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Seasonal Flux and Assemblage Composition of Planktic Foraminifera from the Northern Gulf of Mexico, 2008–11

By Caitlin E. Reynolds and Richard Z. Poore

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Seasonal Flux and Assemblage Composition of Planktic Foraminifera from the Northern Gulf of Mexico, 2008–11

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Abstract

The U.S. Geological Survey anchored a sediment trap in the northern Gulf of Mexico to collect seasonal time-series data on the flux and assemblage composition of live planktic foraminifers. This report provides an update of the previous time-series data to include results from 2011. Ten species, or varieties, constituted ~92 percent of the 2011 assemblage: *Globigerinoides ruber* (pink and white varieties), *Globigerinoides sacculifer*, *Globigerina calida*, *Globigerinella aequilateralis*, *Globorotalia menardii* group [The *Gt. menardii* group includes *Gt. menardii*, *Gt. tumida*, and *Gt. ungulata*], *Orbulina universa*, *Globorotalia truncatulinoides*, *Pulleniatina* spp., and *Neogloboquadrina dutertrei*. The mean daily flux was 205 tests per square meter per day (m^{-2} day^{-1}), with maximum fluxes of >600 tests m^{-2} day^{-1} during mid-February and mid-September and minimum fluxes of <60 tests m^{-2} day^{-1} during mid-March, the beginning of May, and November. *Globorotalia truncatulinoides* showed a clear preference for the winter, consistent with data from 2008 to 2010. *Globigerinoides ruber* (white) flux data for 2011 (average 30 tests m^{-2} day^{-1}) were consistent with data from 2010 (average 29 m^{-2} day^{-1}) and showed a steady threefold increase since 2009 (average 11 tests m^{-2} day^{-1}) and a tenfold increase from the 2008 flux (3 tests m^{-2} day^{-1}).

Introduction

A sediment trap was moored in the northern Gulf of Mexico in January 2008 as part of a U.S. Geological Survey Mendenhall Postdoctoral Fellowship project. The sediment trap, equipped with an automated sampling system, has continuously collected material in the water column from January 2008 to the present and is currently deployed. Information on the trap, trap mooring, planktic foraminifers as climate proxies, and the results from the first year are detailed in Tedesco and others (2009). In this report, we update results from the sediment-trap series to include material collected between January and December of 2011. The report presents the data without interpretation. For discussion and interpretation of flux data from 2008 to 2010, see Poore and others, 2013.

Regional Setting

The Gulf of Mexico is a semi-enclosed basin surrounded by the Gulf Coast of the United States, Mexico, and Cuba (fig. 1). Sea-surface temperature (SST) at the trap site ranges from a winter low of approximately 21 degrees Celsius (°C) to a high of 30 °C (World Ocean Atlas 2009 data cited in Locarnini and others, 2010). Sea-surface salinity (SSS) ranges from about 35 practical salinity units (psu) in the winter to 32 psu in the summer (World Ocean Atlas 2009 data cited in Antonov and others, 2010).

The Gulf of Mexico is connected to the Caribbean and tropical North Atlantic through the Loop Current. The Loop Current is a surface current that enters the Gulf of Mexico between Cuba and the Yucatan Peninsula and typically loops east and south before exiting through the Florida Straits.

The Gulf of Mexico, Caribbean Sea, and western tropical North Atlantic compose the Atlantic Warm Pool, the Atlantic portion of the Western Hemisphere Warm Pool (Wang and Enfield, 2001). The Atlantic Warm Pool is defined by the region covered by water warmer than 28.5 °C and constitutes a large part of the tropical heat engine, supplying moisture to the atmosphere and latent heat to North America from early spring to early fall (Wang and Enfield, 2001; Wang and others, 2006). World Ocean Atlas 2009 climatology indicates the trap site is part of the Atlantic Warm Pool during July, August, and September (summer) (Locarnini and others, 2010).

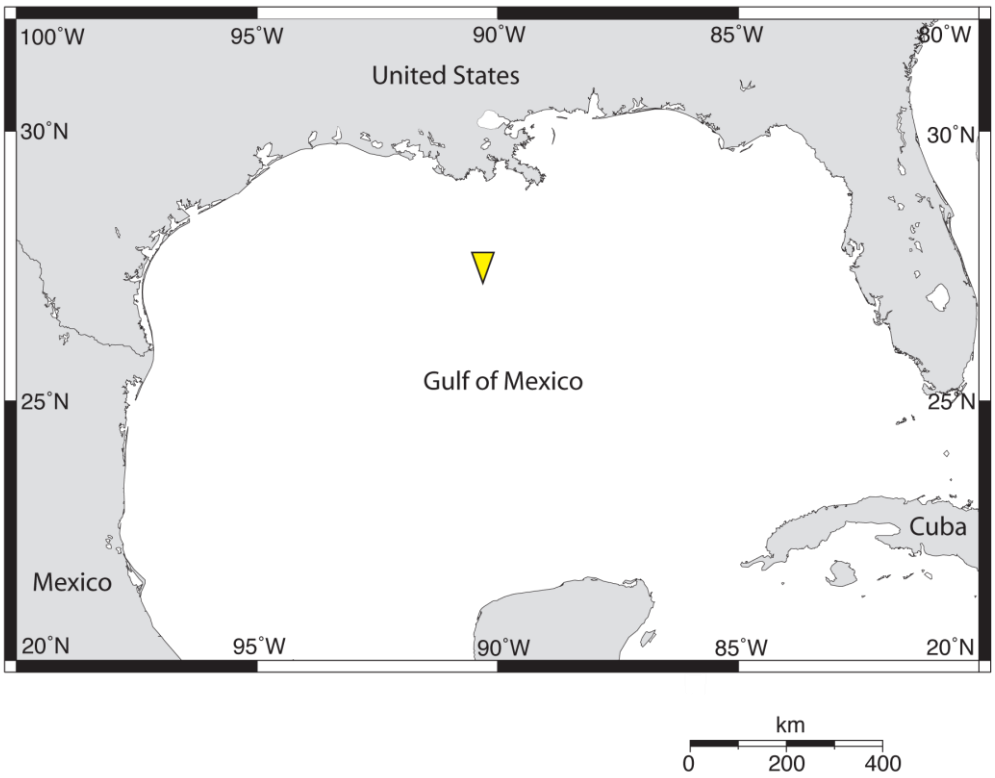

Figure 1. Location of the sediment-trap mooring (inverted triangle) in the northern Gulf of Mexico at approximately 25.7 °N latitude and 90.3 °W longitude.

Materials and Methods

A McLane PARFLUX Mark 78 automated sediment trap was deployed in early January 2008 in approximately 1,150 meters (m) of water depth at approximately 27.5 ºN latitude and 90.3 ºW longitude. The trap is positioned at a depth of 700 m on the mooring to guarantee the collection of deeper-dwelling species of planktic foraminifers (for example, *Globorotalia* spp.). The trap is equipped with 21 collection cups that are mounted on a rotating plate that is programmed to rotate every 7 to 14 days (representing a 1- or 2-week collection period). Sample cups from January 2008 to late May 2009 contained a buffered formalin solution made with filtered (0.44-micrometer (μm) filter) seawater, with a salinity of approximently 33 psu. Sample cups for September 2009 to the present contain a density-

gradient solution with a salinity of approximately 44 psu. Formalin (3.7 percent) and sodium borate are added to the density-gradient solution to poison and preserve the samples. The trap was recovered and redeployed every 3 months during 2008 and approximately every 6 months thereafter. A gap in our sampling occurred from late May to late September 2009 due to scheduling problems. Nine samples from the weeks of March 17, April 7, May 5, October 22, November 19, and December 10 of 2009, and January 7, February 14 and 24 of 2010 were not recovered due to loss of the cups during deployment/recovery. During visits to the trap site, conductivity-temperature-depth (CTD) measurements were collected using a Sea-Bird Electronics SBE9*plus* (figs. 2 and 3).

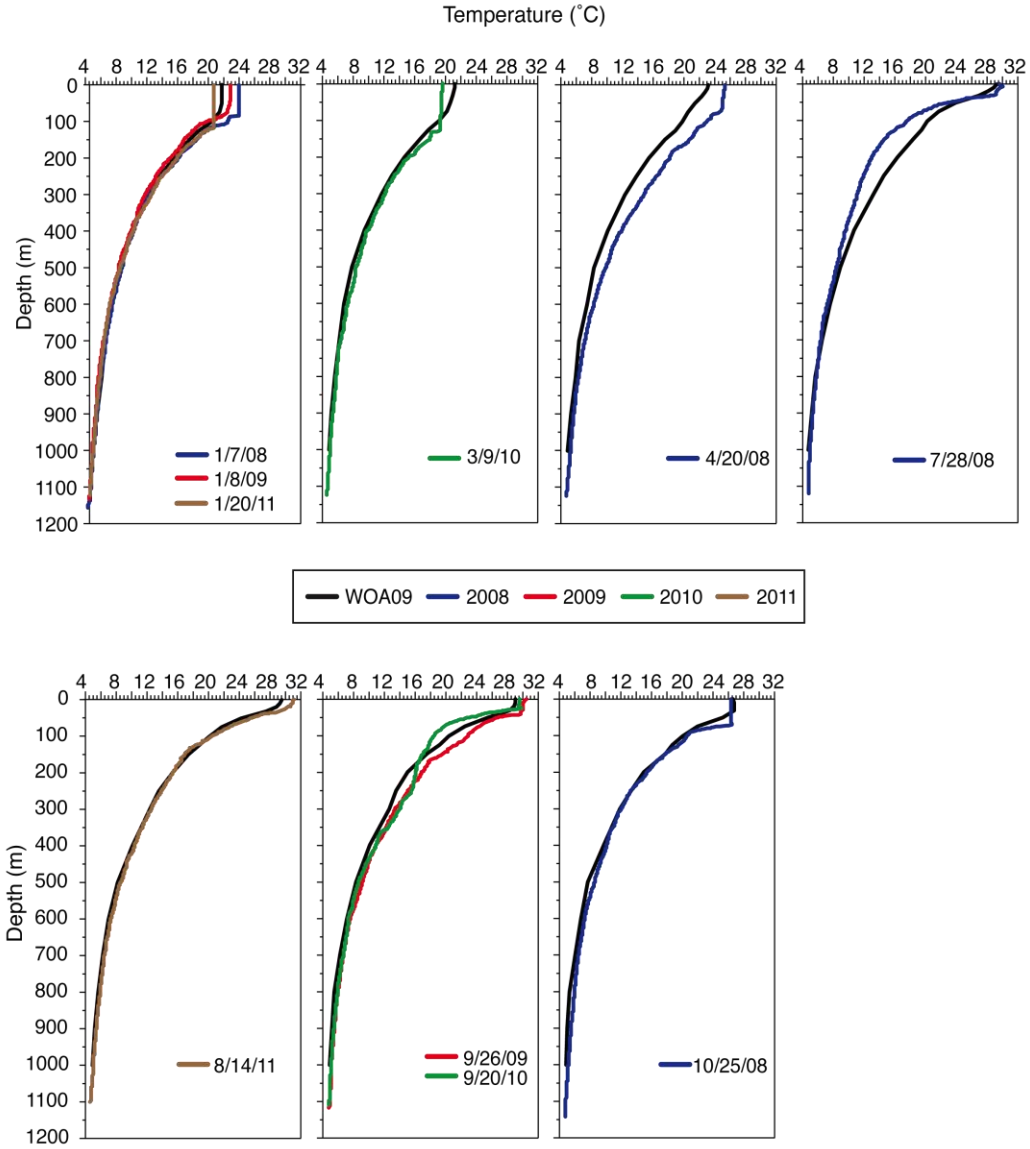

Figure 2. Temperature depth profiles of World Ocean Atlas 2009 climatology (monthly average) (WOA09) (black lines) and conductivity-temperature-depth (CTD) casts for the sediment trap during 2008 (blue lines), 2009 (red lines), 2010 (green lines), and 2011 (brown lines).

