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

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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, *T. quinqueloba*, *N. pachyderma* (s)	Cabedo-Sanz et al. (2016)
MD99-2269	11.4 to 0.4	Mg/Ca and $\delta^{18}O$ of benthic and planktic foram., $\delta^{13}C$ planktic foram., alkenones	Kristjánsdóttir et al. (2017)
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)
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 $\delta^{18}O$, 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 $\delta^{18}O$	Knudsen et al. (2012)
MD99-2275	9.3 to 0	diatoms	Jiang et al. (2015)
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 $\delta^{18}O$, diatoms	Knudsen et al. (2004a)

HM107-03 and -02, MD99-2275	1.2 to 0	benthic and planktic foram. and $\delta^{18}O$, diatoms, IRD	Knudsen et al. (2004b)
MD99-2264 and B997 cores	36 to 0	IRD, $CaCO_3$, MS	Geirsdóttir et a. (2002)
MD99-2256 and -2264	11.5 to 0	benthic foram. and $\delta^{18}O$	Ólafsdóttir et al. (2012)
MD99-2266	10.6 to 0.5	$\delta^{18}O$ of benthic foram., $CaCO_3$, MS, grain size, carbonate, IRD	Quillmann et al. (2010)
MD99-2266	8.4 to 7.6	Mg/Ca and $\delta^{18}O$ of benthic foram., $CaCO_3$	Quillmann et al. (2012)
MD99-2266	10.7 to 0.3	C, N, GDGTs, alkenones, *n*-alkanes	Moossen et al. (2013)
MD99-2266	10.7 to 0.3	GDGTs, alkenones, *n*-alkanes and δD	Moossen et al. (2015)
MD99-2263	2 to 0	grain size, magnetics, minerology, benthic and planktic foram and $\delta^{18}O$, 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, *n*-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 $\delta^{18}O$	Castaneda et al. (2004)
B997 cores	10 to 0	benthic and planktic foram and $\delta^{18}O$	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 $\delta^{18}O$ and $\delta^{13}C$	Jennings et al. (2001)

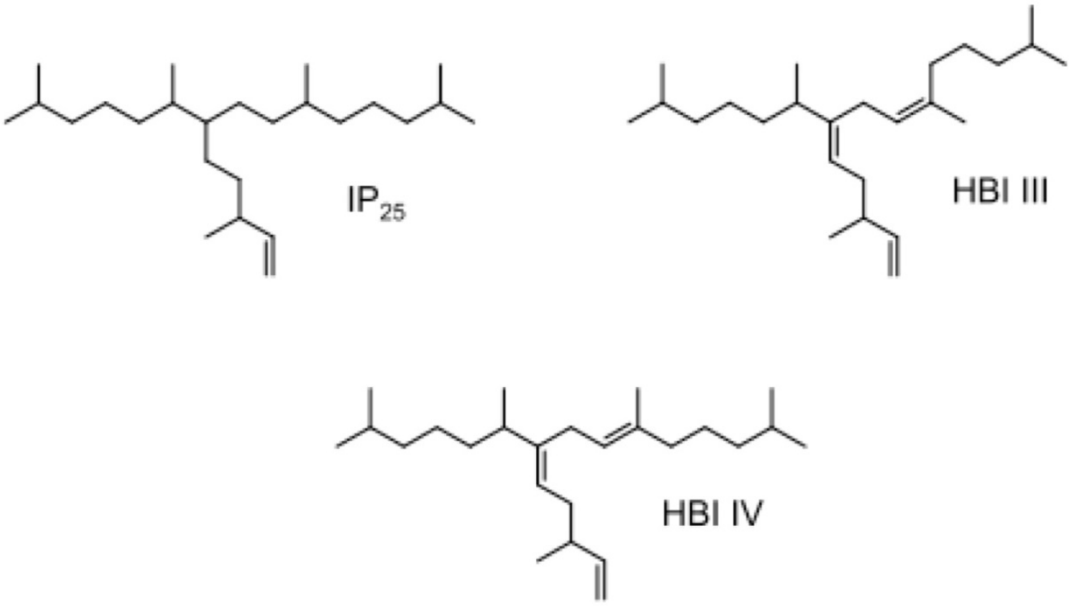

Fig. S1: Structures of highly branched isoprenoid (HBI) biomarkers discussed in the current study.

