Supporting Information for "Modeling seasonal and vertical habitats of planktonic foraminifera on a global scale"

Contents of this file

Figure S1.

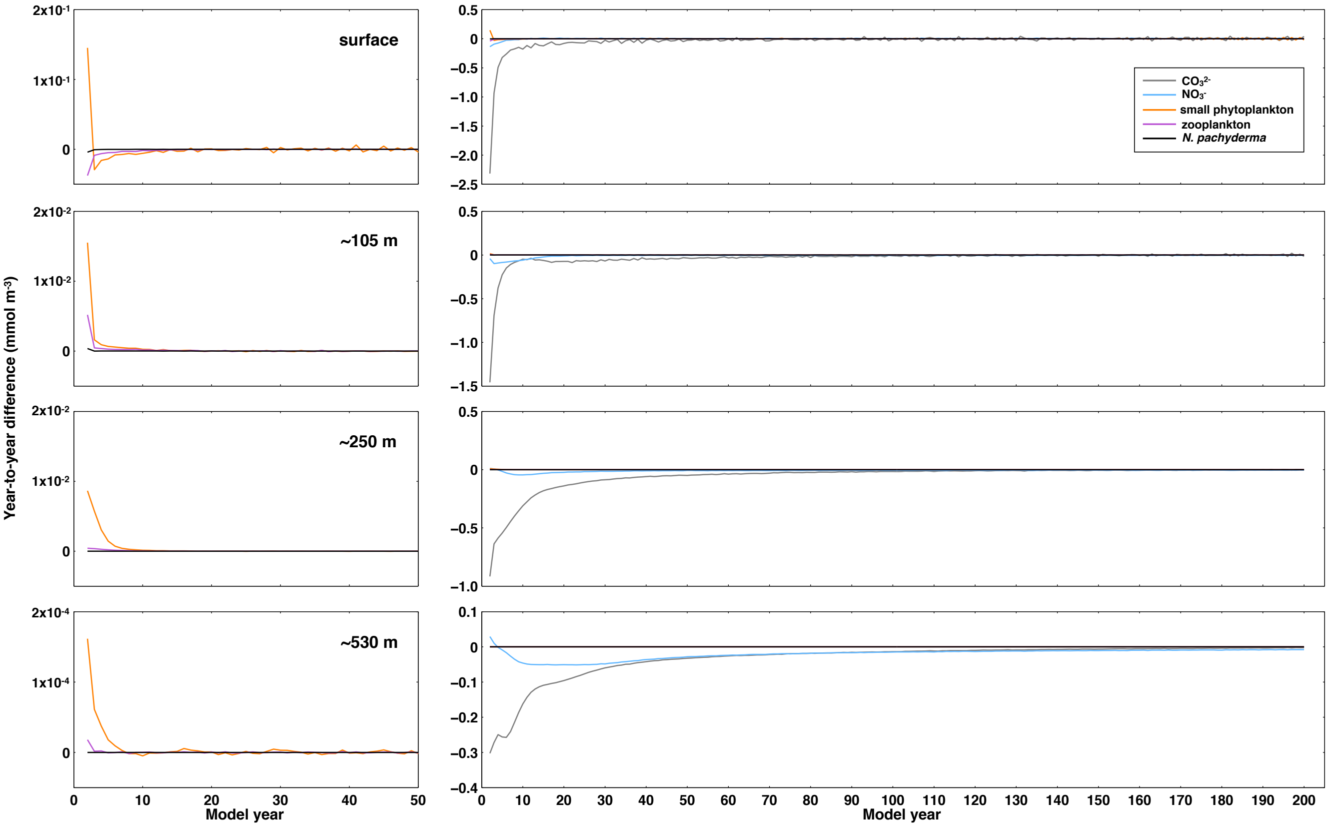
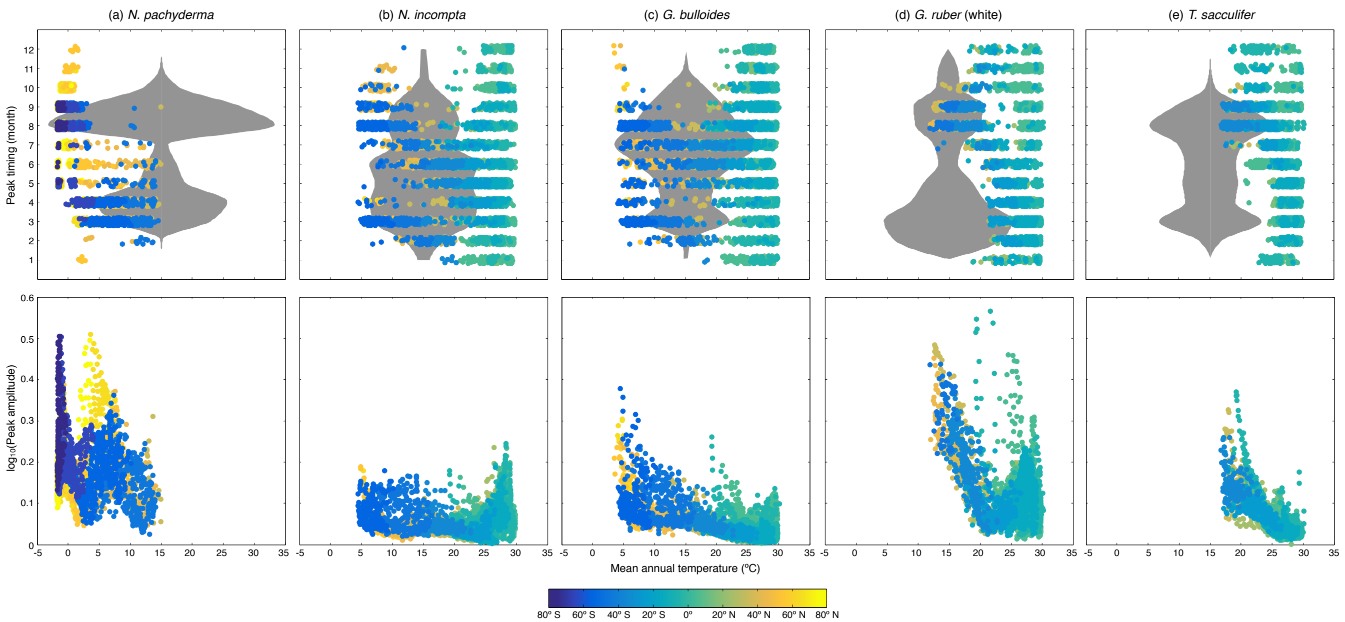

surface
~105 m
~250 m
~530 m
Year-to-year difference (mmol m^{-3})
Model year
Model year
CO_3^{2-}
NO_3^-
small phytoplankton
zooplankton
N. pachyderma

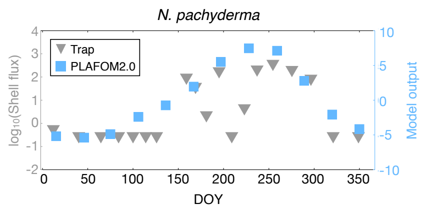
Figure S2.



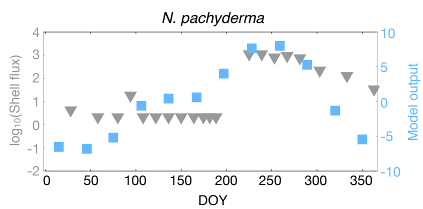
(a) N. pachyderma
(b) N. incompta
(c) G. bulloides
(d) G. ruber (white)
(e) T. sacculifer
Peak timing (month)
log₁₀(Peak amplitude)
Mean annual temperature (°C)
80° S
60° S
40° S
20° S
0°
20° N
40° N
60° N
80° N

Figure S3.

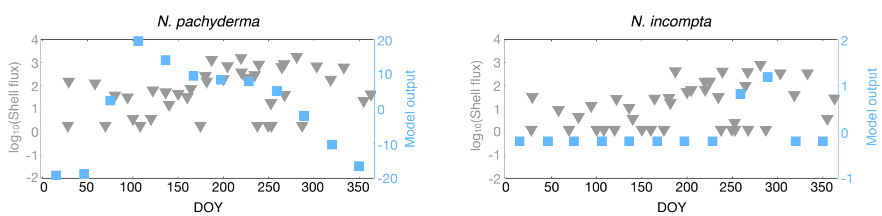
Site GS2



Site OG5



Site NB6/7



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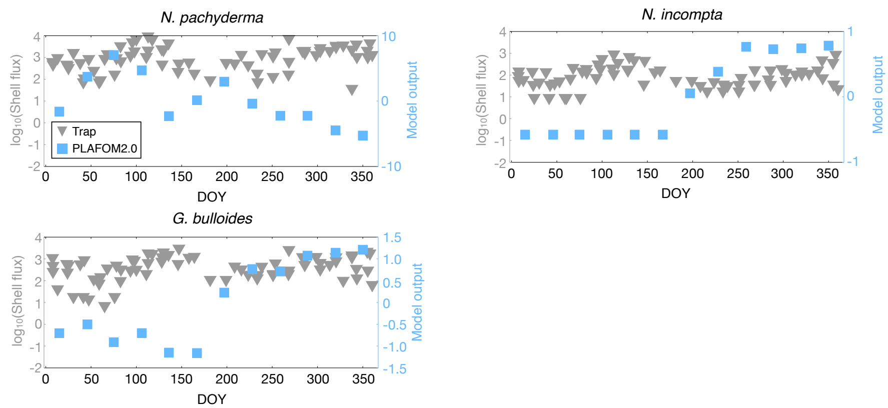
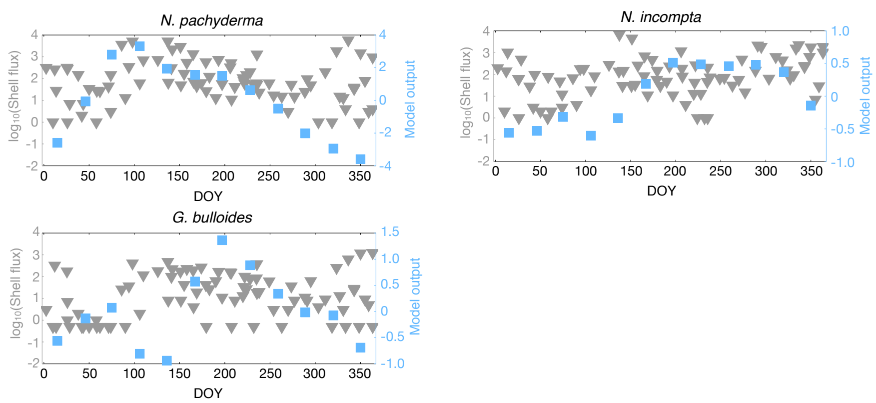
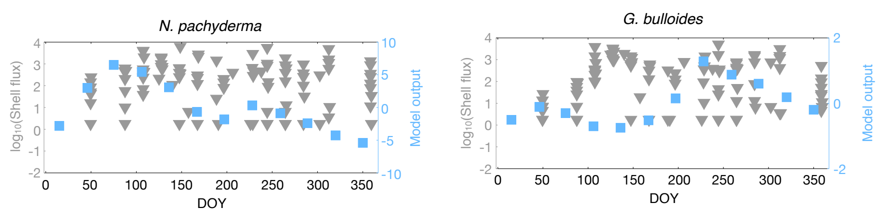