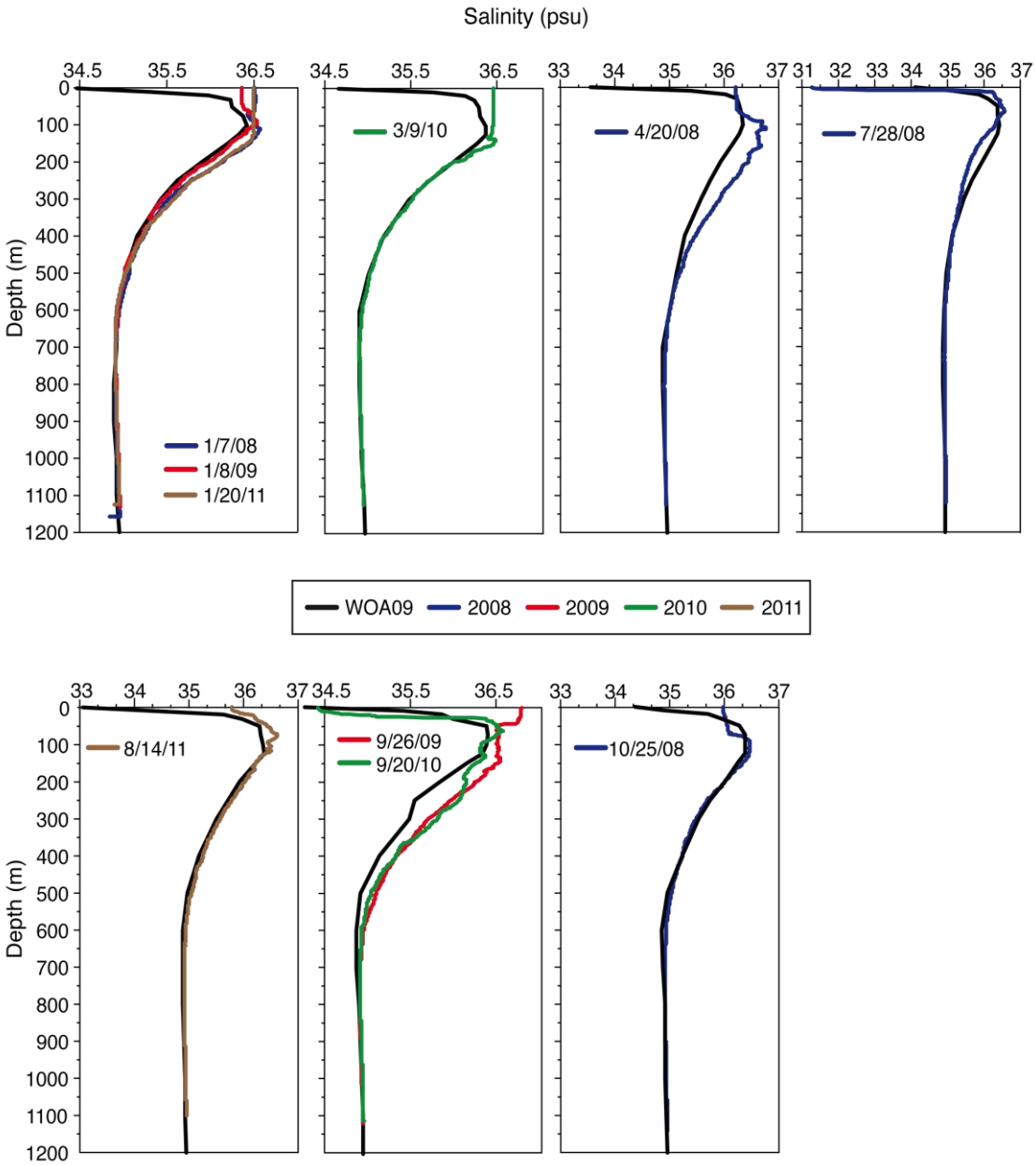

Figure 3. Salinity depth profiles of World Ocean Atlas 2009 climatology (monthly average) (WOA09) (black lines) and conductivity-temperature-depth (CTD) casts for the sediment trap during 2008 (blue lines), 2009 (red lines), 2010 (green lines), and 2011 (brown lines).

Sediment-trap samples were wet split into four aliquots using a precision rotary splitter at the University of South Carolina, stored in buffered deionized water, and then refrigerated. A quarter split was wet sieved over a 150-μm sieve and subsequently wet picked for all foraminifers. In samples with less than 300 foraminifers in the first quarter split, an additional one-quarter split was processed. The counts were then summed. All planktic foraminifers were identified to species. The species counts are reported as flux in tests per square meter per day. Flux was calculated by multiplying the individual species counts by number of splits, then dividing by sampling length, which was typically 7 or 14 days. Percent abundance (percent of each species within each cup) is reported weekly and for each season.

Seasonal flux is the total flux for each individual species. Seasons are defined as winter (January, February, and March), spring (April, May, and June), summer (July, August, and September), and fall (October, November, and December). Relative seasonal abundances were calculated by dividing the individual species total seasonal flux by the total seasonal flux for all planktic foraminifers.

Results from 2011

From the sediment-trap material, 10 species, or varieties, of planktic foraminifers constituted ~92 percent of the 2011 assemblage: *Globigerinoides ruber* (d'Orbigny) (pink and white varieties), *Gs. sacculifer* (Brady), *Globigerina calida* Parker, *Globigerinella aequilateralis* (Brady), *Globorotalia menardii* group [The *Gt. menardii* group includes *Gt. menardii* (Parker, Jones, and Brady), *Gt. tumida* (Brady), and *Gt. ungulata* Bermudez], *Orbulina universa* d'Orbigny, *Gt. truncatulinoides* (d'Orbigny), *Pulleniatina* spp., and *Neogloboquadrina dutertrei* (d'Orbigny) (table 1; figs. 4 and 5).

The mean daily flux of planktic foraminifers recovered from the trap in 2011 was 205 tests m^{-2} day^{-1} (table 1; fig. 4). The winter (January, February, and March) flux contributed about 36 percent of the annual flux and ranged from 52 to 617 tests m^{-2} day^{-1}, with a mean flux of 287 tests m^{-2} day^{-1}. Spring (April, May, and June) flux contributed about 17 percent of the annual flux and ranged from 48 to 174 tests m^{-2} day^{-1}, with a mean flux of 121 tests m^{-2} day^{-1}. Summer (July, August, and September) flux contributed about 16 percent of the annual flux and ranged from 72 to 672 tests m^{-2} day^{-1}, with a mean flux of 207 tests m^{-2} day^{-1}. The fall (October, November, and December) flux contributed about 32 percent of the annual flux and ranged from 62 to 565 tests m^{-2} day^{-1}, with a mean flux of 213 tests m^{-2} day^{-1}.

Globortotalia truncatulinoides was the most abundant species in the early winter season, comprising >62 percent of the assemblage during January and February (fig. 5). The spinose species *Globigerinoides ruber* (pink) (23 percent), *Globigerinoides ruber* (white) (17 percent), *Globigerinoides sacculifer* (9 percent), *Globigerina calida* (9 percent), *Globigerinella aequilateralis* (8 percent), the non-spinose *Neogloboquadrina dutertrei* (10 percent), and the *Globorotalia menardii* group (8 percent) accounted for the bulk of the spring percentage (~84 percent). The summer season was dominated by the *Globigerinoides* genus (*Gs. ruber* (pink), *Gs. ruber* (white), and *Gs. sacculifer*), which made up ~79 percent of the total assemblage. *Gs. ruber* (pink) (16 percent), *Gs. ruber* (white) (19 percent), *Gs. sacculifer* (15 percent), *Gl. aequilateralis* (9 percent), *N. dutertrei* (10 percent), *Pulleniatina* spp. (8 percent) and the *Gt. menardii* group (10 percent) accounted for ~88 percent of the fall assemblage.

Globigerinoides (*Gs. ruber* (pink), *Gs. ruber* (white), and *Gs. sacculifer*) flux (tests m^{-2} day^{-1}) increased by a factor of 2 from the average 2008–10 data to late September and early October 2011 data. The increase accounted for ~89 percent of the assemblage in late September and ~87 percent in early October.

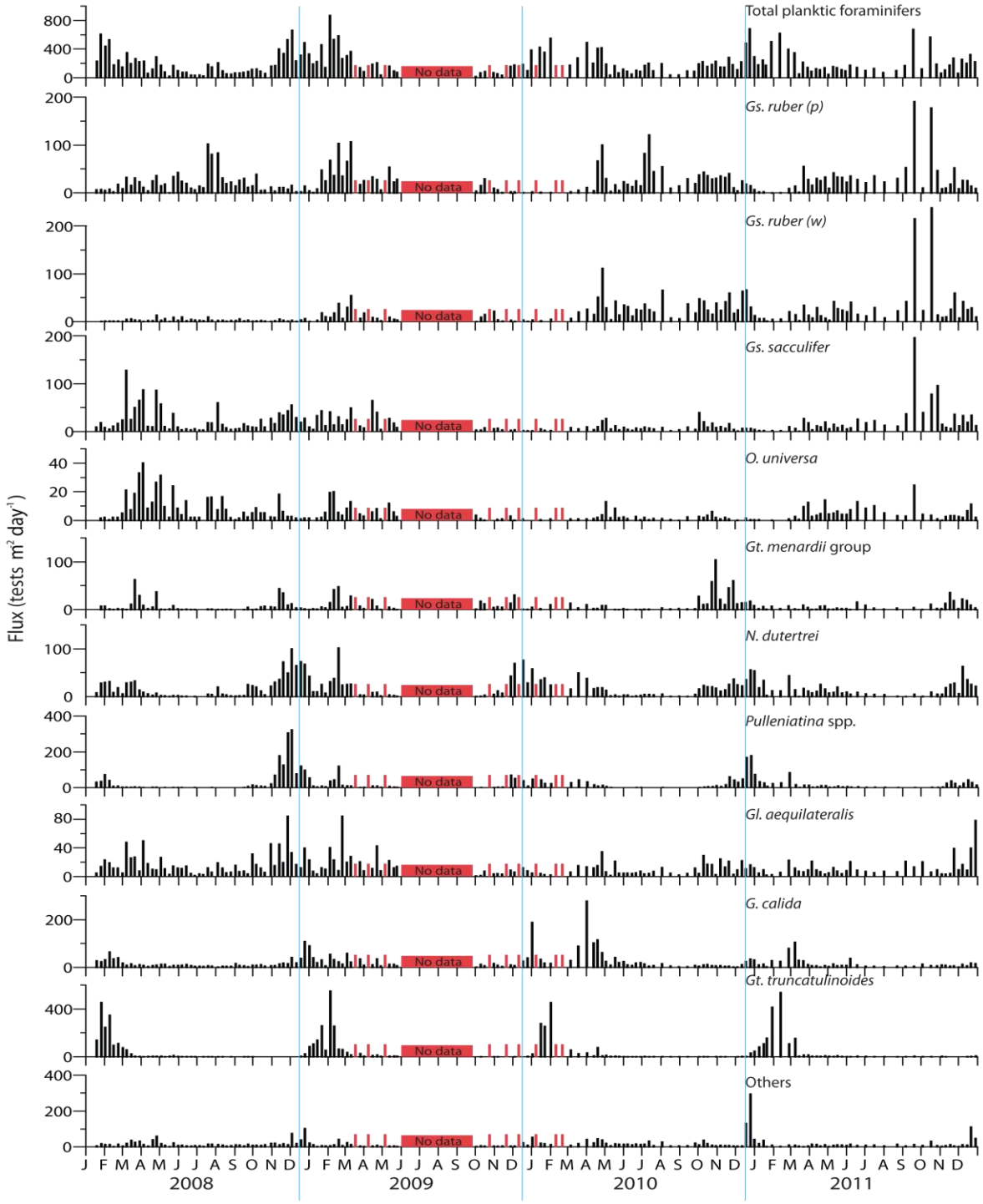

Figure 4. Average daily flux of 7- to 14-day-long sampling intervals of all planktic foraminifers and the 10 most abundant species/groups during 2008-11. Note the scale change in the y-axis. The tick marks on the x-axis denote the 1st day of each month. There was a gap in sampling from late May to late September 2009 (red rectangles and designated as "No data") and loss of nine sample cups (red bars). m^{-2} day^{-1}, square meter per day.

