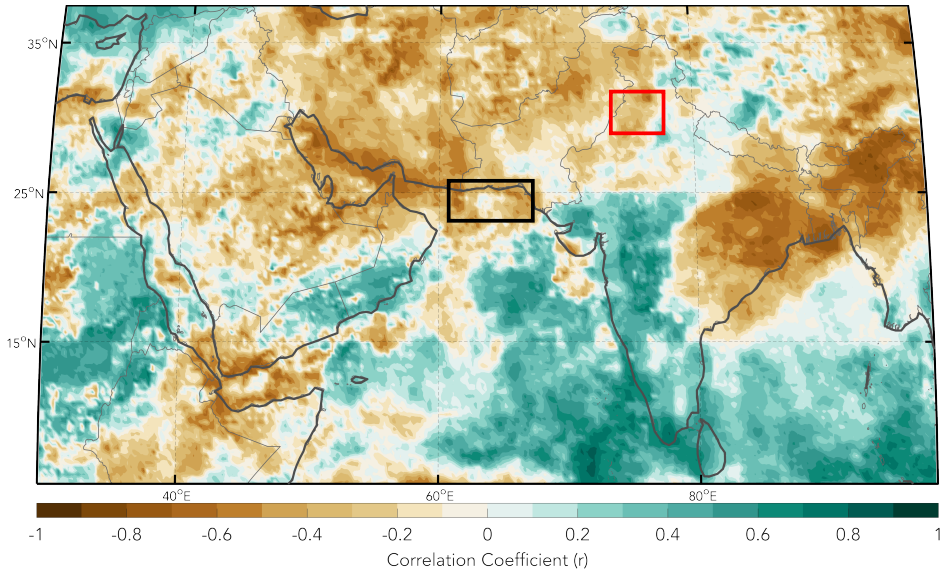
Supplementary Materials

1. Modern Climatology

Important limitations to modern climatological observations include their sparseness and short collection periods, which precludes investigations of multidecadal climate variability or longer (Abram et al. 2016). Even determining the stationarity and significance of interannual-to-decadal patterns of climate variability using instrumental records can be challenging. Nevertheless, the use of modern datasets allows us to look at climatic patterns at synoptic scales and establish their physical consistency for paleoclimate interpretation. Thus, in addition to exploring Holocene paleoclimate reconstructions from the eastern Northern Hemisphere and Tropics (see main text) we explored field correlations on interannual timescales (Thirumalai et al. 2018) to assess modern relationships between sea-surface temperatures in the Arabian Sea and winter monsoon rainfall over the region of interest, the upper Ghaggar-Hakra interfluve.



Suppl. Fig. 1. Correlation map between modern DJF rainfall over the entire map domain and DJF SSTs in the northernmost coastal Arabian Sea (denoted by the black box). Data comes from the HadISST dataset (Rayner et al., 2003) for SST and TRMM for rainfall (Huffman et al. 2007). Red box encompasses the upper Ghaggar-Hakra interfluve.

The TRMM dataset for rainfall (Huffman et al. 2007) and the HadISST dataset for SSTs (Rayner et al. 2003) were used over the 1998 to 2014 time domain. Wintertime SST averages (i.e., December, January, and February composites; hereafter DJF) and rainfall data were considered. The wintertime spatial pattern correlation between coastal SSTs in the northern Arabian Sea (i.e., red box along the Makaran Coast) and regional rainfall amounts during DJF is shown in Supplementary Figure 1. Green colors indicate positive

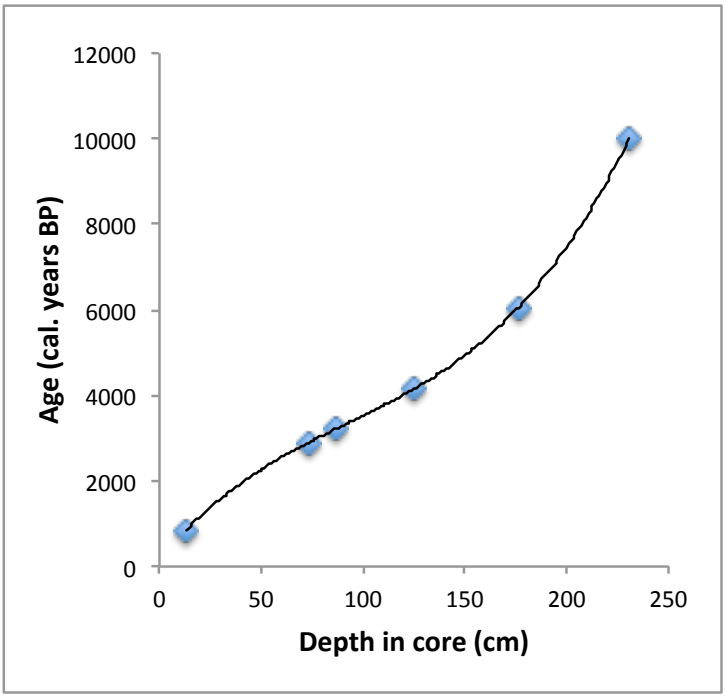
correlations, i.e., more (or less) rainfall with warmer (cooler) SSTs whereas brown colors indicate areas of anticorrelation where higher rainfall occurs with cooler SSTs in the northern Arabian Sea.

This exercise indicates that a large zonal swath from the eastern Mediterranean to the western Himalayas is *negatively* correlated with wintertime coastal Arabian Sea SSTs. Although the short-term length of the rainfall dataset inhibits us from interpreting the magnitude of these correlations at face value and assessing significance (moreover, causation), the consistent and large spatial patterns of anticorrelation give us additional confidence in establishing a link between Arabian Sea SSTs and wintertime rainfall.

2. Age Model

The chronology for the Holocene section of the core was previously reported in Orsi et al. (2017) and is based on calibrated radiocarbon dates of five multi-specimen samples of planktic foram *Orbulina universa* and one mixed planktic foraminifer sample. The calibrated radiocarbon dates were used to derive a simple age model - a third order polynomial (Supplementary Figure 2) - that was used to interpolate ages (in years BP) for each sample depth (in cm):

$$\text{Age} = 0.0013*(\text{depth})^3 - 0.3631*(\text{depth})^2 + 56.906*(\text{depth}) + 164.08 \qquad r^2 = 0.99999$$



Suppl. Fig. 2. Calibration curve for the Holocene sediments in core Indus 11C.

Suppl. Table 1. Depth distribution of paleo-DNA taxa (in %) from core Indus 11C that used for factor analysis.