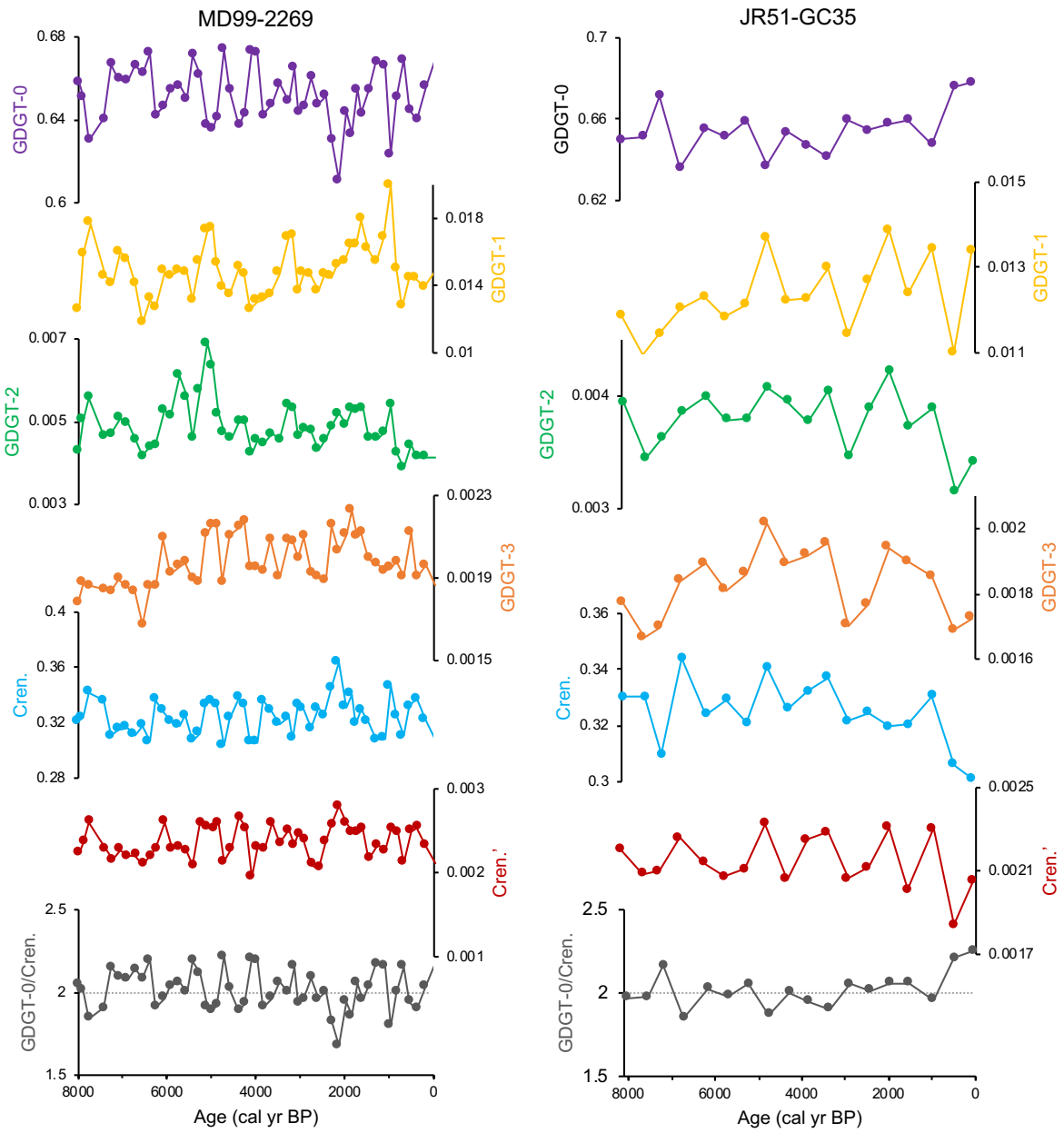

Fig. S2: **Fractional abundances of individual GDGTs and GDGT-0/crenarchaeol ratios for MD99-2269 (left) and JR51-GC35 (right).** GDGT-0/crenarchaeol values around and below 2 (grey