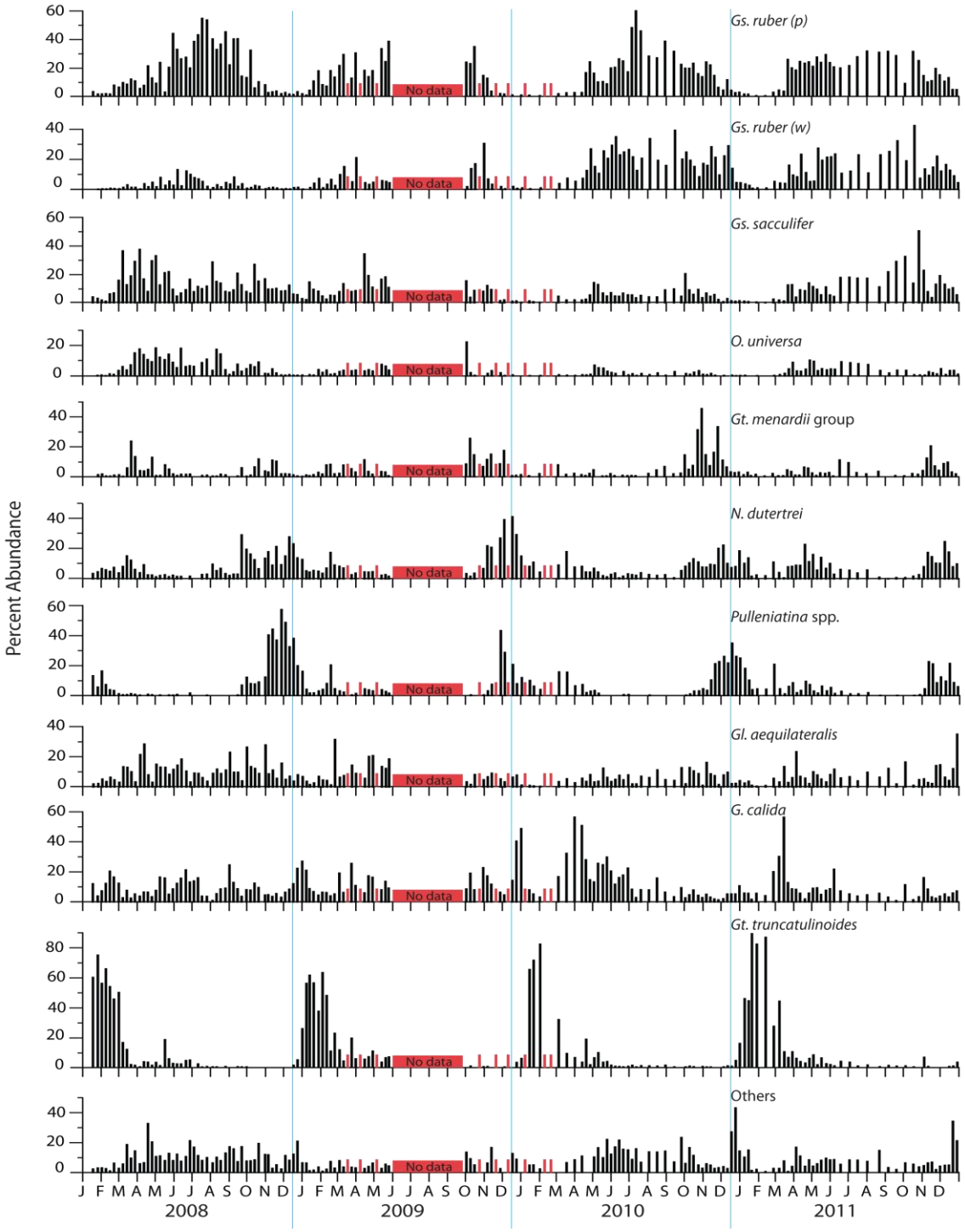

Figure 5. Weekly percent abundance of the 10 most common species/groups of planktic foraminifers during 2008–11. Note the scale change in the y-axis. The tick marks on the x-axis denote the 1st day of each month. There was a gap in sampling from late May to late September 2009 (red rectangles and designated as "No data") and loss of nine sample cups (red bars).

Discussion

The sediment record has shown that *Gs. ruber* (white) is a major component (~20–30 percent) of the late Holocene planktic foraminifer assemblages (Kennett and others, 1985; LoDico and others, 2006; Poore and others, 2011). However, in this study, *Gs. ruber* (white) has been anomalously low (1.5 percent (2008), ~5 percent (2009), and ~14 percent (2010 and 2011)). The addition of 2011 data to the 2008–10 flux and percentage data provide for a better understanding of the inter- and intra- annual variability. A longer time series is needed to distinguish the natural range of all foraminiferal species.

Conclusions

Sediment-trap data collected from January 2008 to December 2011 shows that 10 species/groups of planktic foraminifers comprised ~92 percent of the total flux. *Globorotalia truncatulinoides* flux data indicate that the species almost exclusively is present in January and February.

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Table 1. Planktic foraminiferal flux (tests per square meter per day, m^{-2} d^{-1}) and percent contribution (in parentheses) to the total assemblage for the 14 most common species, northern Gulf of Mexico. Table is separated by season (winter, spring, summer, and fall) and year. The first 10 species listed comprised about 90 percent of the total flux. Particularly low fluxes (<50 tests m^{-2} d^{-1}) are denoted with an asterisk next to the mid-week collection date.

Table 1. Planktic foraminiferal flux (tests per square meter per day, m^{-2} d^{-1}) and percent contribution (in parentheses) to the total assemblage for the 14 most common species, northern Gulf of Mexico. Table is separated by season (that is, winter, spring, summer, and fall) and year. The first 10 species listed comprised about 90 percent of the total flux. Particularly low fluxes (that is, <50 tests m^{-2} d^{-1}) are denoted with an asterisk next to the mid-week collection date. [*Globigerinoides*=*Gs*., *Globorotalia*=*Gt*., *Globigerina*=*G*., *Globigerinella*=*Gl*., *Neogloboquadrina*=*N*, *Orbulina*=*O*.]