Paleo-DNA Taxa (%) / Sample Depth (cm)	1	5	10	16	21	27	32	37	43	48	54	59	66	71	76	79	82	85	88	96.4
Eukaryota;Viridiplantae;Streptophyta;Embryophyta;Anthocerotophyta;Anthocerotopsida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0005	0.0011	0	0	0	0.0024
Eukaryota;Metazoa;environmental samples;invertebrate environmental sample;Other;Other	0	0	0	0	0	0	0	0	0	0	0.0005	0.0007	0	0	0	0	0	0	0	0.0012
Eukaryota;Haptophyceae;unclassified Haptophyceae;unclassified coccolithophorid CCMP300;Other;Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;Mollusca;Bivalvia;Pteriomorphia;Mytiloida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0005	0	0
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Cochlodinium	0	0	0	0.0005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;stramenopiles;Eustigmatophyceae;Eustigmatales;Monodopsidaceae;Nannochloropsis	0	0	0.001	0	0	0.0023	0	0.0005	0	0.0005	0	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Syndiniaceae;Syndinium	0	0	0	0	0	0	0	0.0005	0.0012	0	0.0005	0	0	0	0	0	0.0011	0	0	0
Eukaryota;Rhizaria;Cercozoa;Cercomonadida;Cercomonadidae;Paracercomonas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Rhodophyta;Bangiophyceae;Bangiales;Bangiaceae;Porphyra	0	0	0	0	0	0	0	0	0.0017	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;Chordata;Tunicata;Thaliacea;Doliolida	0	0	0	0.0005	0	0	0	0	0	0	0.0005	0	0.0004	0.0005	0	0	0	0	0	0.0006
Eukaryota;Haptophyceae;Phaeocystales;Phaeocystaceae;Phaeocystis;Phaeocystis globosa	0.0007	0.0009	0	0	0.0005	0	0.0006	0	0	0.0005	0	0	0	0	0	0	0	0	0	0
Eukaryota;Viridiplantae;Chlorophyta;Trebouxiophyceae;Chlorella;'Chlorella' luteoviridis	0	0.0009	0.0005	0	0	0	0	0	0	0	0.0009	0.0007	0	0	0	0	0.0005	0	0.0006	0
Eukaryota;Metazoa;Chordata;Tunicata;Thaliacea;Salpida	0	0	0	0	0	0.0006	0	0	0.0004	0.002	0	0	0	0.0005	0	0	0.0011	0	0.0006	0
Eukaryota;Metazoa;Annelida;Clitellata;Branchiobdellae;Branchiobdellida	0	0	0	0	0	0	0	0.0015	0	0	0	0	0	0	0	0	0	0	0	0.0012
Eukaryota;Amoebozoa;Tubulinea;Euamoebida;Tubulinida;Hartmannellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0005	0	0	0	0	0
Eukaryota;Alveolata;environmental samples;Uncultured marine alveolate Group II DH145-EKD20;Other;Other	0	0	0	0	0	0	0	0	0	0	0.0009	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;Nematoda;Chromadorea;Oxyurida;Oxyuroidea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0006	0	0	0	0
Eukaryota;stramenopiles;Oomycetes;Peronosporales;Phytophthora;Phytophthora infestans T30-4	0	0.0013	0	0.0025	0	0.0029	0	0	0.0004	0	0	0	0	0	0	0.0011	0	0	0	0
Eukaryota;Rhizaria;unclassified Rhizaria;Acantharian sp. 6201;Other;Other	0	0.0009	0.0005	0	0	0.0012	0	0	0	0.001	0.0005	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Prostomatea;Prorodontida	0	0	0	0	0	0	0	0	0	0	0.0014	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Trachylina;Trachymedusae	0	0	0	0	0	0	0	0	0	0	0	0.002	0	0	0	0	0	0	0	0.0018
Eukaryota;Fungi;Dikarya;Ascomycota;Saccharomycotina;Saccharomycetes	0	0	0	0.001	0	0	0.0012	0	0	0.0005	0	0	0	0	0	0	0	0	0	0
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Plagoniidae;Lithomelissa	0	0.0009	0	0	0	0	0.0012	0	0	0.002	0	0	0.0009	0	0	0	0	0.0005	0	0
Eukaryota;Metazoa;Bryozoa;Gymnolaemata;Cheilostomatida;Neocheilostomatina	0	0	0.001	0.001	0.0005	0	0.0024	0	0	0	0.0023	0.0007	0	0.0009	0	0	0	0	0	0.0006
Eukaryota;Rhizaria;Acantharea;Symphyacanthida;Symphyacanthida sp. 211;Other	0	0.0013	0	0.001	0	0.0017	0	0	0	0	0	0	0	0	0	0	0	0	0.0018	0
Eukaryota;stramenopiles;Bacillariophyta;Fragilariophyceae;Fragilariophycidae;Fragilariales	0	0	0	0	0	0.0017	0	0	0	0	0.0005	0	0	0	0	0	0	0	0	0
Eukaryota;Rhizaria;Acantharea;Symphyacanthida;Amphilithiidae;Amphibelone	0	0	0	0	0	0	0	0	0	0	0.0005	0	0	0	0	0	0	0	0.0006	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Spirotrichea;Hypotrichia	0	0	0	0	0	0.0017	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Viridiplantae;Chlorophyta;Mamiellophyceae;Mamiellales;Micromonas	0	0	0	0	0	0.0023	0	0	0	0	0	0.0007	0	0	0	0	0	0	0	0
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Chaetocerotophycidae;Chaetocerotales	0	0	0	0	0	0	0.0012	0	0	0	0.0005	0	0	0.0009	0	0.0006	0	0	0	0
Eukaryota;stramenopiles;Pseudopirsonia;Pseudopirsonia mucosa;Other;Other	0	0	0	0	0	0.0006	0.0018	0	0	0	0	0	0	0.0018	0	0	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;Prorocentrales;Prorocentraceae;Prorocentrum	0	0.0013	0	0	0	0	0	0	0	0	0	0.0013	0	0	0	0	0.0011	0	0	0
Eukaryota;stramenopiles;Labyrinthulida;Thraustochytriidae;Thraustochytrium;Thraustochytrium kinnei	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0006	0	0	0	0
Eukaryota;Metazoa;Arthropoda;Hexapoda;Collembola;Poduromorpha	0	0	0	0	0	0	0	0	0	0	0.0005	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Spirotrichea;Choreotrichia	0	0	0	0.0005	0	0.0012	0	0	0.0021	0	0.0005	0	0.0004	0.0009	0	0	0	0	0	0
Eukaryota;stramenopiles;environmental samples;uncultured heterokont;Other;Other	0	0	0	0.0005	0.0016	0	0	0.0005	0.0004	0.0015	0	0.0007	0.0009	0	0	0.0006	0.0005	0	0	0
Eukaryota;Choanoflagellida;environmental samples;uncultured choanoflagellate;Other;Other	0	0	0	0.0015	0	0	0.0012	0	0	0	0	0	0	0.0005	0	0	0	0.0005	0	0
Eukaryota;Cryptophyta;Pyrenomonadales;Geminigeraceae;Guillardia;Guillardia theta	0	0	0.001	0	0	0	0	0.0005	0	0	0	0	0	0	0	0	0.0016	0	0	0.0006
Eukaryota;Cryptophyta;environmental samples;uncultured cryptophyte;Other;Other	0	0.0018	0	0	0.0011	0.0017	0	0	0	0	0	0	0	0.0009	0	0	0	0.0005	0	0
Eukaryota;Metazoa;Annelida;Polychaeta;Scolecida;Orbiniidae	0	0.0004	0	0	0	0	0	0.0005	0	0.0005	0	0.0013	0.0018	0	0	0	0	0	0.0006	0.0036
Eukaryota;Cryptophyta;Pyrenomonadales;Chroomonadaceae;Chroomonas;Chroomonas sp. M1312	0	0	0	0.001	0	0	0	0	0	0	0	0	0.0004	0.0023	0	0	0	0	0	0
Eukaryota;Metazoa;Platyhelminthes;Trematoda;Digenea;Strigeidida	0	0	0	0	0.0043	0	0.0047	0	0	0	0	0	0	0	0.0026	0	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Dinophyceae sp. ex Thalassicolla nucleata;Other	0.0003	0	0	0	0	0	0	0	0	0	0	0	0	0.0027	0	0	0.0022	0	0.0012	0
Eukaryota;Metazoa;Nematoda;Chromadorea;Desmodorida;Desmodoridae	0	0.0004	0	0	0	0	0.0006	0	0.0008	0	0.0009	0.0007	0	0.0009	0	0.0006	0.0005	0	0.0024	0
Eukaryota;Alveolata;Ciliophora;environmental samples;uncultured ciliate;Other	0	0.0013	0.0025	0	0.0016	0	0	0	0	0.004	0	0.0007	0	0	0	0	0	0	0	0.0006
Eukaryota;Metazoa;Mesozoa;Orthonectida;Rhopalura;Rhopalura ophiocomae	0	0	0	0	0	0	0.0024	0	0	0	0	0	0	0	0	0	0.0005	0	0.0006	0
Eukaryota;stramenopiles;PX clade;Phaeophyceae;Fucales;Sargassaceae	0	0.0004	0	0.0005	0	0.0029	0	0	0	0	0	0	0	0	0	0	0	0.001	0	0
Eukaryota;Alveolata;Dinophyceae;Noctilucales;Noctilucaceae;Noctiluca	0	0	0	0	0	0.0023	0	0	0	0	0	0.0007	0	0	0	0.0006	0	0	0	0
Eukaryota;Metazoa;Arthropoda;Crustacea;Malacostraca;Eumalacostraca	0	0	0	0	0	0.0006	0.0018	0	0	0	0	0.0007	0	0	0	0	0	0.0005	0	0
Eukaryota;Alveolata;Dinophyceae;Blastodiniales;Blastodinium;Blastodinium contortum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0018	0.0006
Eukaryota;stramenopiles;Bacillariophyta;Mediophyceae;Lithodesmiophycidae;Lithodesmiales	0	0	0.001	0.0025	0	0	0.0012	0	0	0.0015	0	0	0.0004	0.0009	0	0	0	0.0005	0	0
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Dinophyceae sp. Shepherd's Crook;Other	0	0	0.001	0	0	0	0.0012	0	0.0004	0	0	0	0.0004	0	0	0	0	0	0	0
Eukaryota;stramenopiles;Labyrinthulida;Thraustochytriidae;unclassified Thraustochytriidae;Thraustochytriidae sp. WO2007068997	0	0	0	0	0	0	0	0	0.0017	0.001	0.0014	0	0	0	0	0	0.0011	0.001	0	0
Eukaryota;Fungi;Chytridiomycota;environmental samples;uncultured Chytridiomycota;Other	0	0	0	0	0	0	0	0.0026	0	0	0	0	0.0004	0	0	0	0	0	0	0.0053
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Hydroida;Leptomedusae	0	0.0013	0	0	0	0.0023	0	0	0	0.001	0	0	0	0.005	0	0	0.0011	0.0024	0	0
Eukaryota;Fungi;Fungi incertae sedis;Basal fungal lineages;environmental samples;uncultured rhizosphere zygomycete	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Theoperidae;Artostrobus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;Annelida;Polychaeta;Scolecida;Spionida	0	0.0004	0.001	0	0	0	0.0006	0	0.0008	0.0025	0.0014	0	0	0.0014	0	0	0	0	0.0018	0
Eukaryota;Alveolata;unclassified Alveolata;Ichthyodinium;Ichthyodinium chabelardi;Other	0	0.0004	0	0.001	0	0.0006	0.0012	0	0	0.001	0	0	0	0	0	0	0	0.001	0	0
Eukaryota;stramenopiles;Bacillariophyta;Bacillariophyceae;Bacillariophycidae;Bacillariales	0	0	0	0	0	0	0	0	0	0	0.0005	0	0	0.0005	0	0	0.006	0	0	0
Eukaryota;Metazoa;Chordata;Cephalochordata;Branchiostomidae;Branchiostoma	0	0	0	0	0	0	0	0	0	0	0.0009	0.0007	0	0	0	0.0006	0.0005	0.001	0	0.0006
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Naked dinoflagellate UDNSW0701;Other	0	0	0	0	0	0	0	0	0	0.0005	0	0.006	0	0	0	0	0.0081	0	0.0048	0
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Hydroida;Limnomedusae	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0009	0.0005	0	0	0.001	0	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Oligohymenophorea;Peniculida	0.0007	0.0013	0.002	0	0	0	0	0	0	0	0	0	0.0009	0.0032	0	0	0.0011	0	0.0012	0.0024
Eukaryota;Fungi;Dikarya;Ascomycota;Taphrinomycotina;Pneumocystidomycetes	0	0.0009	0.0005	0	0	0	0.0006	0.0005	0	0.001	0	0.002	0	0.005	0.0015	0	0.0005	0	0	0
Eukaryota;Alveolata;Ellobiopsidae;Thalassomyces;Thalassomyces fagei;Other	0	0	0.0025	0.002	0	0	0	0	0.0004	0.0005	0.0014	0.002	0	0	0	0	0.0011	0	0.0024	0
Eukaryota;Rhizaria;Polycystinea;Spumellaria;unclassified Spumellaria;Spumellarian radiolarian 7017	0.0021	0.0004	0.0015	0.0015	0.0033	0	0.0024	0.0021	0.0017	0.001	0.0014	0.0007	0.0009	0.0045	0.0015	0	0	0	0.0006	0
Eukaryota;Rhizaria;Acantharea;Chaunacanthida;Chaunacanthid 217;Other	0	0	0.001	0	0.0011	0	0	0	0.0021	0	0	0.0007	0	0.0032	0	0.0011	0.0005	0.0005	0	0.0036
Eukaryota;stramenopiles;Bacillariophyta;Bacillariophyceae;Bacillariophycidae;Naviculales	0	0	0.0035	0	0	0.0069	0	0.0005	0.0008	0.0005	0	0	0	0.0014	0.0015	0	0.0005	0	0.0012	0.0041
Eukaryota;stramenopiles;Bacillariophyta;Mediophyceae;Biddulphiophycidae;Hemiaulales; Eucampia	0	0.0004	0.0015	0	0	0	0	0.0005	0	0.0025	0	0.004	0	0.0018	0.001	0	0	0	0	0
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Rhizosoleniophycidae;Rhizosoleniales	0	0	0.0005	0.002	0.0027	0	0	0	0.0012	0.001	0	0.0013	0	0	0.0005	0	0	0.0015	0	0
