The study of the entry of Chlorofluorocarbons (CFCs) and other anthropogenic compounds such as sulfur hexafluoride (SF_6) into the ocean.
- 2.) The use of these chemical tracers to study the rates and pathways of ocean circulation and mixing processes, and for estimating the production rates (and variability) of intermediate and deep waters in the Arctic and Antarctic.
- 3.) The use of chemical tracers to improve estimates of the rate of anthropogenic carbon dioxide uptake in the ocean.
- 4.) The use of CFC observations to test and evaluate numerical model simulations of key oceanic processes, including the uptake and redistribution of trace gases in the ocean, and the transfer rates and pathways of surface derived climate signals (e.g. warming) into the interior of the ocean.
- 4.) The importance of the ocean as a source/sink for reactive trace gases.
- 5.) The degradation of CFCs in anoxic waters.
- 6.) Improving techniques for the high precision analysis of trace gases in the atmosphere and ocean.

Associate Member of the SCOR Working Group 143 "Dissolved N_2O and CH_4 measurements: Working towards a global network of ocean time series measurements of N_2O and CH_4 ".

Publications:

Sonnerup, R.E., S. Mecking, J.L. Bullister, and M.J. Warner (2015): Transit time distributions and oxygen utilization rates from chlorofluorocarbons and sulfur hexafluoride in the southeast Pacific Ocean. submitted to . *J. Geophys. Res.*

Kim, I.-N., K. Lee, N. Gruber, D.M. Karl, J.L. Bullister, S. Yang, and T.-W. Kim (2014): Increasing anthropogenic nitrogen in the North Pacific Ocean. *Science*, 346(6213), doi: 10.1126/science.1258396, 1102–1106.

Feely, R.A., L.D. Talley, J.L. Bullister, C.A. Carlson, S.C. Doney, R.A. Fine, E. Firing, N. Gruber, D.A. Hansell, G.C. Johnson, R.M. Key, C. Langdon, A. Macdonald, J.T. Mathis, S. Mecking, F.J. Millero, C.W. Mordy, C.L. Sabine, W.M. Smethie, J.H. Swift, A.M. Thurnherr, R. Wanninkhof, and M.J. Warner (2014): The U.S. Repeat Hydrography CO₂/Tracer Program (GO-SHIP): Accomplishments From The First Decadal Survey. A US CLIVAR and OCB Report, 2014-5, U.S. CLIVAR Project Office, Washington, DC, Published online at US OCB.

Barrett, P.M., J.A. Resing, N.J. Buck, R.A. Feely, J.L. Bullister, C.S. Buck, W.M. Landing, and C.I. Measures (2014): Calcium carbonate dissolution in the upper 1000 m of the eastern North Atlantic. *Global Biogeochem. Cycles*. 28(4), doi: 10.1002/2013GB004619, 386–397.

Bullister, J.L., M. Rhein, and C. Mauritzen (2013) Deep water formation,. In Siedler, G., Griffies, S., Gould, J. and Church, J. (Eds.): *Ocean Circulation and Climate, 2nd Ed. A 21st century perspective*, Academic Press, 2013: International Geophysics Series, Volume 103. ISBN: 9780123918512.

Tanhua, T., D.W. Waugh, and J.L. Bullister (2013): Estimating changes in ocean ventilation from early 1990s CFC-12 and late 2000s SF6 measurements. *Geophys. Res. Lett.*, 40(5), doi: 10.1002/grl.50251, 927–932.

Sonnerup, R., S. Mecking, and J. Bullister (2013): Transit time distributions and oxygen utilization rates in the northeast Pacific Ocean from chlorofluorocarbons and sulfur hexafluoride. *Deep Sea Research I*, 72, 61-71.

Wanninkhof, R., Park, G.-H., Takahashi, T., Feely, R. A., Bullister, J. L., and Doney, S. C. (2013).: Changes in deep-water CO₂ concentrations over the last several decades determined from discrete pCO₂ measurements, *Deep -Sea Res I.*, 74, 48-63, <http://dx.doi.org/10.1016/j.dsr.2012.12.005>, 2013.

de Souza, G. F., Reynolds, B. C., Johnson, G. C., Bullister, J. L., and Bourdon, B. (2012): Silicon stable isotope distribution traces Southern Ocean export of Si to the eastern South Pacific thermocline, *Biogeosciences*, 9, 4199-4213, doi:10.5194/bg-9-4199-2012, 2012..