Sample		Mid-week Date	*Gs. ruber* (pink)	*Gs. ruber* (white)	*Gs. sacculifer*	*Gt. menardii* group	*Pulleniatina* spp.	*N. dutertrei*	*Gl. aequilateralis*	*G. calida*	*O. universa*	*Gt. truncatulinoides*	*Gt. crassaformis*	*Gg. glutinata*	*G. bulloides*	*G. falconensis*	Others	Total planktic flux	Seasonal percent of annual flux
GMT-1	1	18-Jan-08	6.86 (2.99)	0.00 (0.00)	9.14 (3.99)	0.00 (0.00)	30.29 (13.22)	8.00 (3.49)	4.57 (2.00)	27.43 (11.97)	0.00 0.00	137.71 (60.10)	0.57 (0.25)	1.71 (0.75)	0.00 (0.00)	0.00 (0.00)	2.86 (1.25)	229.14	
GMT-1	2	25-Jan-08	7.43 (1.23)	0.57 (0.09)	18.29 (3.03)	7.43 (1.23)	33.71 (5.58)	28.00 (4.64)	13.71 (2.27)	23.43 (3.88)	1.71 (0.28)	452.57 (74.93)	7.43 (1.23)	6.86 (1.14)	0.00 (0.00)	0.00 (0.00)	2.86 (0.47)	604.00	
GMT-1	3	1-Feb-08	5.71 (1.31)	1.14 (0.26)	8.00 (1.83)	7.43 (1.70)	71.43 (16.32)	29.71 (6.79)	22.86 (5.22)	32.00 (7.31)	2.29 (0.52)	245.14 (56.01)	0.00 (0.00)	6.29 (1.44)	1.14 (0.26)	1.71 (0.39)	2.86 (0.65)	437.71	
GMT-1	4	8-Feb-08	8.00 (1.52)	1.14 (0.22)	4.57 (0.87)	1.71 (0.33)	38.86 (7.38)	31.43 (5.97)	18.86 (3.58)	64.00 (12.15)	0.57 (0.11)	346.29 (65.73)	1.14 (0.22)	5.71 (1.08)	1.71 (0.33)	0.57 (0.11)	2.29 (0.43)	526.86	
GMT-1	5	15-Feb-08	2.29 (1.29)	1.14 (0.65)	10.86 (6.13)	0.57 (0.32)	6.86 (3.87)	8.57 (4.84)	11.43 (6.45)	36.00 (20.32)	2.29 (1.29)	95.43 (53.87)	0.00 (0.00)	0.57 (0.32)	0.00 (0.00)	0.57 (0.32)	0.57 (0.32)	177.14	
GMT-1	6	22-Feb-08	18.29 (7.51)	1.14 (0.47)	16.57 (6.81)	2.29 (0.94)	8.00 (3.29)	18.29 (7.51)	11.43 (4.69)	40.00 (16.43)	2.29 (0.94)	110.86 (45.54)	1.71 (0.70)	5.71 (2.35)	1.71 (0.70)	0.00 (0.00)	5.14 (2.11)	243.43	
GMT-1	7	29-Feb-08	9.14 (6.15)	0.57 (0.38)	23.43 (15.77)	1.71 (1.15)	1.71 (1.15)	5.71 (3.85)	4.57 (3.08)	18.29 (12.31)	5.14 (3.46)	74.29 (50.00)	2.29 (1.54)	0.57 (0.38)	0.00 (0.00)	0.00 (0.00)	1.14 (0.77)	148.57	
GMT-1	8	7-Mar-08	32.57 (9.31)	4.57 (1.31)	127.43 (36.44)	0.57 (0.16)	1.71 (0.49)	28.57 (8.17)	47.43 (13.56)	9.14 (2.61)	21.14 (6.05)	57.71 (16.50)	2.29 (0.65)	10.29 (2.94)	0.00 (0.00)	0.00 (0.00)	6.29 (1.80)	349.71	
GMT-1	9	14-Mar-08	16.00 (8.16)	5.71 (2.92)	24.57 (12.54)	11.43 (5.83)	1.14 (0.58)	29.71 (15.16)	25.71 (13.12)	14.86 (7.58)	7.43 (3.79)	23.43 (11.95)	0.57 (0.29)	28.57 (14.58)	0.00 (0.00)	0.00 (0.00)	6.86 (3.50)	196.00	
GMT-1	10	21-Mar-08	31.43 (11.88)	3.43 (1.30)	49.71 (18.79)	62.86 (23.76)	3.43 (1.30)	32.57 (12.31)	26.86 (10.15)	6.29 (2.38)	18.86 (7.13)	4.57 (1.73)	2.29 (0.86)	16.00 (6.05)	0.00 (0.00)	0.00 (0.00)	6.29 (2.38)	264.57	
GMT-1	11	28-Mar-08	23.43 (10.54)	2.86 (1.29)	64.57 (29.05)	29.71 (13.37)	1.71 (0.77)	13.71 (6.17)	7.43 (3.34)	11.43 (5.14)	33.14 (14.91)	2.86 (1.29)	4.00 (1.80)	17.71 (7.97)	0.00 (0.00)	0.00 (0.00)	9.71 (4.37)	222.29	
winter		Total	161.14	22.29	357.14	125.71	198.86	234.29	194.86	282.86	94.86	1550.86	22.29	100.00	4.57	2.86	46.86	3399.43	
		(%)	(4.74)	(0.66)	(10.51)	(3.70)	(5.85)	(6.89)	(5.73)	(8.32)	(2.79)	(45.62)	(0.66)	(2.94)	(0.13)	(0.08)	(1.38)		(35.23)
GMT-1	12	4-Apr-08	12.00 (5.22)	0.57 (0.25)	86.29 (37.56)	9.14 (3.98)	0.57 (0.25)	9.14 (3.98)	49.71 (21.64)	8.57 (3.73)	40.00 (17.41)	0.57 (0.25)	1.71 (0.75)	4.57 (1.99)	0.00 (0.00)	0.00 (0.00)	6.86 (2.99)	229.71	
GMT-1	13	11-Apr-08	4.57 (7.41)	2.29 (3.70)	10.29 (16.67)	2.29 (3.70)	0.00 (0.00)	5.71 (9.26)	17.71 (28.70)	4.00 (6.48)	8.57 (13.89)	2.29 (3.70)	0.57 (0.93)	2.29 (3.70)	0.00 (0.00)	0.00 (0.00)	1.14 (1.85)	61.71	
GMT-1	14	18-Apr-08	25.33 (21.17)	2.00 (1.67)	9.33 (7.80)	5.67 (4.74)	1.00 (0.84)	3.00 (2.51)	9.67 (8.08)	7.67 (6.41)	12.67 (10.58)	4.00 (3.34)	30.00 (25.07)	4.67 (3.90)	0.00 (0.00)	0.00 (0.00)	4.67 (3.90)	119.67	
GMT-2	1	25-Apr-08	36.57 (12.61)	13.43 (4.63)	85.71 (29.56)	37.43 (12.91)	1.43 (0.49)	7.14 (2.46)	8.86 (3.05)	9.71 (3.35)	26.57 (9.16)	4.00 (1.38)	30.86 (10.64)	16.57 (5.71)	0.00 (0.00)	0.00 (0.00)	11.71 (4.04)	290.00	
GMT-2	2	2-May-08	15.43 (8.91)	2.86 (1.65)	57.14 (33.00)	1.14 (0.66)	0.00 (0.00)	2.29 (1.32)	26.29 (15.18)	13.14 (7.59)	31.43 (18.15)	5.71 (3.30)	9.14 (5.28)	2.29 (1.32)	0.00 (0.00)	0.00 (0.00)	6.29 (3.63)	173.14	
GMT-2	3	9-May-08	18.86 (23.57)	6.29 (7.86)	10.00 (12.50)	0.57 (0.71)	0.29 (0.36)	1.71 (2.14)	10.57 (13.21)	13.14 (16.43)	9.71 (12.14)	0.86 (1.07)	2.29 (2.86)	1.71 (2.14)	0.00 (0.00)	0.00 (0.00)	4.00 (5.00)	80.00	
GMT-2	4	16-May-08*	0.57 (2.63)	0.57 (2.63)	4.57 (21.05)	1.71 (7.89)	0.00 (0.00)	0.57 (2.63)	2.86 (13.16)	3.43 (15.79)	2.29 (10.53)	4.00 (18.42)	1.14 (5.26)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	21.71	
GMT-2	5	23-May-08	34.29 (20.13)	9.14 (5.37)	37.14 (21.81)	8.57 (5.03)	0.57 (0.34)	2.29 (1.34)	14.29 (8.39)	8.57 (5.03)	24.00 (14.09)	9.71 (5.70)	7.43 (4.36)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	14.29 (8.39)	170.29	
GMT-2	6	30-May-08	42.86 (43.99)	2.57 (2.64)	9.14 (9.38)	1.71 (1.76)	0.29 (0.29)	2.29 (2.35)	11.43 (11.73)	8.29 (8.50)	8.57 (8.80)	2.57 (2.64)	3.71 (3.81)	1.14 (1.17)	0.00 (0.00)	0.00 (0.00)	2.86 (2.93)	97.43	
GMT-2	7	6-Jun-08	24.57 (32.82)	9.71 (12.98)	3.43 (4.58)	0.57 (0.76)	0.57 (0.76)	1.14 (1.53)	10.86 (14.50)	9.14 (12.21)	4.00 (5.34)	1.71 (2.29)	1.71 (2.29)	1.14 (1.53)	0.00 (0.00)	0.00 (0.00)	6.29 (8.40)	74.86	
GMT-2	8	13-Jun-08	20.00 (26.12)	1.71 (2.24)	5.14 (6.72)	1.14 (1.49)	0.00 (0.00)	1.14 (1.49)	14.29 (18.66)	12.00 (15.67)	13.71 (17.91)	1.71 (2.24)	4.00 (5.22)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.71 (2.24)	76.57	
GMT-2	9	20-Jun-08*	10.29 (27.27)	4.57 (12.12)	3.43 (9.09)	0.57 (1.52)	0.00 (0.00)	0.00 (0.00)	4.00 (10.61)	8.00 (21.21)	2.29 (6.06)	1.71 (4.55)	1.71 (4.55)	0.57 (1.52)	0.00 (0.00)	0.00 (0.00)	0.57 (1.52)	37.71	
GMT-2	10	27-Jun-08*	6.86 (19.67)	3.43 (9.84)	5.71 (16.39)	0.57 (1.64)	0.57 (1.64)	0.57 (1.64)	1.14 (3.28)	4.57 (13.11)	2.29 (6.56)	1.71 (4.92)	6.29 (18.03)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.14 (3.28)	34.86	
spring		Total	252.19	59.14	327.33	71.10	5.29	37.00	181.67	110.24	186.10	40.57	100.57	34.95	0.00	0.00	61.52	1467.67	
		(%)	(17.18)	(4.03)	(22.30)	(4.84)	(0.36)	(2.52)	(12.38)	(7.51)	(12.68)	(2.76)	(6.85)	(2.38)	(0.00)	(0.00)	(4.19)		(15.21)
GMT-2	11	4-Jul-08	14.29 (38.46)	2.86 (7.69)	2.86 (7.69)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	3.43 (9.23)	5.14 (13.85)	2.29 (6.15)	0.00 (0.00)	3.43 (9.23)	1.14 (3.08)	0.00 (0.00)	0.00 (0.00)	1.71 (4.62)	37.14	
GMT-2	12	11-Jul-08	10.86 (43.18)	1.71 (6.82)	2.86 (11.36)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	2.29 (9.09)	4.00 (15.91)	0.00 (0.00)	0.57 (2.27)	0.57 (2.27)	0.57 (2.27)	0.00 (0.00)	0.00 (0.00)	1.71 (6.82)	25.14	
GMT-2	13	18-Jul-08	102.00 (54.75)	9.71 (5.21)	18.29 (9.82)	1.43 (0.77)	0.00 (0.00)	5.14 (2.76)	11.71 (6.29)	6.86 (3.68)	16.00 (8.59)	0.29 (0.15)	7.71 (4.14)	1.71 (0.92)	0.00 (0.00)	0.00 (0.00)	5.43 (2.91)	186.29	