Eukaryota;Fungi;Dikarya;Ascomycota;Pezizomycotina;Eurotiomycetes	0.0079	0.0018	0	0.0005	0	0.0012	0.0012	0	0	0	0	0.0033	0.0004	0.0005	0	0	0	0	0	0.0024
Eukaryota;Rhodophyta;Compsopogonophyceae;Compsopogonales;Compsopogonaceae;Compsopogonopsis	0	0.0004	0	0	0.0005	0	0.0047	0	0.0008	0	0.0018	0	0	0	0.0005	0.0011	0.0005	0	0.0048	0.0107
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Spongodiscidae;Stylodictya	0.0007	0.0013	0	0.0025	0.0054	0.0006	0.0071	0.0031	0.0004	0	0	0	0	0.0036	0.0021	0.0011	0	0	0	0
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Pterocorythidae;Pterocorys	0	0.0116	0.0035	0.001	0.0038	0.0006	0	0.001	0.0012	0	0	0	0	0.0009	0.0072	0	0	0	0	0
Eukaryota;Haptophyceae;Reticulosphaerales;Reticulosphaera;Reticulosphaera socialis;Other	0	0.0009	0	0.0015	0	0	0	0.0015	0.0008	0	0	0.0027	0	0.0018	0	0.0006	0.0016	0.0005	0	0.003
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Gymnodinium	0.0003	0	0.0005	0.002	0.0016	0	0.0053	0	0	0.0015	0	0.006	0	0.0036	0.001	0.0028	0.0011	0	0.0024	0
Eukaryota;Rhizaria;Cercozoa;Cercomonadida;Cercomonadidae;environmental samples	0	0	0	0.001	0	0	0	0.0005	0.0008	0.0005	0.0009	0.0013	0.0048	0.0045	0	0.0022	0.0005	0.0005	0	0
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Siphonophora;Cystonectae	0.0007	0.0063	0.006	0.0015	0.0103	0.004	0.01	0	0	0.0005	0	0.0027	0.0013	0.0032	0	0.0006	0.0016	0	0	0.0012
Eukaryota;Metazoa;Ctenophora;Typhlocoela;Platyctenida;Coeloplanidae	0.0003	0.0018	0.0035	0.0005	0.0098	0.0017	0.0065	0	0.0025	0.0025	0.0009	0.0007	0.0026	0.0036	0.0015	0.0006	0.0005	0.0019	0.0097	0
Eukaryota;stramenopiles;Oomycetes;Myzocytiopsidales;Eurychasmataceae;Eurychasma	0	0	0	0.004	0	0	0.0041	0.001	0	0	0	0	0.0018	0.0005	0	0.0044	0	0.0005	0	0
Eukaryota;Rhizaria;Acantharea;environmental samples;uncultured marine Acantharea;Other	0	0.0009	0.007	0.0035	0.0022	0.0017	0.0059	0.0005	0.005	0.006	0.0014	0.002	0.0018	0.0014	0.0005	0.0011	0.0005	0.0005	0	0
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;Pseudoscourfieldiales;Pycnococcaceae	0.0007	0.0009	0.001	0.0005	0.0027	0.0029	0.0035	0.0005	0.0029	0.0005	0.0032	0.004	0.0009	0.0005	0.0041	0.0006	0.0038	0.0019	0	0
Eukaryota;Metazoa;Chordata;Craniata;Vertebrata;Euteleostomi	0.0021	0.0013	0.001	0.0065	0.0016	0.0012	0.0047	0.0144	0.0008	0	0.0005	0.0007	0.0013	0.0014	0.0026	0	0	0.0024	0.0012	0.0047
Eukaryota;Fungi;Fungi incertae sedis;Basal fungal lineages;Entomophthoromycotina;Entomophthorales	0	0.0004	0	0.003	0.0022	0	0.0018	0.0005	0	0	0.0009	0.002	0.0009	0	0	0.0033	0.0033	0.0044	0	0.0166
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Karlodinium	0.0003	0	0.003	0.0025	0	0.0017	0	0.001	0.0054	0	0.0009	0	0.0022	0.0018	0.0021	0.0011	0.0016	0	0.003	0
Eukaryota;Viridiplantae;Chlorophyta;Chlorophyceae;Chlamydomonadales;environmental samples	0	0.0058	0	0	0	0.0035	0	0.0021	0	0.003	0.0079	0.0114	0.0022	0	0	0	0	0	0	0
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Collosphaeridae;Collosphaera	0	0	0	0	0	0.0006	0	0	0	0	0	0	0.0004	0.0009	0.0005	0	0.0011	0.0005	0.0024	0.0089
Eukaryota;Fungi;Dikarya;Basidiomycota;Agaricomycotina;Agaricomycetes	0	0.0009	0.0015	0.0065	0.0005	0.004	0	0.0026	0	0.002	0.0009	0.0033	0.0009	0	0.001	0.0006	0.0022	0.0005	0.0006	0.003
Eukaryota;Rhodophyta;environmental samples;uncultured rhodophyte;Other;Other	0	0	0.0005	0.0025	0.0005	0	0.0136	0.0005	0.0004	0	0.0014	0	0	0	0.0015	0	0.0033	0.001	0.0036	0.0041
Eukaryota;Alveolata;Dinophyceae;Lophodiniales;Lophodiniaceae;Woloszynskia	0	0	0.002	0.0035	0.0065	0.0087	0.0242	0.001	0.0017	0	0	0.0027	0.0018	0.0009	0.0057	0.0017	0	0.0044	0.0091	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Oligohymenophorea;Scuticociliatia	0.0014	0.0022	0.0115	0.0035	0	0.0052	0.0124	0	0.0004	0.001	0.0129	0.0007	0.0048	0.0032	0.001	0.0017	0.0033	0.0019	0.006	0.013
Eukaryota;Metazoa;Chordata;Tunicata;Appendicularia;Oikopleuridae	0.001	0.0036	0.0045	0.0045	0.0043	0.0023	0.0083	0.0026	0.0012	0.002	0.0014	0.004	0.0009	0.0036	0.0041	0.0011	0.0011	0.0034	0.0054	0.0041
Eukaryota;Metazoa;Arthropoda;Crustacea;Maxillopoda;Copepoda	0.0007	0.0013	0.0025	0.0005	0.0043	0.0254	0.0041	0	0.0029	0.0015	0.0014	0.0007	0.0022	0.0005	0	0.0111	0	0	0.0054	0
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;Prasinophyceae sp. CCMP1205;Other	0.0038	0.0076	0.0125	0.0025	0.0049	0.0058	0.0112	0.0057	0.0083	0.0045	0.0046	0.0073	0.0039	0.0027	0.0077	0.0033	0.006	0.001	0.0079	0
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Thalassiosirophycidae;Thalassiosirales	0	0.0018	0.0105	0.0035	0.0065	0	0.0041	0.001	0	0.004	0.0046	0.002	0.0009	0.0032	0.001	0.0011	0.0027	0.0015	0.0042	0.0053
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Actinommidae;Hexacontium	0.0021	0.0067	0.009	0.006	0.0184	0.0029	0.0035	0.0087	0.0062	0.0129	0.0014	0.006	0.0018	0.0045	0.0113	0.0022	0.0016	0.0029	0.0066	0.0107
Eukaryota;Alveolata;environmental samples;uncultured alveolate;Other;Other	0.0021	0.0036	0.002	0.011	0.0005	0.0017	0.0207	0.0103	0.0157	0.006	0.0018	0.0013	0.0022	0.0005	0.0015	0.0044	0	0	0.0018	0.0012
Eukaryota;Rhizaria;Cercozoa;environmental samples;uncultured cercozoan;Other	0.0017	0.008	0.0015	0.0055	0.0157	0.0023	0.0024	0.0046	0.0099	0.003	0.0042	0.0134	0.0039	0.0086	0.0051	0.0017	0.0054	0.0005	0.0085	0
Eukaryota;Viridiplantae;Chlorophyta;environmental samples;uncultured Chlorophyta;Other	0	0	0.0191	0.0235	0.0114	0	0	0.0036	0	0.0184	0	0.004	0.0171	0.0168	0.0118	0	0.0174	0	0.0012	0.0018
Eukaryota;Viridiplantae;Streptophyta;Embryophyta;Tracheophyta;Spermatophyta	0.0003	0.0125	0	0.013	0.0022	0.0058	0.0035	0.0062	0.0037	0.002	0.0217	0.0027	0.0004	0.0023	0.0041	0.0017	0.0038	0.0015	0.0054	0.0059
Eukaryota;Rhizaria;Cercozoa;Silicofilosea;Thaumatomonadida;Thaumatomastigidae	0	0.0013	0.004	0.004	0.0016	0.0006	0.0095	0.0072	0.0041	0.007	0.0065	0.0027	0.0053	0.0114	0.0046	0.0022	0.0054	0.0015	0.0024	0.0012
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Ethmosphaeridae;Styptosphaera	0.0027	0.004	0.0065	0.0025	0.0033	0.004	0.0053	0	0.0017	0.0095	0.0032	0.0073	0.0018	0.0018	0.001	0.0017	0.0022	0.001	0.0042	0.0077
Eukaryota;Alveolata;Apicomplexa;Coccidia;Eucoccidiorida;Eimeriorina	0	0	0	0.0005	0	0.0012	0.0059	0	0	0.002	0.0023	0.0007	0.0131	0.0327	0.0057	0.0066	0	0	0	0.0065
Eukaryota;Metazoa;Cnidaria;Scyphozoa;Semaeostomeae;Pelagiidae	0.0147	0.025	0.0557	0.009	0.007	0.004	0.0165	0.0103	0.005	0.011	0.0106	0.0134	0.0074	0.0064	0.0046	0.0083	0.0141	0.0058	0.0006	0.0012
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Syndiniaceae;Hematodinium	0	0.0009	0.001	0.0045	0.0016	0.0023	0.0077	0.0139	0.0004	0.012	0.0005	0.0067	0.0096	0.0105	0.016	0.0083	0.006	0	0.0073	0.0006
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Amoebophryaceae;Amoebophrya	0.0017	0.0139	0.003	0.008	0.0054	0	0.0012	0.0005	0.0004	0	0.0079	0.0294	0.0026	0.0127	0.0005	0	0.0033	0.0083	0.0085	0.0018
Eukaryota;Fungi;Dikarya;Basidiomycota;Ustilaginomycotina;Exobasidiomycetes	0.0034	0.0013	0.0055	0.003	0.0022	0.0063	0.0106	0	0.0261	0.0015	0.0005	0.0067	0.0031	0.0014	0.0067	0	0.0076	0.0005	0.0048	0.0681
Eukaryota;Fungi;Dikarya;Ascomycota;mitosporic Ascomycota;Phoma	0	0	0.0015	0.0015	0.0038	0.0012	0.0035	0.0026	0.0004	0	0.0028	0.0013	0.0004	0.0005	0.0031	0	0.0103	0.0058	0.0036	0.0124
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Colpodea;Colpodida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0011	0	0	0
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;environmental samples;uncultured Prasinophyceae	0	0.0022	0.003	0.006	0.0119	0.0098	0.0225	0.0072	0.0157	0.0085	0.0023	0.0013	0.0083	0.0059	0.0031	0.0077	0.0114	0.0194	0.0109	0.0083
Eukaryota;Rhizaria;Cercozoa;Thecofilosea;Cryomonadida;Cryothecomonas	0	0.0058	0.005	0.0115	0.0065	0.0115	0.0142	0.0159	0.0066	0.0129	0.0226	0.0107	0.0105	0.0323	0.0057	0.0227	0.0119	0.0053	0.0224	0.0178
Eukaryota;Alveolata;Dinophyceae;Blastodiniales;Blastodinium;Blastodinium navicula	0	0.0009	0.0005	0	0	0.0081	0.0242	0	0	0.0025	0.0009	0.0067	0.0013	0.0018	0.0031	0.01	0.0022	0.0039	0	0.0337
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Colpodea;Cyrtolophosidida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0006	0	0	0	0
Eukaryota;stramenopiles;environmental samples;uncultured stramenopile;Other;Other	0.0014	0.0929	0.0241	0.0155	0.0168	0.0271	0.0455	0.0237	0.0066	0.0468	0.0638	0.0508	0.007	0.0255	0.0273	0.016	0.0385	0.0185	0.023	0.0006
Eukaryota;Fungi;Dikarya;Ascomycota;Pezizomycotina;Dothideomycetes	0.0003	0.0027	0	0.007	0	0.0098	0.0006	0.0082	0.0037	0.0115	0.0023	0.0013	0.0022	0.0118	0.0082	0.0149	0.0049	0.001	0.0048	0.0687
Eukaryota;Metazoa;Cnidaria;Anthozoa;Hexacorallia;Actiniaria	0	0.0027	0.0025	0.0035	0.0005	0.0029	0	0.0031	0.0045	0.0045	0.0009	0.0087	0.0009	0.0009	0.0093	0.0221	0.0005	0.0015	0.0109	0.0397
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Spongodiscidae;Euchitonia	0.0038	0.0152	0.0296	0.0235	0.0233	0.0098	0.0272	0.0046	0.0128	0.0134	0.0194	0.02	0.0105	0.0159	0.0098	0.0089	0.0185	0.018	0.0193	0.0391
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Theoperidae;Pterocanium	0.0517	0.0304	0.1299	0.0918	0.0228	0.0254	0.042	0.0344	0.0864	0.0847	0.0102	0.0434	0.0136	0.0318	0.0031	0.026	0.0179	0.0151	0.0502	0.003
Eukaryota;Alveolata;environmental samples;uncultured marine alveolate;Other;Other	0.0051	0.0621	0.0451	0.0334	0.0157	0.0796	0.0331	0.0298	0.0405	0.0174	0.025	0.0254	0.0031	0.0459	0.0695	0.1057	0.0635	0.0632	0.0725	0.0207
Eukaryota;Rhizaria;environmental samples;uncultured rhizarian;Other;Other	0.0051	0.0286	0.0436	0.025	0.0347	0.0283	0.0491	0.0067	0.0161	0.0324	0.0245	0.0381	0.0153	0.045	0.0216	0.0127	0.0261	0.0117	0.0332	0.0669
Eukaryota;Alveolata;environmental samples;Uncultured marine alveolate Group I DH148-EKD22;Other;Other	0.0007	0.0871	0.0502	0.0793	0.0314	0.0785	0.1082	0.1398	0.0567	0.0911	0.0079	0.0628	0.0298	0.0414	0.1467	0.2258	0.1346	0.0734	0.0586	0.119
Eukaryota;Alveolata;Dinophyceae;environmental samples;uncultured dinoflagellate;Other	0.0096	0.1492	0.0983	0.1173	0.1653	0.1396	0.1637	0.1224	0.0728	0.128	0.1479	0.2191	0.163	0.2206	0.2671	0.14	0.1857	0.3233	0.1897	0.093
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Sphaerozoidae;Rhaphidozoum	0.0859	0.1801	0.3485	0.3897	0.4412	0.3895	0.1809	0.4751	0.5335	0.3889	0.5217	0.2719	0.6148	0.3042	0.2578	0.2778	0.2964	0.1473	0.2937	0.1664