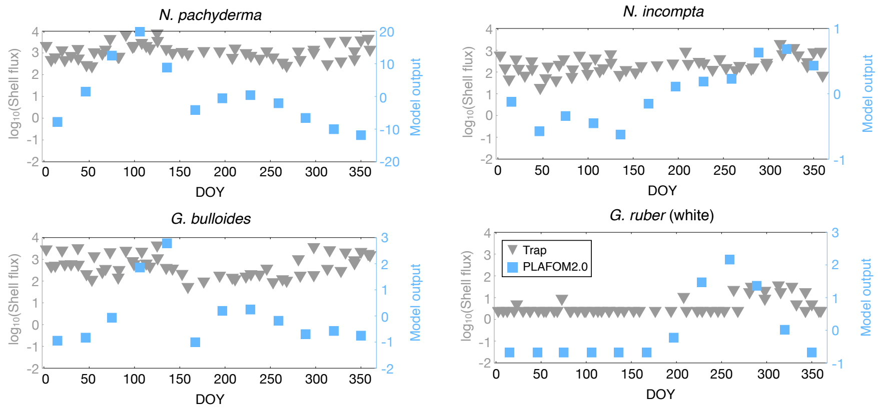
Site PAPA



Site SA



Site KNOT



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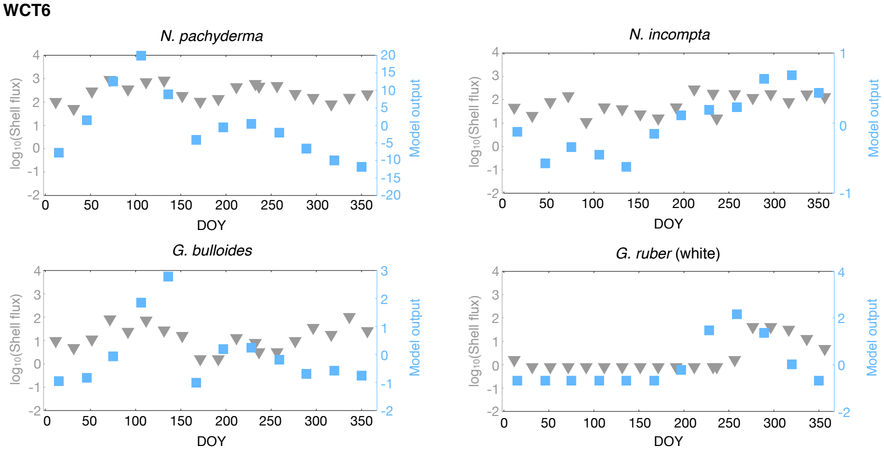

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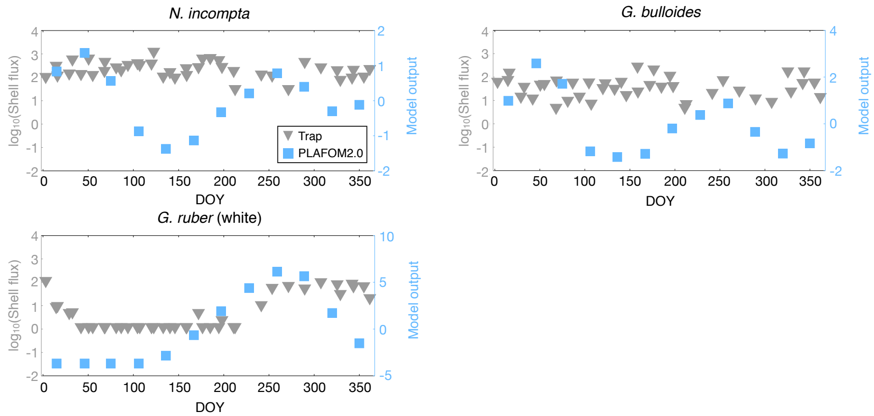

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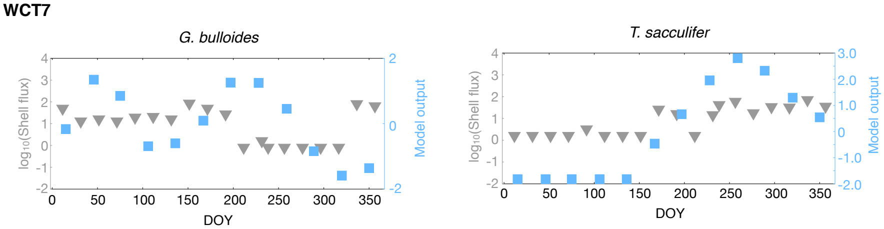
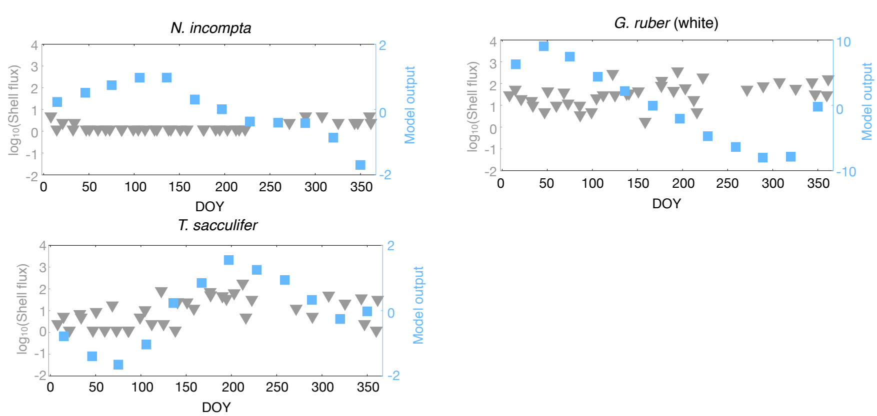


Site WCT1



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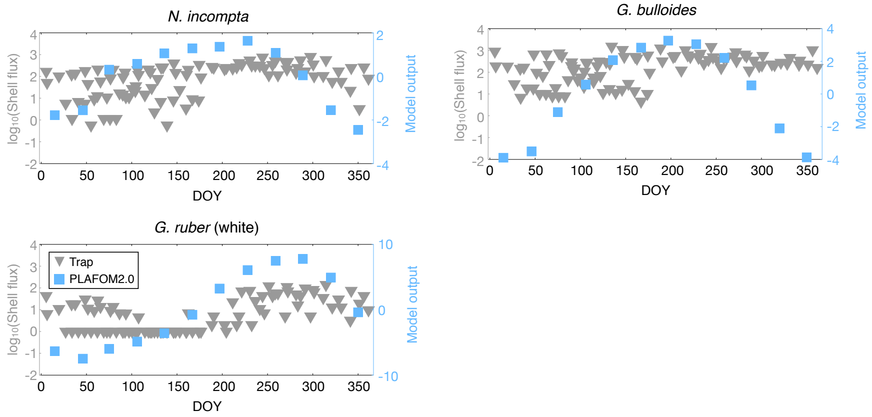
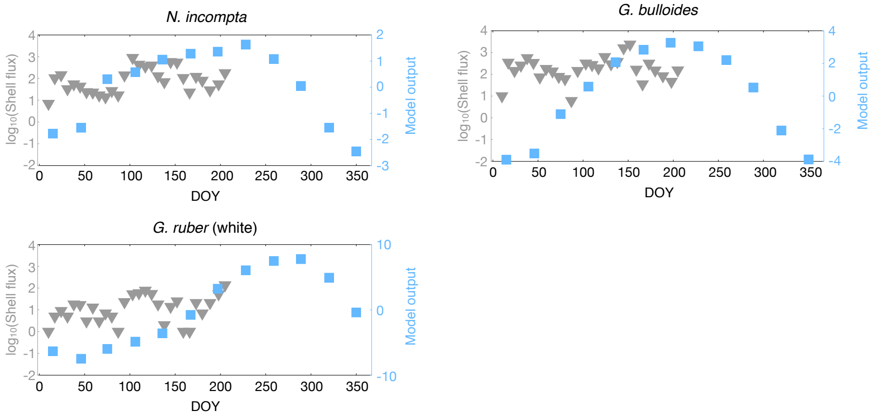
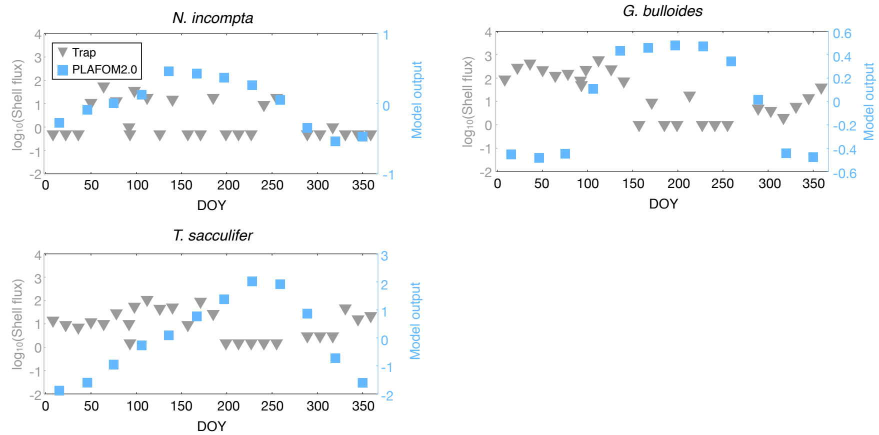


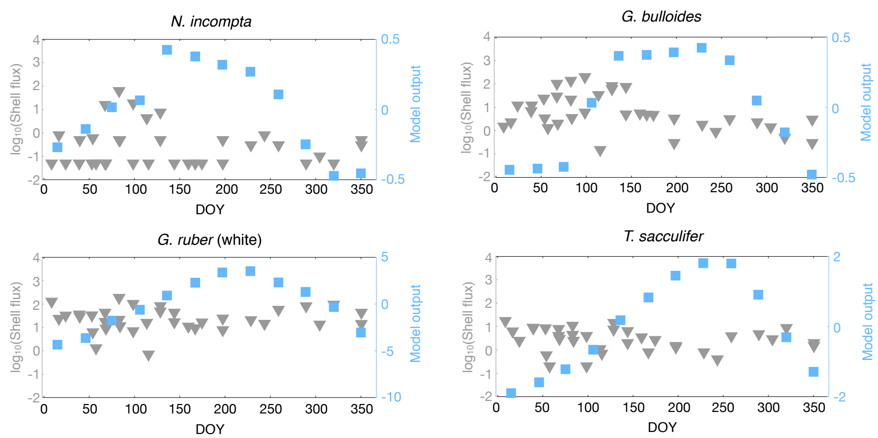
Site SPB



Site JGOFS34



Site L1



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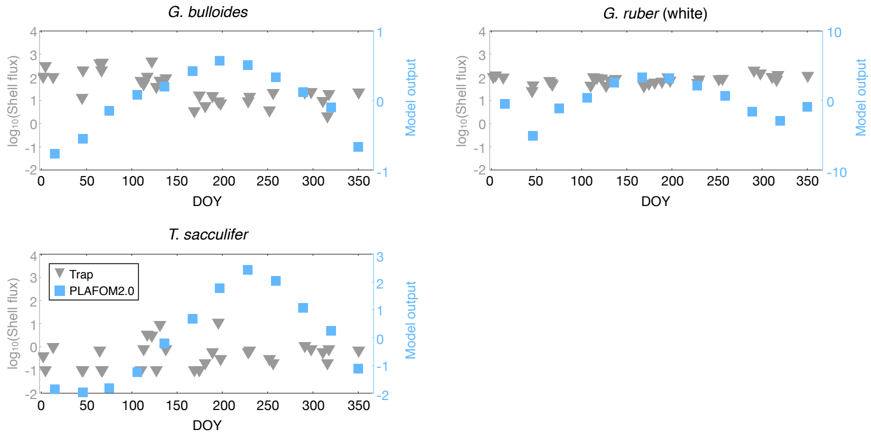