Wanninkhof, R., S.C. Doney, J.L. Bullister, N.M. Levine, M. Warner, and N. Gruber (2010): Detecting anthropogenic CO₂ changes in the interior Atlantic Ocean between 1989 and 2005. *J. Geophys. Res.*, 115, C11028, doi: 10.1029/2010JC006251, 25 pp

Bullister, J.L., and T. Tanhua (2010): Sampling and measurement of chlorofluorocarbons and sulfur hexafluoride in seawater. In *The GO-SHIP Repeat Hydrography Manual: A Collection of Expert Reports and Guidelines*. E.M. Hood, C.L. Sabine, and B.M. Sloyan (eds.), IOCCP Report Number 14, ICPO Publication Series Number 134. Available online at <http://www.go-ship.org/HydroMan.html>

Olsen, A., R.M. Key, E. Jeansson, E. Falck, J. Olafsson, S. van Heuven, I. Skjelvan, A.M. Omar, K.A. Olsson, L.G. Anderson, S. Jutterström, F. Rey, T. Johannessen, R.G.J. Bellerby, J. Blindheim, J.L. Bullister, B. Pfeil, X. Lin, A. Kozyr, C. Schirnack, T. Tanhua, and D.W.R. Wallace (2009): Overview of the Nordic Seas CARINA data and salinity measurements. *Earth Sys. Sci. Data*, 1, 25–34.

Jeansson, E., K.A. Olsson, T. Tanhua, and L. Bullister (2010): Nordic Seas and Arctic Ocean CFC data in CARINA. *Earth Sys. Sci. Data*, 2(1), 79-97.

Tanhua, T., Steinfeldt, R., Key, R. M., Brown, P., Gruber, N., Wanninkhof, R., Perez, F., Körtzinger, A., Velo, A., Schuster, U., van Heuven, S., Bullister, J. L., Stendardo, I., Hoppema, M., Olsen, A., Kozyr, A., Pierrot, D.,

Schirnack, C., and Wallace, D. W. R.: Atlantic Ocean CARINA data: overview and salinity adjustments, *Earth Syst. Sci. Data*, 2, 17-34, 2010.

Min, D.-H., M.J. Warner, and J.L. Bullister (2010): [Estimated rates of carbon tetrachloride removal in the thermocline and deep waters of the East Sea \(Sea of Japan\)](#). *Mar. Chem.*, 21(1-4), doi: 10.1016/j.marchem.2010.03.008, 100-111.

Steinfeldt, R., T. Tanhua, J.L. Bullister, R.M. Key, M. Rhein, and J Köhler (2010): Atlantic CFC data in CARINA. *Earth Sys. Sci. Data Discuss.*, 2, 27-61.

Álvarez, M., C. Lo Monaco, T. Tanhua, A. Yool, A. Oschlies, J.L. Bullister, C. Goyet, N. Metzl, F. Touratier, E. McDonagh, and H.L. Bryden (2009): Estimating the storage of anthropogenic carbon in the subtropical Indian Ocean: A comparison of five different approaches. *Bioscience*, 6(4), 681-703.

Feely, R.A., C.L. Sabine, F.J. Millero, C. Langdon, A.G. Dickson, R.A. Fine, J.L. Bullister, D.A. Hansell, C.A. Carlson, B.M. Sloyan, A.P. McNichol, R.M. Key, R.H. Byrne, and R. Wanninkhof (2009): Carbon dioxide, hydrographic, and chemical data obtained during the R/Vs *Roger Revelle* and *Thomas Thompson* repeat hydrography cruises in the Pacific Ocean: CLIVAR CO₂ sections P16S_2005 (6 January-19 February, 2005) and P16N_2006 (13 February-30 March, 2006). ORNL/CDIAC-155, NDP-090, A. Kozyr (ed.), Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN, 56 pp.

Steinfeldt, R., M. Rhein, J.L. Bullister, and T. Tanhua (2009): Inventory changes in anthropogenic carbon from 1997-2003 in the Atlantic Ocean between 20°S and 65°N. *Global Biogeochem. Cycles*, 23, GB3010, doi: 10.1029/2008GB003311.

Sonnerup, R.E., J.L. Bullister, and M.J. Warner (2008): Improved estimates of ventilation rate changes and CO₂ uptake in the Pacific Ocean using chlorofluorocarbons and sulfur hexafluoride. *J. Geophys. Res.*, 113, C12007, doi: 10.1029/2008JC004864.

Johnson, G.C., S.G. Purkey, and J.L. Bullister (2008): Warming and freshening in the abyssal southeastern Indian Ocean. *J. Climate*, 21, doi: 10.1175/2008JCLI2384.1, 5351-5363.