dotted line) indicate that the GDGT pool is not altered by methanogenic contributors (e.g. Blaga et al., 2009).

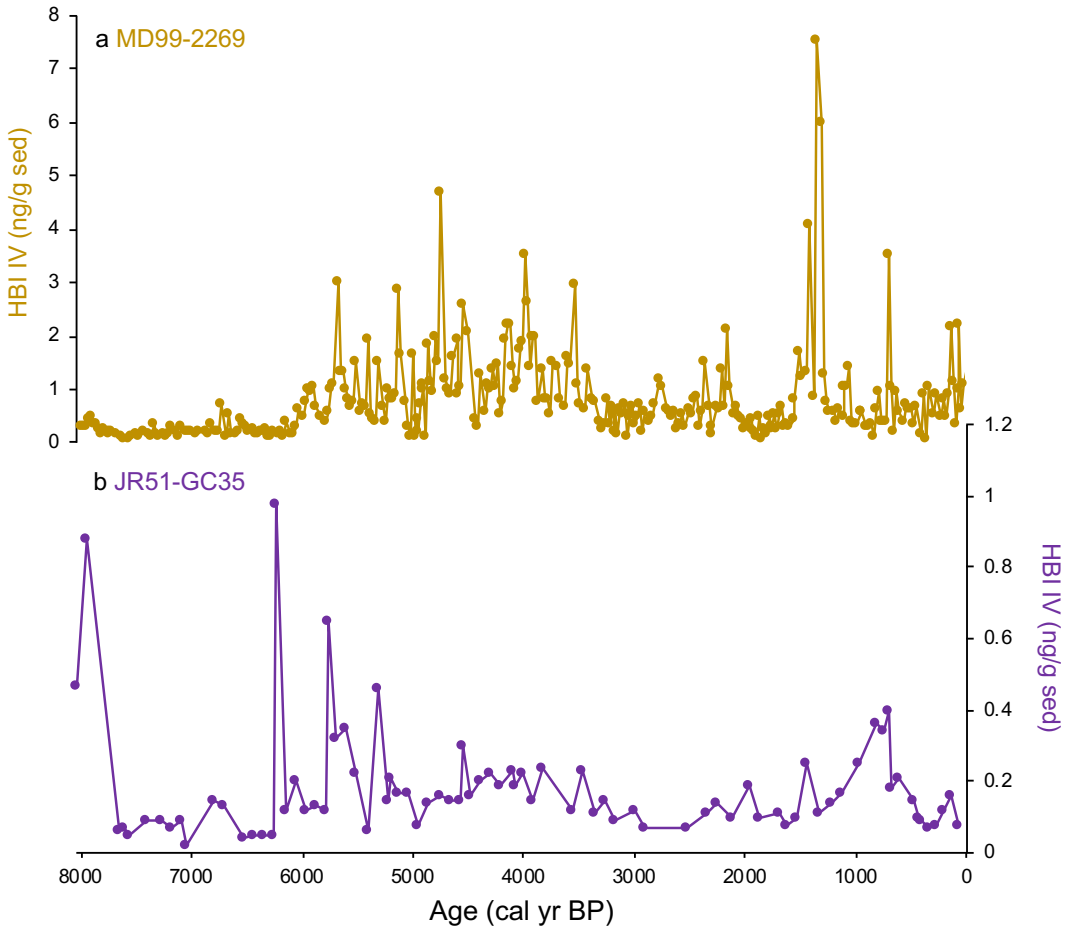

Fig. S3: Downcore HBI IV records from a) MD99-2269 and b) JR51-GC35.