GMT-2	14	25-Jul-08	80.57 (53.61)	2.86 (1.90)	17.43 (11.60)	1.43 (0.95)	0.29 (0.19)	4.57 (3.04)	5.71 (3.80)	5.43 (3.61)	16.29 (10.84)	0.86 (0.57)	5.43 (3.61)	4.00 (2.66)	0.00 (0.00)	0.00 (0.00)	5.43 (3.61)	150.29	
GMT-3	1	4-Aug-08	83.43 (40.22)	2.29 (1.10)	59.43 (28.65)	0.57 (0.28)	0.00 (0.00)	20.00 (9.64)	18.86 (9.09)	1.71 (0.83)	7.43 (3.58)	0.57 (0.28)	7.43 (3.58)	5.71 (2.75)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	207.43	
GMT-3	2	11-Aug-08	31.43 (32.74)	2.86 (2.98)	14.29 (14.88)	0.29 (0.30)	0.00 (0.00)	5.14 (5.36)	11.43 (11.90)	5.14 (5.36)	16.57 (17.26)	0.29 (0.30)	3.43 (3.57)	0.29 (0.30)	0.00 (0.00)	0.00 (0.00)	4.86 (5.06)	96.00	
GMT-3	3	18-Aug-08	19.71 (36.51)	0.86 (1.59)	7.43 (13.76)	0.86 (1.59)	0.00 (0.00)	3.71 (6.88)	4.86 (8.99)	4.57 (8.47)	7.71 (14.29)	0.00 (0.00)	1.71 (3.17)	2.29 (4.23)	0.00 (0.00)	0.29 (0.53)	0.00 (0.00)	54.00	
GMT-3	4	25-Aug-08	22.86 (45.20)	2.29 (4.52)	4.00 (7.91)	0.57 (1.13)	0.00 (0.00)	1.71 (3.39)	5.71 (11.30)	4.57 (9.04)	2.00 (3.95)	0.29 (0.56)	2.86 (5.65)	1.71 (3.39)	0.00 (0.00)	0.00 (0.00)	2.00 (3.95)	50.57	
GMT-3	5	1-Sep-08	14.57 (21.89)	2.29 (3.43)	4.86 (7.30)	0.00 (0.00)	0.00 (0.00)	1.43 (2.15)	15.43 (23.18)	16.29 (24.46)	0.57 (0.86)	0.00 (0.00)	5.14 (7.73)	0.86 (1.29)	0.00 (0.00)	0.00 (0.00)	5.14 (7.73)	66.57	
GMT-3	6	8-Sep-08	26.86 (40.17)	5.43 (8.12)	6.00 (8.97)	0.00 (0.00)	0.00 (0.00)	2.00 (2.99)	6.57 (9.83)	8.57 (12.82)	1.71 (2.56)	0.00 (0.00)	6.57 (9.83)	0.57 (0.85)	0.00 (0.00)	0.00 (0.00)	2.57 (3.85)	66.86	
GMT-3	7	15-Sep-08	30.57 (40.38)	1.43 (1.89)	15.71 (20.75)	0.29 (0.38)	0.29 (0.38)	2.29 (3.02)	7.43 (9.81)	6.57 (8.68)	5.71 (7.55)	0.29 (0.38)	3.43 (4.53)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.71 (2.26)	75.71	
GMT-3	8	22-Sep-08	12.00 (13.91)	3.14 (3.64)	10.86 (12.58)	5.14 (5.96)	6.00 (6.95)	25.14 (29.14)	3.43 (3.97)	3.14 (3.64)	2.57 (2.98)	0.29 (0.33)	3.71 (4.30)	4.29 (4.97)	0.29 (0.33)	0.00 (0.00)	6.29 (7.28)	86.29	
GMT-3	9	29-Sep-08	15.14 (12.96)	0.86 (0.73)	9.14 (7.82)	0.29 (0.24)	14.29 (12.22)	22.86 (19.56)	31.14 (26.65)	9.43 (8.07)	5.43 (4.65)	0.29 (0.24)	1.71 (1.47)	2.29 (1.96)	0.86 (0.73)	0.00 (0.00)	3.14 (2.69)	116.86	
summer		Total	464.29	38.57	173.14	10.86	20.86	94.00	128.00	81.43	84.29	3.71	53.14	25.43	1.14	0.29	40.00	1219.14	
		(%)	(38.08)	(3.16)	(14.20)	(0.89)	(1.71)	(7.71)	(10.50)	(6.68)	(6.91)	(0.30)	(4.36)	(2.09)	(0.09)	(0.02)	(3.28)		(12.63)
GMT-3	10	6-Oct-08	39.14 (32.16)	1.43 (1.17)	8.00 (6.57)	1.14 (0.94)	9.71 (7.98)	20.00 (16.43)	16.57 (13.62)	9.43 (7.75)	8.86 (7.28)	0.00 (0.00)	1.43 (1.17)	4.29 (3.52)	0.29 (0.23)	0.00 (0.00)	1.43 (1.17)	121.71	
GMT-3	11	13-Oct-08	5.14 (5.57)	2.29 (2.48)	24.86 (26.93)	6.00 (6.50)	7.14 (7.74)	11.71 (12.69)	11.43 (12.38)	11.43 (12.38)	5.43 (5.88)	0.00 (0.00)	1.14 (1.24)	2.57 (2.79)	0.00 (0.00)	0.29 (0.31)	2.86 (3.10)	92.29	
GMT-3	12	20-Oct-08	6.00 (9.95)	1.14 (1.90)	9.14 (15.17)	7.14 (11.85)	5.43 (9.00)	4.00 (6.64)	5.43 (9.00)	5.71 (9.48)	5.43 (9.00)	0.00 (0.00)	0.00 (0.00)	2.86 (4.74)	0.00 (0.00)	0.00 (0.00)	8.00 (13.27)	60.29	
GMT-4	1	30-Oct-08	12.57 (7.80)	0.57 (0.35)	27.14 (16.84)	6.00 (3.72)	20.00 (12.41)	22.00 (13.65)	45.43 (28.19)	7.14 (4.43)	2.57 (1.60)	0.00 (0.00)	10.00 (6.21)	3.43 (2.13)	0.29 (0.18)	0.00 (0.00)	4.00 (2.48)	161.14	
GMT-4	2	5-Nov-08	4.00 (2.36)	1.71 (1.01)	16.00 (9.46)	5.14 (3.04)	68.57 (40.54)	30.29 (17.91)	14.86 (8.78)	8.00 (4.73)	2.29 (1.35)	0.00 (0.00)	8.57 (5.07)	9.14 (5.41)	0.00 (0.00)	0.00 (0.00)	0.57 (0.34)	169.14	
GMT-4	3	12-Nov-08	11.43 (2.86)	5.14 (1.29)	38.29 (9.57)	44.00 (11.00)	177.71 (44.43)	36.00 (9.00)	45.14 (11.29)	14.29 (3.57)	18.29 (4.57)	0.00 (0.00)	1.14 (0.29)	6.86 (1.71)	0.57 (0.14)	0.00 (0.00)	1.14 (0.29)	400.00	
GMT-4	4	19-Nov-08	11.43 (3.39)	2.86 (0.85)	33.71 (10.00)	34.86 (10.34)	125.14 (37.12)	72.00 (21.36)	19.43 (5.76)	18.29 (5.42)	6.29 (1.86)	0.00 (0.00)	0.00 (0.00)	5.14 (1.53)	0.57 (0.17)	0.57 (0.17)	6.86 (2.03)	337.14	
GMT-4	5	26-Nov-08	8.00 (1.51)	1.14 (0.22)	42.86 (8.10)	9.71 (1.84)	305.14 (57.67)	49.14 (9.29)	84.00 (15.87)	15.43 (2.92)	2.86 (0.54)	0.00 (0.00)	1.14 (0.22)	3.43 (0.65)	5.14 (0.97)	0.00 (0.00)	1.14 (0.22)	529.14	
GMT-4	6	3-Dec-08	16.00 (2.43)	2.86 (0.43)	54.86 (8.32)	12.57 (1.91)	322.86 (48.96)	99.43 (15.08)	33.14 (5.03)	41.71 (6.33)	2.86 (0.43)	0.00 (0.00)	1.14 (0.17)	6.29 (0.95)	47.43 (7.19)	16.57 (2.51)	1.71 (0.26)	659.43	
GMT-4	7	10-Dec-08	2.86 (1.23)	0.57 (0.25)	28.57 (12.29)	4.00 (1.72)	76.00 (32.68)	64.57 (27.76)	16.57 (7.13)	19.43 (8.35)	1.71 (0.74)	0.00 (0.00)	1.14 (0.49)	0.57 (0.25)	9.14 (3.93)	4.57 (1.97)	2.86 (1.23)	232.57	
GMT-4	8	17-Dec-08	2.86 (0.91)	3.43 (1.09)	18.86 (6.01)	3.43 (1.09)	120.00 (38.25)	72.57 (23.13)	12.00 (3.83)	37.71 (12.02)	1.14 (0.36)	4.00 (1.28)	1.14 (0.36)	12.00 (3.83)	12.57 (4.01)	10.29 (3.28)	1.71 (0.55)	313.71	
GMT-4	9	24-Dec-08	14.29 (2.93)	6.29 (1.29)	27.43 (5.63)	1.71 (0.35)	97.14 (19.95)	67.43 (13.85)	39.43 (8.10)	108.00 (22.18)	1.71 (0.35)	24.00 (4.93)	0.57 (0.12)	2.29 (0.47)	24.00 (4.93)	68.57 (14.08)	4.00 (0.82)	486.86	
fall		Total	133.71	29.43	329.71	135.71	1334.86	549.14	343.43	296.57	59.43	28.00	27.43	58.86	100.00	100.86	36.29	3563.43	
		(%)	(3.75)	(0.83)	(9.25)	(3.81)	(37.46)	(15.41)	(9.64)	(8.32)	(1.67)	(0.79)	(0.77)	(1.65)	(2.81)	(2.83)	(1.02)		(36.93)
Annual		Total	1011.33	149.43	1187.33	343.38	1559.86	914.43	847.95	771.10	424.67	1623.14	203.43	219.24	105.71	104.00	184.67	9649.67	
		(%)	(10.48)	(1.55)	(12.30)	(3.56)	(16.16)	(9.48)	(8.79)	(7.99)	(4.40)	(16.82)	(2.11)	(2.27)	(1.10)	(1.08)	(1.91)		
GMT-4	10	31-Dec-08	4.57 (1.38)	0.57 (0.17)	9.14 (2.76)	0.57 (0.17)	53.71 (16.23)	42.29 (12.78)	22.86 (6.91)	89.14 (26.94)	1.71 (0.52)	85.14 (25.73)	0.57 (0.17)	3.43 (1.04)	6.86 (2.07)	6.86 (2.07)	3.43 (1.04)	330.86	
GMT-4	11	7-Jan-09	1.00 (0.52)	0.00 (0.00)	4.00 (2.09)	2.00 (1.05)	8.00 (4.19)	10.00 (5.24)	7.00 (3.66)	40.00 (20.94)	0.00 (0.00)	107.00 (56.02)	0.00 (0.00)	3.00 (1.57)	3.00 (1.57)	3.00 (1.57)	3.00 (1.57)	191.00	
GMT-5	1	13-Jan-09	8.86 (3.92)	2.57 (1.14)	32.86 (14.56)	1.43 (0.63)	3.71 (1.65)	10.00 (4.43)	3.43 (1.52)	19.71 (8.73)	1.71 (0.76)	138.86 (61.52)	1.14 (0.51)	0.00 (0.00)	0.29 (0.13)	0.00 (0.00)	1.14 (0.51)	225.71	
GMT-5	2	20-Jan-09	48.00 (10.49)	18.29 (4.00)	42.86 (9.36)	5.71 (1.25)	8.00 (1.75)	25.14 (5.49)	12.00 (2.62)	30.86 (6.74)	2.29 (0.50)	257.71 (56.30)	0.00 (0.00)	4.00 (0.87)	0.00 (0.00)	0.00 (0.00)	2.86 (0.62)	457.71	
GMT-5	3	27-Jan-09	25.14 (17.64)	10.29 (7.21)	11.43 (8.02)	4.00 (2.81)	4.29 (3.01)	7.14 (5.01)	10.00 (7.01)	6.29 (4.41)	5.71 (4.01)	53.43 (37.47)	0.57 (0.40)	1.71 (1.20)	0.29 (0.20)	0.29 (0.20)	2.00 (1.40)	142.57	
GMT-5	4	3-Feb-09	68.00 (7.86)	8.57 (0.99)	40.57 (4.69)	14.86 (1.72)	35.43 (4.10)	30.86 (3.57)	40.00 (4.62)	54.29 (6.27)	19.43 (2.25)	546.86 (63.21)	1.71 (0.20)	2.86 (0.33)	0.00 (0.00)	0.00 (0.00)	1.71 (0.20)	865.14	