Paleo-DNA Taxa (%) / Sample Depth (cm)	101.4	107.4	110.9	114.4	118.4	122.4	127.4	133.4	138.4	143.4	148.4	154.4	159.4	164.4	175.4	183.4	191.4	197.6	208.6	224.6	237.6	247.6	257.6	267.6	278.7
Eukaryota;Viridiplantae;Streptophyta;Embryophyta;Anthocerotophyta;Anthocerotopsida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;environmental samples;invertebrate environmental sample;Other;Other	0	0.002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Haptophyceae;unclassified Haptophyceae;unclassified coccolithophorid CCMP300;Other;Other	0.0006	0	0	0	0.001	0	0.0015	0.001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0004	0
Eukaryota;Metazoa;Mollusca;Bivalvia;Pteriomorphia;Mytiloida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0016	0	0	0.0005	0.0017	0	0.0004	0
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Cochlodinium	0	0	0.0011	0	0	0	0	0	0	0	0	0	0	0	0	0.0017	0	0.0005	0	0	0.0016	0	0	0	0
Eukaryota;stramenopiles;Eustigmatophyceae;Eustigmatales;Monodopsidaceae;Nannochloropsis	0	0	0	0	0	0	0	0	0	0	0	0	0	0.002	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Syndiniaceae;Syndinium	0	0.0013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0009	0	0.0009	0
Eukaryota;Rhizaria;Cercozoa;Cercomonadida;Cercomonadidae;Paracercomonas	0	0	0	0.0007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0041	0.0022	0	0.0007	0	0
Eukaryota;Rhodophyta;Bangiophyceae;Bangiales;Bangiaceae;Porphyra	0	0.0007	0	0	0	0	0	0	0	0	0	0.0012	0	0	0	0	0	0	0	0.0033	0	0.0009	0	0	0
Eukaryota;Metazoa;Chordata;Tunicata;Thaliacea;Doliolida	0	0	0.0005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0016	0	0.0008	0	0.0009	0.001	0	0.0003
Eukaryota;Haptophyceae;Phaeocystales;Phaeocystaceae;Phaeocystis;Phaeocystis globosa	0	0	0	0	0	0	0	0	0	0	0.0006	0	0	0	0	0	0	0	0	0.0008	0.0011	0.0004	0.0007	0	0.001
Eukaryota;Viridiplantae;Chlorophyta;Trebouxiophyceae;Chlorella;'Chlorella' luteoviridis	0	0	0	0	0	0	0	0	0.0006	0.0006	0	0.0006	0	0.0007	0.0007	0	0	0.0005	0.0004	0	0	0	0	0	0
Eukaryota;Metazoa;Chordata;Tunicata;Thaliacea;Salpida	0	0	0	0	0	0.0011	0	0	0	0	0	0.0012	0	0	0	0	0	0.0011	0	0	0	0	0	0	0
Eukaryota;Metazoa;Annelida;Clitellata;Branchiobdellae;Branchiobdellida	0.0032	0	0	0	0.0005	0.0016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0005	0	0	0	0
Eukaryota;Amoebozoa;Tubulinea;Euamoebida;Tubulinida;Hartmannellidae	0.0006	0	0	0	0	0	0	0.0005	0	0	0	0	0	0	0	0.0022	0	0.0005	0	0.0041	0	0	0	0.0004	0
Eukaryota;Alveolata;environmental samples;Uncultured marine alveolate Group II DH145-EKD20;Other;Other	0	0	0	0	0	0	0	0	0	0.0012	0	0	0	0	0.0037	0	0	0	0	0	0	0	0.001	0.0022	0
Eukaryota;Metazoa;Nematoda;Chromadorea;Oxyurida;Oxyuroidea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0047	0	0.004	0
Eukaryota;stramenopiles;Oomycetes;Peronosporales;Phytophthora;Phytophthora infestans T30-4	0	0	0	0	0	0	0	0	0	0.0006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0007
Eukaryota;Rhizaria;unclassified Rhizaria;Acantharian sp. 6201;Other;Other	0	0	0.0005	0.0007	0.0025	0	0	0	0	0	0	0	0.0018	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Prostomatea;Prorodontida	0	0	0	0	0	0	0	0	0	0	0	0	0.0005	0	0	0	0	0	0	0.0057	0	0	0	0.0022	0
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Trachylina;Trachymedusae	0	0.0034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0016	0	0	0	0.0004	0.0007
Eukaryota;Fungi;Dikarya;Ascomycota;Saccharomycotina;Saccharomycetes	0	0.002	0	0	0	0	0	0	0.0006	0	0	0	0	0	0	0	0	0.0005	0	0.0033	0	0	0	0.0009	0
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Plagoniidae;Lithomelissa	0	0	0	0	0.0005	0	0	0	0	0	0.0036	0	0	0	0	0	0	0	0.0004	0	0	0	0.0003	0	0
Eukaryota;Metazoa;Bryozoa;Gymnolaemata;Cheilostomatida;Neocheilostomatina	0.0006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0006	0	0	0	0	0	0	0	0	0
Eukaryota;Rhizaria;Acantharea;Symphyacanthida;Symphyacanthida sp. 211;Other	0	0	0	0.002	0	0.0011	0	0	0	0	0	0	0	0	0	0	0	0.0011	0	0	0.0005	0	0	0	0
Eukaryota;stramenopiles;Bacillariophyta;Fragilariophyceae;Fragilariophycidae;Fragilariales	0	0	0	0	0.0005	0	0	0	0	0	0.0006	0	0	0.0013	0	0	0	0.0044	0	0	0	0	0	0.0018	0
Eukaryota;Rhizaria;Acantharea;Symphyacanthida;Amphilithiidae;Amphibelone	0.0006	0.004	0.0005	0	0	0.0011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0013	0	0.0018	0.0007
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Spirotrichea;Hypotrichia	0	0	0	0	0	0	0	0	0	0.0012	0	0	0	0	0	0	0	0.0016	0	0	0	0.0055	0.0003	0	0.0007
Eukaryota;Viridiplantae;Chlorophyta;Mamiellophyceae;Mamiellales;Micromonas	0	0	0	0	0	0.0011	0	0	0.0011	0	0	0	0	0	0	0	0	0	0	0	0.0032	0.0021	0	0.0013	0.0003
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Chaetocerotophycidae;Chaetocerotales	0	0	0	0	0	0	0.0005	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0016	0.0026	0	0.004	0.001
Eukaryota;stramenopiles;Pseudopirsonia;Pseudopirsonia mucosa;Other;Other	0	0	0	0.0054	0	0	0	0	0.0006	0	0	0	0	0	0	0	0	0	0	0	0.0027	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;Prorocentrales;Prorocentraceae;Prorocentrum	0	0.0047	0	0	0	0	0	0	0	0.0012	0	0	0	0.002	0.0007	0.0006	0	0	0	0	0	0	0	0	0
Eukaryota;stramenopiles;Labyrinthulida;Thraustochytriidae;Thraustochytrium;Thraustochytrium kinnei	0	0	0.0005	0	0.0041	0	0	0.0016	0	0.0018	0	0	0	0	0.0015	0	0	0	0	0.0025	0.0005	0	0	0	0.0003
Eukaryota;Metazoa;Arthropoda;Hexapoda;Collembola;Poduromorpha	0	0	0.0021	0.0034	0.002	0	0.001	0.0005	0	0.0012	0.0018	0	0.0009	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Spirotrichea;Choreotrichia	0	0	0	0	0	0	0	0	0	0	0	0.0012	0	0.0013	0	0	0	0	0	0	0.0005	0.0009	0	0.0018	0.0023
Eukaryota;stramenopiles;environmental samples;uncultured heterokont;Other;Other	0	0	0	0	0	0	0	0.0005	0	0	0.0018	0.0012	0	0.0007	0	0.0022	0	0	0	0	0	0	0	0	0
Eukaryota;Choanoflagellida;environmental samples;uncultured choanoflagellate;Other;Other	0	0	0	0	0	0.0011	0	0.001	0	0	0	0	0	0.0007	0.0007	0	0	0.0044	0	0	0	0.0021	0	0	0
Eukaryota;Cryptophyta;Pyrenomonadales;Geminigeraceae;Guillardia;Guillardia theta	0	0	0	0	0	0.0011	0.003	0	0	0	0.0006	0	0	0	0.003	0	0	0	0	0	0.0011	0.0013	0	0	0
Eukaryota;Cryptophyta;environmental samples;uncultured cryptophyte;Other;Other	0	0.0007	0.0005	0	0	0	0	0	0	0	0.0006	0	0	0	0	0.0006	0	0	0	0	0.0005	0.0009	0.0007	0.0035	0
Eukaryota;Metazoa;Annelida;Polychaeta;Scolecida;Orbiniidae	0	0	0	0	0	0.0011	0	0.001	0	0	0	0	0	0	0	0.0006	0	0	0	0	0.0022	0	0	0.0009	0
Eukaryota;Cryptophyta;Pyrenomonadales;Chroomonadaceae;Chroomonas;Chroomonas sp. M1312	0	0.0013	0	0	0	0	0	0	0	0	0.003	0	0.0009	0.0033	0.0022	0	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;Platyhelminthes;Trematoda;Digenea;Strigeidida	0	0	0	0	0	0.0005	0	0	0	0.0018	0.0006	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Dinophyceae sp. ex Thalassicolla nucleata;Other	0	0	0.0016	0	0	0	0	0	0	0	0	0	0	0	0	0.0006	0	0	0	0.0049	0.0011	0	0	0	0.0003
Eukaryota;Metazoa;Nematoda;Chromadorea;Desmodorida;Desmodoridae	0	0.0007	0	0	0.002	0.0011	0.0005	0.0005	0	0	0	0.0006	0	0	0	0.0011	0	0.0005	0	0	0	0	0	0	0
Eukaryota;Alveolata;Ciliophora;environmental samples;uncultured ciliate;Other	0	0	0	0	0	0	0	0	0	0	0	0.0018	0	0	0	0	0	0.0016	0	0	0.0005	0	0	0	0.0003
Eukaryota;Metazoa;Mesozoa;Orthonectida;Rhopalura;Rhopalura ophiocomae	0	0	0	0.0007	0	0	0	0.0031	0.0017	0.003	0	0	0	0.0007	0	0.0017	0	0	0	0	0.0011	0.0013	0.0003	0	0
Eukaryota;stramenopiles;PX clade;Phaeophyceae;Fucales;Sargassaceae	0.0006	0.0013	0.0011	0	0.0025	0.0011	0.0005	0	0.0006	0	0	0.0029	0	0	0.0015	0	0	0	0.0004	0	0	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;Noctilucales;Noctilucaceae;Noctiluca	0	0	0	0.0013	0	0.0011	0	0	0.0022	0	0	0.0006	0	0	0	0	0	0	0	0.0016	0.0038	0.0013	0.0003	0.0022	0
Eukaryota;Metazoa;Arthropoda;Crustacea;Malacostraca;Eumalacostraca	0.0006	0	0	0	0	0	0	0.0016	0	0	0	0	0	0	0	0	0	0	0	0.0025	0.0097	0	0	0.0009	0
