

NOAA/AOML
Western Boundary Time Series (WBTS)
Data Reports

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2025

Hooper, J.A., M.O. Baringer, and R.H. Smith (2025). Hydrographic Measurements Collected Aboard the R/V Endeavor, 27 February - 16 March 2021: Western Boundary Time Series Cruise AB2102 (EN-663). NOAA Data Report, OAR-AOML-88, 194 pp. <https://doi.org/10.25923/qc75-tw15>

2023

Hooper, J.A., M.O. Baringer, and R.H. Smith (2023). Hydrographic Measurements Collected in 2021 During Western Boundary Time Series Cruises in the Florida Current aboard the UNOLS Ship R/V F. G. Walton Smith, (FC2104, FC2105), NOAA Data Report, OAR-AOML-87, 84 pp. <https://doi.org/10.25923/remh-dz79>

Hooper, J.A., M.O. Baringer, and R.H. Smith (2023). Hydrographic Measurements Collected Aboard the NOAA Ship Ronald H Brown, 3 December -18 December 2019: Western Boundary Time Series Cruise AB1912 (RB1907), NOAA Data Report, OAR-AOML-86, 207 pp. <https://doi.org/10.25923/pqzf-fb12>

2022

Hooper, J.A., M.O. Baringer, and R.H. Smith. Hydrographic measurements collected in 2020 during Western Boundary Time Series cruises in the Florida Current aboard the R/V *Walton Smith* (FC2002, FC2012, FC2012B). NOAA Data Report, OAR-AOML-84 (<https://doi.org/10.25923/yhq6-rg24>), 116 pp. (2022).

Hooper, J.A., M.O. Baringer, and R.H. Smith. Hydrographic measurements collected aboard the UNOLS Ship R/V *Atlantic Explorer*, 17 November-3 December 2018: Western Boundary Time Series cruise AB1811 (AE1833). NOAA Data Report, OAR-AOML-85 (<https://doi.org/10.25923/6q2f-fh78>) (2022)

2021

Hooper, J.A., M.O. Baringer, and R.H. Smith. Hydrographic measurements collected in 2018 during Western Boundary Time Series cruises in the Florida Current aboard the R/V *F.G. Walton Smith* and R/V *Savannah* (FC1804, FC1806, FC1809, FC1810). NOAA Data Report, OAR-AOML-82 (<https://doi.org/10.25923/g23r-a516>) 144 pp. (2021).

Hooper, J.A., M.O. Baringer, and R.H. Smith. Hydrographic measurements collected in 2019 during Western Boundary Time Series cruises in the Florida Current aboard the R/V *F.G. Walton Smith* (FC1902, FC1904, FC1906, FC1907, FC1910). NOAA Data Report, OAR-AOML-83 (<https://doi.org/10.25923/q7q7-dj80>), 182 pp. (2021).

2020

Garcia, R.F., R.H. Smith, and D. Volkov (2020): Oceanographic data collected in the Straits of Florida at 27°N during the year 2019, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-81, 76 pp., <https://doi.org/10.25923/hkcc-4k61>

Garcia, R.F., R.H. Smith, and D. Volkov (2020): Oceanographic data collected in the Straits of Florida at 27°N during the year 2018, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-80, 75 pp., <https://doi.org/10.25923/znsg-pj87>

Hooper, J.A., and Baringer, M.O., 2020: Hydrographic measurements collected aboard the UNOLS Ship R/V Walton Smith, 2016: Western Boundary Time Series cruise-Florida Current. NOAA Data Report, OAR-AOML-77, 168 pp. (<https://doi.org/10.25923/2dvd-cg65>).

Hooper, J.A., and Baringer, M.O., 2020: Hydrographic measurements collected aboard the UNOLS Ship R/V Walton Smith, 2017: Western Boundary Time Series cruise-Florida Current. NOAA Data Report, OAR-AOML-78., 165 pp., (<https://doi.org/10.25923/j51s-6k46>).

Hooper, J.A., Baringer, M.O., and Smith, R.H., 2020: Hydrographic measurements collected aboard the NOAA Ship Ronald H. Brown, 23 February-1 March 2018: Western Boundary Time Series cruise RB1801 (WB1802). NOAA Data Report, OAR-AOML-79, 110 pp. (<https://doi.org/10.25923/mb6v-jg14>).

2019

Garcia, R.F., C.S. Meinen, R.H. Smith, and D.L. Volkov (2019): Oceanographic data collected in the Straits of Florida at 27°N during the year 2017, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-76, 81 pp., <https://doi.org/10.25923/3ak8-d940>

2018

Hooper, J.A., and Baringer, M.O., 2018: Hydrographic measurements collected aboard the NOAA Ship R/V Ronald H. Brown, September 11-21, 2007: Western Boundary Time Series Cruise RB-07-08 (AB0709). [NOAA Data Report, OAR-AOML-60](#), 193 pp.

