

Supplemental Material for

Response of biological productivity to North Atlantic marine front migration during the Holocene

David J. Harning^{1,2,*}, Anne E. Jennings², Denizcan Köseoğlu³, Simon T. Belt³, Áslaug Geirsdóttir¹, Julio Sepúlveda²

¹ Faculty of Earth Sciences, University of Iceland

² Institute of Arctic and Alpine Research (INSTAAR) and Department of Geological Sciences, University of Colorado Boulder

³ Biogeochemistry Research Centre, School of Geography, Earth and Environmental Sciences, Plymouth University

* Corresponding author: David J. Harning (david.harning@colorado.edu)

Table S1: Marine sediment core proxy records from Iceland's insular shelves.

| Marine core | Time Interval (ka BP) | Proxies | Reference |
|-------------------------|-----------------------|--|--------------------------------|
| MD99-2269 | 10 to 0 | diatoms | Andersen et al. (2004) |
| MD99-2269 | 10 to 0 | coccolithophores, CaCO ₃ , low-resolution benthic foram. | Giraudeau et al. (2004) |
| MD99-2269 | 11.5 to 0 | CaCO ₃ , quartz | Moros et al. (2006) |
| MD99-2269 | 10 to 0 | dinocysts | Solignac et al. (2006) |
| MD99-2269 | 4 to 0 | Mg/Ca of benthic foram. | Kristjánsdóttir et al. (2007a) |
| MD99-2269 | 12 to 0 | tephra | Kristjánsdóttir et al. (2007b) |
| MD99-2269 | 12 to 0 | PSV age model | Stoner et al. (2007) |
| MD99-2269 | 11.5 to 0 | diatoms | Justwan et al. (2008) |
| MD99-2269 | 8 to 0 | IP ₂₅ , HBI III, <i>T. quinqueloba</i> , <i>N. pachyderma</i> (s) | Cabedo-Sanz et al. (2016) |
| MD99-2269 | 11.4 to 0.4 | Mg/Ca and δ ¹⁸ O of benthic and planktic foram., δ ¹³ C planktic foram., alkenones | Kristjánsdóttir et al. (2017) |
| <hr/> | | | |
| JR51-GC35 | 10.2 to 0 | ¹⁴ C chronology, alkenones | Bendle & Rosell-Melé (1997) |
| JR51-GC35 and MD99-2264 | 12 to 0 | minerology | Andrews et al. (2014) |
| JR51-GC35 | 8 to 0 | HBI, planktic foraminifera | Cabedo-Sanz et al. (2016) |
| <hr/> | | | |
| MD99-2275 | 1.2 to 0 | IP ₂₅ | Massé et al. (2008) |
| MD99-2275 | 2 to 0 | diatoms | Jiang et al. (2005) |
| MD99-2275 and -2271 | 2 to 0 | dinocysts, benthic and planktic foram. and δ ¹⁸ O, diatoms, sedimentology | Eiríksson et al. (2006) |
| MD99-2275 | 2 to 0 | alkenones | Sicre et al. (2008a) |
| MD99-2275 | 4.5 to 0 | alkenones, magnetics | Sicre et al. (2008b) |
| B05-2006-MC04 | 0.13 to 0 | benthic and planktic foram., diatoms, IRD | Knudsen et al. (2009) |
| MD99-2275 | 2 to 0 | alkenones | Sicre et al. (2011) |
| MD99-2275 | 15 to 0 | tephra | Gudmundsdóttir et al. (2012) |
| MD99-2275 | 1 to 0 | benthic and planktic foram. and δ ¹⁸ O | Knudsen et al. (2012) |
| MD99-2275 | 9.3 to 0 | diatoms | Jiang et al. (2015) |
| <hr/> | | | |
| HM107-04 and -05 | 14 to 0 | grain size, minerology, MS, water content, CaCO ₃ , benthic and planktic foram., tephra | Eiríksson et al. (2000a) |
| HM107-03 | 4.5 to 0 | benthic and planktic foram., grain size, IRD, tephra | Eiríksson et al. (2000b) |
| HM107-03 | 4.6 to 0 | diatoms | Jiang et al. (2002) |
| HM107-04 and -05 | 15.8 to 0 | benthic and planktic foram. and δ ¹⁸ O, diatoms | Knudsen et al. (2004a) |