Eukaryota;Alveolata;Dinophyceae;Blastodiniales;Blastodinium;Blastodinium contortum	0.0013	0	0	0.0061	0	0	0	0.0058	0	0	0.0006	0.0023	0	0	0	0	0	0	0	0	0	0	0	0.0004	0
Eukaryota;stramenopiles;Bacillariophyta;Mediophyceae;Lithodesmiophycidae;Lithodesmiales	0	0	0.0021	0	0	0	0	0	0	0	0	0.0006	0	0	0	0.0017	0	0	0	0.0057	0	0.0026	0.0003	0	0
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Dinophyceae sp. Shepherd's Crook;Other	0	0.0034	0.0005	0	0.0005	0	0.004	0	0.0006	0.0018	0	0	0.0027	0	0	0.0034	0	0	0	0	0	0.0013	0.001	0	0
Eukaryota;stramenopiles;Labyrinthulida;Thraustochytriidae;unclassified Thraustochytriidae;Thraustochytriidae sp. WO2007068997	0	0	0	0	0.0005	0.0011	0.0015	0.0021	0.0022	0	0.0042	0.0018	0	0	0.0007	0.0011	0	0	0.0004	0	0.0005	0	0.0014	0	0
Eukaryota;Fungi;Chytridiomycota;environmental samples;uncultured Chytridiomycota;Other	0	0	0.0095	0	0	0	0	0.0031	0	0	0	0	0	0	0	0	0	0	0.0008	0	0.0027	0	0	0	0
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Hydroida;Leptomedusae	0	0.0054	0	0.0027	0	0	0	0	0.0006	0	0.0012	0.0012	0	0	0	0	0	0	0	0	0	0.0004	0	0.0004	0
Eukaryota;Fungi;Fungi incertae sedis;Basal fungal lineages;environmental samples;uncultured rhizosphere zygomycete	0	0	0	0	0	0.0011	0	0	0	0	0	0	0	0.0026	0.0022	0.0028	0	0.0033	0	0.0074	0.0038	0	0.0003	0.0009	0.0007
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Theoperidae;Artostrobus	0.0013	0	0	0	0.0015	0.007	0	0.0016	0	0	0.006	0	0	0	0.0022	0.0011	0	0.0005	0	0.0025	0.0016	0	0	0	0
Eukaryota;Metazoa;Annelida;Polychaeta;Scolecida;Spionida	0	0.0013	0	0.0007	0	0	0	0	0	0	0.0018	0	0	0	0	0.0034	0.0003	0.0022	0	0.0057	0	0.0004	0	0	0.0003
Eukaryota;Alveolata;unclassified Alveolata;Ichthyodinium;Ichthyodinium chabelardi;Other	0	0	0	0	0	0.0016	0	0	0	0	0	0	0	0	0	0	0	0	0.0004	0.0025	0.0022	0.0051	0.0038	0.004	0.0017
Eukaryota;stramenopiles;Bacillariophyta;Bacillariophyceae;Bacillariophycidae;Bacillariales	0.0006	0.0034	0.0005	0	0	0.0021	0	0.001	0	0.0012	0	0	0	0.002	0	0.0022	0	0.0022	0	0	0	0.0004	0.0007	0.0031	0
Eukaryota;Metazoa;Chordata;Cephalochordata;Branchiostomidae;Branchiostoma	0.0013	0	0.0005	0.0047	0.0015	0	0.0005	0.0016	0.0011	0.0024	0	0.0064	0.0018	0	0.0007	0	0	0	0	0	0	0	0	0	0
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Naked dinoflagellate UDNSW0701;Other	0	0	0	0.0054	0	0	0.003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Hydroida;Limnomedusae	0.0026	0.0074	0.0016	0.0007	0	0	0.0005	0	0	0	0.0006	0.0006	0.0005	0.0007	0.006	0.0006	0	0.0033	0.0016	0.0057	0	0	0	0	0
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Oligohymenophorea;Peniculida	0	0	0	0	0.0015	0.0005	0	0.0005	0	0.0018	0	0	0.0009	0	0	0	0	0.0033	0	0.0016	0.0016	0.0051	0.0003	0.0053	0.001
Eukaryota;Fungi;Dikarya;Ascomycota;Taphrinomycotina;Pneumocystidomycetes	0.0032	0	0.0037	0	0.0025	0.0011	0.0005	0	0.0022	0	0	0.0012	0.0064	0	0	0	0.0003	0.0027	0	0	0	0	0.0003	0	0
Eukaryota;Alveolata;Ellobiopsidae;Thalassomyces;Thalassomyces fagei;Other	0	0.0013	0	0	0	0.0005	0	0	0	0	0	0	0	0	0	0	0	0.0005	0	0.0049	0.0102	0.0043	0	0.0013	0.0017
Eukaryota;Rhizaria;Polycystinea;Spumellaria;unclassified Spumellaria;Spumellarian radiolarian 7017	0	0	0	0	0	0	0	0.0016	0.0017	0.0006	0	0	0	0.002	0.0007	0.0022	0	0.0011	0	0	0.0005	0	0.0003	0.0009	0.0003
Eukaryota;Rhizaria;Acantharea;Chaunacanthida;Chaunacanthid 217;Other	0	0	0.0011	0	0	0.0005	0.0025	0.0016	0	0	0	0	0	0.0013	0	0.0017	0	0	0.0004	0.0033	0.0027	0.0043	0.0014	0.0026	0.0023
Eukaryota;stramenopiles;Bacillariophyta;Bacillariophyceae;Bacillariophycidae;Naviculales	0.0006	0	0	0	0	0.0064	0	0	0.0022	0	0.0012	0.0012	0	0	0.0015	0.0022	0.0003	0.0011	0.0008	0	0	0	0.0014	0	0
Eukaryota;stramenopiles;Bacillariophyta;Mediophyceae;Biddulphiophycidae;Hemiaulales; Eucampia	0	0	0	0	0	0	0	0	0	0.0018	0	0.0023	0	0	0.0022	0.0011	0.0003	0	0	0.0016	0.0005	0.0055	0.0041	0.0057	0.0076
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Rhizosoleniophycidae;Rhizosoleniales	0	0	0	0	0.0005	0	0.0005	0	0	0.003	0.0024	0	0	0	0	0.0017	0.0003	0.0011	0	0.0016	0.0016	0.003	0.0024	0.0115	0.006
Eukaryota;Fungi;Dikarya;Ascomycota;Pezizomycotina;Eurotiomycetes	0	0	0.0042	0	0.0015	0	0.001	0.0031	0	0.0036	0	0	0	0.0007	0	0.0028	0.0006	0.0082	0.0021	0.0041	0.0011	0	0.0003	0	0.003
Eukaryota;Rhodophyta;Compsopogonophyceae;Compsopogonales;Compsopogonaceae;Compsopogonopsis	0.0013	0.0074	0	0	0.001	0.0005	0	0	0	0.0047	0	0.0012	0	0	0.0052	0.0073	0	0.0022	0	0	0	0	0	0	0
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Spongodiscidae;Stylodictya	0	0.0007	0.0016	0.002	0	0.0005	0.002	0.001	0.0028	0.0012	0.0036	0.0035	0	0	0	0.0017	0	0.0016	0.0008	0.0016	0.0038	0.0013	0.0014	0.0022	0.0007
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Pterocorythidae;Pterocorys	0.0006	0	0	0	0	0	0.0005	0	0	0	0.0078	0.0018	0	0	0	0.0011	0	0.0044	0.0008	0.0049	0.0091	0.0026	0.0003	0	0
Eukaryota;Haptophyceae;Reticulosphaerales;Reticulosphaera;Reticulosphaera socialis;Other	0.0019	0.0074	0.0026	0.002	0.001	0.0011	0.0005	0.0058	0.0022	0.0065	0.0018	0	0.0009	0.0026	0.0015	0.0045	0	0	0	0.0049	0.0016	0	0.0003	0.0013	0.0003
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Gymnodinium	0.0045	0	0	0.002	0	0	0.004	0	0.0028	0.0136	0.003	0	0.0014	0.0007	0.0015	0.0006	0	0.0005	0	0	0.0016	0.0004	0.0028	0.0018	0.0026
Eukaryota;Rhizaria;Cercozoa;Cercomonadida;Cercomonadidae;environmental samples	0.0032	0	0.0005	0.0013	0	0	0	0	0	0.0101	0.0006	0.0006	0.0041	0	0.0291	0	0	0.0055	0	0	0	0	0	0	0
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Siphonophora;Cystonectae	0	0.0054	0.0005	0.0034	0	0	0	0.0026	0	0.0012	0.0012	0.0006	0	0.0013	0.0007	0.0034	0.0006	0.0027	0	0	0	0.0004	0	0	0
Eukaryota;Metazoa;Ctenophora;Typhlocoela;Platyctenida;Coeloplanidae	0	0.0047	0	0.0007	0.001	0	0.003	0.0026	0.0017	0	0	0.0018	0	0.0046	0.0015	0.0006	0	0.0011	0	0	0	0	0	0	0.0003
Eukaryota;stramenopiles;Oomycetes;Myzocytiopsidales;Eurychasmataceae;Eurychasma	0.0052	0	0.0032	0.0034	0.0041	0.008	0.0025	0.0026	0.0011	0.016	0.0042	0	0.0046	0	0	0.0067	0.0009	0	0	0	0	0	0	0	0
Eukaryota;Rhizaria;Acantharea;environmental samples;uncultured marine Acantharea;Other	0.0026	0	0.0005	0	0.0015	0	0	0	0.0034	0.003	0.0078	0.0018	0.0041	0.0053	0	0.0006	0	0.0022	0	0.0025	0.0016	0	0	0.0004	0
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;Pseudoscourfieldiales;Pycnococcaceae	0	0.0034	0.0042	0.0013	0	0.0016	0	0.0021	0.0017	0.003	0.0018	0.0012	0.0041	0.0013	0.003	0.0067	0	0.0044	0.0008	0.009	0.0054	0	0	0.0022	0.0003
Eukaryota;Metazoa;Chordata;Craniata;Vertebrata;Euteleostomi	0	0.0007	0.0021	0.0027	0.002	0.0011	0	0.0031	0	0.0024	0.0006	0	0.0009	0.0007	0.0022	0.0006	0.0003	0.0016	0.0004	0.0057	0.0059	0.0026	0.0076	0.0013	0.0017
Eukaryota;Fungi;Fungi incertae sedis;Basal fungal lineages;Entomophthoromycotina;Entomophthorales	0.0039	0.0007	0.0005	0.0054	0.001	0	0.0015	0	0.0011	0.0012	0.003	0.0047	0	0.0026	0	0	0	0.006	0	0.0139	0.0075	0.0021	0.0007	0.0009	0.0013
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Karlodinium	0.0032	0.0013	0.0005	0.0034	0.0117	0	0.001	0.001	0.0045	0.0006	0.0006	0.0058	0.0023	0.0007	0.0082	0.0168	0	0.0049	0.0004	0	0.0022	0.0013	0.0017	0	0
Eukaryota;Viridiplantae;Chlorophyta;Chlorophyceae;Chlamydomonadales;environmental samples	0	0	0.0164	0	0.0005	0	0	0	0	0	0	0.0123	0	0	0	0.0045	0	0	0	0	0.0022	0.0226	0.0083	0.0071	0
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Collosphaeridae;Collosphaera	0.0019	0.0101	0.0011	0	0.0025	0.0011	0	0.0021	0.0089	0.0059	0.0024	0.0029	0.0064	0.0165	0	0.0017	0	0.0306	0	0.0074	0.0011	0	0	0.0013	0.0013
Eukaryota;Fungi;Dikarya;Basidiomycota;Agaricomycotina;Agaricomycetes	0.0039	0.004	0.0053	0.0067	0.0025	0	0.0065	0.0084	0.0034	0.0041	0.0036	0.0041	0.0037	0.002	0.0037	0.0028	0	0.0115	0.0008	0.0008	0.0005	0.0038	0.0045	0	0.0056
Eukaryota;Rhodophyta;environmental samples;uncultured rhodophyte;Other;Other	0.0006	0.0027	0.0005	0.0034	0.0015	0	0.025	0.0073	0.0078	0.0006	0.0036	0.0058	0.0307	0	0.006	0.0056	0.0003	0	0.0012	0.0025	0	0	0	0.0004	0