Hooper, J.A., and Baringer, M.O., 2018: Hydrographic measurements collected aboard the UNOLS Ship R/V Endeavor, May 8-24, 2017: Western Boundary Time Series Cruise EN598 (AB1705). NOAA Data Report, OAR-AOML-75, 188 pp. [doi:10.25923/rszb-p579](https://doi.org/10.25923/rszb-p579)

2017

Garcia, R.F, C.S, Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2016, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-74, 74 pp., <https://doi.org/10.7289/V5/DR-AOML-74>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2000, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-73, 26 pp., <https://doi.org/10.7289/V5/DR-AOML-73>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2001, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-72, 59 pp., <https://doi.org/10.7289/V5/DR-AOML-72>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2002, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-71, 65 pp., <https://doi.org/10.7289/V5/DR-AOML-71>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2003, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-70, 56 pp., <https://doi.org/10.7289/V5/DR-AOML-70>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2004, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-69, 82 pp., <https://doi.org/10.7289/V5/DR-AOML-69>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2005, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-68, 66 pp., <https://doi.org/10.7289/V5/DR-AOML-68>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2006, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-67, 72 pp., <https://doi.org/10.7289/V5/DR-AOML-67>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2007, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-66, 60 pp., <https://doi.org/10.7289/V5/DR-AOML-66>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2008, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-65, 50 pp., <https://doi.org/10.7289/V5/DR-AOML-65>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2009, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-64, 68 pp., <https://doi.org/10.7289/V5/DR-AOML-64>

Garcia, R.F., C.S. Meinen, and R.H. Smith (2017), Oceanographic data collected in the Straits of Florida at 27°N during the year 2010, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-63, 70 pp., <https://doi.org/10.7289/V5/DR-AOML-63>

2016

Garcia, R.F, C.S Meinen, and R.H Smith (2016). Oceanographic data collected in the Straits of Florida at 27°N during the year 2011, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-62, 67 pp., <https://doi.org/10.7289/V5/DR-AOML-62>

Garcia, R.F, C.S Meinen, and R.H Smith (2016). Oceanographic data collected in the Straits of Florida at 27°N during the year 2012, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-61, 56 pp., <https://doi.org/10.7289/V5/DR-AOML-61>

Garcia, R.F, C.S Meinen, and R.H Smith (2016). Oceanographic data collected in the Straits of Florida at 27°N during the year 2013, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-59, 65 pp., <https://doi.org/10.7289/V5/DR-AOML-59>

Garcia, R.F, C.S Meinen, and R.H Smith (2016). Oceanographic data collected in the Straits of Florida at 27°N during the year 2014, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-58, 75 pp., <https://doi.org/10.7289/V5Z60M26>

Garcia, R.F, C.S Meinen, and R.H Smith (2016). Oceanographic data collected in the Straits of Florida at 27°N during the year 2015, including the estimated Florida Current transport. NOAA Data Report, OAR-AOML-57, 77 pp., <https://doi.org/10.7289/V5J38QKF>

Hooper, James, and M.O. Baringer, 2016. Hydrographic measurements collected aboard the UNOLS Ship R/V Endeavor, February 16-28, 2016: Western Boundary Time Series Cruise EN574 (AB1602). NOAA Data Report, OAR-AOML-56, 211 pp., [doi:10.7289/V5/DR-AOML-56](https://doi.org/10.7289/V5/DR-AOML-56)

Hooper, James, M.O. Baringer, 2016. Hydrographic Measurements Collected Aboard the UNOLS Ship R/V Walton Smith, 2015: Western Boundary Time Series Cruise: Florida Current. NOAA Data Report, OAR-AOML-55, 164 pp., [doi:10.7289/V5/DR-AOML-55](https://doi.org/10.7289/V5/DR-AOML-55)

Hooper, James, and M.O. Baringer, 2016. Hydrographic measurements collected aboard the UNOLS Ship R/V Endeavor, October 3-20, 2015: Western Boundary Time Series Cruise EN570 (AB1510). NOAA Data Report, OAR-AOML-54, 188 pp., [doi:10.7289/V5/DR-AOML-54](https://doi.org/10.7289/V5/DR-AOML-54)

Hooper, James, and M.O. Baringer, 2016. Hydrographic measurements collected aboard the R/V Cape Hatteras, September-October 2008: Western Boundary Time Series Cruise AB0809. NOAA Data Report, OAR-AOML-53, 103 pp., [doi:10.7289/V557191M](https://doi.org/10.7289/V557191M)