| | | | |
|-----------------------------|-------------|--|------------------------------|
| HM107-03 and -02, MD99-2275 | 1.2 to 0 | benthic and planktic foram. and $\delta^{18}\text{O}$, diatoms, IRD | Knudsen et al. (2004b) |
| MD99-2264 and B997 cores | 36 to 0 | IRD, CaCO_3 , MS | Geirsdóttir et al. (2002) |
| MD99-2256 and -2264 | 11.5 to 0 | benthic foram. and $\delta^{18}\text{O}$ | Ólafsdóttir et al. (2012) |
| MD99-2266 | 10.6 to 0.5 | $\delta^{18}\text{O}$ of benthic foram., CaCO_3 , MS, grain size, carbonate, IRD | Quillmann et al. (2010) |
| MD99-2266 | 8.4 to 7.6 | Mg/Ca and $\delta^{18}\text{O}$ of benthic foram., CaCO_3 | Quillmann et al. (2012) |
| MD99-2266 | 10.7 to 0.3 | C, N, GDGTs, alkenones, <i>n</i> -alkanes | Moossen et al. (2013) |
| MD99-2266 | 10.7 to 0.3 | GDGTs, alkenones, <i>n</i> -alkanes and δD | Moossen et al. (2015) |
| MD99-2263 | 2 to 0 | grain size, magnetics, minerology, benthic and planktic foram and $\delta^{18}\text{O}$, IP_{25} | Andrews et al. (2009) |
| MD99-2263 | 12 to 0 | minerology, IRD, CaCO_3 , IP_{25} | Darby et al. (2017) |
| MD99-2271, -2272, -2275 | 4.5 to 0 | grain size, C, MS, water content, CaCO_3 , benthic and planktic foram., tephra | Knudsen & Eiríksson (2002) |
| MD99-2271, -2273, -2275 | 4.5 to 0 | tephra and ^{14}C | Eiríksson et al. (2004) |
| MD99-2273 | 0.9 to 0.5 | alkenones, IP_{25} | Sicre et al. (2013) |
| MD99-2272 | 15 to 4 | IP_{25} , HBI III, sterols, <i>n</i> -alkanols, tephra | Xiao et al. (2017) |
| B997 cores | <45 | ^{14}C | Andrews et al. (2000) |
| B997 cores | 4 to 0 | MS, CaCO_3 , grain size, pollen | Andrews et al. (2001a) |
| B997 cores | 5 to 0 | CaCO_3 | Andrews et al. (2001b) |
| B997 cores | 10.2 | tephra, magnetics | Andrews et al. (2002a) |
| B997 cores | 36 to 0 | grain size, IRD, density, MS, magnetics, C, CaCO_3 | Andrews et al. (2002b) |
| B997 cores | 10 to 0 | coccolithophores, CaCO_3 | Andrews & Giraudeau (2003) |
| B997 cores | 44 to 0 | grain size, density, MS, foram., tephra | Andrews & Helgadóttir (2003) |
| B997 cores | 14 to 0 | benthic and planktic foram and $\delta^{18}\text{O}$ | Castaneda et al. (2004) |
| B997 cores | 10 to 0 | benthic and planktic foram and $\delta^{18}\text{O}$ | Smith et al. (2005) |
| B997 cores | 2 to 0 | minerology | Andrews & Eberl (2007) |
| B997 cores | 12 to 0 | PSV | Andrews et al. (2008) |
| B997 cores | 12 to 0 | minerology | Andrews (2009) |
| B997 cores | 0.8 to 0 | quartz, CaCO_3 , IP_{25} , HBI III, GDGTs | Harning et al. (2019) |

| | | | |
|--------------------------|------------------------------------|---|------------------------|
| KN 158-4-72GGC (Djúpall) | | carbonate, grain size, minerology | Andresen et al. (2005) |
| 93030-006 LCF | 12.7 to 9.4 (^{14}C yrs) | grain size, IRD, C, CaCO_3 , MS, benthic and planktic foram., tephra | Jennings et al. (2000) |
| 93030-03BC | 0.4 to 0 | C, minerology, magnetics, CaCO_3 , planktic foram. and $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ | Jennings et al. (2001) |

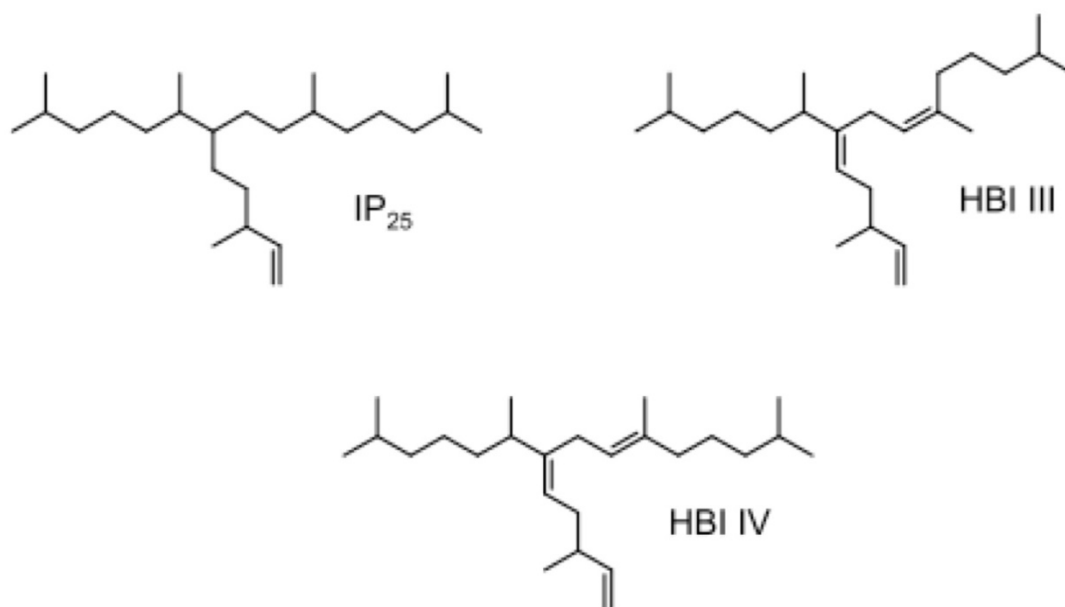


Fig. S1: Structures of highly branched isoprenoid (HBI) biomarkers discussed in the current study.