Eukaryota;Alveolata;Dinophyceae;Lophodiniales;Lophodiniaceae;Woloszynskia	0.0071	0	0.0016	0.002	0	0.0011	0.002	0.0052	0.0056	0.0018	0.0108	0.0006	0.0023	0	0	0.0011	0	0.0186	0.0029	0	0.0005	0	0.0028	0.0097	0.001
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Oligohymenophorea;Scuticociliatia	0	0	0.0005	0.0007	0	0.0048	0.0005	0.0005	0.0045	0.0036	0.0018	0.0187	0	0.0086	0	0.0056	0	0	0	0.0131	0.0032	0.0017	0	0.0004	0.0033
Eukaryota;Metazoa;Chordata;Tunicata;Appendicularia;Oikopleuridae	0.0013	0.002	0.0011	0	0	0.0038	0	0.0026	0.0022	0.0024	0.0024	0.0058	0.0023	0.006	0.003	0.0034	0	0.0066	0.0012	0.0041	0.0102	0.0128	0.0052	0.011	0.0056
Eukaryota;Metazoa;Arthropoda;Crustacea;Maxillopoda;Copepoda	0.0065	0	0.0032	0	0.0112	0.0021	0	0.0016	0	0.0053	0	0.0029	0.0046	0.0026	0.0022	0.0017	0	0.0044	0	0	0.0081	0.0102	0.0062	0.0128	0.0099
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;Prasinophyceae sp. CCMP1205;Other	0	0.002	0.0011	0.0013	0.0041	0.0027	0.0005	0.001	0.0028	0.0018	0.0036	0.0082	0.0055	0.002	0.003	0.0073	0	0.0005	0	0	0.0032	0.0009	0	0	0
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Thalassiosirophycidae;Thalassiosirales	0.0039	0.006	0	0.0047	0.002	0.0038	0.002	0.0016	0.0039	0.0018	0	0	0.0005	0.0013	0.0052	0.0034	0.0003	0	0.0004	0.0172	0.0048	0.0247	0.0062	0.0353	0.0146
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Actinommidae;Hexacontium	0	0.0007	0.0026	0.0007	0.0036	0.0016	0.001	0.0026	0.0028	0.0053	0	0.0023	0.0005	0.0026	0.0075	0.0028	0	0.0071	0.0012	0.009	0.0151	0.0089	0.0003	0.0102	0.0026
Eukaryota;Alveolata;environmental samples;uncultured alveolate;Other;Other	0	0.0034	0.0095	0	0.0208	0	0.0681	0.0047	0	0.0006	0.0048	0	0	0.0033	0.0082	0	0	0	0	0.0016	0.0032	0.0009	0	0	0
Eukaryota;Rhizaria;Cercozoa;environmental samples;uncultured cercozoan;Other	0	0.0067	0.0047	0.0067	0.001	0.0123	0.002	0.0031	0.0034	0.0036	0.0144	0.0047	0.0055	0.006	0.0253	0.0017	0.0006	0.0093	0.0021	0	0.0032	0.0013	0.0031	0	0
Eukaryota;Viridiplantae;Chlorophyta;environmental samples;uncultured Chlorophyta;Other	0.024	0.0027	0.0005	0	0.0015	0	0.013	0	0.0006	0.0053	0.012	0.0012	0.0128	0	0.0127	0.0006	0	0.0071	0	0	0.0016	0	0.0003	0	0
Eukaryota;Viridiplantae;Streptophyta;Embryophyta;Tracheophyta;Spermatophyta	0	0.004	0.0016	0.0135	0.0051	0.0064	0.0025	0.0456	0.0039	0.0041	0.0084	0	0.0032	0.0046	0.0104	0.0034	0	0.0175	0.0004	0.0025	0.0022	0.0009	0.0017	0.0013	0.0043
Eukaryota;Rhizaria;Cercozoa;Silicofilosea;Thaumatomonadida;Thaumatomastigidae	0.0208	0	0.0074	0.0081	0.0015	0.0113	0.0045	0.0052	0.0073	0.0095	0.003	0.0088	0.0023	0.0139	0.006	0.0078	0.0006	0.0229	0.0016	0.0148	0.0065	0.0009	0	0	0
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Ethmosphaeridae;Styptosphaera	0.0013	0.0074	0.0032	0.0054	0.0041	0.0054	0.002	0.0105	0.0011	0.0077	0.003	0.0094	0.0027	0.0093	0.0075	0.0089	0	0.0093	0.0021	0.0287	0.0215	0.0153	0.0041	0.0057	0.0017
Eukaryota;Alveolata;Apicomplexa;Coccidia;Eucoccidiorida;Eimeriorina	0	0	0.0021	0.0384	0	0.0027	0.001	0.0026	0	0.0047	0	0	0.0009	0.0205	0.0007	0	0	0.0115	0	0.0049	0.0005	0.0145	0.0472	0.0221	0.0099
Eukaryota;Metazoa;Cnidaria;Scyphozoa;Semaeostomeae;Pelagiidae	0.0006	0	0	0.0007	0.0015	0	0.0015	0.0016	0.0011	0.0024	0	0.0058	0	0.0026	0.0067	0.0034	0.0003	0.006	0	0.0041	0.0022	0	0.0003	0	0
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Syndiniaceae;Hematodinium	0.0097	0.0168	0.0026	0.0047	0.0102	0.0043	0.003	0.0089	0.0195	0.0112	0.0193	0.0018	0	0.0185	0.0104	0.0078	0	0.0022	0	0.0115	0.0011	0.0034	0	0.0018	0.0003
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Amoebophryaceae;Amoebophrya	0.0273	0.0148	0	0	0.0005	0.0027	0.012	0.0021	0.0223	0.0178	0.0024	0.007	0.0055	0.0007	0.0015	0	0.0018	0.006	0	0.0164	0.0172	0	0.0021	0.0097	0.005
Eukaryota;Fungi;Dikarya;Basidiomycota;Ustilaginomycotina;Exobasidiomycetes	0.0026	0.0054	0.0011	0.0081	0.0041	0.0005	0.001	0.0026	0.005	0.0184	0.0024	0.0094	0.0082	0.006	0.0022	0.0095	0.0012	0.0104	0	0.018	0.0194	0.0013	0.001	0.004	0.001
Eukaryota;Fungi;Dikarya;Ascomycota;mitosporic Ascomycota;Phoma	0.0143	0.0591	0.0211	0.0013	0.0086	0.008	0.0105	0.0063	0.0117	0.0018	0.0223	0.0018	0	0.006	0.0164	0.0073	0	0.0153	0.0234	0.0066	0.0027	0.0026	0.0003	0.004	0.003
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Colpodea;Colpodida	0	0	0	0	0	0	0	0	0.0313	0	0	0	0.0018	0	0.0007	0	0	0	0.0115	0	0.0022	0.0243	0.083	0.1165	0.1524
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;environmental samples;uncultured Prasinophyceae	0.0143	0.0141	0.0216	0.0027	0.0102	0.0161	0	0.0131	0.005	0.016	0.0102	0.0018	0.006	0.0066	0.0268	0.0112	0	0.0044	0.0045	0.0115	0.0221	0.0213	0.0613	0.0097	0.006
Eukaryota;Rhizaria;Cercozoa;Thecofilosea;Cryomonadida;Cryothecomonas	0.0247	0.0161	0.0058	0.0168	0.0107	0.0075	0.0095	0.0147	0.0235	0.013	0.0307	0.0427	0.0247	0.0073	0.0395	0.0162	0.0012	0.0289	0.0016	0.0164	0.0097	0	0.001	0.0004	0
Eukaryota;Alveolata;Dinophyceae;Blastodiniales;Blastodinium;Blastodinium navicula	0.0649	0.0316	0.0338	0.0175	0.0081	0.008	0.0165	0.0073	0.0078	0.0112	0.0108	0.0076	0.0101	0.0007	0.0045	0.0056	0.0003	0.095	0.1649	0.0484	0.0204	0.0332	0.0507	0.0384	0.003
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Colpodea;Cyrtolophosidida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0007	0	0	0	0	0	0	0.2162	0.3704	0.1823	0.0427
Eukaryota;stramenopiles;environmental samples;uncultured stramenopile;Other;Other	0.0104	0.0027	0.0021	0.0067	0.0025	0.0043	0.0015	0.0089	0.0095	0.0118	0.0072	0.0058	0.0105	0.0152	0.0112	0.0207	0.0012	0.0016	0.0016	0.0418	0.0151	0.0153	0.0121	0.0212	0.0056
Eukaryota;Fungi;Dikarya;Ascomycota;Pezizomycotina;Dothideomycetes	0.0435	0.0114	0.0301	0.0397	0.0254	0.0252	0.0345	0.0304	0.0313	0.0249	0.003	0.0146	0.0165	0.0152	0.003	0.0022	0.0003	0.0824	0.1259	0.0508	0.0183	0.0264	0.0096	0.0035	0.002
Eukaryota;Metazoa;Cnidaria;Anthozoa;Hexacorallia;Actiniaria	0.0253	0.0114	0.0079	0.0108	0.0361	0.0252	0.0255	0.033	0.0073	0.0184	0.0048	0.0304	0.006	0.0165	0.0201	0.0078	0	0.1004	0.1079	0.0803	0.0802	0.0064	0.0255	0.0216	0.0109
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Spongodiscidae;Euchitonia	0.0175	0.0195	0.0079	0.0188	0.0076	0.0075	0.005	0.0037	0.0095	0.0178	0.0199	0.0228	0.0142	0.0536	0.0432	0.0408	0.0034	0.0311	0.0127	0.0402	0.0403	0.014	0.009	0.0282	0.0119
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Theoperidae;Pterocanium	0	0.0181	0.0158	0.0054	0.0061	0.0038	0	0.0021	0.0056	0.0071	0.0024	0.0111	0.0069	0.0007	0.0022	0.0006	0.0006	0.0136	0	0.0426	0.0054	0.006	0.0007	0.0004	0.0003
Eukaryota;Alveolata;environmental samples;uncultured marine alveolate;Other;Other	0.026	0.0128	0.0164	0.0155	0.0407	0.0509	0.0536	0.0115	0.0179	0.0326	0.0662	0.0462	0.039	0.0807	0.0365	0.0207	0	0.0055	0.0008	0.0139	0.007	0.0009	0.0276	0.0053	0.0003
Eukaryota;Rhizaria;environmental samples;uncultured rhizarian;Other;Other	0.0331	0.0376	0.0227	0.0336	0.0219	0.0424	0.009	0.0293	0.0173	0.0391	0.0367	0.038	0.0174	0.0377	0.0537	0.0838	0.0022	0.0459	0.0201	0.1049	0.0758	0.1072	0.0527	0.068	0.0282
Eukaryota;Alveolata;environmental samples;Uncultured marine alveolate Group I DH148-EKD22;Other;Other	0.0922	0.0296	0.258	0.0633	0.2049	0.2005	0.2317	0.2991	0.2183	0.0965	0.2924	0.2977	0.1801	0.041	0.0171	0.1811	0.0194	0.1283	0.2428	0.0639	0.0565	0.0855	0.0296	0.0088	0.0086
Eukaryota;Alveolata;Dinophyceae;environmental samples;uncultured dinoflagellate;Other	0.1377	0.1848	0.1472	0.2759	0.1139	0.2574	0.1727	0.1341	0.1625	0.135	0.1312	0.1129	0.1031	0.137	0.1557	0.2359	0.0166	0.0213	0.0275	0.0861	0.0678	0.0677	0.0593	0.0512	0.0646
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Sphaerozoidae;Rhaphidozoum	0.2	0.1129	0.2438	0.2907	0.1662	0.2059	0.1942	0.1786	0.2496	0.302	0.1462	0.1696	0.3905	0.3269	0.2288	0.1051	0.037	0.0797	0.0185	0.0492	0.1969	0.1094	0.0445	0.0781	0.0311