LeBel, D.A., W.M. Smethie, Jr., M. Rhein, D. Kieke, R.A. Fine, J.L. Bullister, D.-H. Min, W. Roether, R.F. Weiss, C. Andrié, D. Smythe-Wright, and E.P. Jones (2008): The formation rate of North Atlantic Deep Water and Eighteen Degree Water calculated from CFC-11 inventories observed during WOCE. *Deep-Sea Res. I*, 55, 891-910.

Fine, R.A., W.M. Smethie, Jr., J.L. Bullister, M. Rhein, D.-H. Min, M.J. Warner, A. Poisson, and R.F. Weiss (2008): Decadal ventilation and mixing of Indian Ocean waters. *Deep-Sea Res. I*, 55, 20-37.

Bullister, J.L., and D.P. Wisegarver (2008): The shipboard analysis of trace levels of sulfur hexafluoride, chlorofluorocarbon-11 and chlorofluorocarbon-12 in seawater. *Deep-Sea Res. I*, 55, 1063-1074.

Kieke, D., M. Rhein, L. Stramma, W.M. Smethie, J.L. Bullister, and D.A. LeBel (2007): Changes in the pool of Labrador Sea Water in the subpolar North Atlantic. *Geophys. Res. Lett.*, 34, L06605, doi: 10.1029/2006GL028959.

Sonnerup, R., J. Bullister, and S. Mecking (2007): Circulation rate changes in the eastern subtropical North Pacific based on chlorofluorocarbon ages. *Geophys. Res. Lett.*, 34, L08605, doi: 10.1029/2006GL028813.

Sonnerup, R.E., A.P. McNichol, P.D. Quay, R.H. Gammon, J.L. Bullister, C.L. Sabine, and R.D. Slater (2007): Anthropogenic delta¹³C changes in the North Pacific Ocean reconstructed using a multiparameter mixing approach (MIX). *Tellus*, 59B, 303-317.

Bullister, J.L., D.P. Wisegarver, and R.E. Sonnerup (2006): Sulfur hexafluoride as a transient tracer in the north Pacific Ocean. *Geophys. Res. Lett.*, 33, L18603, doi: 10.1029/2006GL026514.

Feely, R.A., R. Wanninkhof, C. Sabine, G. Johnson, M. Baringer, J. Bullister, C.W. Mordy, and J.-Z. Zhang (2006): Global repeat hydrographic/CO₂/tracer surveys in support of CLIVAR and global carbon cycle objectives: Carbon

inventories and fluxes. In Annual Report on The State of the Ocean and the Ocean Observing System for Climate, Annual Report, Fiscal Year 2005, J.M. Levy (ed.), NOAA/Climate Program Office/Office of Climate Observation, 196–206.

Mecking, S., M.J. Warner, and J.L. Bullister (2006): Temporal changes in pCFC-12 ages and AOU along two hydrographic sections in the eastern subtropical North Pacific. *Deep-Sea Res. I*, 53(1), 169–187.

Wanninkhof, R., S.C. Doney, E. Peltola, R.D. Castle, F.J. Millero, J.L. Bullister, D.A. Hansell, M.J. Warner, C. Langdon, G.C. Johnson, and C.W. Mordy (2006): Carbon dioxide, hydrographic, and chemical data obtained during the R/V Ronald H. Brown repeat hydrography cruise in the Atlantic Ocean: CLIVAR CO₂ Section A16S_2005 (11 January–24 February, 2005). ORNL/CDIAC-151, NDP-087, A. Kozyr (ed.), Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN, 33 pp.

Feely, R.A., R. Wanninkhof, C. Sabine, G. Johnson, M. Baringer, J. Bullister, C.W. Mordy, and J.-Z. Zhang (2005): 2005 Plans, Global repeat hydrographic/CO₂/tracer surveys in support of CLIVAR and global carbon cycle objectives: Carbon inventories and fluxes. In *The State of the Ocean and the Ocean Observing System for Climate, Annual Report, Fiscal Year 2004*, NOAA/OGP/Office of Climate Observation, Section 3.14b, 298–300.

Feely, R.A., R. Wanninkhof, C. Sabine, G. Johnson, M. Baringer, J. Bullister, C.W. Mordy, and J.-Z. Zhang (2005): Global repeat hydrographic/CO₂/tracer surveys in support of CLIVAR and global carbon cycle objectives: Carbon inventories and fluxes. In *The State of the Ocean and the Ocean Observing System for Climate, Annual Report, Fiscal Year 2004*, NOAA/OGP/Office of Climate Observation, Section 3.15a, 149–168

Johnson, G.C., J.L. Bullister, and N. Gruber (2005): Labrador sea water property variations in the northeastern Atlantic Ocean. *Geophys. Res. Lett.*, 32(7), L07602, doi: 10.1029/2005GL022404.