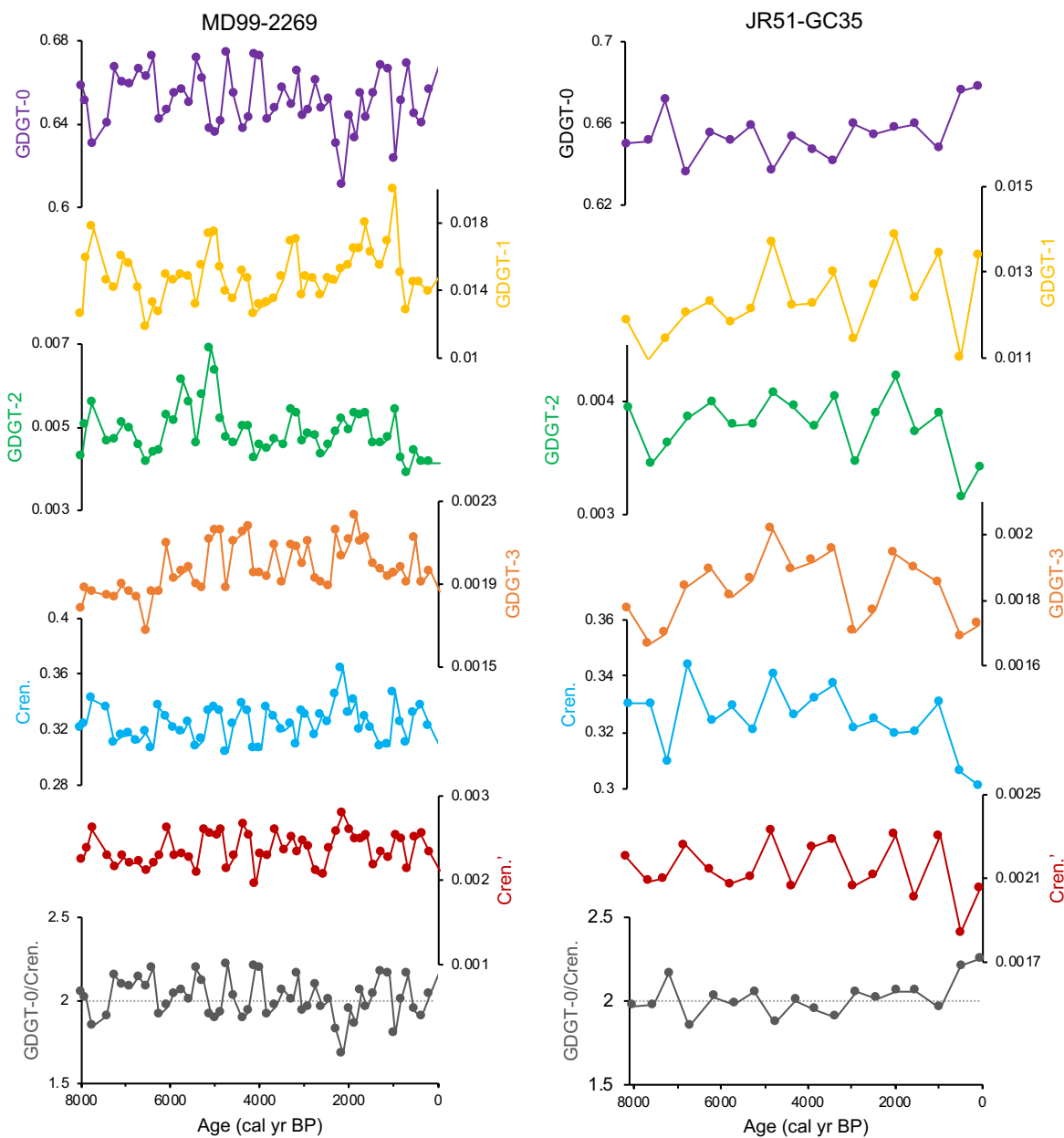


Fig. S2: Fractional abundances of individual GDGTs and GDGT-0/crenarchaeol ratios for MD99-2269 (left) and JR51-GC35 (right). GDGT-0/crenarchaeol values around and below 2 (grey dotted line) indicate minimal GDGT contributions from methanogenic archaea that may compromise TEX_{86}^L -based temperature inferences (e.g. [Blaga et al., 2009](#)).

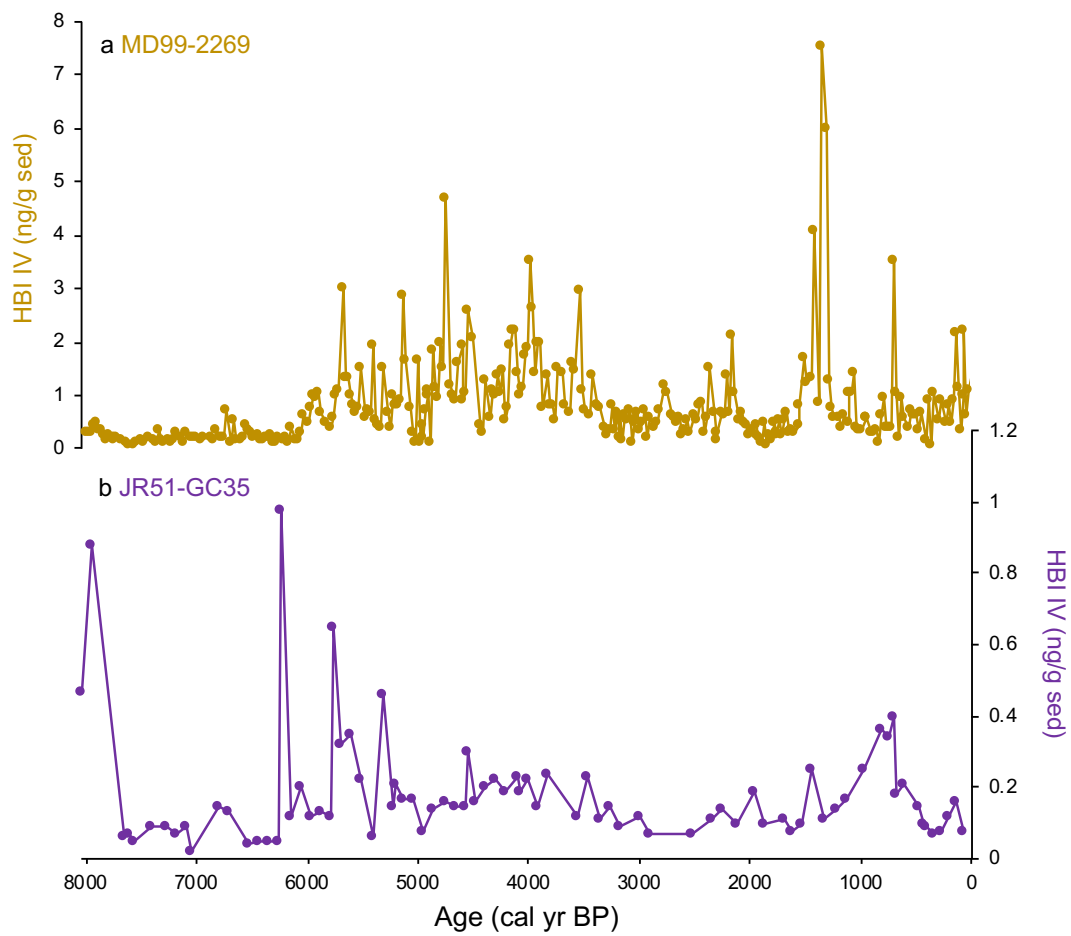


Fig. S3: Downcore HBI IV records from a) MD99-2269 and b) JR51-GC35.