Suppl. Table 2. Relative abundances for chlorophyll biosynthesis proteins.

Depth (cm)	**Age** (*years BP*)	**Chlorophyll biosynthesis proteins** (%)
5.0	439.7	
10.0	698.1	0.000171910
32.0	1655.9	0.000431344
48.0	2202.8	
59.0	2524.6	
71.0	2839.3	
82.0	3105.7	0.000160414
88.0	3245.9	
96.4	3440.1	0.001164460
107.4	3698.0	0.005422218
118.4	3969.3	0.006170394
127.4	4208.7	0.007838955
138.4	4531.1	0.008094630
159.4	5274.2	0.006121696
175.4	5989.6	
191.4	6869.4	0.000222347
208.6	8034.9	
224.6	9357.5	
237.6	10624.0	

Suppl. Table 3. Paleo-DNA factor analysis scores.

Paleo-DNA Taxa	Factor 1 Scores Variability Explained 20%	Factor 2 Scores Variability Explained 20%	Factor 3 Scores Variability Explained 20%
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Sphaerozoidae;Rhaphidozoum	**0.3384**	0.0691	0.0833
Eukaryota;Alveolata;Dinophyceae;environmental samples;uncultured dinoflagellate;Other	**0.2046**	**0.2135**	0.0345
Eukaryota;Alveolata;environmental samples;Uncultured marine alveolate Group I DH148-EKD22;Other;Other	0.0329	**0.4261**	0.04
Eukaryota;Rhizaria;environmental samples;uncultured rhizarian;Other;Other	0.0574	0.0842	**0.2231**
Eukaryota;Alveolata;environmental samples;uncultured marine alveolate;Other;Other	**0.2011**	0.1404	0.0684
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Theoperidae;Pterocanium	**0.2383**	0.0921	0.008
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Spongodiscidae;Euchitonia	0.1272	0.0637	0.1196
Eukaryota;Metazoa;Cnidaria;Anthozoa;Hexacorallia;Actiniaria	0.1099	0.1859	0.1265
Eukaryota;Fungi;Dikarya;Ascomycota;Pezizomycotina;Dothideomycetes	0.1063	**0.2026**	0.0636
Eukaryota;stramenopiles;environmental samples;uncultured stramenopile;Other;Other	0.19	0.0331	0.0279
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Colpodea;Cyrtolophosidida	0.0329	0.0208	0.1603
Eukaryota;Alveolata;Dinophyceae;Blastodiniales;Blastodinium;Blastodinium navicula	0.1012	0.1391	0.0973
Eukaryota;Rhizaria;Cercozoa;Thecofilosea;Cryomonadida;Cryothecomonas	0.1115	**0.2215**	0.0585
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;environmental samples;uncultured Prasinophyceae	0.0158	0.0728	0.123
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Colpodea;Colpodida	0.0336	0.0294	**0.2005**
Eukaryota;Fungi;Dikarya;Ascomycota;mitosporic Ascomycota;Phoma	0.0443	0.1333	0.018
Eukaryota;Fungi;Dikarya;Basidiomycota;Ustilaginomycotina;Exobasidiomycetes	0.0206	0.0389	0.047
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Amoebophryaceae;Amoebophrya	0.0528	0.1292	0.0544
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Syndiniaceae;Hematodinium	0.1538	0.1895	0.0804
Eukaryota;Metazoa;Cnidaria;Scyphozoa;Semaeostomeae;Pelagiidae	0.1638	0.0637	0.0015
Eukaryota;Alveolata;Apicomplexa;Coccidia;Eucoccidiorida;Eimeriorina	0.007	0.0161	0.1464
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Ethmosphaeridae;Styptosphaera	0.0255	0.0553	0.1322
Eukaryota;Rhizaria;Cercozoa;Silicofilosea;Thaumatomonadida;Thaumatomastigidae	0.0571	0.1671	0.0006
Eukaryota;Viridiplantae;Streptophyta;Embryophyta;Tracheophyta;Spermatophyta	0.0245	0.0785	0.0096
Eukaryota;Viridiplantae;Chlorophyta;environmental samples;uncultured Chlorophyta;Other	**0.219**	0.0483	0.1014
Eukaryota;Rhizaria;Cercozoa;environmental samples;uncultured cercozoan;Other	0.1266	0.0637	0.0106
Eukaryota;Alveolata;environmental samples;uncultured alveolate;Other;Other	0.0125	0.0629	0.0216
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Actinommidae;Hexacontium	0.1986	0.0403	0.1196
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Thalassiosirophycidae;Thalassiosirales	0.0166	0.0161	0.1764
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;Prasinophyceae sp. CCMP1205;Other	**0.3198**	0.025	0.0527
Eukaryota;Metazoa;Arthropoda;Crustacea;Maxillopoda;Copepoda	0.0232	0.0367	0.1064
Eukaryota;Metazoa;Chordata;Tunicata;Appendicularia;Oikopleuridae	0.1016	0.0004	**0.2343**
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Oligohymenophorea;Scuticociliatia	0.1266	0.0119	0.0427
Eukaryota;Alveolata;Dinophyceae;Lophodiniales;Lophodiniaceae;Woloszynskia	0.0553	0.0484	0.0304
Eukaryota;Rhodophyta;environmental samples;uncultured rhodophyte;Other;Other	0.0067	0.1271	0.048
Eukaryota;Fungi;Dikarya;Basidiomycota;Agaricomycotina;Agaricomycetes	0.025	0.1919	0.0815
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Collosphaeridae;Collosphaera	0.015	0.0718	0.0277
Eukaryota;Viridiplantae;Chlorophyta;Chlorophyceae;Chlamydomonadales;environmental samples	0.0056	0.0221	0.1184
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Karlodinium	0.0276	0.0994	0.0145
Eukaryota;Fungi;Fungi incertae sedis;Basal fungal lineages;Entomophthoromycotina;Entomophthorales	0.0038	0.0696	0.0789
Eukaryota;Metazoa;Chordata;Craniata;Vertebrata;Euteleostomi	0.0619	0.0292	0.0857
Eukaryota;Viridiplantae;Chlorophyta;Prasinophyceae;Pseudoscourfieldiales;Pycnococcaceae	0.0769	0.09	0.0587
Eukaryota;Rhizaria;Acantharea;environmental samples;uncultured marine Acantharea;Other	**0.2139**	0.0081	0.0407
Eukaryota;stramenopiles;Oomycetes;Myzocytiopsidales;Eurychasmataceae;Eurychasma	0.0231	0.165	0.0327
Eukaryota;Metazoa;Ctenophora;Typhlocoela;Platyctenida;Coeloplanidae	0.1912	0.0282	0.0252
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Siphonophora;Cystonectae	0.1501	0.0201	0.0212
Eukaryota;Rhizaria;Cercozoa;Cercomonadida;Cercomonadidae;environmental samples	0.0172	0.0424	0.015
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Gymnodinium	0.0323	0.0622	0.0278
Eukaryota;Haptophyceae;Reticulosphaerales;Reticulosphaera;Reticulosphaera socialis;Other	0.0251	0.1758	0.0422
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Pterocorythidae;Pterocorys	0.096	0.0246	0.0537
Eukaryota;Rhizaria;Polycystinea;Spumellaria;Spongodiscidae;Stylodictya	0.0927	0.0359	0.0717
Eukaryota;Rhodophyta;Compsopogonophyceae;Compsopogonales;Compsopogonaceae;Compsopogonopsis	0.0153	0.0706	0.0197
Eukaryota;Fungi;Dikarya;Ascomycota;Pezizomycotina;Eurotiomycetes	0.0072	0.0688	0.154
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Rhizosoleniophycidae;Rhizosoleniales	0.0069	0.0181	0.1586
Eukaryota;stramenopiles;Bacillariophyta;Mediophyceae;Biddulphiophycidae;Hemiaulales	0.0117	0.032	**0.2417**
Eukaryota;stramenopiles;Bacillariophyta;Bacillariophyceae;Bacillariophycidae;Naviculales	0.0311	0.0829	0.0182
Eukaryota;Rhizaria;Acantharea;Chaunacanthida;Chaunacanthid 217;Other	0.0067	0.0329	**0.2517**
Eukaryota;Rhizaria;Polycystinea;Spumellaria;unclassified Spumellaria;Spumellarian radiolarian 7017	**0.2166**	0.0687	0.0345
Eukaryota;Alveolata;Ellobiopsidae;Thalassomyces;Thalassomyces fagei;Other	0.0263	0.0247	0.1051
Eukaryota;Fungi;Dikarya;Ascomycota;Taphrinomycotina;Pneumocystidomycetes	0.0015	0.1588	0.0413
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Oligohymenophorea;Peniculida	0.0183	0.0044	0.186
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Hydroida;Limnomedusae	0.0373	0.1031	0.0273
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Naked dinoflagellate UDNSW0701;Other	0.0474	0.0409	0.0326
Eukaryota;Metazoa;Chordata;Cephalochordata;Branchiostomidae;Branchiostoma	0.019	0.1262	0.0315
Eukaryota;stramenopiles;Bacillariophyta;Bacillariophyceae;Bacillariophycidae;Bacillariales	0.0011	0.0594	0.0388
Eukaryota;Alveolata;unclassified Alveolata;Ichthyodinium;Ichthyodinium chabelardi;Other	0.0221	0.0249	**0.2415**
Eukaryota;Metazoa;Annelida;Polychaeta;Scolecida;Spionida	0.0426	0.0234	0.0402
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Theoperidae;Artostrobus	0.0282	0.0977	0.0013
Eukaryota;Fungi;Fungi incertae sedis;Basal fungal lineages;environmental samples;uncultured rhizosphere zygomycete	0.0146	0.0215	0.0847
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Hydroida;Leptomedusae	0.0448	0.0389	0.0074
Eukaryota;Fungi;Chytridiomycota;environmental samples;uncultured Chytridiomycota;Other	0.0486	0.088	0.0312
Eukaryota;stramenopiles;Labyrinthulida;Thraustochytriidae;unclassified Thraustochytriidae;Thraustochytriidae sp. WO2007068997	0.0162	0.1065	0.0093
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Dinophyceae sp. Shepherd's Crook;Other	0.0162	0.1172	0.006
Eukaryota;stramenopiles;Bacillariophyta;Mediophyceae;Lithodesmiophycidae;Lithodesmiales	0.0246	0.006	0.064
Eukaryota;Alveolata;Dinophyceae;Blastodiniales;Blastodinium;Blastodinium contortum	0.0337	0.0995	0.0081
Eukaryota;Metazoa;Arthropoda;Crustacea;Malacostraca;Eumalacostraca	0.0056	0.0043	0.0598
Eukaryota;Alveolata;Dinophyceae;Noctilucales;Noctilucaceae;Noctiluca	0.0157	0.0382	0.1136
Eukaryota;stramenopiles;PX clade;Phaeophyceae;Fucales;Sargassaceae	0.0246	0.1576	0.022
Eukaryota;Metazoa;Mesozoa;Orthonectida;Rhopalura;Rhopalura ophiocomae	0.0159	0.0998	0.0442
Eukaryota;Alveolata;Ciliophora;environmental samples;uncultured ciliate;Other	0.112	0.0556	0.0179
Eukaryota;Metazoa;Nematoda;Chromadorea;Desmodorida;Desmodoridae	0.0586	0.0863	0.0343
Eukaryota;Alveolata;Dinophyceae;unclassified Dinophyceae;Dinophyceae sp. ex Thalassicolla nucleata;Other	0.012	0.0164	0.0463
Eukaryota;Metazoa;Platyhelminthes;Trematoda;Digenea;Strigeidida	0.0944	0.0316	0.0066
Eukaryota;Cryptophyta;Pyrenomonadales;Chroomonadaceae;Chroomonas;Chroomonas sp. M1312	0.0637	0.0339	0.027
Eukaryota;Metazoa;Annelida;Polychaeta;Scolecida;Orbiniidae	0.0305	0.0227	0.0503
Eukaryota;Cryptophyta;environmental samples;uncultured cryptophyte;Other;Other	0.0291	0.0254	0.1126
Eukaryota;Cryptophyta;Pyrenomonadales;Geminigeraceae;Guillardia;Guillardia theta	0.0051	0.0736	0.0095
Eukaryota;Choanoflagellida;environmental samples;uncultured choanoflagellate;Other;Other	0.0019	0.0307	0.0515
Eukaryota;stramenopiles;environmental samples;uncultured heterokont;Other;Other	0.1421	0.0054	0.0401
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Spirotrichea;Choreotrichia	0.0815	0.0731	0.1742
Eukaryota;Metazoa;Arthropoda;Hexapoda;Collembola;Poduromorpha	0.0544	0.1527	0.0315
Eukaryota;stramenopiles;Labyrinthulida;Thraustochytriidae;Thraustochytrium;Thraustochytrium kinnei	0.0478	0.1054	0.0109
Eukaryota;Alveolata;Dinophyceae;Prorocentrales;Prorocentraceae;Prorocentrum	0.0244	0.0224	0.0024
Eukaryota;stramenopiles;Pseudopirsonia;Pseudopirsonia mucosa;Other;Other	0.0036	0.0266	0.0202
Eukaryota;stramenopiles;Bacillariophyta;Coscinodiscophyceae;Chaetocerotophycidae;Chaetocerotales	0.0032	0.0268	0.1458
Eukaryota;Viridiplantae;Chlorophyta;Mamiellophyceae;Mamiellales;Micromonas	0.0083	0.0047	0.1229
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Spirotrichea;Hypotrichia	0.0159	0.0025	0.0887
Eukaryota;Rhizaria;Acantharea;Symphyacanthida;Amphilithiidae;Amphibelone	0.0174	0.0269	0.0628
Eukaryota;stramenopiles;Bacillariophyta;Fragilariophyceae;Fragilariophycidae;Fragilariales	0.0029	0.018	0.0437
Eukaryota;Rhizaria;Acantharea;Symphyacanthida;Symphyacanthida sp. 211;Other	0.057	0.0331	0.0137
Eukaryota;Metazoa;Bryozoa;Gymnolaemata;Cheilostomatida;Neocheilostomatina	0.1252	0.0391	0.0001
Eukaryota;Rhizaria;Polycystinea;Nassellaria;Plagoniidae;Lithomelissa	0.0568	0.0083	0.0166
Eukaryota;Fungi;Dikarya;Ascomycota;Saccharomycotina;Saccharomycetes	0.0102	0.0084	0.0504
Eukaryota;Metazoa;Cnidaria;Hydrozoa;Trachylina;Trachymedusae	0.0069	0.0188	0.0623
Eukaryota;Alveolata;Ciliophora;Intramacronucleata;Prostomatea;Prorodontida	0.0028	0.0017	0.0516
Eukaryota;Rhizaria;unclassified Rhizaria;Acantharian sp. 6201;Other;Other	0.0217	0.0757	0.0421
Eukaryota;stramenopiles;Oomycetes;Peronosporales;Phytophthora;Phytophthora infestans T30-4	0.073	0.0154	0.0188
Eukaryota;Metazoa;Nematoda;Chromadorea;Oxyurida;Oxyuroidea	0.0176	0.0186	0.1165
Eukaryota;Alveolata;environmental samples;Uncultured marine alveolate Group II DH145-EKD20;Other;Other	0.0004	0.0129	0.0543
Eukaryota;Amoebozoa;Tubulinea;Euamoebida;Tubulinida;Hartmannellidae	0.0137	0.0284	0.0388
Eukaryota;Metazoa;Annelida;Clitellata;Branchiobdellae;Branchiobdellida	0.0163	0.0839	0.0149
Eukaryota;Metazoa;Chordata;Tunicata;Thaliacea;Salpida	0.0741	0.015	0.0131
Eukaryota;Viridiplantae;Chlorophyta;Trebouxiophyceae;Chlorella;'Chlorella' luteoviridis	0.1352	0.0536	0.0142
Eukaryota;Haptophyceae;Phaeocystales;Phaeocystaceae;Phaeocystis;Phaeocystis globosa	0.0986	0.1271	**0.2698**
Eukaryota;Metazoa;Chordata;Tunicata;Thaliacea;Doliolida	0.0105	0.0167	0.1411
Eukaryota;Rhodophyta;Bangiophyceae;Bangiales;Bangiaceae;Porphyra	0.0119	0.0016	0.0457
Eukaryota;Rhizaria;Cercozoa;Cercomonadida;Cercomonadidae;Paracercomonas	0.0173	0.0061	0.0676
Eukaryota;Alveolata;Dinophyceae;Syndiniales;Syndiniaceae;Syndinium	0.0724	0.0219	0.0577
Eukaryota;stramenopiles;Eustigmatophyceae;Eustigmatales;Monodopsidaceae;Nannochloropsis	0.0753	0.0241	0.0047
Eukaryota;Alveolata;Dinophyceae;Gymnodiniales;Gymnodiniaceae;Cochlodinium	0.0227	0.0502	0.0621
Eukaryota;Metazoa;Mollusca;Bivalvia;Pteriomorphia;Mytiloida	0.025	0.008	0.1149
Eukaryota;Haptophyceae;unclassified Haptophyceae;unclassified coccolithophorid CCMP300;Other;Other	0.0677	0.1378	0.015
Eukaryota;Metazoa;environmental samples;invertebrate environmental sample;Other;Other	0.0019	0.0232	0.0172
Eukaryota;Viridiplantae;Streptophyta;Embryophyta;Anthocerotophyta;Anthocerotopsida	0.0008	0.0338	0.0081