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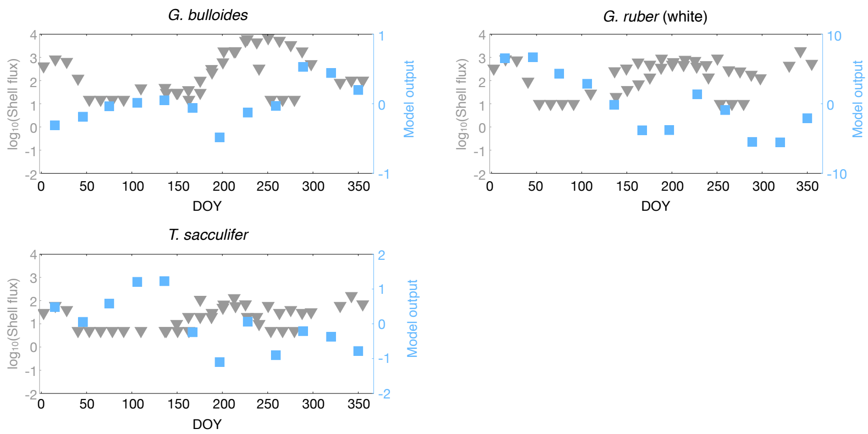

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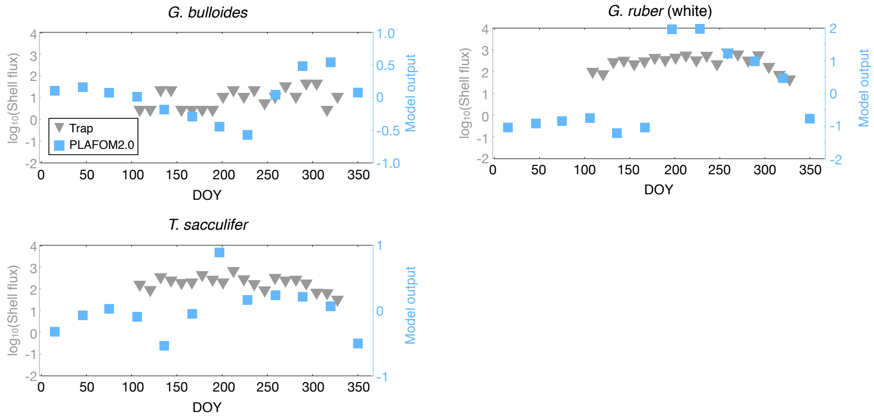

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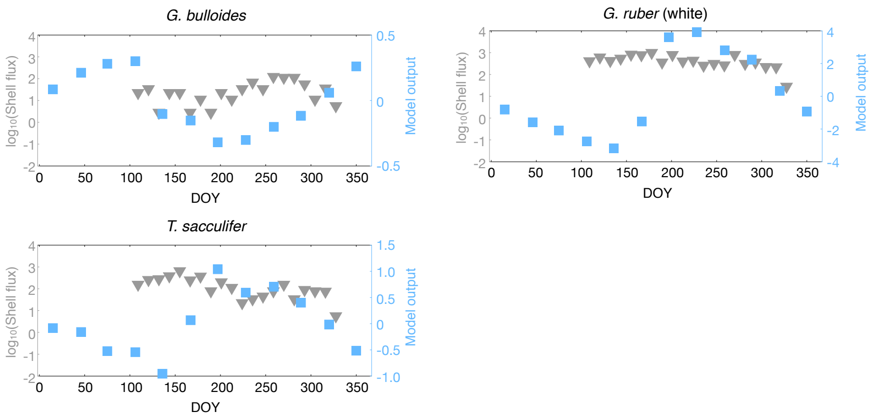

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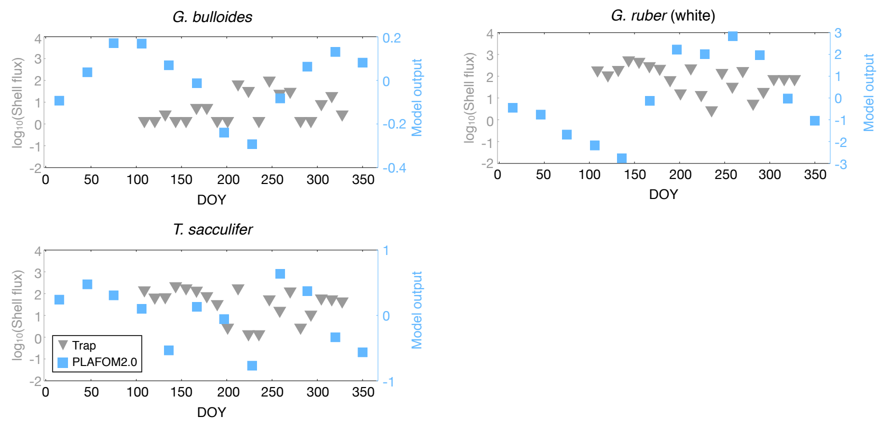

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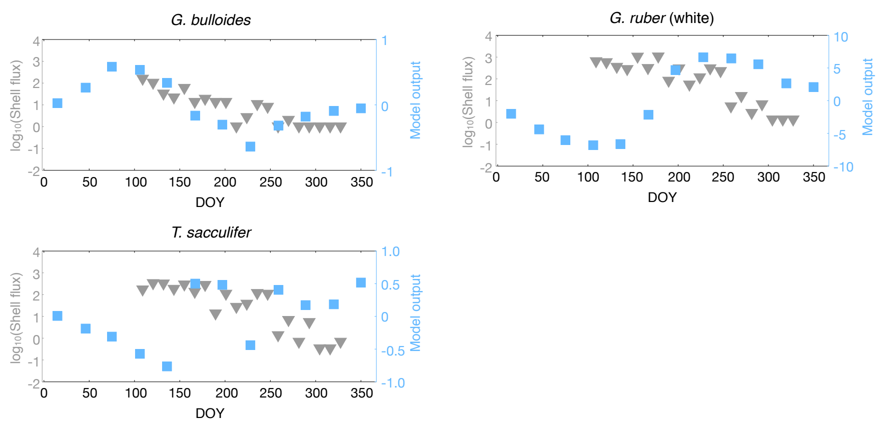
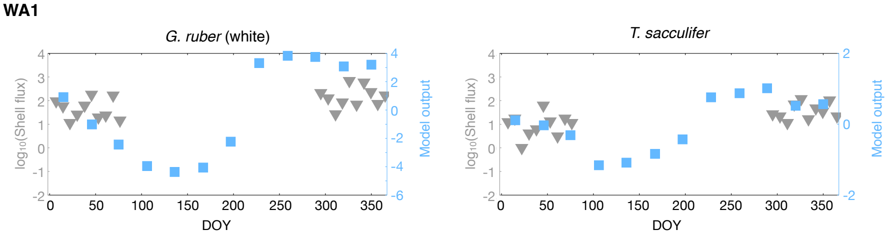


Site WA1



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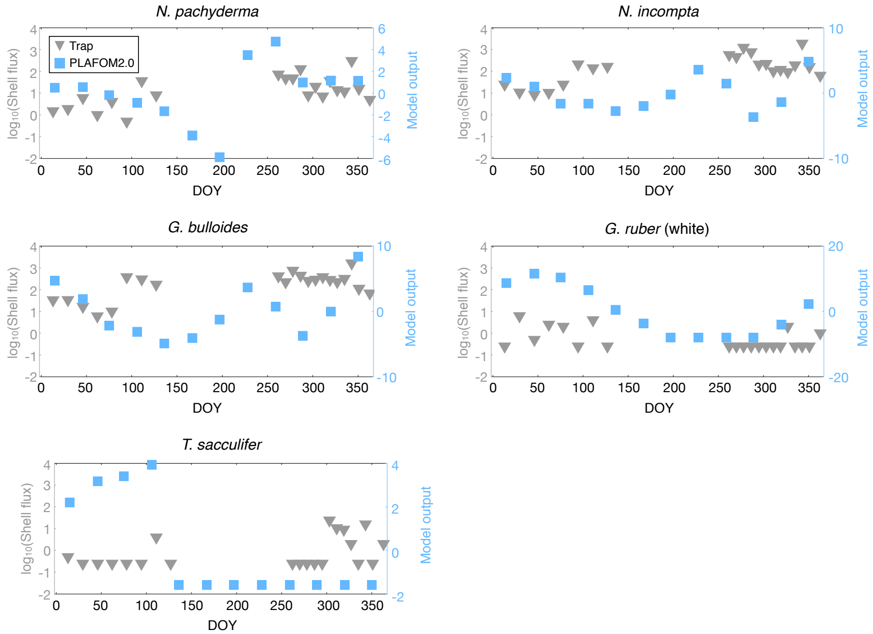

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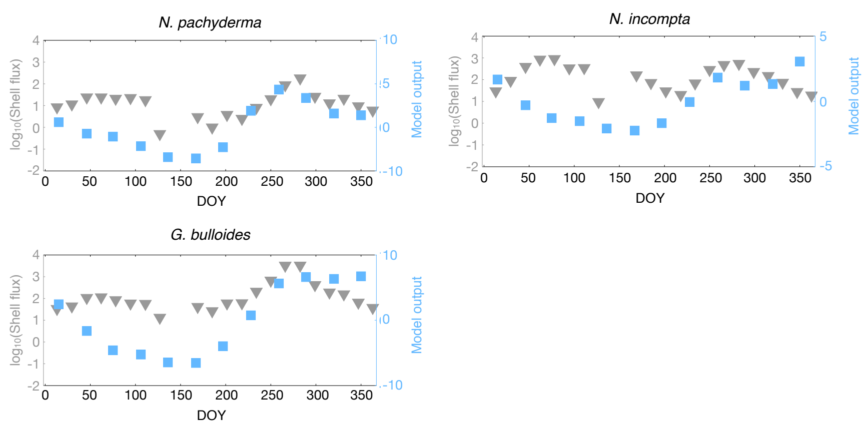
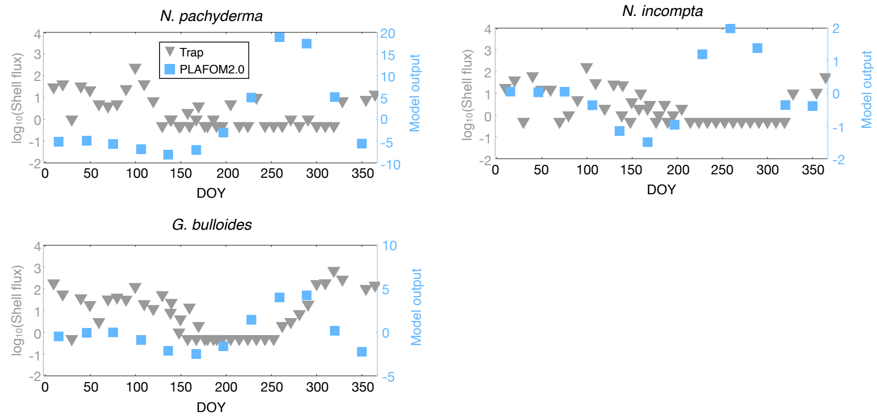


Site CP



Site WS34

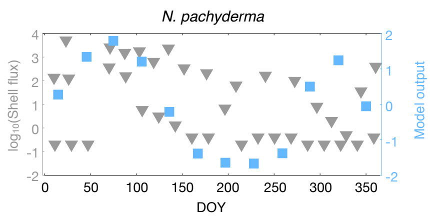
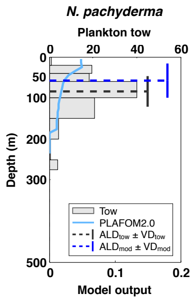
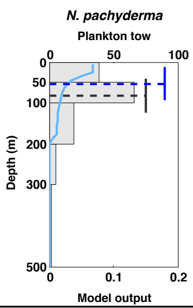


Figure S4.