2015

Hooper, James, M.O. Baringer, 2015. Hydrographic Measurements Collected Aboard the NOAA Ship R/V Ronald H. Brown, 16 April - 5 May 2009: Western Boundary Time Series Cruise RB-0901 (AB0904). NOAA Data Report, OAR-AOML-52, 223 pp., [doi:10.7289/V59021SC](https://doi.org/10.7289/V59021SC)

Hooper, James, M.O. Baringer, 2015. Hydrographic Measurements Collected Aboard the UNOLS Ship R/V Endeavor, 14 February - 27 February 2015: Western Boundary Time Series Cruise EN-551 (AB1502). NOAA Data Report, OAR-AOML-51, 215 pp.,
[doi:10.7289/V5DR2SGZ](https://doi.org/10.7289/V5DR2SGZ)

Hooper, James, M.O. Baringer, 2015. Hydrographic Measurements Collected Aboard the UNOLS Ship R/V Walton Smith, 2014: Western Boundary Time Series Cruise: Florida Current. NOAA Data Report, OAR-AOML-50, 122 pp., [doi:10.7289/V5JD4TSZ](https://doi.org/10.7289/V5JD4TSZ)

Hooper, James, M.O. Baringer, 2015. Hydrographic measurements collected aboard the National Environmental Research Council Ship RSS Discovery, 21 November-6 December 2009: Western Boundary Time Series Cruise D345 (AB0911). NOAA Data Report, OAR-AOML-49, 147 pp., [doi:10.7289/V5P55KG7](https://doi.org/10.7289/V5P55KG7)

Hooper, James, M.O. Baringer, 2015. Hydrographic measurements collected aboard the UNOLS Ship R/V Oceanus, Leg 1: 23 March-4 April 2010 and Leg 2: 6 April-17 April 2010: Western Boundary Time Series Cruise OC459-1 and OC459-2 (AB1003). NOAA Data Report, OAR-AOML-48, 232 pp., [doi:10.7289/V5SX6B6N](https://doi.org/10.7289/V5SX6B6N)

2014

Hooper, James, M.O. Baringer, 2014. Hydrographic Measurements Collected Aboard the UNOLS Ship R/V Knorr, 13 April - 3 May 2011: Western Boundary Time Series Cruise KN-200-4 (AB 1104). NOAA Data Report, OAR-AOML-47, 201 pp., [doi:10.7289/V5416V09](https://doi.org/10.7289/V5416V09)

Hooper, James, M.O. Baringer, 2014. Hydrographic Measurements Collected Aboard the UNOLS Ship R/V Atlantic Explorer, 15 March - 1 April 2014: Western Boundary Time Series Cruise AE 1404 (AB 1403). NOAA Data Report, OAR-AOML-46, 181 pp., [doi:10.7289/V5348H87](https://doi.org/10.7289/V5348H87)

Hooper, James, M.O. Baringer, 2014. Hydrographic Measurements Collected Aboard the NOAA Ship Ronald H. Brown, 19 February - 5 March 2013: Western Boundary Time Series Cruise RB 1302 (AB 1302). NOAA Data Report, OAR-AOML-45, 257 pp., [doi:10.7289/V5CN71VB](https://doi.org/10.7289/V5CN71VB)

Hooper, James, M.O. Baringer, 2014. Hydrographic Measurements Collected Aboard the UNOLS Ship R/V Endeavor, 24 September - 10 October 2012: Western Boundary Time Series Cruise EN-517 (AB 1209). NOAA Data Report, OAR-AOML-44, 190 pp., [doi:10.7289/V5SF2T3R](https://doi.org/10.7289/V5SF2T3R)

2013

Hooper, James, M.O. Baringer, 2013. Hydrographic Measurements Collected Aboard the NOAA Ship Ronald H. Brown, 15 February - 5 March 2012: Western Boundary Time Series Cruise RB-12-01 (AB 1202). NOAA Data Report, OAR-AOML-43, 267 pp., [doi:10.7289/V57W6941](https://doi.org/10.7289/V57W6941)

2011

Baringer, M. O., T. O. Kanzow, C. S. Meinen, S. A. Cunningham, D. Rayner, W. E. Johns, H. L. Bryden, Eleanor Faika-Williams, J. J-M. Hirschi, M. P. Chidichimo, L. M. Beal and J. Marotzke, 2011. [Global Oceans] Meridional Overturning Circulation Observations in the Subtropical North Atlantic [in State of the Climate in 2010, Blunden, J., D. S. Arndt, M. O. Baringer (eds.)]. Bull. Am. Met. Soc., 92, S95-S98. doi: 10.1175/1520-0477-92.6.S1.