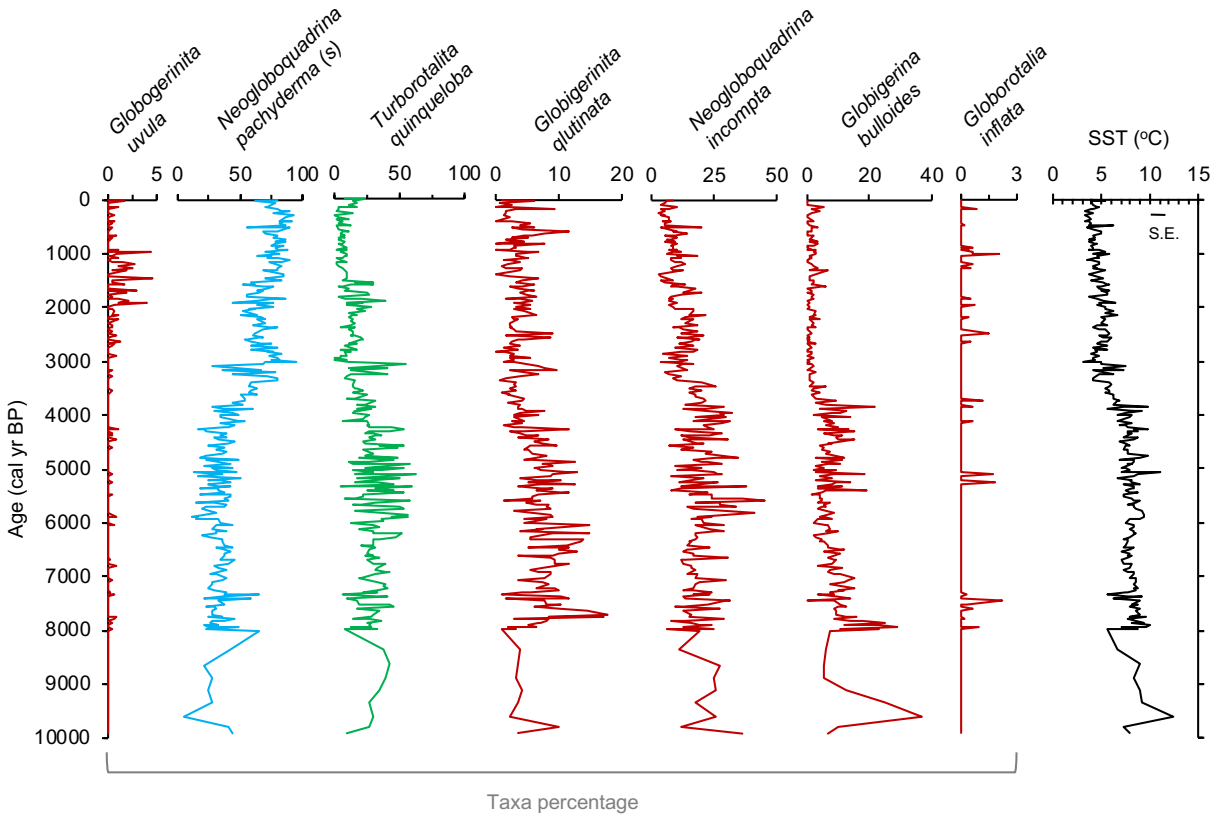

Fig. S4: Planktic foraminiferal species in MD99-2269 used to estimate summer SSTs over the last 10 ka BP, with emphasis on high-resolution estimates for the past 8 cal ka BP. Colors indicate environmental preferences: red=Atlantic Water species, blue=Arctic, green=frontal species.