Station 93-36



Station PS78-25



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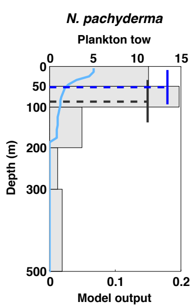

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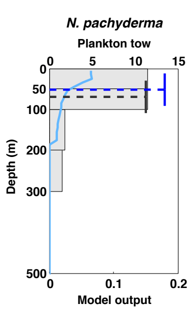

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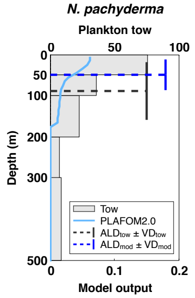

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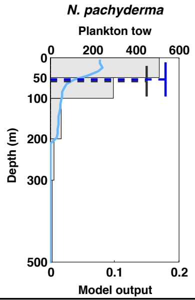
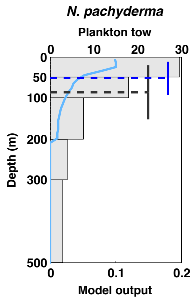
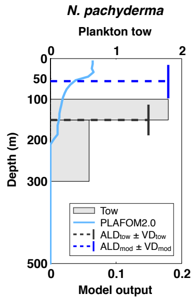


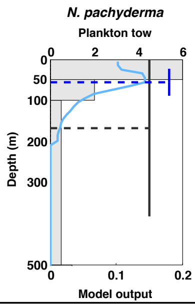
Station PS55-063



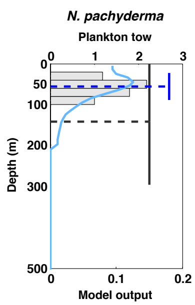
Station MN116



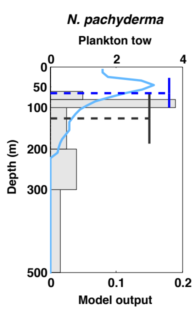
Station MN2



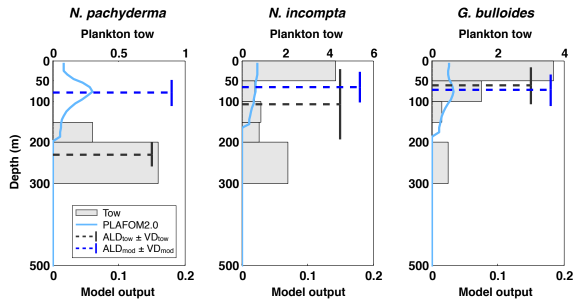
Station MN323



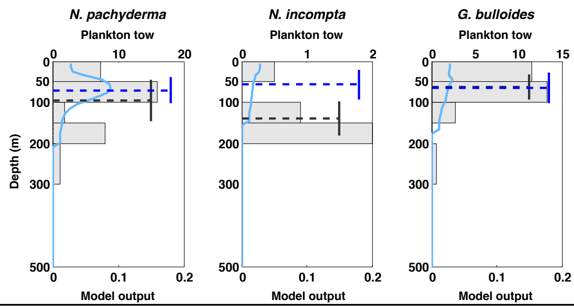
Station MN314



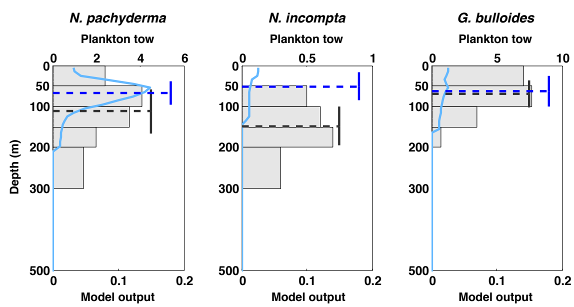
Station PAPA



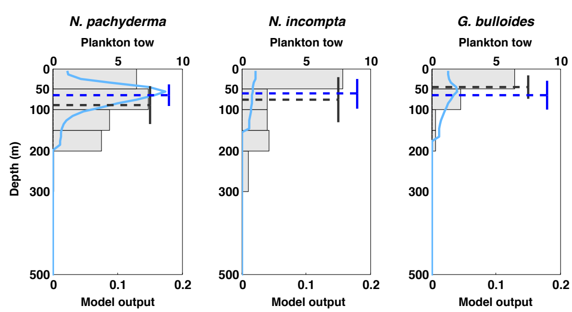
Station 101

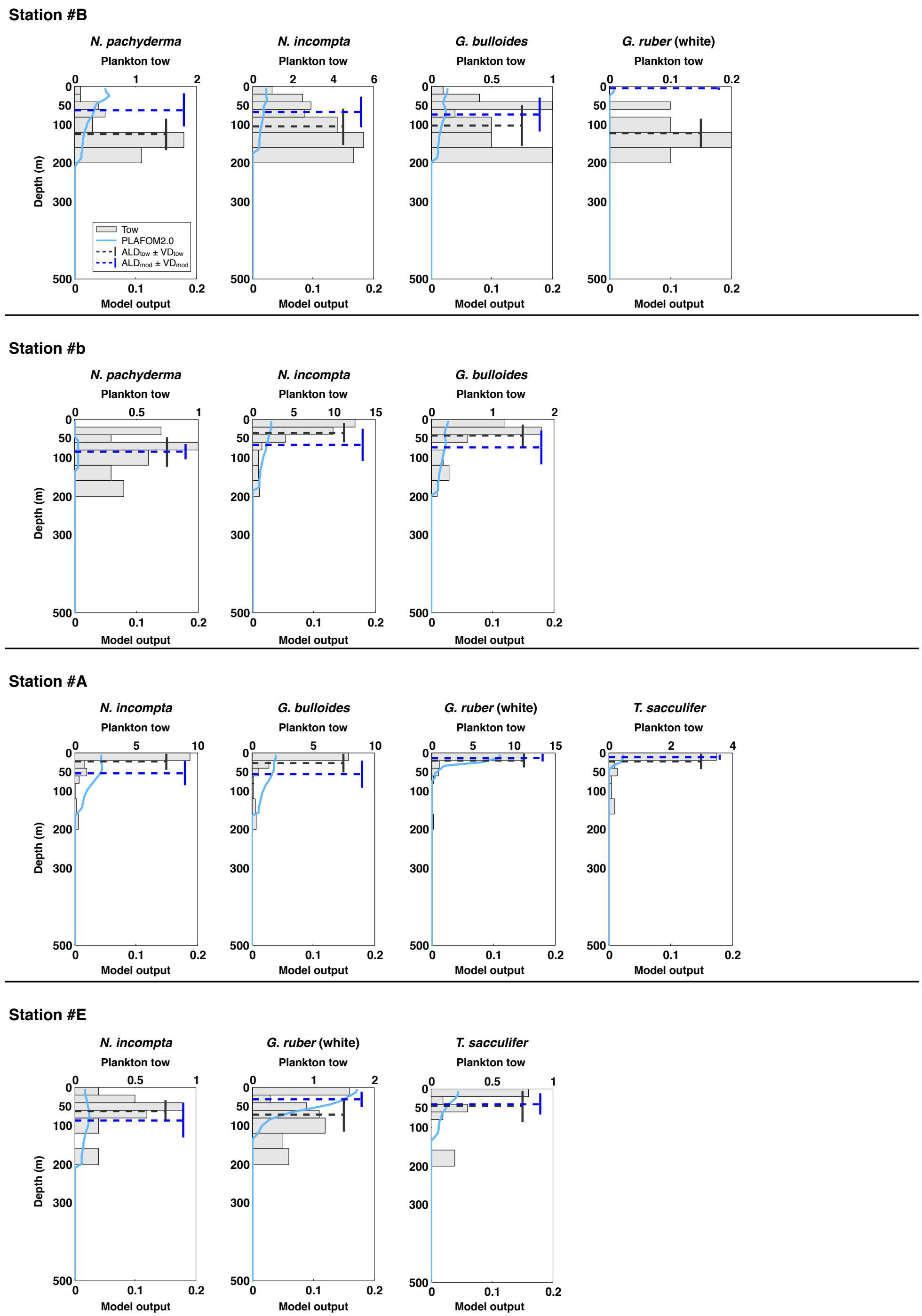


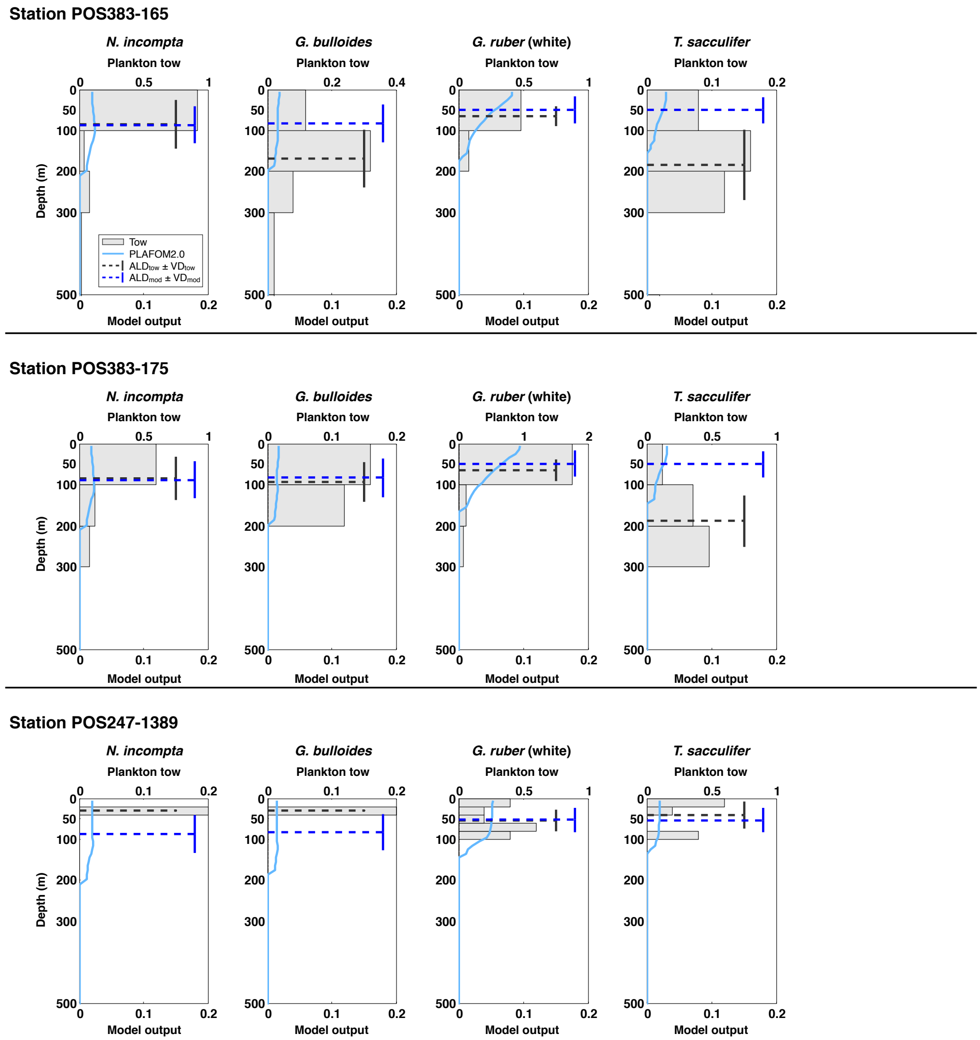
Station 79



Station KNOT

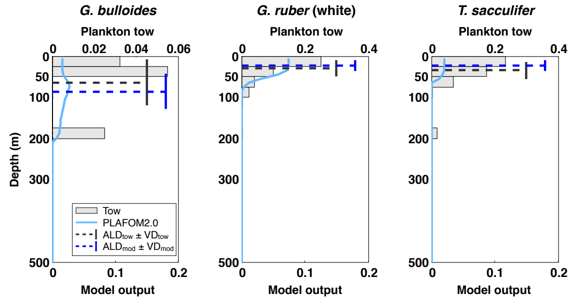



Station #B
N. pachyderma
N. incompta
G. bulloides
G. ruber (white)
Plankton tow
Depth (m)
Model output
Tow
PLAFOM2.0
ALDtow ± VDtow
ALDmod ± VDmod
Station #b
N. pachyderma
N. incompta
G. bulloides
Station #A
N. incompta
G. bulloides
G. ruber (white)
T. sacculifer
Station #E
N. incompta
G. ruber (white)
T. sacculifer

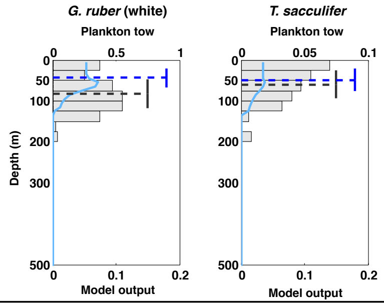


Station POS383-165
Station POS383-175
Station POS247-1389
N. incompta
G. bulloides
G. ruber (white)
T. sacculifer
Plankton tow
Model output
Depth (m)
Tow
PLAFOM2.0
ALDtow ± VDtow
ALDmod ± VDmod