GMT-5	5	10-Feb-09	36.57 (6.89)	17.71 (3.34)	13.14 (2.48)	41.71 (7.86)	42.86 (8.07)	37.71 (7.10)	22.86 (4.31)	32.57 (6.14)	20.00 (3.77)	254.29 (47.90)	4.00 (0.75)	4.57 (0.86)	0.00 (0.00)	0.57 (0.11)	2.29 (0.43)	530.86	
GMT-5	6	17-Feb-09	103.43 (17.80)	37.71 (6.49)	30.29 (5.21)	48.00 (8.26)	118.86 (20.45)	101.14 (17.40)	8.00 (1.38)	22.86 (3.93)	5.71 (0.98)	62.86 (10.82)	0.57 (0.10)	32.57 (5.60)	7.43 (1.28)	0.00 (0.00)	1.71 (0.29)	581.14	
GMT-5	7	24-Feb-09	35.14 (13.25)	6.57 (2.48)	13.14 (4.96)	4.86 (1.83)	12.00 (4.53)	24.00 (9.05)	84.29 (31.79)	13.71 (5.17)	3.71 (1.40)	60.29 (22.74)	4.00 (1.51)	2.57 (0.97)	0.00 (0.00)	0.00 (0.00)	0.86 (0.32)	265.14	
GMT-5	8	3-Mar-09	65.71 (21.44)	29.71 (9.69)	23.71 (7.74)	6.57 (2.14)	9.43 (3.08)	25.43 (8.29)	19.71 (6.43)	58.57 (19.11)	8.57 (2.80)	35.43 (11.56)	0.29 (0.09)	8.29 (2.70)	11.14 (3.63)	0.00 (0.00)	4.00 (1.30)	306.57	
GMT-5	9	10-Mar-09	106.57 (29.23)	54.57 (14.97)	48.86 (13.40)	28.29 (7.76)	8.29 (2.27)	26.00 (7.13)	27.71 (7.60)	22.57 (6.19)	13.14 (3.61)	15.43 (4.23)	0.00 (0.00)	2.86 (0.78)	1.43 (0.39)	0.00 (0.00)	8.86 (2.43)	364.57	
GMT-5	11	24-Mar-09	17.43 (12.53)	6.86 (4.93)	10.86 (7.80)	7.43 (5.34)	0.57 (0.41)	3.71 (2.67)	20.29 (14.58)	35.43 (25.46)	4.57 (3.29)	27.14 (19.51)	1.43 (1.03)	0.86 (0.62)	0.57 (0.41)	0.00 (0.00)	2.00 (1.44)	139.14	
GMT-5	12	31-Mar-09	25.71 (30.30)	17.71 (20.88)	7.14 (8.42)	2.57 (3.03)	1.14 (1.35)	3.14 (3.70)	7.71 (9.09)	9.14 (10.77)	3.14 (3.70)	4.86 (5.72)	0.00 (0.00)	0.29 (0.34)	0.00 (0.00)	0.00 (0.00)	2.29 (2.69)	84.86	
winter		Total	546.14	211.14	288.00	168.00	306.29	346.57	285.86	435.14	89.71	1649.29	14.29	67.00	31.00	10.71	36.14	4485.29	
		(%)	(12.18)	(4.71)	(6.42)	(3.75)	(6.83)	(7.73)	(6.37)	(9.70)	(2.00)	(36.77)	(0.32)	(1.49)	(0.69)	(0.24)	(0.81)		(72.35)
GMT-5	14	14-Apr-09	33.71 (17.99)	8.29 (4.42)	64.29 (34.30)	21.14 (11.28)	8.29 (4.42)	8.57 (4.57)	10.86 (5.79)	11.14 (5.95)	6.00 (3.20)	10.29 (5.49)	0.86 (0.46)	0.00 (0.00)	0.57 (0.30)	0.00 (0.00)	3.43 (1.83)	187.43	
GMT-5	15	21-Apr-09	28.29 (13.58)	6.57 (3.16)	39.71 (19.07)	7.14 (3.43)	7.71 (3.70)	9.14 (4.39)	42.57 (20.44)	36.00 (17.28)	8.29 (3.98)	14.57 (7.00)	4.86 (2.33)	0.29 (0.14)	0.29 (0.14)	0.00 (0.00)	2.86 (1.37)	208.29	
GMT-5	16	28-Apr-09*	6.57 (17.83)	1.71 (4.65)	4.00 (10.85)	0.57 (1.55)	1.14 (3.10)	1.71 (4.65)	7.71 (20.93)	6.00 (16.28)	1.14 (3.10)	4.00 (10.85)	0.86 (2.33)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.43 (3.88)	36.86	
GMT-5	18	12-May-09	53.71 (33.27)	9.14 (5.66)	26.57 (16.46)	5.43 (3.36)	6.29 (3.89)	3.71 (2.30)	22.00 (13.63)	12.86 (7.96)	12.00 (7.43)	5.43 (3.36)	1.14 (0.71)	0.57 (0.35)	0.00 (0.00)	0.00 (0.00)	2.57 (1.59)	161.43	
GMT-5	19	19-May-09	22.86 (24.17)	4.86 (5.14)	17.14 (18.13)	2.86 (3.02)	2.57 (2.72)	2.57 (2.72)	11.71 (12.39)	12.86 (13.60)	6.00 (6.34)	6.00 (6.34)	1.14 (1.21)	1.14 (1.21)	0.29 (0.30)	0.00 (0.00)	2.57 (2.72)	94.57	
GMT-5	20	24-May-09	28.80 (38.50)	3.20 (4.28)	8.00 (10.70)	0.40 (0.53)	1.20 (1.60)	1.20 (1.60)	14.00 (18.72)	6.80 (9.09)	2.80 (3.74)	5.20 (6.95)	1.60 (2.14)	0.80 (1.07)	0.00 (0.00)	0.00 (0.00)	0.80 (1.07)	74.80	
spring		Total	173.94	33.77	159.71	37.54	27.20	26.91	108.86	85.66	36.23	45.49	10.46	2.80	1.14	0.00	13.66	763.37	
		(%)	(22.79)	(4.42)	(20.92)	(4.92)	(3.56)	(3.53)	(14.26)	(11.22)	(4.75)	(5.96)	(1.37)	(0.37)	(0.15)	0.00	(1.79)		(12.31)
GMT-6	1	1-Oct-09*	4.00 (23.73)	0.29 (1.69)	2.57 (15.25)	1.43 (8.47)	0.00 (0.00)	0.57 (3.39)	0.57 (3.39)	1.43 (8.47)	3.71 (22.03)	0.00 (0.00)	1.71 (10.17)	0.29 (1.69)	0.29 (1.69)	0.00 (0.00)	0.00 (0.00)	16.86	
GMT-6	2	8-Oct-09	15.71 (22.73)	9.43 (13.64)	2.57 (3.72)	17.71 (25.62)	0.29 (0.41)	1.14 (1.65)	1.14 (1.65)	13.14 (19.01)	1.43 (2.07)	0.57 (0.83)	5.43 (7.85)	0.57 (0.83)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	69.14	
GMT-6	3	15-Oct-09	30.00 (34.77)	14.57 (16.89)	7.43 (8.61)	12.57 (14.57)	0.00 (0.00)	3.14 (3.64)	7.14 (8.28)	6.86 (7.95)	0.29 (0.33)	0.00 (0.00)	2.00 (2.32)	0.57 (0.66)	0.00 (0.00)	0.86 (0.99)	0.86 (0.99)	86.29	
GMT-6	5	29-Oct-09	10.29 (14.34)	21.71 (30.28)	5.71 (7.97)	4.86 (6.77)	0.29 (0.40)	4.86 (6.77)	3.43 (4.78)	16.29 (22.71)	0.00 (0.00)	0.29 (0.40)	0.57 (0.80)	2.29 (3.19)	0.00 (0.00)	0.00 (0.00)	1.14 (1.59)	71.71	
GMT-6	6	5-Nov-09	6.86 (12.50)	3.71 (6.77)	6.57 (11.98)	6.29 (11.46)	1.71 (3.13)	12.00 (21.88)	3.71 (6.77)	9.43 (17.19)	0.86 (1.56)	0.29 (0.52)	0.57 (1.04)	2.29 (4.17)	0.00 (0.00)	0.00 (0.00)	0.57 (1.04)	54.86	
GMT-6	7	12-Nov-09*	1.14 (3.33)	1.14 (3.33)	3.14 (9.17)	5.14 (15.00)	2.57 (7.50)	7.14 (20.83)	3.14 (9.17)	4.00 (11.67)	1.14 (3.33)	0.00 (0.00)	0.86 (2.50)	3.43 (10.00)	0.00 (0.00)	0.00 (0.00)	1.43 (4.17)	34.29	
GMT-6	9	26-Nov-09	2.57 (1.62)	2.86 (1.80)	2.29 (1.44)	13.71 (8.62)	69.14 (43.45)	42.86 (26.93)	8.57 (5.39)	10.00 (6.28)	3.14 (1.97)	0.00 (0.00)	1.43 (0.90)	0.29 (0.18)	0.86 (0.54)	0.29 (0.18)	1.14 (0.72)	159.14	
GMT-6	10	3-Dec-09	2.29 (1.30)	0.57 (0.32)	3.43 (1.94)	30.86 (17.50)	50.86 (28.85)	69.14 (39.22)	6.00 (3.40)	8.00 (4.54)	0.29 (0.16)	0.29 (0.16)	2.29 (1.30)	0.00 (0.00)	0.29 (0.16)	0.57 (0.32)	1.43 (0.81)	176.29	
GMT-6	12	17-Dec-09	1.14 (0.62)	3.43 (1.86)	1.71 (0.93)	1.14 (0.62)	38.29 (20.74)	76.00 (41.18)	12.00 (6.50)	26.29 (14.24)	1.14 (0.62)	0.00 (0.00)	0.57 (0.31)	1.14 (0.62)	3.43 (1.86)	17.71 (9.60)	0.57 (0.31)	184.57	
GMT-6	13	24-Dec-09	0.00 (0.00)	0.57 (0.58)	1.14 (1.17)	0.86 (0.88)	7.71 (7.89)	28.57 (29.24)	7.71 (7.89)	39.43 (40.35)	0.00 (0.00)	3.14 (3.22)	1.43 (1.46)	0.00 (0.00)	2.86 (2.92)	3.71 (3.80)	0.57 (0.58)	97.71	
fall		Total	74.00	58.29	36.57	94.57	170.86	245.43	53.43	134.86	12.00	4.57	16.86	10.86	7.71	23.14	7.71	950.86	
		(%)	(7.78)	(6.13)	(3.85)	(9.95)	(17.97)	(25.81)	(5.62)	(14.18)	(1.26)	(0.48)	(1.77)	(1.14)	(0.81)	(2.43)	(0.81)		(15.34)
Annual		Total	794.09	303.20	484.29	300.11	504.34	618.91	448.14	655.66	137.94	1699.34	41.60	80.66	39.86	33.86	57.51	6199.51	
		(%)	(12.81)	(4.89)	(7.81)	(4.84)	(8.14)	(9.98)	(7.23)	(10.58)	(2.23)	(27.41)	(0.67)	(1.30)	(0.64)	(0.55)	(0.93)		
GMT-6	14	31-Dec-09	2.29 (0.59)	3.43 (0.89)	1.14 (0.30)	5.14 (1.34)	46.29 (12.04)	57.71 (15.01)	4.57 (1.19)	187.43 (48.74)	0.00 (0.00)	22.86 (5.94)	2.86 (0.74)	2.29 (0.59)	28.00 (7.28)	20.57 (5.35)	0.00 (0.00)	384.57	
GMT-6	16	14-Jan-10	1.71 (0.40)	1.71 (0.40)	5.14 (1.21)	2.29 (0.67)	42.86 (10.11)	34.86 (8.22)	4.00 (0.94)	33.71 (7.95)	0.57 (0.13)	277.14 (65.36)	0.57 (0.13)	3.43 (0.81)	1.71 (0.40)	13.14 (3.10)	1.14 (0.27)	424.00	
GMT-6	17	21-Jan-10	0.00 0.00	0.00 (0.00)	2.29 (0.64)	0.00 (0.00)	22.29 (6.28)	38.86 (10.95)	2.29 (0.64)	18.29 (5.15)	0.00 (0.00)	253.71 (71.50)	0.00 (0.00)	9.14 (2.58)	0.57 (0.16)	6.29 (1.77)	1.14 (0.32)	354.86	
GMT-6	18	31-Jan-10	1.14 (0.21)	4.86 (0.88)	1.71 (0.31)	10.57 (2.13)	22.00 (4.01)	24.00 (4.37)	2.00 (0.36)	17.43 (3.18)	1.14 (0.21)	451.14 (82.20)	0.00 (0.00)	7.71 (1.41)	1.71 (0.31)	1.43 (0.26)	2.00 (0.36)	548.86	