Karstensen, J., P. Schlosser, D.W.R. Wallace, J.L. Bullister, and J. Blindheim (2005): Water mass transformation in the Greenland Sea during the 1990s. *J. Geophys. Res.*, 110(C7), C07022, doi: 10.1024/2004JC002510.

Key, R.M., A. Kozyr, C.L. Sabine, K. Lee, R. Wanninkhof, J.L. Bullister, R.A. Feely, F.J. Millero, and T.-H. Peng (2004): A global ocean carbon climatology: Results from Global Data Analysis Project (GLODAP). *Global Biogeochem. Cy.*, 18, GB4031, doi: 10.1029/2004GB002247.

Sabine, C.L., R.M. Key, A. Kozyr, R.A. Feely, R. Wanninkhof, F.J. Millero, T.-H. Peng, J.L. Bullister, and K. Lee (2005): Global Ocean Data Analysis Project (GLODAP): Results and data. ORNL/CDIAC-145, NDP-083, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN, 110 pp. plus 6 Appendices.

Stanev, E., J. Staneva, J.L. Bullister, and J.W. Murray (2004): Ventilation of the Black Sea pycnocline. Parameterization of convection, numerical simulations and validations against observed chlorofluorocarbon data. *Deep-Sea Res.*, 51(12), 2137–2169.

Chung, S., K. Lee, R.A. Feely, C.L. Sabine, F.J. Millero, R. Wanninkhof, J.L. Bullister, R.M. Key, and T.-H. Peng (2003): Calcium carbonate budget in the Atlantic Ocean based on water column inorganic carbon chemistry. *Global Biogeochem. Cy.*, 17(4), 1093, doi: 10.1029/2002GB002001.

Feely, R.A., C.L. Sabine, R. Schlitzer, J.L. Bullister, S. Mecking, and D. Greeley (2004): Oxygen utilization and organic carbon remineralization in the upper water column of the Pacific Ocean. *J. Oceanogr.*, 60(1), 45–52.

Han, L., J.L. Bullister, and D.P. Wisegarver (2003): Study of dissolved chlorofluorocarbons in Lake Washington. *Chin. J. Oceanol. Limnol.*, 21(2), 171–179.

Lee, K., S.-D. Choi, G.-H. Park, R. Wanninkhof, T.-H. Peng, R.M. Key, C.L. Sabine, R.A. Feely, J.L. Bullister, F.J. Millero, and A. Kozyr (2003): [An updated anthropogenic CO₂ inventory in the Atlantic Ocean](#). *Global Biogeochem. Cy.*, 17(4), 1116, doi: 10.1029/2003GB002067. [\[PDF Version\]](#)