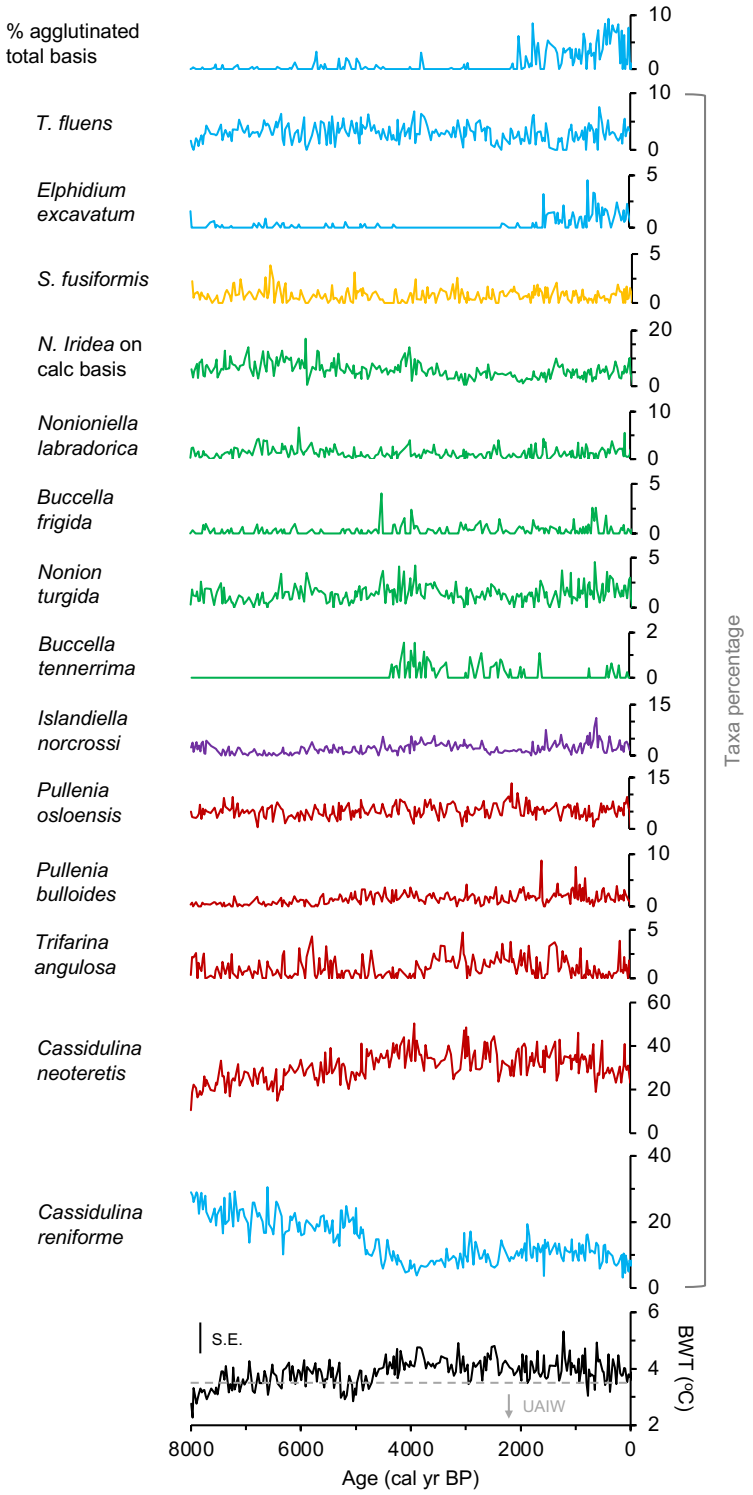

Fig S5: Select benthic species used to estimate BWT in MD99-2269 over the last 8 cal ka BP. Species colors indicate environmental preferences: red=Atlantic; blue=Arctic, purple=mixed Atlantic Water, green=productivity, yellow=indifferent.