GMT-6	21	4-Mar-10	2.57	(1.48)	6.57	(3.79)	7.71	(4.45)	13.71	(8.57)	27.43	(15.82)	15.71	(9.06)	6.00	(3.46)	28.86	(16.64)	1.14	(0.66)	55.14	(31.80)	3.14	(1.81)	4.29	(2.47)	0.86	(0.49)	0.00	(0.00)	0.29	(0.16)	173.43	
GMT-7	1	17-Mar-10	6.00	(2.18)	20.00	(7.27)	5.14	(1.87)	4.00	(1.87)	42.86	(15.58)	49.43	(17.96)	14.86	(5.40)	88.57	(32.19)	1.14	(0.42)	25.43	(9.24)	0.57	(0.21)	11.71	(4.26)	2.86	(1.04)	0.00	(0.00)	2.57	(0.93)	275.14	
GMT-7	2	31-Mar-10	11.43	(2.34)	25.71	(5.25)	9.43	(1.93)	10.57	(2.39)	31.43	(6.42)	38.00	(7.76)	13.43	(2.74)	275.71	(56.33)	1.14	(0.23)	31.43	(6.42)	3.14	(0.64)	21.71	(4.44)	13.43	(2.74)	0.00	(0.00)	2.86	(0.58)	489.43	
winter		Total	25.14		62.29		32.57		46.29		235.14		258.57		47.14		650.00		5.14		1116.86		10.29		60.29		49.14		41.43		10.00		2650.29	
		(%)		(0.95)		(2.35)		(1.23)		(1.75)		(8.87)		(9.76)		(1.78)		(24.53)		(0.19)		(42.14)		(0.39)		(2.27)		(1.85)		(1.56)		(0.38)		(29.28)
GMT-7	3	11-Apr-10	4.86	(2.41)	14.57	(7.24)	3.71	(1.85)	2.57	(1.99)	14.86	(7.39)	16.57	(8.24)	11.71	(5.82)	102.00	(50.71)	1.43	(0.71)	6.86	(3.41)	0.57	(0.28)	9.43	(4.69)	10.29	(5.11)	0.00	(0.00)	1.71	(0.85)	201.14	
GMT-7	4	18-Apr-10	66.86	(16.32)	50.86	(12.41)	9.71	(2.37)	2.86	(1.26)	8.00	(1.95)	18.29	(4.46)	14.86	(3.63)	114.29	(27.89)	2.29	(0.56)	76.57	(18.69)	9.71	(2.37)	12.57	(3.07)	16.57	(4.04)	0.00	(0.00)	6.29	(1.53)	409.71	
GMT-7	5	25-Apr-10	100.00	(23.97)	111.43	(26.71)	22.29	(5.34)	8.57	(3.01)	12.00	(2.88)	18.29	(4.38)	34.29	(8.22)	61.14	(14.66)	4.00	(0.96)	6.86	(1.64)	7.43	(1.78)	10.29	(2.47)	1.14	(0.27)	0.00	(0.00)	19.43	(4.66)	417.14	
GMT-7	6	2-May-10	30.29	(15.96)	28.57	(15.06)	26.86	(14.16)	8.57	(11.45)	6.29	(3.31)	13.14	(6.93)	6.29	(3.31)	25.14	(13.25)	13.14	(6.93)	12.00	(6.33)	6.29	(3.31)	8.57	(4.52)	0.00	(0.00)	0.00	(0.00)	4.57	(2.41)	189.71	
GMT-7	7	9-May-10*	3.71	(9.77)	4.00	(10.53)	4.86	(12.78)	0.00	(5.26)	0.57	(1.50)	1.71	(4.51)	1.43	(3.76)	9.71	(25.56)	2.00	(5.26)	3.71	(9.77)	5.71	(15.04)	0.29	(0.75)	0.00	(0.00)	0.00	(0.00)	0.29	(0.75)	38.00	
GMT-7	8	16-May-10	17.14	(10.14)	42.86	(25.34)	11.43	(6.76)	0.57	(5.41)	0.00	(0.00)	3.43	(2.03)	21.14	(12.50)	41.71	(24.66)	8.57	(5.07)	5.71	(3.38)	4.57	(2.70)	6.86	(4.05)	0.00	(0.00)	0.00	(0.00)	5.14	(3.04)	169.14	
GMT-7	9	23-May-10	5.71	(8.51)	13.71	(20.43)	3.14	(4.68)	0.29	(3.40)	0.00	(0.00)	0.86	(1.28)	4.29	(6.38)	20.00	(29.79)	2.00	(2.98)	2.57	(3.83)	7.71	(11.49)	3.43	(5.11)	0.00	(0.00)	0.00	(0.00)	3.43	(5.11)	67.14	
GMT-7	10	30-May-10	23.43	(19.62)	34.57	(28.95)	8.29	(6.94)	2.29	(4.07)	0.00	(0.00)	3.43	(2.87)	4.29	(3.59)	24.29	(20.33)	2.57	(2.15)	1.71	(1.44)	6.29	(5.26)	4.29	(3.59)	0.00	(0.00)	0.00	(0.00)	3.71	(3.11)	119.14	
GMT-7	11	6-Jun-10	18.29	(20.19)	31.43	(34.70)	4.29	(4.73)	0.57	(2.21)	0.00	(0.00)	3.43	(3.79)	4.57	(5.05)	10.57	(11.67)	1.43	(1.58)	0.57	(0.63)	4.57	(5.05)	6.86	(7.57)	0.00	(0.00)	0.00	(0.00)	4.00	(4.42)	90.57	
GMT-7	12	13-Jun-10	13.43	(26.11)	11.71	(22.78)	2.29	(4.44)	0.00	(0.00)	0.00	(0.00)	0.29	(0.56)	4.00	(7.78)	8.29	(16.11)	0.00	(0.00)	0.29	(0.56)	2.86	(5.56)	3.14	(6.11)	0.29	(0.56)	0.00	(0.00)	4.86	(9.44)	51.43	
GMT-7	13	20-Jun-10	25.43	(24.65)	25.43	(24.65)	6.86	(6.65)	0.86	(3.60)	0.57	(0.55)	1.71	(1.66)	4.86	(4.71)	18.29	(17.73)	2.86	(2.77)	0.29	(0.28)	2.86	(2.77)	2.57	(2.49)	0.00	(0.00)	0.00	(0.00)	10.57	(10.25)	103.14	
GMT-7	14	27-Jun-10	15.14	(16.99)	23.43	(26.28)	4.86	(5.45)	0.57	(1.28)	0.57	(0.64)	2.86	(3.21)	7.14	(8.01)	20.00	(22.44)	0.57	(0.64)	0.57	(0.64)	5.71	(6.41)	2.00	(2.24)	0.57	(0.64)	0.00	(0.00)	5.14	(5.77)	89.14	
spring		Total	324.29		392.57		108.57		27.71		42.86		84.00		118.86		455.43		40.86		117.71		64.29		70.29		28.86		0.00		69.14		1945.43	
		(%)		(16.67)		(20.18)		(5.58)		(1.42)		(2.20)		(4.32)		(6.11)		(23.41)		(2.10)		(6.05)		(3.30)		(3.61)		(1.48)		0.00		(3.55)		(21.49)
GMT-7	15	4-Jul-10	82.29	(48.16)	36.57	(21.40)	9.14	(5.35)	1.14	(2.01)	0.00	(0.00)	4.57	(2.68)	3.43	(2.01)	14.29	(8.36)	2.29	(1.34)	2.29	(1.34)	8.57	(5.02)	1.71	(1.00)	0.00	(0.00)	0.00	(0.00)	4.57	(2.68)	170.86	
GMT-7	16	11-Jul-10	121.14	(60.06)	25.14	(12.46)	6.86	(3.40)	1.14	(0.85)	0.00	(0.00)	4.57	(2.27)	4.00	(1.98)	5.71	(2.83)	0.57	(0.28)	0.57	(0.28)	28.00	(13.88)	1.14	(0.57)	0.00	(0.00)	0.00	(0.00)	2.86	(1.42)	201.71	
GMT-7	17	19-Jul-10	44.36	(45.86)	19.82	(20.49)	4.91	(5.08)	0.00	(1.50)	0.00	(0.00)	3.82	(3.95)	6.91	(7.14)	7.82	(8.08)	1.45	(1.50)	1.09	(1.13)	3.27	(3.38)	0.91	(0.94)	0.00	(0.00)	0.00	(0.00)	2.36	(2.44)	96.73	
GMT-7	18	1-Aug-10	54.86	(28.07)	65.43	(33.48)	8.00	(4.09)	4.00	(2.78)	0.57	(0.29)	5.43	(2.78)	12.29	(6.29)	15.43	(7.89)	1.43	(0.73)	2.00	(1.02)	9.43	(4.82)	7.14	(3.65)	0.29	(0.15)	0.00	(0.00)	9.14	(4.68)	195.43	
GMT-7	19	15-Aug-10*	10.43	(26.84)	7.43	(19.12)	1.57	(4.04)	1.71	(6.25)	0.00	(0.00)	0.86	(2.21)	4.43	(11.40)	6.14	(15.81)	0.71	(1.84)	0.29	(0.74)	3.14	(8.09)	0.71	(1.84)	0.00	(0.00)	0.00	(0.00)	1.43	(3.68)	38.86	
GMT-7	20	29-Aug-10*	14.71	(38.58)	6.00	(15.73)	3.43	(8.99)	2.57	(7.12)	0.00	(0.00)	1.00	(2.62)	1.86	(4.87)	2.43	(6.37)	0.14	(0.37)	0.57	(1.50)	3.86	(10.11)	0.43	(1.12)	0.00	(0.00)	0.00	(0.00)	1.14	(3.00)	38.14	
GMT-7	21	12-Sep-10	29.71	(31.42)	36.86	(38.97)	9.14	(9.67)	1.71	(4.53)	0.00	(0.00)	0.57	(0.60)	4.00	(4.23)	3.14	(3.32)	2.57	(2.72)	0.29	(0.30)	2.00	(2.11)	1.71	(1.81)	0.00	(0.00)	0.00	(0.00)	2.86	(3.02)	94.57	
GMT-8	1	24-Sep-10	19.71	(22.19)	17.71	(19.94)	4.00	(4.50)	2.00	(2.25)	0.00	(0.00)	4.86	(5.47)	11.43	(12.86)	8.29	(9.32)	0.00	0.00	0.00	(0.00)	0.86	(0.96)	11.71	(13.18)	0.00	(0.00)	0.00	(0.00)	8.29	(9.32)	88.86	
summer		Total	377.22		214.96		47.05		14.29		0.57		25.68		48.34		63.25		9.17		7.09		59.13		25.48		0.29		0.00		32.65		925.16	
		(%)		(40.77)		(23.24)		(5.09)		(1.54)		(0.06)		(2.78)		(5.22)		(6.84)		(0.99)		(0.77)		(6.39)		(2.75)		(0.03)		(0.00)		(3.53)		(10.22)
GMT-8	2	1-Oct-10	37.71	(19.53)	47.43	(24.56)	39.43	(20.41)	28.00	(15.98)	0.57	(0.30)	16.00	(8.28)	4.00	(2.07)	5.14	(2.66)	2.86	(1.48)	0.57	(0.30)	0.00	(0.00)	9.14	(4.73)	0.00	(0.00)	0.00	(0.00)	2.29	(1.18)	193.14	
GMT-8	3	8-Oct-10	43.43	(19.44)	42.86	(19.18)	20.00	(8.95)	10.86	(5.88)	2.29	(1.02)	23.43	(10.49)	29.14	(13.04)	10.29	(4.60)	2.29	(1.02)	1.71	(0.77)	2.86	(1.28)	29.71	(13.30)	0.00	(0.00)	0.00	(0.00)	4.57	(2.05)	223.43	
GMT-8	4	15-Oct-10	36.29	(23.05)	23.71	(15.06)	9.14	(5.81)	11.71	(9.80)	4.57	(2.90)	20.86	(13.25)	16.86	(10.71)	12.29	(7.80)	3.71	(2.36)	0.57	(0.36)	4.86	(3.09)	8.86	(5.63)	0.00	(0.00)	0.00	(0.00)	4.00	(2.54)	157.43	
GMT-8	5	22-Oct-10	29.14	(15.69)	15.43	(8.31)	17.14	(9.23)	58.29	(34.77)	5.71	(3.08)	20.57	(11.08)	16.57	(8.92)	8.00	(4.31)	6.29	(3.38)	0.00	(0.00)	2.86	(1.54)	2.29	(1.23)	0.00	(0.00)	0.00	(0.00)	3.43	(1.85)	185.71	