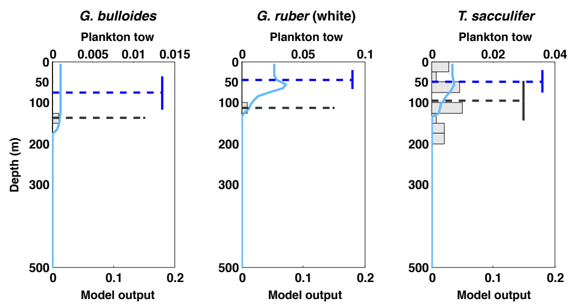
Station MOC1-38



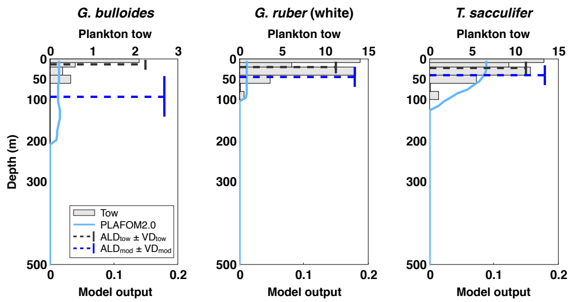
Station MOC1-28



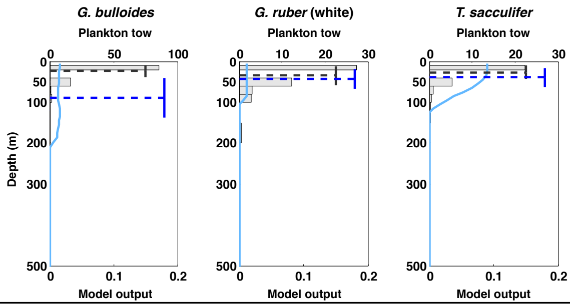
Station MOC1-23



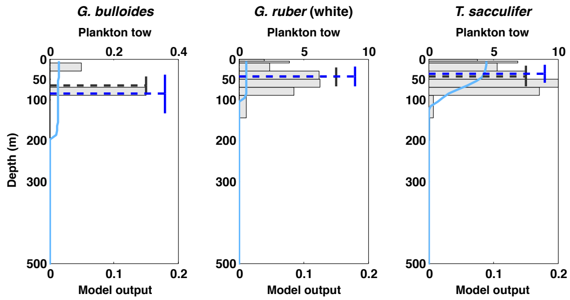
Station MOC63



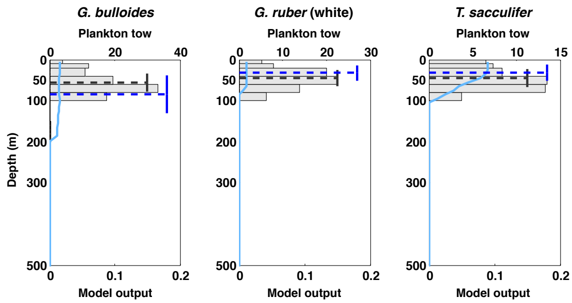
Station MOC65



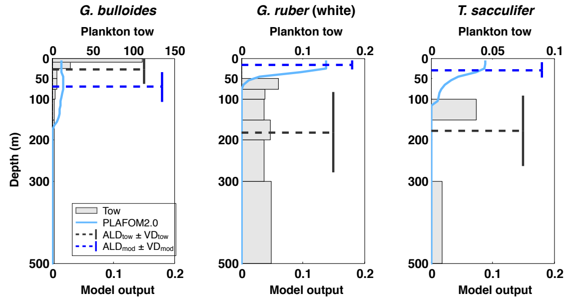
Station MOC12



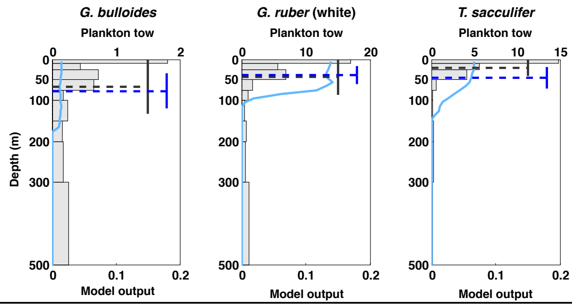
Station MOC66



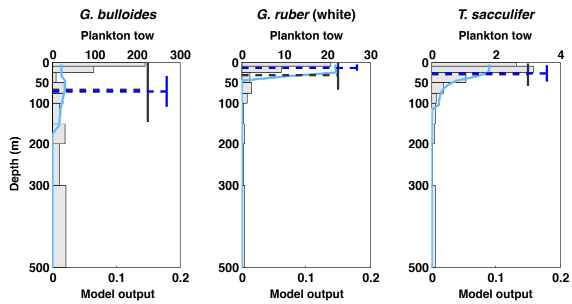
Station 310



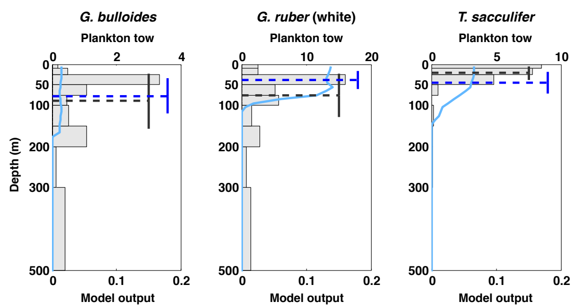
Station 920



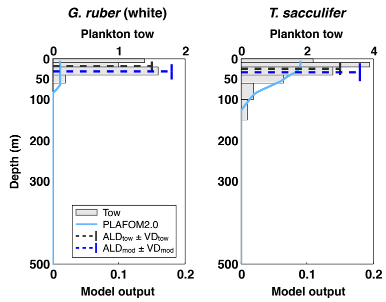
Station 313



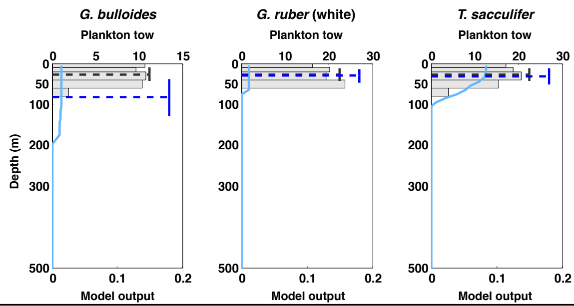
Station 917



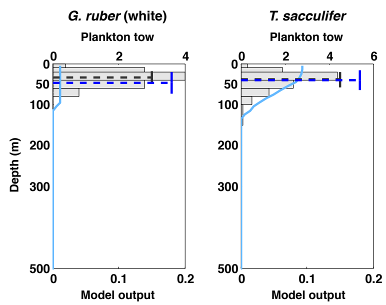
Station MOC15



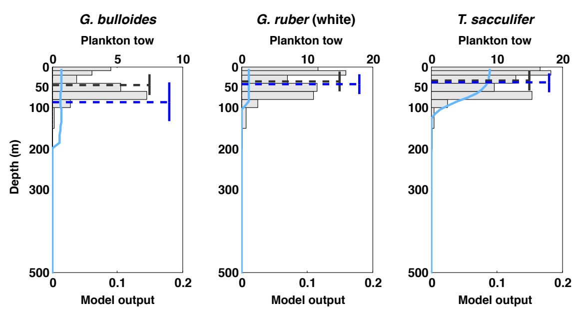
Station MOC69

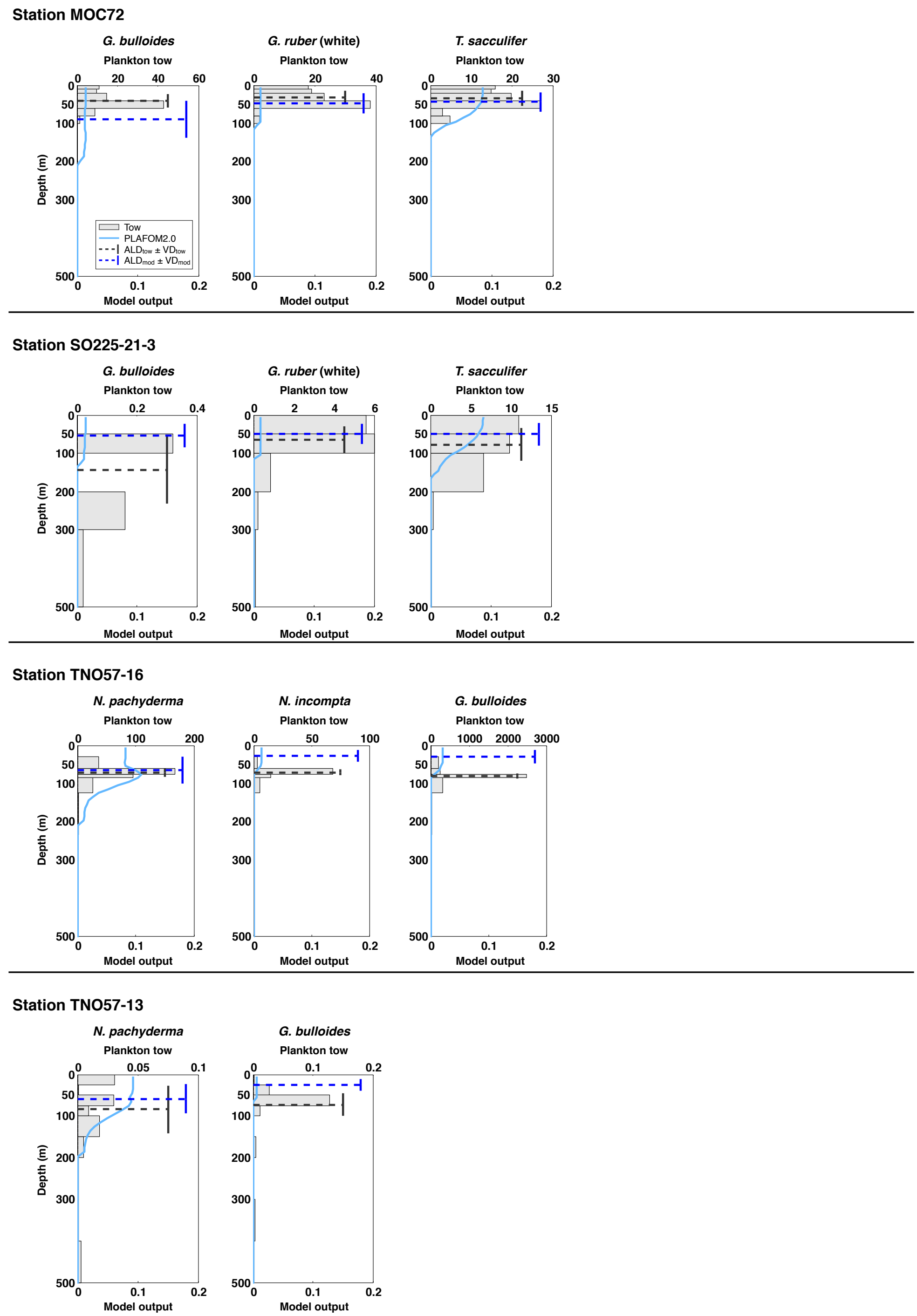


Station MOC20

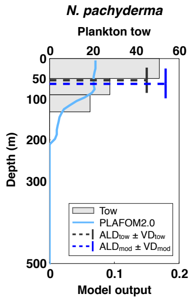


Station MOC71

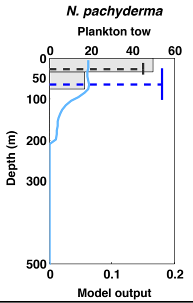



Station MOC72
G. bulloides
G. ruber (white)
T. sacculifer
Plankton tow
Depth (m)
Model output
Tow
PLAFOM2.0
ALDtow ± VDtow
ALDmod ± VDmod
Station SO225-21-3
G. bulloides
G. ruber (white)
T. sacculifer
Plankton tow
Depth (m)
Model output
Station TNO57-16
N. pachyderma
N. incompta
G. bulloides
Plankton tow
Depth (m)
Model output
Station TNO57-13
N. pachyderma
G. bulloides
Plankton tow
Depth (m)
Model output

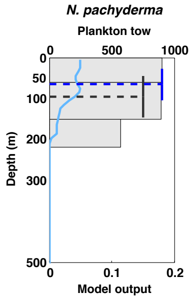
Station AN98-O



Station AN99-O



Station AN00-O



Station AN01-O

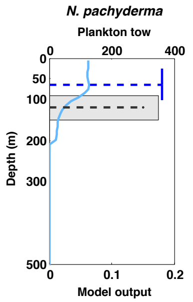


Table S1.

#	Site	Latitude (°N)	Longitude (°E)	Water Depth (m)	Trap Depth (m)	Deployment Time (day/month/year)	Duration (days)	Species	Fraction (μm)	Source
1	GS2	75.00	0.00	3720	300	03/06/1994 to 11/05/1995	342	Np	63-500	Jensen (1998)
2	OG5	72.40	-7.70	2624	500	06/08/1991 to 10/07/1992	339	Np	63-500	Jensen (1998)
3	NB6/7	69.69	0.47	3273	500	06/08/1991 to 02/10/1993	780	Np, Ni	63-500	Jensen (1998)
4	PAC50	50.01	165.03	5570	3260	01/12/1997 to 10/06/2001	1091	Np, Ni, Gb	$>$125	Kuroyanagi et al. (2002)
5	PAPA	50.00	-145.00	4240	3800	23/09/1982 to 30/08/1986	1122	Np, Ni, Gb	$>$125	Sautter and Thunell (1989)
6	SA	49.00	-174.00	5406	4812	23/08/1990 to 03/08/1999	2702	Np, Gb	$>$125	Asahi and Takahashi (2007)