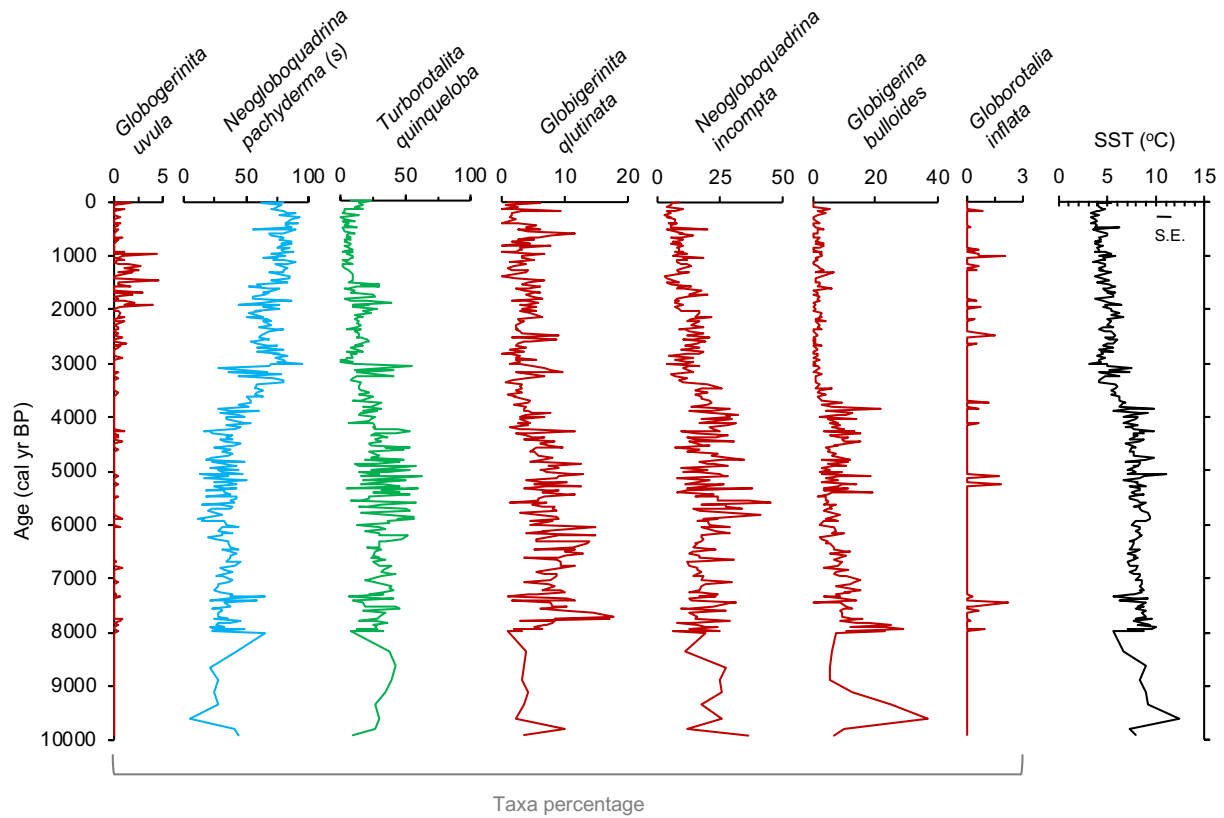


Fig. S4: Planktic foraminiferal species in MD99-2269 used to estimate summer SSTs over the last 10 ka BP, with emphasis on high-resolution estimates for the past 8 cal ka BP. Colors indicate environmental preferences: red=Atlantic Water species, blue=Arctic, green=frontal species.