2010

Baringer, M. O., T. O. Kanzow, C. S. Meinen, S. A. Cunningham, D. Rayner, W. E. Johns, H. L. Bryden, J. J-M. Hirschi, L. M. Beal and J. Marotzke, 2010. [Global Oceans] The Meridional Overturning Circulation [in State of the Climate in 2009, D. S. Arndt, M. O. Baringer, and M. R. Johnson (eds.)]. Bull. Am. Met. Soc., 91(6), 66-69.

2009

Baringer, M. O., C. S. Meinen, G. C. Johnson, T. O. Kanzow, S. A. Cunningham, W. E. Johns, L. M. Beal, J. J.-M. Hirschi, D. Rayner, H. R. Longworth, H. L. Bryden, and J. Marotzke, 2009. The meridional overturning circulation, in State of the Climate in 2008, T. Peterson and M. Baringer (eds.), Bulletin of the American Meteorological Society, 90, S59-S62.

Sweet, W., C. Zervas and S. Gill, 2009. Elevated East Coast Sea Level Anomaly: June - July 2009. NOAA Technical Report NOS CO-OPS 051, 30 pp.

2008

Baringer, M. O., and C. S. Meinen, 2008. The Meridional Overturning Circulation, in State of the Climate in 2007, D. H. Levinson and J. H. Lawrimore (eds.), Bulletin of the American Meteorological Society, 89(7), s49-s51, doi:10.1175/BAMS-89-7-StateoftheClimate.

2007

Baringer, M. O. and C. S. Meinen, 2007. Thermohaline Circulation in Supplement to State of the Climate in 2006, A.Arguez, ed., Bulletin of the American Meteorological Society: Vol. 88, No. 6, pp. s1-s135, doi: 10.1175/BAMS-88-6-StateoftheClimate.

2006

Baringer, M. O. and C. S. Meinen, 2006. Thermohaline Circulation in State of the Climate in 2005, K. A. Shein, ed., Bulletin of the American Meteorological Society: 87, No. 6, pp. s1-s102, doi: 10.1175/BAMS-87-6-shein.

2004

Fonseca, C. A. and M. Barringer (2004): CTD/O2 and LADCP measurements collected aboard the NOAA Ship Ronald H. Brown, June 2002: Deep Western Boundary Current Climate Time Series (ABACO-02). Cruise Report, Atlantic Oceanographic and Meteorological Laboratory, Miami, Florida, USA

Fonseca, C. A. and M. Barringer (2004): CTD/O2 and LADCP measurements collected aboard the R/V Oceanus , April-May 2001: Deep Western Boundary Current Climate Time Series (ABACO-01). Cruise Report, Atlantic Oceanographic and Meteorological Laboratory, Miami, Florida, USA.

2001

Peltola, E., K. Lee, R.H. Wanninkhof, R. Feely, M. Roberts, D. Greeley, M.O. 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 (repeat) during January-February 1998. NOAA Data Report, OAR AOML-41(PB2001-107645), 210 pp.

1999

McTaggart, K.E., G.C. Johnson, C.I. Fleurant, and M.O. Baringer (1999): CTD/O2 measurements collected on a Climate and Global Change cruise along 24°N in the Atlantic Ocean (WOCE section A6) during January-February 1998. NOAA Data Report, ERL PMEL-68 (PB99-155194), 368 pp. 1998

1998

Peltola, E., K. Lee, R.H. Wanninkhof, R. Feely, M. Roberts, D. Greeley, M.O. 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 (repeat) during January-February 1998. NOAA Data Report, OAR AOML-41 (PB2001-107645), 210 pp.

1994

Baringer, M.O., and R.A. Fine (1994): Deep circulation in the western subtropical North Atlantic from Trident. Proceedings, Principal Investigators Meeting, Princeton, New Jersey, May 9-11, 1994. Atlantic Climate Change Program, 135-137

1993

Fine, R.A., E. Johns, and R.L. Molinari. Deep Western Boundary Current structure in the region of the Blake-Bahama outer ridge. Proceedings, Principal Investigators Meeting of the Atlantic Climate Change Program, Miami, FL, March 9-11, 1992. NOAA Climate and Global Change Program, Special Report No. 7, 137-142, 1993 FY1993

1990

Zantopp R.J., T.N. Lee and W.E. Johns, 1990: Moored current meter observations east of Abaco, Bahamas, at 26.5°N (STACS-10 Array). University of Miami RSMAS Technical Report 90-002, 10 pp.

1985

Ratnaswamy, M., W.D. Wilson, and R.L. Molinari. Current velocity and hydrographic observations in the Straits of Florida: Subtropical Atlantic Climate Study (STACS), 1983-1984. NOAA Data Report, ERL-AOML-5 (PB86-108602), 24 pp., 1985