7	KNOT	43.97	155.06	5370	2957	01/12/1997 to 12/05/2000	799	Np, Ni, Gb, Gr	$>$125	Kuroyanagi et al. (2002)
8	WCT6	42.00	155.34	5578	1091	15/08/1999 to 31/08/2000	382	Np, Ni, Gb, Gr	$>$125	Mohiuddin et al. (2005)
9	WCT2	39.00	147.00	5356-5322	1371; 1586	19/11/1997 to 10/08/1999	608	Ni, Gb, Gr	$>$125	Mohiuddin et al. (2002)
10	WCT7	36.68	154.94	5578	5034	19/08/1999 to 29/08/2000	376	Gb, Ts	$>$125	Mohiuddin et al. (2004)
11	WCT1	25.00	136.99	4905-5308	917; 1388	07/12/1997 to 12/08/1999	560	Ni, Gr, Ts	$>$125	Mohiuddin et al. (2002)
12	SBB	34.23	-120.03	650	590; 470	12/08/1993 to 26/06/1999	1015	Ni, Gb, Gr	$>$125	Kincaid et al. (2000) Darling et al. (2003)
13	SPB	33.55	-118.50	880	500	07/01/1988 to 26/07/1988	199	Ni, Gb, Gr	$>$125	Sautter and Thunell (1991)
14	JGOFS34	34.00	-21.00	n.a.	2000	03/04/1989 to 16/04/1990	378	Ni, Gb, Ts	$>$150	Wolfteich (1994)
15	L1	33.00	-22.00	5300	3000	24/02/2002 to 01/04/2004	764	Ni, Gb, Gr, Ts	$>$125	Storz et al. (2009)
16	BATS	32.08	-64.25	4200	3200	06/04/1978 to 17/05/1984	1848	Gb, Gr, Ts	$>$125	Deuser et al. (1981) Deuser and Ross (1989)
17	WAST	16.32	60.47	4016	3026	10/05/1986 to 21/10/1987	506	Gb, Gr, Ts	$>$150	Curry et al. (1992)
18	EA1	3.17	-11.25	4524	984	13/04/1991 to 29/11/1991	230	Gb, Gr, Ts	$>$150	Fischer and Wefer (1996)
19	EA2	1.78	-11.25	4399	953	13/04/1991 to 29/11/1991	230	Gb, Gr, Ts	$>$150	Fischer and Wefer (1996)
20	EA3	0.08	-10.77	4141	1097	13/04/1991 to 29/11/1991	230	Gb, Gr, Ts	$>$150	Fischer and Wefer (1996)
21	EA4	-2.19	-10.09	3906	1068	13/04/1991 to 29/11/1991	230	Gb, Gr, Ts	$>$150	Fischer and Wefer (1996)
22	WA1	-4.00	-25.57	5530	652	17/10/1992 to 21/03/1993	155	Gr, Ts	$>$150	Fischer and Wefer (1996)
23	NCR	-42.70	178.63	1500	1000	14/09/1996 to 15/05/1997	243	Np, Ni, Gb, Gr, Ts	$>$150	King and Howard (2001)
24	SCR	-44.62	178.62	1500	1000	09/06/1996 to 15/05/1997	340	Np, Ni, Gb, Gr, Ts	$>$150	King and Howard (2001)
25	CP	-52.62	174.15	n.a.	442; 362	14/05/1998 to 13/07/1999	368	Np, Ni, Gb	$>$150	Northcote and Neil (2005)
26	WS34	-64.90	-2.60	5053	360	16/01/1988 to 26/02/1990	745	Np	$>$125	Donner and Wefer (1994)

Np – *N. pachyderma*; Ni – *N. incompta*; Gb – *G. bulloides*; Gr – *G. ruber* (white); Ts – *T. sacculifer*
n.a. – not available (i.e., not given in data set)

Table S2.