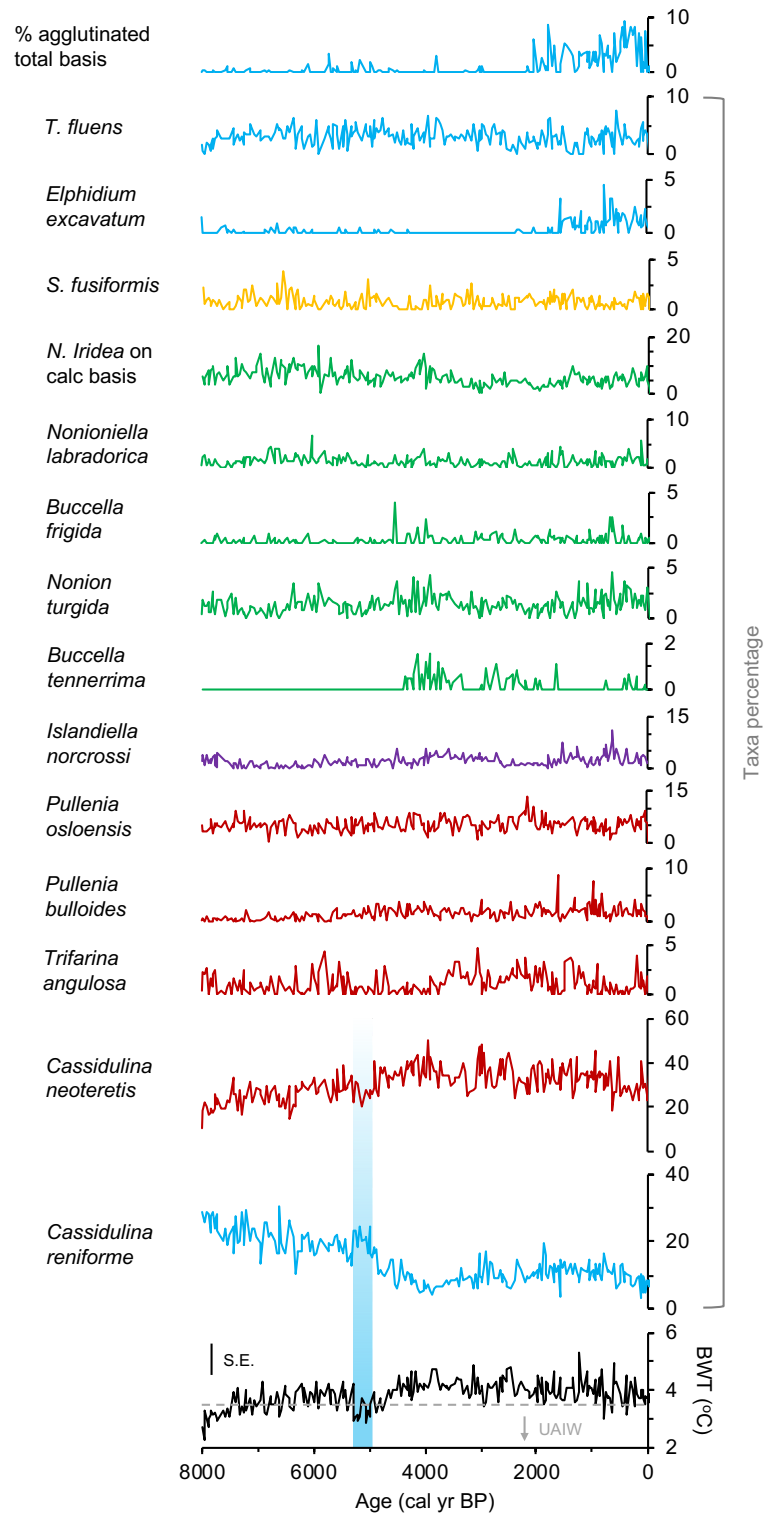


Fig S5: Select benthic species used to estimate BWT in MD99-2269 over the last 8 cal ka BP. Species colors indicate environmental preferences: red=Atlantic; blue=Arctic, purple=mixed Atlantic Water, green=productivity, yellow=indifferent.

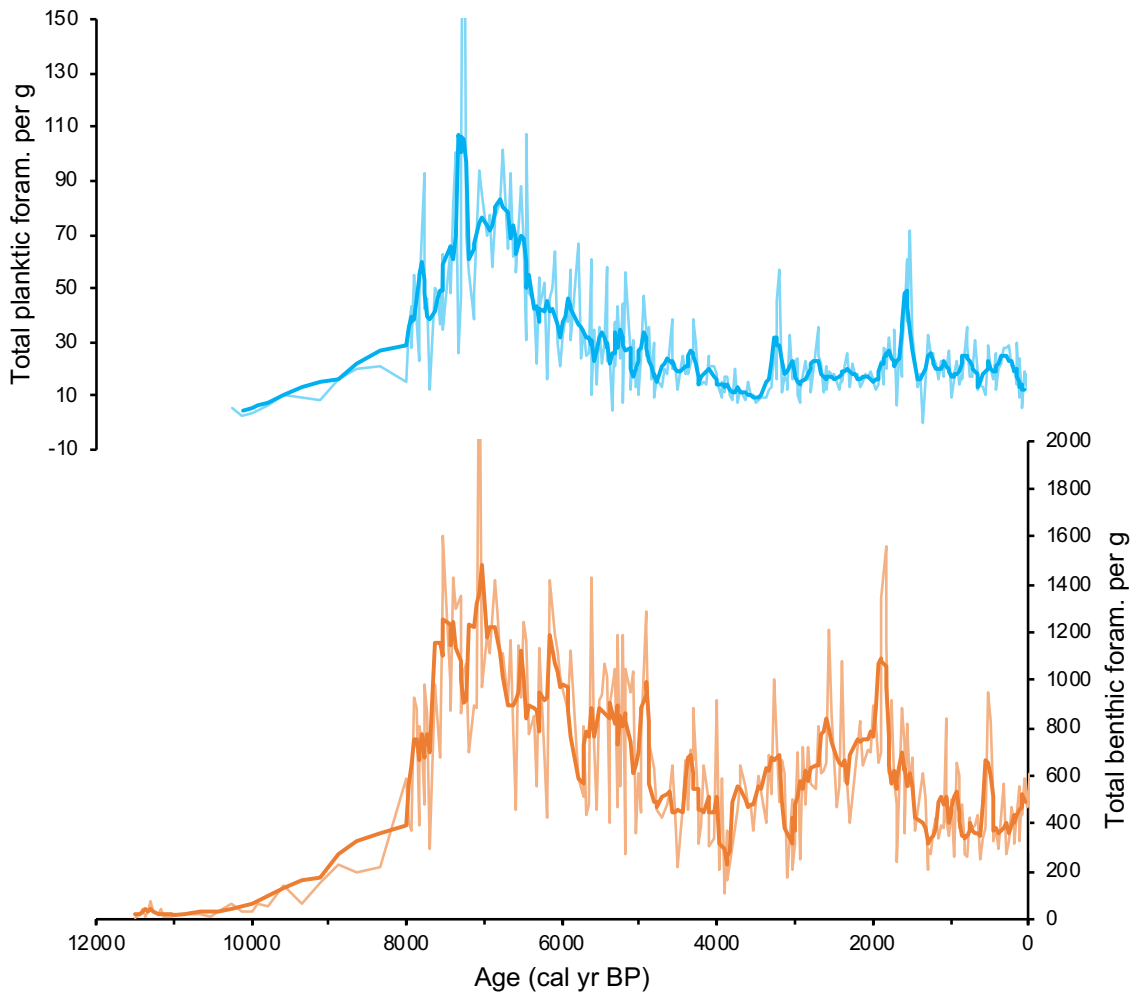


Fig. S6: Downcore records from MD99-2269 for planktic and benthic foraminifera per gram. Bold line is a 5-pt running mean.