- Matsumoto, K., J.L. Sarmiento, R.M. Key, O. Aumont, J.L. Bullister, K. Caldeira, J.-M. Campin, S.C. Doney, H. Drange, J.-C. Dutay, M. Follows, Y. Gao, A. Gnanadesikan, N. Gruber, A. Ishida, F. Joos, K. Lindsay, E. Maier-Reimer, J.C. Marshall, R.J. Matear, P. Monfray, A. Mouchet, R. Najjar, G.-K. Plattner, R. Schlitzer, R. Slater, P.S. Swathi, I.J. Totterdell, M.-F. Weirig, Y. Yamanaka, A. Yool, and J.C. Orr (2004): [Evaluation of ocean carbon cycle models with data-based metrics](#). *Geophys. Res. Lett.*, 31, L07303, doi: 10.1029/2003GL018970. [\[PDF Version\]](#)
- Sabine, C.L., R.A. Feely, N. Gruber, R.M. Key, K. Lee, J.L. Bullister, R. Wanninkhof, C.S. Wong, D.W.R. Wallace, B. Tilbrook, F.J. Millero, T.-H. Peng, A. Kozyr, T. Ono, and A.F. Rios (2004): [The oceanic sink for anthropogenic CO₂](#). *Science*, 305(5682), 367–371. [\[PDF Version\]](#)
- Willey, D.A., R.A. Fine, R.E. Sonnerup, J.L. Bullister, W.M. Smethie, Jr., and M.J. Warner (2004): [Global oceanic chlorofluorocarbon inventory](#). *Geophys. Res. Lett.*, 31, L01303, doi: 10.1029/2003GL018816. [\[PDF Version\]](#)
- Feely, R.A., C.L. Sabine, K. Lee, F.J. Millero, M.F. Lamb, D. Greeley, J.L. Bullister, R.M. Key, T.-H. Peng, A. Kozyr, T. Ono, and C.S. Wong (2002): [In situ calcium carbonate dissolution in the Pacific Ocean](#). *Global Biogeochem. Cy.*, 16(4), 1144, doi: 10.1029/2002GB001866. [\[PDF Version\]](#)
- McNeil, B.I., R.J. Matear, R.M. Key, J.L. Bullister, and J.L. Sarmiento (2003): [Anthropogenic CO₂ uptake by the ocean based on the global chlorofluorocarbon data set](#). *Science*, 299(5604), 235–239. [\[PDF Version\]](#)
- Min, D.-H., J.L. Bullister, and R.F. Weiss (2002): [Anomalous chlorofluorocarbons in the Southern California Borderland Basins](#). *Geophys. Res. Lett.*, 29(20), 1955, doi: 10.1029/2002GL015408. [\[PDF Version\]](#)
- Sabine, C.L., R.A. Feely, R.M. Key, J.L. Bullister, F.J. Millero, K. Lee, T.-H. Peng, B. Tilbrook, T. Ono, and C.S. Wong (2002): [Distribution of anthropogenic CO₂ in the Pacific Ocean](#). *Global Biogeochem. Cy.*, 16(4), 1083, doi: 10.1029/2001GB001639. [\[PDF Version\]](#)
- Bullister, J.L., D.P. Wisegarver, and F.A. Menzia (2002): [The solubility of sulfur hexafluoride in water and seawater](#). *Deep-Sea Res. Pt. I*, 49(1), 175–187. [\[PDF Version\]](#)
- Dutay, J.-C., J.L. Bullister, S.C. Doney, J.C. Orr, R. Najjar, K. Caldeira, J.-M. Campin, H. Drange, M. Follows, Y. Gao, N. Gruber, M.W. Hecht, A. Ishida, F. Joos, K. Lindsay, G. Madec, E. Maier-Reimer, J.C. Marshall, R.J. Matear, P. Monfray, A. Mouchet, G.-K. Plattner, J. Sarmiento, R. Schlitzer, R. Slater, I.J. Totterdell, M.-F. Weirig, Y. Yamanaka, and A. Yool (2002): [Evaluation of ocean model ventilation with CFC-11: Comparison of 13 global ocean models](#). *Ocean Model.*, 4(2), 89–120. [\[PDF Version\]](#)
- Feely, R.A., C.L. Sabine, J.L. Bullister, and D. Greeley (2002): [Organic carbon remineralization in the Pacific Ocean](#). In Sixth International Symposium on the Geochemistry of the Earth's Surface (GES-6), Honolulu, HI, 20–24 May 2002, 226–228.
- Frank, H., E.H. Christoph, O. Holm-Hansen, and J.L. Bullister (2002): [Trifluoroacetate in ocean waters](#). *Environ. Sci. Tech.*, 36(1), 12–15. [\[PDF Version\]](#)
- Klatt, O., W. Roether, M. Hoppema, K. Bulsiewicz, U. Fleischmann, C. Rodehacke, E. Fahrbach, R.F. Weiss, and J.L. Bullister (2002): [Repeated CFC sections at the Greenwich Meridian in the Weddell Sea](#). *J. Geophys. Res.*, 107(C4), doi: 10.1029/2000JC000731. [\[PDF Version\]](#)
- Lamb, M.F., C.L. Sabine, R.A. Feely, R. Wanninkhof, R.M. Key, G.C. Johnson, F.J. Millero, K. Lee, T.-H. Peng, A. Kozyr, J.L. Bullister, D. Greeley, R.H. Byrne, D.W. Chipman, A.G. Dickson, C. Goyet, P.R. Guenther, M. Ishii, K.M. Johnson, C.D. Keeling, T. Ono, K. Shitashima, B. Tilbrook, T. Takahashi, D.W.R. Wallace, Y.W. Watanabe, C. Winn, and C.S. Wong (2002): [Consistency and synthesis of Pacific Ocean CO₂ survey data](#). *Deep-Sea Res. Pt. II*, 49(1–3), 21–58. [\[PDF Version\]](#)
- Lee, B.-S., J.L. Bullister, J.W. Murray, and R.W. Sonnerup (2002): [Anthropogenic chlorofluorocarbon in the Black Sea and the Sea of Marmara](#). *Deep-Sea Res. Pt. I*, 49(5), 895–913. [\[PDF Version\]](#)

Orsi, A.H., W.M. Smethie Jr., and J.L. Bullister (2002): [On the total input of Antarctic waters to the deep ocean: A preliminary estimate from chlorofluorocarbon measurements](#). *J. Geophys. Res.*, 107(C8), doi: 10.1029/2001JC000976. [\[PDF Version\]](#)