#	Station	Latitude (°N)	Longitude (°E)	Water Depth (m)	Depth Intervals	Date (season)	Species	Fraction (µm)	Source
1	93-36	80.36	-10.14	n.a.	0-20, 20-40, 40-60, 60-100, 100-150, 150-200, 200-250, 250-275	27/07/1993 (summer)	Np	n.a.	Kohfeld et al. (1996)
2	PS78-25	78.83	7.00	1465	0-50, 50-100, 100-200, 200-300, 300-500	26/06/2011 (summer)	Np, Ni, Gb	100-250	Pados and Spielhagen (2014)
3	PS78-44	78.83	0.08	2636	0-50, 50-100, 100-200, 200-300, 300-500	29/06/2011 (summer)	Np, Ni, Gb	100-250	Pados and Spielhagen (2014)
4	PS78-75	78.83	-3.92	1978	0-50, 50-100, 100-200, 200-300, 300-500	04/07/2011 (summer)	Np, Ni, Gb	100-250	Pados and Spielhagen (2014)
5	PS55-025	75.00	-10.58	3084	0-50, 50-100, 100-200, 200-300, 300-500	11/07/1999 (summer)	Np, Ni, Gb	125-250	Stangeew (2001)
6	PS55-043	75.00	0.36	3789	0-50, 50-100, 100-200, 200-300, 300-500	14/07/1999 (summer)	Np, Ni, Gb	125-250	Stangeew (2001)
7	PS55-063	75.00	10.65	2542	0-50, 50-100, 100-200, 200-300, 300-500	16/07/1999 (summer)	Np, Ni, Gb	125-250	Stangeew (2001)
8	MN116	75.00	-7.31	3393	0-50, 50-100, 100-150, 150-300	21/08/1994 (summer)	Np	125-250	Simstich et al. (2003)
9	MN2	70.00	3.40	3261	0-50, 50-100, 100-500, 500-1000, 1000-2000	10/07/1994 (summer)	Np	125-250	Simstich et al. (2003)
10	MN323	69.69	0.47	3290	0-20, 20-40, 40-60, 60-80, 80-100, 100-200, 200-300, 300-500, 500-700, 700-1000, 1000-1500, 1500-2000, 2000-2500	07/07/1992 (summer)	Np	125-250	Simstich et al. (2003)
11	MN314	67.54	5.58	1438	0-20, 20-40, 40-60, 60-80, 80-100, 100-200, 200-300, 300-500, 500-700	28/06/1992 (summer)	Np	125-250	Simstich et al. (2003)
12	PAPA	49.98	-144.97	4253	0-50, 50-100, 100-150, 150-200, 200-300	16/08/2015 (summer)	Np, Ni, Gb	>100	Iwasaki et al. (2017)
13	101	47.00	-174.95	5790	0-50, 50-100, 100-150, 150-200, 200-300	05/08/2015 (summer)	Np, Ni, Gb	>100	Iwasaki et al. (2017)
14	79	46.98	166.73	5957	0-50, 50-100, 100-150, 150-200, 200-300	31/07/2015 (summer)	Np, Ni, Gb	>100	Iwasaki et al. (2017)
15	KNOT	44.08	154.98	5335	0-50, 50-100, 100-150, 150-200, 200-300	25/07/2015 (summer)	Np, Ni, Gb	>100	Iwasaki et al. (2017)
16	#B	41.57	141.90	1000	0-20, 20-40, 40-60, 60-80, 80-120, 120-160, 160-200	03/06/2002 (summer)	Np, Ni, Gb, Gr, Ts	125-1000	Kuroyanagi and Kawahata (2004)
17	#b	41.15	143.38	2077	0-20, 20-40, 40-60, 60-80, 80-120, 120-160, 160-200	04/06/2002 (summer)	Np, Ni, Gb, Gr, Ts	125-1000	Kuroyanagi and Kawahata (2004)
18	#A	36.02	141.78	2220	0-20, 20-40, 40-60, 60-80, 80-120, 120-160, 160-200	25/05/2002 (spring)	Np, Ni, Gb, Gr, Ts	125-1000	Kuroyanagi and Kawahata (2004)
19	#E	32.17	133.88	2660	0-20, 20-40, 40-60, 60-80, 80-120, 120-160, 160-200	27/05/2002 (spring)	Np, Ni, Gb, Gr, Ts	125-1000	Kuroyanagi and Kawahata (2004)
20	POS383-165	34.00	-22.00	5288	0-100, 100-200, 200-300, 300-500, 500-700	23/04/2009 (spring)	Np, Ni, Gb, Gr, Ts	>100	Rebotim et al. (2017)
21	POS383-175	33.15	-22.00	5232	0-100, 100-200, 200-300, 300-500, 500-700	26/04/2009 (spring)	Np, Ni, Gb, Gr, Ts	>100	Rebotim et al. (2017)
22	POS247-1389	33.08	-22.00	5226	0-20, 20-40, 40-60, 60-80, 80-100, 100-200, 200-300, 300-500, 500-700	24/01/1999 (winter)	Np, Ni, Gb, Gr, Ts	>100	Rebotim et al. (2017)
23	MOC1-38	38.92	-67.90	n.a.	0-25, 25-50, 50-75, 75-100, 100-125, 125-150, 150-175, 175-200	11/1975 (fall)	Gb, Gr, Ts	n.a.	Fairbanks et al. (1980)
24	MOC1-28	33.91	-71.78	n.a.	0-25, 25-50, 50-75, 75-100, 100-125, 125-150, 150-175, 175-200	11/1975 (fall)	Gr, Ts	n.a.	Fairbanks et al. (1980)
25	MOC1-23	32.73	-71.16	n.a.	0-25, 25-50, 50-75, 75-100, 100-125, 125-150, 150-175, 175-200	11/1975 (fall)	Gr, Ts	n.a.	Fairbanks et al. (1980)
26	310	16.02	52.73	n.a.	0-10, 10-25, 25-50, 50-75, 75-100, 100-150, 150-200, 200-300, 300-500	20/08/1992 (summer)	Np, Gb, Gr, Ts	>125	Peeters and Brummer (2002)
27	920	16.09	52.70	n.a.	0-10, 10-25, 25-50, 50-75, 75-100, 100-150, 150-200, 200-300, 300-500	27/02/1993 (winter)	Np, Gb, Gr, Ts	>125	Peeters and Brummer (2002)
28	313	15.91	53.02	n.a.	0-10, 10-25, 25-50, 50-75, 75-100, 100-150, 150-200, 200-300, 300-500	21/08/1992 (summer)	Np, Gb, Gr, Ts	>125	Peeters and Brummer (2002)
29	917	15.89	52.97	n.a.	0-10, 10-25, 25-50, 50-75, 75-100, 100-150, 150-200, 200-300, 300-500	25/02/1993 (winter)	Np, Gb, Gr, Ts	>125	Peeters and Brummer (2002)
30	MOC63	2.92	-140.20	n.a.	0-10, 10-20, 20-40, 40-60,	22/08/1992	Gb, Gr, Ts	>150	Watkins et al. (1998)

Continued on next page

#	Station	Latitude (°N)	Longitude (°E)	Water Depth (m)	Depth Intervals	Date (season)	Species	Fraction (μm)	Source
					60-80, 80-100, 100-150, 150-200	(summer)			
31	MOC65	2.05	-141.49	n.a.	10-20, 40-60, 60-80, 80-100, 100-150, 150-200	26/08/1992 (summer)	Gb, Gr, Ts	>150	Watkins et al. (1998)
32	MOC12	2.01	-139.88	n.a.	0-5, 5-10, 10-30, 30-50, 50-70, 70-90, 90-145, 145-200	17/02/1992 (winter)	Gb, Gr, Ts	>150	Watkins et al. (1996)
33	MOC66	1.13	-140.01	n.a.	0-10, 10-20, 20-40, 40-60, 60-80, 80-100, 100-150, 150-200	27/08/1992 (summer)	Gb, Gr, Ts	>150	Watkins et al. (1998)
34	MOC15	0.00	-140.07	n.a.	0-10, 10-20, 20-40, 40-60, 60-100, 100-150	23/02/1992 (winter)	Gr, Ts	>150	Watkins et al. (1996)
35	MOC69	-1.05	-139.97	n.a.	0-10, 10-20, 20-40, 40-60, 60-80, 100-150, 150-200	01/09/1992 (fall)	Gb, Gr, Ts	>150	Watkins et al. (1998)
36	MOC20	-2.02	-140.16	n.a.	0-10, 10-20, 20-40, 40-60, 60-80, 80-100, 100-150, 150-200	29/02/1992 (winter)	Gr, Ts	>150	Watkins et al. (1996)
37	MOC71	-2.33	-140.32	n.a.	0-10, 10-20, 20-40, 40-60, 60-80, 80-100, 100-150, 150-200	04/09/1992 (fall)	Gb, Gr, Ts	>150	Watkins et al. (1998)
38	MOC72	-3.21	-140.25	n.a.	0-10, 10-20, 20-40, 40-60, 60-80, 80-100, 100-150, 150-200	06/09/1992 (fall)	Gb, Gr, Ts	>150	Watkins et al. (1998)
39	SO225-21-3	-3.05	-165.06	5188	0-50, 50-100, 100-200, 200-300, 300-500	08/12/2012 (winter)	Gb, Gr, Ts	>150	Rippert et al. (2016)
40	TNO57-16	-50.12	5.75	3761	0-30, 30-60, 60-75, 75-85, 85-125, 125-235, 235-300, 300-440	24/02/1996 (winter)	Np, Ni, Gb	>150	Mortyn and Charles (2003)
41	TNO57-13	-53.18	5.13	2851	0-25, 25-50, 50-75, 75-100, 100-150, 150-200, 200-300, 300-400, 400-500	21/02/1996 (winter)	Np, Ni, Gb	>150	Mortyn and Charles (2003)
42	AN98/O	-63.25	177.25	4100	0-50, 50-90, 90-130	20/01/1998 (winter)	Np, Ni, Gb	>100	Bergami et al. (2009)
43	AN99/O	-63.40	178.05	4074	0-35, 35-70	09/01/1999 (winter)	Np, Ni, Gb	>100	Bergami et al. (2009)
44	AN00/O	-63.53	178.38	3548	0-60, 60-150, 150-220	11/01/2000 (winter)	Np, Ni, Gb	>100	Bergami et al. (2009)
45	AN01/O	-63.43	178.10	3964	0-90, 90-150	09/01/2001 (winter)	Np, Ni, Gb	>100	Bergami et al. (2009)

Np – *N. pachyderma*; Ni – *N. incompta*; Gb – *G. bulloides*; Gr – *G. ruber* (white); Ts – *T. sacculifer*
n.a. – not available (i.e., not given in data set)
Here the season refers to those of the Northern Hemisphere.

Table S3a.

Province	Sediment Trap Details			*N. pachyderma*		*N. incompta*		*G. bulloides*		*G. ruber* (white)		*T. sacculifer*	
	Site	Latitude (°N)	Longitude (°E)	Trap	PLAFOM2.0	Trap	PLAFOM2.0	Trap	PLAFOM2.0	Trap	PLAFOM2.0	Trap	PLAFOM2.0
Polar	GS2	75.00	0.00	Jun-Sep	Jul-Sep	-	-	-	-	-	-	-	-
	OG5	72.40	-7.70	Aug-Sep	Aug-Sep	-	-	-	-	-	-	-	-
	NB6/7	69.69	-0.47	Jun-Nov	Mar-Jul	Jul-Nov	Sep-Oct	-	-	-	-	-	-
Subpolar	PAC50	50.01	165.03	Mar-May Sep-Nov	Feb-Apr Jun-Aug	Mar-May	Sep-Dec	Apr-Jun	Oct-Dec	-	-	-	-
	PAPA	50.00	-145.00	Mar-May Nov-Dec	Mar-May	Apr-Jun	Jul-Nov	Apr-Jun Nov-Dec	Jun-Aug	-	-	-	-
	SA	49.00	-174.00	Apr-Jul Aug-Oct	Feb-May	-	-	Apr-May Jul-Sep	Aug-Oct	-	-	-	-
Transitional	KNOT	43.97	155.06	Mar-May	Mar-May	none	Oct-Dec	Mar-May Oct-Dec	Apr-May	Sep-Nov	Aug-Oct	-	-
	WCT6	42.00	155.34	Mar-May Jul-Sep	Mar-Apr	Jun-Oct	Oct-Dec	Mar-May Oct-Nov	Apr-May	Sep-Nov	Aug-Sep	-	-
	WCT2	39.00	147.00	-	-	none	Jan-Mar Aug-Oct	none	Jan-Mar Aug-Sep	Sep-Dec	Aug-Oct	-	-
	WCT7	36.68	154.94	-	-	-	-	May-Jun	Feb-Mar Jul-Aug	-	-	Aug-Dec	Jul-Nov
Subtropics	SBB	34.23	-120.03	-	-	Aug-Oct	May-Sep	Jun-Aug	May-Sep	Jul-Nov	Jul-Nov	-	-
	JGOFS34	34.00	-21.00	-	-	Feb-Apr Aug-Sep	May-Aug	Mar-May	May-Sep	-	-	Apr-Jun	Jun-Oct
	SPB	33.55	-118.50	-	-	Mar-May	May-Sep	May-Jun	May-Sep	Apr-Jul	Jul-Nov	-	-
	L1	33.00	-22.00	-	-	Feb-Apr	May-Aug	Mar-May	May-Sep	Mar-May	Jun-Sep	Mar-May	Jun-Oct
	BATS	32.08	-64.25	-	-	-	-	Jan-May	Jun-Sep	none	May-Jul	May-Jul	Jun-Oct
	WCT1	25.00	136.99	-	-	none	Mar-May	-	-	Jun-Aug	Jan-Apr	Jun-Aug	Jun-Sep
Tropics	WAST	16.32	60.47	-	-	-	-	Jan-Feb Jul-Oct	Oct-Dec	Dec-Feb May-Aug	Jan-Apr Aug-Sep	Jun-Sep	Mar-May
	EA1	3.17	-11.25	-	-	-	-	Sep-Nov	Oct-Nov	none	Jul-Oct	none	Jun-Aug
	EA2	1.78	-11.25	-	-	-	-	Jul-Oct	Feb-Apr Nov-Dec	none	Jul-Oct	May-Jul	Jul-Oct
	EA3	0.08	-10.77	-	-	-	-	Jul-Sep	Mar-Apr Oct-Dec	May-Jun	Jul-Oct	May-Jun	Jan-Mar Sep-Oct
	EA4	-2.19	-10.09	-	-	-	-	Apr-May	Mar-May	Apr-Aug	Jul-Oct	Apr-Aug	Jun-Sep
	WA1	-4.00	-25.57	-	-	-	-	-	-	none	Aug-Dec	none	Aug-Oct
Tran-sitional	NCR	-42.70	178.63	Sep-Dec	Aug-Sep	Sep-Oct	Aug-Sep Dec-Feb	Apr-May Sep-Nov	Jul-Sep Dec-Feb	none	Jan-Apr	Oct-Dec	Jan-Apr
	SCR	-44.62	178.62	Sep-Oct	Aug-Oct	Feb-Apr Sep-Nov	Sep-Oct Dec-Jan	Sep-Oct	Sep-Jan	-	-	-	-
Sub-polar	CP	-52.62	174.15	Mar-May	Aug-Nov	Mar-May	Aug-Oct	Nov-May	Aug-Oct	-	-	-	-
Polar	WS34	-64.90	-2.60	Mar-May	Feb-Apr Oct-Dec	-	-	-	-	-	-	-	-