References

- Andersen, C., Koç, N., Jennings, A.E., and Andrews, J.T.: Nonuniform response of the major surface currents in the Nordic Seas to insolation forcing: Implications for the Holocene climate variability. *Paleoceanography*, 19, 1-16, 2004.
- Andresen, C.S., Bond, G., Kuijpers, A., Knutz, P.C., and Björck, S.: Holocene climate variability at multidecadal time scales detected by sedimentological indicators in a shelf core NW off Iceland. *Mar. Geol.*, 214, 323–338, 2005.
- Andrews, J.T.: Seeking a Holocene drift ice proxy: non-clay mineral variations from the SW to N-central Iceland shelf: trends, regime shifts, and periodicities. *J. Quat. Sci.*, 24, 664–676, 2009.
- Andrews, J.T., Belt, S.T., Olafsdottir, S., Massé, G., and Vare, L.L.: Sea ice and marine climate variability for NW Iceland/Denmark Strait over the last 2000 cal. yr BP. *Holocene*, 19, 775–784, 2009.
- Andrews, J.T., Bigg, G.R., and Wilton, D.J.: Holocene ice-rafting and sediment transport from the glaciated margin of East Greenland (67–70°N) to the N Iceland shelves: detecting and modelling changing sediment sources. *Quat. Sci. Rev.*, 91, 204–217, 2014.
- Andrews, J.T., Caseldine, C., Weiner, N.J., and Hatton, J.: Late Quaternary (ca. 4 ka) marine and terrestrial environmental change in Reykharfjörður, north Iceland: climate and/or settlement? *J. Quat. Sci.*, 16, 133–144, 2001a.
- Andrews, J.T., and Eberl, D.D.: Quantitative mineralogy of surface sediments on the Iceland shelf, and application to down-core studies of Holocene ice-rafted sediments. *J. Sediment. Res.*: 77, 469–479, 2007
- Andrews, J.T., Geirsdóttir, Á., Hardardóttir, J., Principato, S., Grönvold, K., Kristjánsdóttir, G.B., Helgadóttir, G., Drexler, J., and Sveinbjörnsdóttir, A.E.: Distribution, sediment magnetism and geochemistry of the Saksunarvatn (10 180 ± 60 cal. yr BP) tephra in marine, lake, and terrestrial sediments, northwest Iceland. *J. Quat. Sci.*, 17, 731–745, 2002a
- Andrews, J.T., and Giraudeau, J.: Multi-proxy records showing significant Holocene environmental variability on the inner North Iceland Shelf (Hunafloi). *Quat. Sci. Rev.*, 22, 175–193, 2003.
- Andrews, J.T., Hardardóttir, J., Geirsdóttir, Á., and Helgadóttir, G.: Late Quaternary ice extent and depositional history from the Djúpall trough, off the Vestfirðir peninsula, north-west Iceland: A stacked 36 cal environmental record. *Polar Res.*, 21, 211–226, 2002b.
- Andrews, J.T., Harðardóttir, J., Helgadóttir, G., Jennings, A.E., Geirsdóttir, Á., Sveinbjörnsdóttir, Á.E., Schoolfield, S., Kristjánsdóttir, G.B., Smith, L.M., Thors, K., and Syvitski, J.: The N and W Iceland Shelf: insights into Last Glacial Maximum ice extent and deglaciation based on acoustic stratigraphy and basal radiocarbon AMS dates. *Quat. Sci. Rev.*, 19, 619–631, 2000.
- Andrews, J.T., Hardardóttir, J., Stoner, J.S., and Principato, S.: Holocene sediment magnetic properties along a transect from Ísafjarðardjúp to Djúpall, Northwest Iceland. *Arct., Antarct., Alp. Res.*, 40, 1–14, 2008.
- Andrews, J.T., and Helgadóttir, G.: Late Quaternary ice cap extent and deglaciation, Húnaflóaáall, Northwest Iceland: Evidence from marine cores. *Arct., Antarct., Alp. Res.*, 35, 218–232, 2003.
- Andrews, J.T., Helgadóttir, G., Geirsdóttir, A., and Jennings, A.E.: Multi-century-scale records of carbonate (hydrographic?) variability on the N. Iceland margin over the last 5000 years. *Quat. Res.*, 56, 199–206, 2001b.
- Andrews, J.T., Kihl, R., Kristjansdottir, G.B., Smith, L.M., Helgadóttir, G., Geirsdóttir, A., and Jennings, A.E.: Holocene sediment properties of the East Greenland and Iceland continental shelves bordering Denmark strait (64°–68°N), North Atlantic. *Sedimentology*, 49, 5–24, 2002b