Sabine, C.L., R.M. Key, J.L. Bullister, R.A. Feely, M.F. Lamb, F.J. Millero, R. Wanninkhof, T.-H. Peng, K. Lee, A. Kozyr, and N. Gruber (2001): [Multiple anthropogenic tracer distributions in the ocean](#). In Sixth International Carbon Dioxide Conference, Sendai, Japan, 1–5 October 2001, 915–918

Feely, R.A., C.L. Sabine, K. Lee, F.J. Millero, M.F. Lamb, J.L. Bullister, R.M. Key, R. Wanninkhof, T.-H. Peng, and A. Kozyr (2001): [Calcium carbonate dissolution in the Pacific Ocean](#). In Sixth International Carbon Dioxide Conference, Sendai, Japan, 1–5 October 2001, 617–620

Dickson, A.G., C.D. Keeling, P.R. Guenther, and J.L. Bullister (2001): [Carbon dioxide, hydrographic, and chemical data obtained during the R/V John V. Vickers Cruise, August 4–October 21, 1992](#). ORNL/CDIAC-128, NPD-075, Environmental Sciences Division, Pub. 5007, Oak Ridge National Laboratory, 133 pp.

Huang, W., X. Bu, L. Nguyen, R.H. Gammon, and J.L. Bullister (2000): [Production and consumption of methyl halides in a freshwater lake](#). *Limnol. Oceanogr.*, 45(7), 1537–1545. [\[PDF Version\]](#)

Min, D.-H., J.L. Bullister, and R.F. Weiss (2000): [Constant ventilation age of thermocline water in the eastern subtropical North Pacific Ocean from chlorofluorocarbon measurements over a 12-year period](#). *Geophys. Res. Lett.*, 27(23), 3909–3912. [\[PDF Version\]](#)

Peltola, E., K. Lee, R. Wanninkhof, R. Feely, M. Roberts, D. Greeley, M. Baringer, G. Johnson, J. Bullister, C. Mordy, J.-Z. Zhang, P. Quay, F. Millero, D. Hansell, and P. Minnett (2001): [Chemical and hydrographic measurements on a Climate and Global Change Cruise along 24°N in the Atlantic Ocean WOCE Section A5R\(epeat\) during January–February 1998](#). NOAA Data Report OAR AOML-41, NTIS: PB2001-107645, NOAA/Atlantic Oceanographic and Marine Laboratory, Miami, FL, 199 pp.

Schlösser, P.J., J.L. Bullister, R. Fine, W.J. Jenkins, R. Key, J. Lupton, W. Roether, and W.M. Smethie, Jr. (2001): [Transformation and age of water masses](#). In *Ocean Circulation and Climate: Observing and Modelling the Global Ocean*, G. Siedler, J. Church, and J. Gould (eds.), Academic Press, 431–452.

Bullister, J.L., R.A. Fine, W.M. Smethie, M.J. Warner, and R.F. Weiss (2000): [Global integration and interpretation of WOCE CFC data](#). In 2000 U.S. WOCE Report, U.S. WOCE Implementation Report #12, U.S. WOCE, 21–25.

Murray, J.W., B.-S. Lee, J.L. Bullister, and G.W. Luther (1999): [The suboxic zone of the Black Sea](#). In *Environmental Degradation of the Black Sea: Challenges and Remedies*, S. Besiktepe, Ü. Ünlüata, and A.S. Bologna (eds.), Kluwer Academic Press, 75–91

Sabine, C.L., M.F. Lamb, J.L. Bullister, R.A. Feely, G.C. Johnson, R.M. Key, A. Kozyr, K. Lee, F.J. Millero, T.-H. Peng, and R. Wanninkhof (2000): [US JGOFS team examines Pacific Ocean CO₂ data quality](#). *International WOCE Newsletter*, 38, 10–14.

Sonnerup, R.E., P.D. Quay, A.P. McNichol, J.L. Bullister, T.A. Westby, and H.L. Anderson (1999): [Reconstructing the oceanic ¹³C Suess Effect](#). *Global Biogeochem. Cy.*, 13(4), 857–872. [\[PDF Version\]](#)

Lee, B.-S., J.L. Bullister, and F.A. Whitney (1999): [Chlorofluorocarbon CFC-11 and carbon tetrachloride removal in Saanich Inlet, an intermittently anoxic basin](#). *Mar. Chem.*, 66, 171–185.

Orsi, A.H., G.C. Johnson, and J.L. Bullister (1999): [Circulation, mixing, and production of Antarctic Bottom Water](#). *Prog. Oceanogr.*, 43, 55–109.