Table S3b.

Province	Sediment Trap Details			*N. pachyderma*		*N. incompta*		*G. bulloides*		*G. ruber* (white)		*T. sacculifer*	
	Site	Latitude (° N)	Longitude (° E)	Trap	PLAFOM2.0	Trap	PLAFOM2.0	Trap	PLAFOM2.0	Trap	PLAFOM2.0	Trap	PLAFOM2.0
Polar	GS2	75.00	0.00	0.78	0.21	-	-	-	-	-	-	-	-
	OG5	72.40	-7.70	0.64	0.17	-	-	-	-	-	-	-	-
	NB6/7	69.69	-0.47	0.80	0.23	0.95	0.84	-	-	-	-	-	-
Sub-polar	PAC50	50.01	165.03	0.75	0.12	0.77	0.37	0.66	0.22	-	-	-	-
	PAPA	50.00	-145.00	1.07	0.11	1.20	0.04	1.10	0.07	-	-	-	-
	SA	49.00	-174.00	0.95	0.15	-	-	0.94	0.08	-	-	-	-
Tran-sitional	KNOT	43.97	155.06	0.69	0.28	0.79	0.07	0.66	0.14	0.76	0.62	-	-
	WCT6	42.00	155.34	0.42	0.28	0.47	0.07	0.62	0.14	0.73	0.62	-	-
	WCT2	39.00	147.00	-	-	0.64	0.06	0.69	0.11	0.74	0.43	-	-
	WCT7	36.68	154.94	-	-	-	-	0.55	0.08	-	-	0.57	0.40
Subtropics	SBB	34.23	-120.03	-	-	0.68	0.03	0.67	0.06	0.87	0.16	-	-
	JGOFS34	34.00	-21.00	-	-	0.85	0.02	0.76	0.03	-	-	0.69	0.12
	SPB	33.55	-118.50	-	-	0.73	0.03	0.85	0.06	0.77	0.16	-	-
	L1	33.00	-22.00	-	-	1.28	0.02	0.91	0.03	0.70	0.08	0.59	0.11
	BATS	32.08	-64.25	-	-	-	-	0.72	0.05	0.37	0.09	0.96	0.13
	WCT1	25.00	136.99	-	-	0.42	0.08	-	-	0.77	0.14	0.88	0.06
Tropics	WAST	16.32	60.47	-	-	-	-	0.77	0.04	0.70	0.11	0.66	0.03
	EA1	3.17	-11.25	-	-	-	-	0.48	0.04	0.36	0.08	0.47	0.03
	EA2	1.78	-11.25	-	-	-	-	0.52	0.02	0.33	0.12	0.59	0.04
	EA3	0.08	-10.77	-	-	-	-	0.81	0.01	0.57	0.07	0.47	0.02
	EA4	-2.19	-10.09	-	-	-	-	0.83	0.04	0.60	0.12	0.50	0.02
	WA1	-4.00	-25.57	-	-	-	-	-	-	0.67	0.09	0.58	0.04
Tran-sitional	NCR	-42.70	178.63	0.91	0.26	0.78	0.07	0.73	0.12	0.77	0.39	0.85	0.54
	SCR	-44.62	178.62	0.87	0.12	0.57	0.06	0.89	0.10	-	-	-	-
Sub-polar	CP	-52.62	174.15	1.29	0.28	1.12	0.11	1.10	0.15	-	-	-	-
Polar	WS34	-64.90	-2.60	1.12	0.13	-	-	-	-	-	-	-	-

Table S4.

Province	Plankton Tow Details			*N. pachyderma*		*N. incompta*		*G. bulloides*		*G. ruber* (white)		*T. sacculifer*	
	Site	Latitude (°N)	Longitude (°E)	Tow[a] (m)	PLAFOM2.0[a] (m)	Tow[a] (m)	PLAFOM2.0[a] (m)	Tow[a] (m)	PLAFOM2.0[a] (m)	Tow[a] (m)	PLAFOM2.0[a] (m)	Tow[a] (m)	PLAFOM2.0[a] (m)
Polar	93-36	80.36	-10.14	85±35	55±40	-	-	-	-	-	-	-	-
	PS78-25	78.83	0.08	80±40	55±40	-	-	-	-	-	-	-	-
	PS78-44	78.83	7.00	85±55	50±40	-	-	-	-	-	-	-	-
	PS78-75	78.83	-3.92	70±40	50±40	-	-	-	-	-	-	-	-
	PS55-025	75.00	-10.58	90±70	50±35	-	-	-	-	-	-	-	-
	PS55-043	75.00	0.36	60±40	55±40	-	-	-	-	-	-	-	-
	PS55-063	75.00	10.65	85±65	50±40	-	-	-	-	-	-	-	-
	MN116	75.00	-7.31	150±40	55±40	-	-	-	-	-	-	-	-
	MN2	70.00	3.40	170±215	55±35	-	-	-	-	-	-	-	-
	MN323	69.69	0.47	140±155	55±35	-	-	-	-	-	-	-	-
	MN314	67.54	5.58	125±60	65±35	-	-	-	-	-	-	-	-
Sub-polar	PAPA	49.98	-144.97	230±30	80±35	105±85	65±35	60±45	70±40	-	-	-	-
	101	47.00	-174.95	95±50	70±30	140±40	55±35	65±30	65±40	-	-	-	-
	79	46.98	166.73	110±55	65±30	150±50	50±35	70±35	65±35	-	-	-	-
Transitional	KNOT	44.08	154.98	90±45	65±25	75±55	60±35	45±30	65±35	-	-	-	-
	#B	41.57	141.90	125±40	60±45	105±45	65±40	100±55	75±45	122±40	5±5	-	-
	#b	41.15	143.38	85±40	85±20	35±25	65±40	40±30	75±45	-	-	-	-
	MOC1-38	38.92	-67.90	-	-	-	-	65±55	85±45	30±20	25±15	35±20	25±15
	#A	36.02	141.78	-	-	25±20	55±30	25±25	55±35	20±20	15±10	25±20	10±10
Subtropics	POS383-165	34.00	-22.00	-	-	85±60	85±45	170±70	85±45	65±25	50±35	185±85	50±30
	MOC1-28	33.91	-71.78	-	-	-	-	-	-	80±35	45±25	60±35	50±30
	POS383-175	33.15	-22.00	-	-	85±55	90±45	95±50	85±45	65±25	50±30	190±65	50±30
	POS247-1389	33.08	-22.00	-	-	30±0	85±45	30±0	85±45	55±25	55±30	40±35	55±30
	MOC1-23	32.73	-71.16	-	-	-	-	140±0	75±40	115±0	45±25	95±50	45±30
	#E	32.17	133.88	-	-	60±30	85±45	-	-	70±45	30±20	45±40	40±30
Tropics	920	16.09	52.70	-	-	-	-	65±65	75±45	40±45	40±20	20±20	45±25
	310	16.02	52.73	-	-	-	-	30±35	70±35	180±100	15±10	180±85	30±20
	313	15.91	53.02	-	-	-	-	70±80	70±35	30±35	15±10	30±30	30±20
	917	15.89	52.97	-	-	-	-	90±65	75±45	75±50	40±20	20±15	45±25
	MOC63	2.92	-140.20	-	-	-	-	15±10	95±50	20±15	45±25	25±15	40±25
	MOC65	2.05	-141.49	-	-	-	-	25±15	90±50	35±25	45±25	25±15	40±25
	MOC12	2.01	-139.88	-	-	-	-	65±25	85±45	45±25	45±25	45±25	35±20
	MOC66	1.13	-140.01	-	-	-	-	55±25	85±45	45±20	35±20	45±25	35±20
	MOC15	0.00	-140.07	-	-	-	-	-	-	20±10	35±20	25±15	35±20
	MOC69	-1.05	-139.97	-	-	-	-	25±15	85±45	25±15	30±15	25±15	35±20
	MOC20	-2.02	-140.16	-	-	-	-	-	-	35±15	50±25	40±20	40±25
	MOC71	-2.33	-140.32	-	-	-	-	45±25	85±45	35±25	45±25	35±25	40±25
	SO225-21-3	-3.05	-165.06	-	-	-	-	145±90	55±30	65±35	50±25	75±45	50±30
	MOC72	-3.21	-140.25	-	-	-	-	40±20	90±50	35±15	50±25	35±20	45±25
Sub-polar	TNO57-16	-50.12	5.75	70±10	65±35	70±10	25±15	80±5	30±15	-	-	-	-
	TNO57-13	-53.18	5.13	85±60	60±35	-	-	75±25	25±15	-	-	-	-
Polar	AN98-O	-63.25	177.25	55±30	60±35	-	-	-	-	-	-	-	-
	AN99-O	-63.40	178.05	25±15	65±40	-	-	-	-	-	-	-	-
	AN01-O	-63.43	178.10	120±0	65±40	-	-	-	-	-	-	-	-
	AN00-O	-63.53	178.38	95±50	65±40	-	-	-	-	-	-	-	-

[a] ALD±VD (in m) of the planktonic foraminiferal species calculated after Rebotim et al. (2017) for the plankton tow samples and for PLAFOM2.0 (obtained at the nearest model grid points of the given plankton tow locations). Note that the values have been rounded to the nearest 5 m.

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