- Bendle, J.A.P., and Rosell-Melé, A.: High-resolution alkenone sea surface temperature variability on the North Icelandic Shelf: implications for Nordic Seas palaeoclimatic development during the Holocene. *Holocene*, 17, 9-24, 2007.
- Blaga, C.I., Reichart, G.-J., Heiri, O., and Sinninghe Damsté, J.S.: Tetraether membrane lipid distribution in water-column particulate matter and sediments: A study from 47 European lakes along a north-south transect. *J. Paleolimnol.*, 41, 535–540, 2009.
- Cabedo-Sanz, P., Belt, S.T., Jennings, A.E., Andrews, J.T., and Geirsdóttir, Á.: Variability in drift ice export from the Arctic Ocean to the North Icelandic Shelf over the last 8000 years: A multi-proxy evaluation. *Quat. Sci. Rev.*, 146, 99-115, 2016.
- Castañeda, I.S., Smith, L.M., Kristjánssdóttir, G.B., and Andrews, J.T.: Temporal changes in Holocene $\delta^{18}\text{O}$ records from northwest and central North Iceland Shelf. *J. Quat. Sci.*, 19, 321-334, 2004.
- Darby, D.A., Andrews, J.T., Belt, S.T., Jennings, A.E., and Cabedo-Sanz, P.: Holocene cyclic records of ice-rafted debris and sea ice variations on the East Greenland and Northwest Iceland margins. *Arct., Antarct., Alp. Res.*, 49, 649-672, 2017.
- Eiríksson, J., Bartels-Jonsdóttir, H.B., Cage, A.G., Gudmundsdóttir, E.R., Klitgaard-Kistensen, D., Marret, F., Rodrigues, T., Abrantes, F., Austin, W.E.N., Jiang, H., Knudsen, K.L., and Sejrup, H.P.: Variability of the North Atlantic current during the last 2000 years based on shelf bottom water and sea surface temperatures along an open ocean/shallow marine transect in western Europe. *Holocene*, 16, 1017–1019, 2006.
- Eiríksson, J., Knudsen, K.L., Haflidason, H., and Henriksen, P.: Late-glacial and Holocene palaeoceanography of the North Icelandic Shelf. *J. Quat. Sci.*, 15, 23-42, 2002a.
- Eiríksson, J., Knudsen, K.L., Haflidason, H., and Heinemeier, J.: Chronology of late Holocene climatic events in the northern North Atlantic based on AMS ^{14}C dates and tephra markers from the volcano Hekla, Iceland. *J. Quat. Sci.*, 15, 573-580, 2002b.
- Eiríksson, J., Larsen, G., Knudsen, K.L., Heinemeier, J., and Símonarson, L.A.: Marine reservoir age variability and water mass distribution in the Iceland Sea. *Quat. Sci. Rev.*, 23, 2247-2268, 2004.
- Geirsdóttir, Á., Andrews, J.T., Ólafsdóttir, S., Helgadóttir, G., and Harðardóttir, J.: A 36 Ky record of iceberg rafting and sedimentation from north-west Iceland. *Polar Res.*, 21, 291–298, 2002.
- Giraudeau, J., Jennings, A.E., and Andrews, J.T.: Timing and mechanisms of surface and intermediate water circulation changes in the Nordic Sea over the last 10000 cal years: A view from the North Iceland Shelf. *Quat. Sci. Rev.*, 23, 2127-2139, 2004.
- Gudmundsdóttir ER, Larsen G, and Eiríksson, J.: Tephra stratigraphy on the North Icelandic shelf: extending tephrochronology into marine sediments off North Iceland. *Boreas*, 41, 719–734, 2012.
- Harning, D.J., Andrews, J.T., Belt, S.T., Cabedo-Sanz, P., Geirsdóttir, Á., Dildar, N., Miller, G.H., and Sepúlveda, J.: Sea ice control on winter subsurface temperatures of the North Iceland Shelf during the Little Ice Age: A TEX₈₆ calibration case study. *Paleoceanogr. Paleoclimatol.*, 34, 1006-2021, 2019.
- Jennings, A.E., Hagen, S., Harðardóttir, J., Stein, R., Ogilvie, A.E.J., and Jonsdóttir, I.: Oceanographic change and terrestrial human impacts in a post A.D. 1400 sediment record from the southwest Iceland shelf. *Clim. Chang.*, 48, 83-100, 2001.
- Jennings, A., Syvitski, J., Gerson, L., Grönvold, K., Geirsdóttir, Á., Harðardóttir, J., Andrews, J., and Hagen, S.: Chronology and paleoenvironments during the late Weichselian deglaciation of the southwest Iceland shelf. *Boreas*, 29, 167-183, 2000.

- Jiang, H., Eiriksson, J., Schultz, M., and Knudsen, K.L., Seidenkrantz, M.S.: Evidence for solar forcing of sea surface temperature on the North Icelandic Shelf during the late Holocene. *Geology*, 33, 73–76, 2005.
- Jiang, H., Seidenkrantz, M.S., Eiriksson, J., and Knudsen, K.L.: Late-Holocene summer sea-surface temperature based on a diatom record from the north Iceland shelf. *Holocene*, 137-147, 2002.
- Jiang, H., Muscheler, R., Björck, S., Seidenkrantz, M.-S., Olsen, J., Sha, L., Sjolte, J., Eiriksson, J., Ran., L., Knudsen, K.-L., and Knudsen, M.F.: Solar forcing of Holocene summer sea-surface temperatures in the northern North Atlantic. *Geology*, 43, 2-5, 2015.
- Justwan, A., Koc, N., and Jennings, A.E.: Evolution of the Irminger and East Icelandic Current systems through the Holocene, revealed by diatom-based sea surface temperature reconstructions. *Quat. Sci. Rev.*, 27, 1571-1582, 2008.
- Knudsen, K.L., Jiang, H., Jansen, E., Eiriksson, J., Heinemeier, J., and Seidenkrantz, M.S.: Environmental changes off North Iceland during the deglaciation and the Holocene: foraminifera, diatoms and stable isotopes. *Mar. Micropaleontol.*, 50, 273–305, 2004a.
- Knudsen, K.L., and Eiriksson, J.: Application of tephrochronology to the timing and correlation of palaeoceanographic events records in Holocene and Late Glacial shelf sediments off North Iceland. *Mar. Geol.*, 191, 165-188, 2002.
- Knudsen, K.L., Eiriksson, J., and Bartels-Jónsdóttir, H.B.: Oceanographic changes through the last millennium off North Iceland: Temperature and salinity reconstructions based on foraminifera and stable isotopes. *Mar. Micropaleontol.*, 84-85, 54-73, 2012.
- Knudsen, K.L., Eiriksson, J., Jansen, E., Jiang, H., Rytter, F., and Gudmundsdottir, E.R.: Palaeoceanographic changes off North Iceland through the last 1200 years: foraminifera, stable isotopes, diatoms and ice rafted debris. *Quat. Sci. Rev.*, 23, 2231–2246, 2004b.
- Knudsen, K.L., Eiriksson, J., Jiang, H., and Jónsdóttir, I.: Paleoceanography and climate changes off North Iceland during the last millennium: comparison of foraminifera, diatoms and ice-rafted debris with instrumental and documentary data. *J. Quat. Sci.*, 24, 457-468, 2009.
- Kristjánisdóttir, G.B., Lea, D.W., Jennings, A.E., Pak, D.K., and Belanger, C.: New spatial Mg/Ca-temperature calibrations for three Arctic, benthic foraminifera and reconstruction of north Iceland shelf temperature for the past 4000 years. *Geochem., Geophys., Geosyst.*, 8, 1-27, 2007a
- Kristjánisdóttir, G.B., Stoner, J.S., Jennings, A.E., Andrews, J.T., and Grönvold, K.: Geochemistry of Holocene cryptotephra from the North Iceland Shelf (MD99-2269): intercalibration with radiocarbon and palaeomagnetic chronostratigraphies. *Holocene*, 17, 155-176, 2007b.
- Kristjánisdóttir, G.B., Moros, M., Andrews, J.T., and Jennings, A.E.: Holocene Mg/Ca, alkenones, and light stable isotope measurements on the outer North Iceland shelf (MD99-2269): A comparison with other multi-proxy data and sub-division of the Holocene. *Holocene*, 26, 55-62, 2017.
- Massé, G., Rowland, S.J., Sicre, M.-A., Jacob, J., Jansen, E., and Belt, S.T.: Abrupt climate changes for Iceland during the last millennium: Evidence from high resolution sea ice reconstructions. *Earth Planet. Sci. Lett.*, 269, 565-569, 2008.
- Moossen, H., Abell, R., Quillmann, U., and Bendle, J.: Holocene changes in marine productivity and terrestrial organic carbon inputs into an Icelandic fjord: Application of molecular and bulk organic proxies. *Holocene*, 23, 1699-1710, 2013..
- Moossen, H., Bendle, J., Seki, O., Quillmann, U., and Kawamura, K.: North Atlantic Holocene climate evolution recorded by high-resolution terrestrial and marine biomarker records. *Quat. Sci. Rev.*, 129, 111-127, 2015.