Peltola, E., R. Wanninkhof, R. Molinari, B. Huss, R. Feely, J. Bullister, J.-Z. Zhang, F. Chavez, A. Dickson, A. Field, D. Hansell, F. Millero, P. Quay, R. Castle, G. Thomas, R. Roddy, T. Lantry, M. Roberts, H. Chen, D. Greeley, K. Lee,

- M. Roche, J.A. Goen, F. Millero III, K. Buck, M. Kelly, F. Menzia, A. Huston, T. Waterhouse, S. Becker, and C. Mordy (1998): [Chemical and hydrographic measurements during the Indian Ocean I8 repeat cruise \(IR8N\) during September and October, 1995](#). NOAA Data Report ERL AOML-34, NOAA/Atlantic Oceanographic and Marine Laboratory, Miami, FL, 163 pp.
- Rintoul, S.R., and J.L. Bullister (1999): [A late winter hydrographic section from Tasmania to Antarctica](#). Deep-Sea Res., 46(8), 1417–1454. [\[PDF Version\]](#)
- Sonnerup, R.E., P.D. Quay, and J.L. Bullister (1999): [Thermocline ventilation and oxygen utilization rates in the subtropical north Pacific based on CFC distributions during WOCE](#). Deep-Sea Res., 46(5), 777–805. [\[PDF Version\]](#)
- Wanninkhof, R., S.C. Doney, T.-H. Peng, J.L. Bullister, K. Lee, and R.A. Feely (1999): [Comparison of methods to determine the anthropogenic CO₂ invasion into the Atlantic Ocean](#). Tellus, 51B, 511–530.
- Bullister, J.L., and D.P. Wisegarver (1998): [The solubility of carbon tetrachloride in water and seawater](#). Deep-Sea Res., 45(8), 1285–1302.
- Peng, T.-H., R. Wanninkhof, J.L. Bullister, R.A. Feely, and T. Takahashi (1998): [Quantification of decadal anthropogenic CO₂ uptake in the ocean based on dissolved inorganic carbon measurements](#). Nature, 396(6711), 560–563. [\[PDF Version\]](#)
- Castle, R.D., R. Wanninkhof, J.L. Bullister, S.C. Doney, R.A. Feely, B.E. Huss, E. Johns, F.J. Millero, K. Lee, D. Frazel, D. Wisegarver, D. Greeley, F. Menzia, M. Lamb, G. Berberian, and L.D. Moore, Jr. (1998): [Chemical and hydrographic profiles and underway measurements from the eastern north Atlantic during July and August of 1993](#). NOAA Data Report ERL AOML-32, NTIS: PB98-131865, NOAA/Atlantic Oceanographic and Marine Laboratory, Miami, FL, 37 pp.
- Craig, A.P., J.L. Bullister, D.E. Harrison, R.M. Chervin, and A.J. Semtner, Jr. (1998): [A comparison of temperature, salinity, and chlorofluorocarbon observations with results from a 1° resolution three-dimensional global ocean model](#). J. Geophys. Res., 103(C1), 1099–1119.
- Doney, S.C., J.L. Bullister, and R. Wanninkhof (1998): [Climatic variability in upper ocean ventilation rates diagnosed using chlorofluorocarbons](#). Geophys. Res. Lett., 25(9), 1399–1402. [\[PDF Version\]](#)
- Bonisch, G., J. Blindheim, J.L. Bullister, P. Schlosser, and R.W.R. Wallace (1997): [Long-term trends of temperature, salinity, density, and transient tracers in the central Greenland Sea](#). J. Geophys. Res., 102(C8), 18,553–18,571. [\[PDF Version\]](#)
- Doney, S.C., W.J. Jenkins, and J.L. Bullister (1997): [A comparison of ocean tracer dating techniques on a meridional section in the eastern North Atlantic](#). Deep-Sea Res., 44, 603–626.
- Lamb, M.F., J.L. Bullister, R.A. Feely, G.C. Johnson, D.P. Wisegarver, B. Taft, R. Wanninkhof, K.E. McTaggart, K.A. Kroglund, C. Mordy, K. Hargreaves, D. Greeley, T. Lantry, H. Chen, B. Huss, F.J. Millero, R.H. Byrne, D.A. Hansell, F.P. Chavez, P.D. Quay, P.R. Guenther, J.-Z. Zhang, W. Gardner, M.J. Richardson, and T.-H. Peng (1997): [Chemical and hydrographic measurements in the eastern Pacific during the CGC94 expedition \(WOCE section P18\)](#). NOAA Data Report ERL PMEL-61a, NTIS: PB97-158075, 235 pp. [\[PDF Version\]](#)
- Mensch, M., R. Bayer, J.L. Bullister, P. Schlosser, and R.F. Weiss (1997): [The distribution of tritium and CFCs in the Weddell Sea during the mid 1980s](#). Prog. Oceanogr., 38, 377–415.
- Dixon, K.W., (1996) J.L. Bullister, R.H. Gammon, and R.J. Stouffer (1996): [Examining a coupled climate model using CFC-11 as an ocean tracer](#). Geophys. Res. Lett., 23(15), 1957–1960.
- Warner, M.W., J.L. Bullister, D.P. Wisegarver, R.H. Gammon, and R.F. Weiss (1996): [Basin-wide distributions of chlorofluorocarbons CFC-11 and CFC-12 in the north Pacific: 1985–1989](#). J. Geophys. Res., 101(C9), 20,525–20,542.