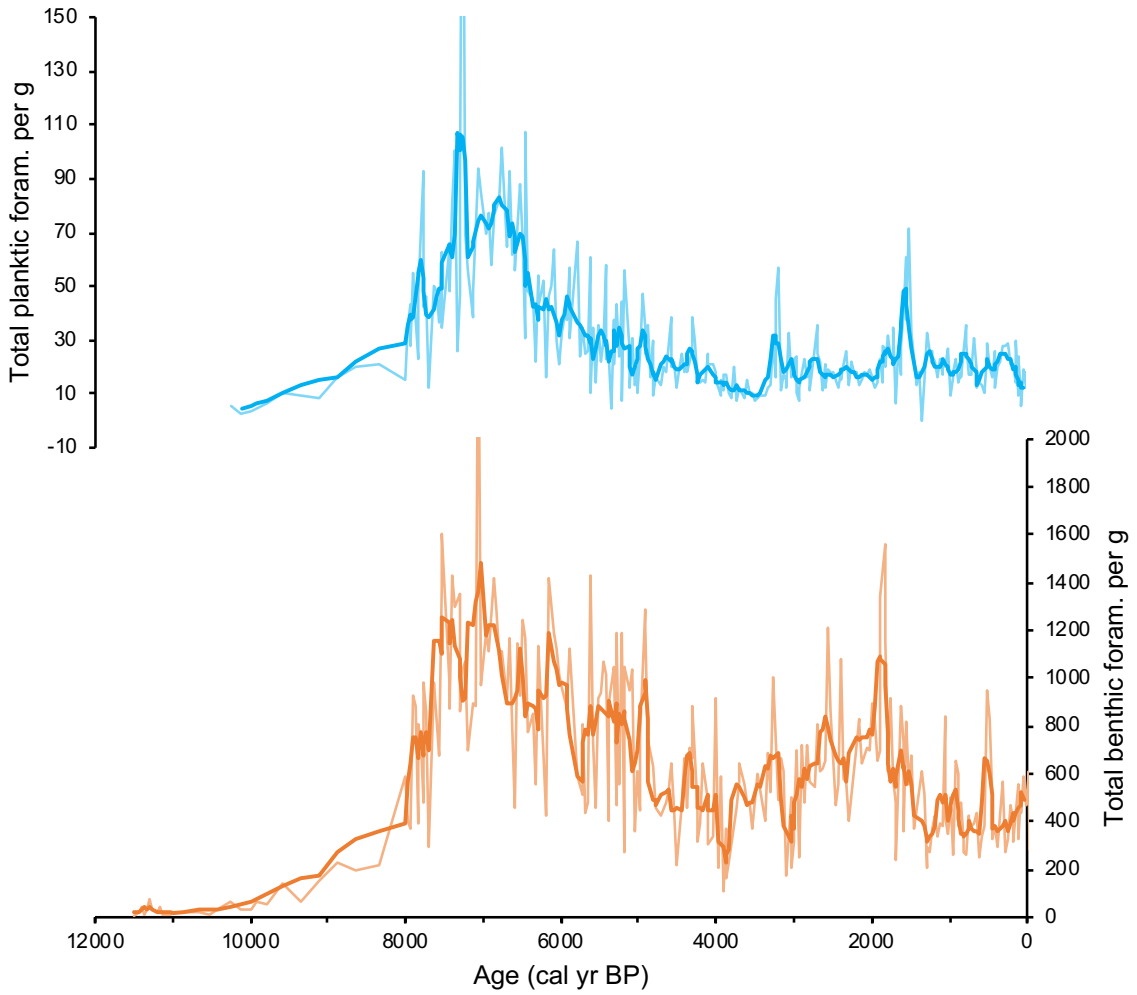

Fig. S6: Downcore records from MD99-2269 for planktic and benthic foraminifera per gram. Bold line is a 5-pt running mean.

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