- Moros, M., Andrews, J.T., Eberl, D.D., and Jansen, E.: Holocene history of drift ice in the northern North Atlantic: Evidence for differential spatial and temporal modes. *Paleoceanography*, 21, 1-10, 2006.
- Ólafsdóttir, S., Jennings, A.E., Geirsdóttir, Á., Andrews, J., and Miller, G.H.: Holocene variability of the North Atlantic Irminger currents on the south- and northwest shelf of Iceland. *Mar. Micropaleontol.*, 77, 101-118, 2010.
- Quillmann, U., Jennings, A., and Andrews, J.: Reconstructing Holocene palaeoclimate and palaeoceanography in Ísafjarðardjúp, northwest Iceland, from two fjord records overprinted by relative sea-level and local hydrographic changes. *J. Quat. Sci.*, 25, 1144-1159, 2010.
- Quillmann, U., Marchitto, T.M., Jennings, A.E., Andrews, J.T., and Friestad, B.F.: Cooling and freshening at 8.2 ka on the NW Iceland Shelf recorded in paired $\delta^{18}\text{O}$ and Mg/Ca measurements of the benthic foraminifer *Cibicides lobatulus*. *Quat. Res.*, 78, 528, 539, 2012.
- Sicre, M.-A., Hall, I.R., Mignot, J., Khodri, M., Ezat, U., Truong, M.-X., Eiriksson, J., and Knudsen, K.-L.: Sea surface temperature variability in the subpolar Atlantic over the last two millennia. *Paleoceanography*, 26, 1-10, 2011.
- Sicre, M.-A., Jacob, J., Ezat, U., Rouse, S., Kissel, K., Eiriksson, J., Knudsen, K.-L., Jansen, E., and Turon, J.L.: Decadal variability of sea surface temperatures off North Iceland over the last 2000 yrs. *Earth Planet. Sci. Lett.*, 268, 137-142, 2008a.
- Sicre, M.-A., Khodri, M., Mignot, J., Eiriksson, J., Knudsen, K.-L., Ezat, U., Closset, I., Nogues, P., and Massé, G.: Sea surface temperature and sea ice variability in the subpolar North Atlantic from explosive volcanism of the late thirteenth century. *Geophys. Res. Lett.*, 40, 5526-5530, 2013.
- Sicre, M.-A., Yiou, P., Eiriksson, J., Ezat, U., Guimbaut, E., Dahhaoui, I., Knudsen, K.-L., Jansen, E., and Turon, J.-L.: A 4500-year reconstruction of sea surface temperature variability at decadal time-scales off North Iceland. *Quat. Sci. Rev.*, 27, 2041-2047, 2008b.
- Smith, L.M., Andrews, J.T., Castañeda, I.S., Kristjánsdóttir, G.B., Jennings, A.E., and Sveinbjörnsdóttir, Á.E.: Temperature reconstructions for SW and N Iceland waters over the last 10 cal ka based on $\delta^{18}\text{O}$ records from planktic and benthic foraminifera. *Quat. Sci. Rev.*, 24, 1723-1740, 2005.
- Solignac, S., Giraudeau, J., and de Vernal, A.: Holocene sea surface conditions in the western North Atlantic: Spatial and temporal heterogeneities. *Paleoceanography*, 21, 1-6, 2006
- Stoner, J.S., Jennings, A., Kristjánsdóttir, G.B., Dunhill, G., Andrews, J.T., and Hardardóttir, J.: A paleomagnetic approach toward refining Holocene radiocarbon-based chronologies: Paleoceanographic records from the north Iceland (MD99-2269) and east Greenland (MD99-2322) margins. *Paleoceanography*, 22, 1-23, 2007.
- Xiao, X., Zhao, M., Knudsen, K.L., Sha, L., Eiriksson, J., Gudmundsdóttir, E., Jiang, H., and Guo, Z.: Deglacial and Holocene sea-ice variability north of Iceland and response to ocean circulation changes. *Earth Planet. Sci. Lett.*, 472, 14-24, 2017.