Suppl. Table 4. Paleo-DNA factor analysis loadings.

Depth (*cm*)	**Age** (*years BP*)	**Factor 1**	**Factor 2**	**Factor 3**	**Commonality** Variability Explained
1	221	0.38	-0.04	0.30	0.24
5	440	0.62	0.17	0.24	0.48
10	698	0.78	0.12	0.15	0.65
16	987	0.64	0.32	0.18	0.55
21	1211	0.73	0.09	0.21	0.58
27	1461	0.43	0.29	0.19	0.30
32	1656	0.62	0.25	0.23	0.50
37	1838	0.60	0.39	0.06	0.51
43	2043	0.64	0.17	0.17	0.47
48	2203	0.69	0.20	0.12	0.53
54	2383	0.60	0.27	0.12	0.45
59	2525	0.58	0.37	0.24	0.54
66	2712	0.69	0.31	0.04	0.57
71	2839	0.59	0.34	0.25	0.52
76	2962	0.66	0.41	0.06	0.60
79	3034	0.47	0.55	0.06	0.52
82	3106	0.54	0.42	0.05	0.47
85	3176	0.44	0.44	0.18	0.42
88	3246	0.61	0.35	0.09	0.50
96.5	3442	0.18	0.41	0.37	0.34
101.5	3559	0.27	0.65	0.05	0.49
107.5	3700	0.23	0.42	0.16	0.25
111	3785	0.13	0.65	0.23	0.49
114.5	3871	0.23	0.51	0.11	0.32
118.5	3972	0.18	0.65	0.01	0.45
122.5	4076	0.28	0.59	0.17	0.45
127.5	4211	0.17	0.61	0.04	0.41
133.5	4383	0.17	0.67	0.18	0.51
138.5	4534	0.42	0.65	0.10	0.60
143.5	4695	0.34	0.58	0.21	0.50
148.5	4865	0.44	0.51	0.05	0.46
154.5	5083	0.42	0.53	0.14	0.48
159.5	5278	0.37	0.58	-0.04	0.47
164.5	5486	0.55	0.35	0.19	0.45
175.5	5995	0.39	0.47	0.13	0.39
183.5	6412	0.39	0.50	0.25	0.46
191.5	6875	0.22	0.43	0.14	0.25
197.5	7255	0.21	0.48	0.39	0.42
208.5	8027	-0.09	0.55	0.24	0.37
224.5	9348	0.21	0.33	0.54	0.44
237.5	10614	0.27	0.25	0.63	0.54
247.5	11715	0.14	0.14	0.79	0.67
257.5	12938	0.11	0.19	0.68	0.51
267.5	14288	0.16	0.09	0.78	0.64
278.5	15931	0.16	0.03	0.76	0.61

Suppl. Table 5. Total plaanktonic foraminifer and *G. falconensis* counts.

Depth (cm)	**Age** (*years BP*)	**Total plaktonics** (*number specimens*)	***G. falconensis*** (*%*)
13.5	622	1135	22
25.5	1189	300	10
51.5	2156	412	7
62.5	2483	531	10
76.5	2852	412	35
82.5	2999	302	14
87	3106	539	43
92.5	3234	309	54
96	3315	341	43
108.5	3606	308	34
115.5	3773	371	32
121.5	3921	458	19
123.5	3972	407	39
125	4011	480	45
132.5	4211	303	26
143.5	4534	385	19
156	4954	574	6
165.5	5319	348	17
166.5	5360	400	3
176	5778	301	11
187.5	6358	429	4
202.5	7255	302	14

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