- Wijffels, S.E., J.M. Toole, H.L. Bryden, R.A. Fine, W.J. Jenkins, and J.L. Bullister (1996): [The water masses and circulation at 10°N in the Pacific](#). Deep-Sea Res., 43(4), 501–544.
- Bullister, J.L., and B.-S. Lee (1995): [Chlorofluorocarbon-11 removal in anoxic marine waters](#). Geophys. Res. Lett., 22(14), 1893–1896.
- Wisegarver, D.P., J.L. Bullister, F.A. Van Woy, F.A. Menzia, R.F. Weiss, A.H. Orsi, and P.K. Salameh (1995): [Chlorofluorocarbon measurements in the southwestern Pacific during the CGC-90 Expedition](#). NOAA Data Report ERL PMEL-57, NTIS: PB96-112644, 98 pp.
- Bullister, J.L., F. Menzia, and D.P. Wisegarver (1993): [WOCE 1991 chlorofluorocarbon standard intercomparison report](#). NOAA Data Report ERL PMEL-45, NTIS: PB93-234326, 65 pp.
- Doney, S.C., and J.L. Bullister (1992): [A chlorofluorocarbon section in the eastern North Atlantic](#). Deep-Sea Res., 39(11/12), 1857–1883.
- Wisegarver, D.P., J.L. Bullister, R.H. Gammon, F.A. Menzia, and K.C. Kelly (1993): [NOAA chlorofluorocarbon tracer program air and seawater measurements: 1986–1989](#). NOAA Data Report ERL PMEL-43, NTIS: PB93-190049, 417 pp.
- Schlosser, P., J.L. Bullister, and R. Bayer (1991): [Studies of deep water formation and circulation in the Weddell Sea using natural and anthropogenic tracers](#). Mar. Chem., 35, 97–122.
- Weiss, R.F., J.L. Bullister, F.A. Van Woy, M.J. Warner, P.K. Salameh, and R.H. Gammon. Transient Tracers in the Ocean, Tropical Atlantic Study: Chlorofluorocarbon Measurements. S.I.O. Reference 91-1, January 1991.
- Bullister, J.L. (1989): Dissolved chlorofluorocarbon studies in the Weddell Sea., Antarctic J. of the U.S., 142-143.
- Bullister, J.L. (1989): Chlorofluorocarbons as time dependent tracers in the Ocean, Ocean. Mag.(2), 2, 12-17.
- Solow, A.R., J.L. Bullister and C. Nevison (1988): An application of circular-linear correlation analysis to the relationship between freon concentration and wind direction in Woods Hole, Massachusetts, Environmental Monitoring and Assessment, 10, 219-228.
- Bullister, J.L. and R.F. Weiss (1988): Determination of CCl_3F and CCl_2F_2 in seawater and air, Deep-Sea Research, 25, 839-853.
- Weiss, R.F., J.L. Bullister, R.H. Gammon, and M.J. Warner (1985): [Atmospheric chlorofluoromethanes in the deep equatorial Atlantic](#). Nature, 314(6012), 608–610.
- Bullister, J.L. and R.F. Weiss (1983): Anthropogenic chlorofluoromethanes in the Greenland and Norwegian Seas, Science, 221, 265-268.
- Setser, P.J., J.L. Bullister, E.C. Frank, N.L. Guinasso, Jr., and D.R. Schink (1982): Relationships between reduced gases, nutrients, and fluorescence in surface waters off Baja California, Deep-Sea Res., 29, 1203-1215.
- Bullister, J.L., N.L. Guinasso, Jr., and D.R. Schink (1982): Dissolved hydrogen, carbon monoxide, and methane at the CEPEX site, J. Geophys. Res., 87, 2022-2034.