GMT-8	6	29-Oct-10	30.86	(13.53)	38.86	(17.04)	8.00	(3.51)	104.00	(46.62)	10.29	(4.51)	17.71	(7.77)	2.29	(1.00)	6.29	(2.76)	2.29	(1.00)	1.14	(0.50)	0.57	(0.25)	1.14	(0.50)	0.00	(0.00)	0.00	(0.00)	4.57	(2.01)	228.00	
GMT-8	7	5-Nov-10	35.43	(23.89)	23.43	(15.80)	10.00	(6.74)	21.71	(15.41)	5.14	(3.47)	11.43	(7.71)	24.29	(16.38)	7.43	(5.01)	1.14	(0.77)	0.29	(0.19)	1.71	(1.16)	0.86	(0.58)	0.00	(0.00)	0.00	(0.00)	5.43	(3.66)	148.29	
GMT-8	8	12-Nov-10	32.29	(21.86)	41.43	(28.05)	6.57	(4.45)	10.86	(8.90)	15.43	(10.44)	14.00	(9.48)	12.86	(8.70)	4.57	(3.09)	2.29	(1.55)	0.29	(0.19)	0.57	(0.39)	2.57	(1.74)	0.00	(0.00)	0.00	(0.00)	4.00	(2.71)	147.71	
GMT-8	9	19-Nov-10	40.57	(14.40)	59.43	(21.10)	16.00	(5.68)	45.71	(16.63)	60.00	(21.30)	25.71	(9.13)	21.14	(7.51)	5.14	(1.83)	1.14	(0.41)	0.00	(0.00)	0.00	(0.00)	1.71	(0.61)	0.00	(0.00)	0.00	(0.00)	5.14	(1.83)	281.71	
GMT-8	10	26-Nov-10	10.86	(5.99)	17.14	(9.46)	4.00	(2.21)	60.57	(33.44)	41.14	(22.71)	36.57	(20.19)	2.86	(1.58)	2.29	(1.26)	0.00	(0.00)	0.00	(0.00)	1.71	(0.95)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	4.00	(2.21)	181.14	
GMT-8	11	3-Dec-10	4.57	(4.10)	24.57	(22.05)	0.86	(0.77)	12.29	(11.28)	29.14	(26.15)	24.86	(22.31)	8.86	(7.95)	2.29	(2.05)	0.29	(0.26)	0.29	(0.26)	0.86	(0.77)	0.86	(0.77)	0.00	(0.00)	0.00	(0.00)	1.71	(1.54)	111.43	
GMT-8	12	10-Dec-10	25.14	(11.40)	63.43	(28.76)	6.29	(2.85)	14.29	(6.48)	48.00	(21.76)	22.29	(10.10)	21.71	(9.84)	11.43	(5.18)	0.00	(0.00)	2.29	(1.04)	0.57	(0.26)	1.14	(0.52)	0.00	(0.00)	4.00	(1.81)	0.00	(0.00)	220.57	
GMT-8	13	17-Dec-10	18.86	(3.92)	66.29	(13.79)	6.29	(1.31)	14.86	(3.45)	168.57	(35.08)	35.43	(7.37)	10.29	(2.14)	24.57	(5.11)	1.71	(0.36)	2.86	(0.59)	0.57	(0.12)	5.71	(1.19)	2.29	(0.48)	120.57	(25.09)	1.71	(0.36)	480.57	
GMT-8	14	24-Dec-10	15.43	(2.26)	30.29	(4.44)	6.29	(0.92)	17.71	(2.68)	178.29	(26.15)	55.43	(8.13)	16.00	(2.35)	34.86	(5.11)	0.57	(0.08)	30.86	(4.53)	0.00	(0.00)	6.29	(0.92)	2.86	(0.42)	284.00	(41.66)	2.86	(0.42)	681.71	
GMT-8	15	31-Dec-10	7.43	(2.55)	12.57	(4.32)	4.00	(1.38)	6.86	(2.36)	73.14	(25.15)	53.71	(18.47)	12.00	(4.13)	30.86	(10.61)	0.57	(0.20)	46.29	(15.91)	0.57	(0.20)	4.57	(1.57)	0.57	(0.20)	33.14	(11.39)	2.86	(0.98)	290.86	
fall		Total	368.00		506.86		154.00		417.72		642.28		378.00		198.86		165.43		25.14		87.15		17.71		74.86		5.71		441.71		46.57		3531.72	
		(%)		(10.42)		(14.35)		(4.36)		(11.83)		(18.19)		(10.70)		(5.63)		(4.68)		(0.71)		(2.47)		(0.50)		(2.12)		(0.16)		(12.51)		(1.32)		(39.01)
Annual		Total	1094.65		1176.67		342.19		506.00		920.85		746.24		413.19		1334.11		80.31		1328.81		151.41		230.91		84.00		483.14		158.37		9052.59	
		(%)		(12.09)		(13.00)		(3.78)		(5.59)		(10.17)		(8.24)		(4.56)		(14.74)		(0.89)		(14.68)		(1.67)		(2.55)		(0.93)		(5.34)		(1.75)		
GMT-8	16	7-Jan-2011	2.29	(1.27)	6.29	(3.50)	1.71	(0.96)	2.29	(1.27)	32.57	(18.15)	18.29	(10.19)	4.57	(2.55)	10.29	(5.73)	0.57	(0.32)	82.29	(45.86)	0.00	(0.00)	1.71	(0.96)	0.00	(0.00)	16.57	(9.24)	0.00	(0.00)	179.43	
GMT-8	17	14-Jan-2011	2.86	(1.17)	6.29	(2.57)	1.71	(0.70)	6.86	(2.80)	25.14	(10.28)	33.71	(13.79)	9.14	(3.74)	13.71	(5.61)	0.00	(0.00)	108.57	(44.39)	1.14	(0.47)	0.57	(0.23)	0.57	(0.23)	30.29	(12.38)	4.00	(1.64)	244.57	
GMT-8	18	19-Jan-2011	0.00	(0.00)	1.14	(0.66)	0.00	0.00	1.14	(0.66)	6.86	(3.95)	2.86	(1.64)	1.71	(0.99)	2.86	(1.64)	0.00	(0.00)	154.86	(89.14)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	2.29	(1.32)	0.00	(0.00)	173.71	
GMT-9	1	28-Jan-11	0.57	(0.11)	4.57	(0.91)	1.71	(0.34)	7.14	(1.42)	22.00	(4.39)	12.29	(2.45)	2.29	(0.46)	28.29	(5.64)	0.29	(0.06)	412.29	(82.22)	0.29	(0.06)	3.43	(0.68)	0.00	(0.00)	3.71	(0.74)	2.57	(0.51)	501.43	
GMT-9	2	11-Feb-11	0.86	(0.14)	5.14	(0.83)	1.43	(0.23)	2.29	(0.37)	26.29	(4.26)	12.00	(1.95)	5.43	(0.88)	24.86	(4.03)	0.00	(0.00)	535.14	(86.79)	0.29	(0.05)	1.14	(0.19)	0.29	(0.05)	0.29	(0.05)	1.14	(0.19)	616.57	
GMT-9	3	25-Feb-11	9.71	(2.45)	20.57	(5.19)	9.71	(2.45)	8.00	(2.02)	82.86	(20.91)	43.71	(11.03)	22.57	(5.70)	79.14	(19.97)	1.14	(0.29)	108.57	(27.40)	0.00	(0.00)	7.14	(1.80)	1.14	(0.29)	0.29	(0.07)	2.00	(0.50)	396.29	
GMT-9	4	7-Mar-11	14.29	(4.12)	14.29	(4.12)	6.29	(1.81)	1.71	(0.49)	15.43	(4.45)	14.29	(4.12)	11.43	(3.29)	104.57	(30.15)	2.86	(0.82)	153.14	(44.15)	1.71	(0.49)	2.29	(0.66)	0.00	(0.00)	0.00	(0.00)	5.14	(1.48)	346.86	
GMT-9	5	14-Mar-11	1.71	(3.28)	2.00	(3.83)	0.57	(1.09)	0.29	(0.55)	0.57	(1.09)	0.29	(0.55)	7.14	(13.66)	29.43	(56.28)	0.86	(1.64)	5.43	(10.38)	0.00	(0.00)	1.14	(2.19)	0.00	(0.00)	0.29	(0.55)	2.57	(4.92)	52.29	
GMT-9	6	21-Mar-11	55.43	(25.73)	34.29	(15.92)	26.86	(12.47)	9.71	(4.51)	13.14	(6.10)	17.14	(7.96)	6.29	(2.92)	27.43	(12.73)	9.71	(4.51)	14.29	(6.63)	0.57	(0.27)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.57	(0.27)	215.43	
GMT-9	7	28-Mar-11	28.29	(19.80)	13.43	(9.40)	18.00	(12.60)	4.86	(3.40)	12.29	(8.60)	11.71	(8.20)	8.86	(6.20)	12.29	(8.60)	12.57	(8.80)	14.86	(10.40)	2.86	(2.00)	0.86	(0.60)	0.29	(0.20)	0.00	(0.00)	1.71	(1.20)	142.86	
winter		Total	116.00		108.00		68.00		44.29		237.14		166.29		79.43		332.86		28.00		1589.43		6.86		18.29		2.29		53.71		19.71		2869.43	
		(%)		(4.04)		(3.76)		(2.37)		(1.54)		(8.26)		(5.80)		(2.77)		(11.60)		(0.98)		(55.39)		(0.24)		(0.64)		(0.08)		(1.87)		(0.69)		(35.87)
GMT-9	8	4-Apr-11	16.29	(18.15)	7.43	(8.28)	3.43	(3.82)	0.86	(0.96)	1.71	(1.91)	8.00	(8.92)	21.14	(23.57)	7.43	(8.28)	2.86	(3.18)	5.43	(6.05)	12.57	(14.01)	0.86	(0.96)	0.00	(0.00)	0.00	(0.00)	1.71	(1.91)	89.71	
GMT-9	9	11-Apr-11	30.57	(24.26)	29.14	(23.13)	11.43	(9.07)	1.14	(0.91)	4.29	(3.40)	11.14	(8.84)	8.86	(7.03)	7.14	(5.67)	3.71	(2.95)	4.86	(3.85)	8.57	(6.80)	2.00	(1.59)	0.86	(0.68)	0.00	(0.00)	2.29	(1.81)	126.00	
GMT-9	10	18-Apr-11	25.71	(23.02)	12.29	(11.00)	9.43	(8.44)	7.14	(6.39)	10.57	(9.46)	25.43	(22.76)	6.57	(5.88)	2.00	(1.79)	4.86	(4.35)	3.14	(2.81)	2.29	(2.05)	1.14	(1.02)	0.00	(0.00)	0.00	(0.00)	1.14	(1.02)	111.71	
GMT-9	11	25-Apr-11	33.43	(23.98)	7.14	(5.12)	19.43	(13.93)	8.00	(5.74)	10.29	(7.38)	15.71	(11.27)	3.14	(2.25)	8.00	(5.74)	14.29	(10.25)	8.29	(5.94)	10.29	(7.38)	0.86	(0.61)	0.00	(0.00)	0.00	(0.00)	0.57	(0.41)	139.43	
GMT-9	12	5/2/2011*	10.00	(20.83)	2.57	(5.36)	5.43	(11.31)	1.14	(2.38)	1.43	(2.98)	7.71	(16.07)	4.86	(10.12)	4.29	(8.93)	4.57	(9.52)	4.00	(8.33)	1.14	(2.38)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.86	(1.79)	48.00	
GMT-9	13	9-May-11	42.29	(27.41)	42.00	(27.22)	14.57	(9.44)	1.14	(0.74)	2.57	(1.67)	8.86	(5.74)	12.29	(7.96)	14.29	(9.26)	5.14	(3.33)	2.57	(1.67)	0.57	(0.37)	4.29	(2.78)	0.00	(0.00)	0.00	(0.00)	4.00	(2.59)	154.29	
GMT-9	14	16-May-11	33.43	(23.64)	27.14	(19.19)	7.71	(5.45)	3.43	(2.42)	8.86	(6.26)	20.00	(14.14)	7.43	(5.25)	6.86	(4.85)	6.57	(4.65)	8.86	(6.26)	4.57	(3.23)	3.71	(2.63)	0.00	(0.00)	0.00	(0.00)	2.86	(2.02)	141.43	
GMT-9	15	23-May-11	32.57	(29.16)	23.71	(21.23)	12.29	(11.00)	2.29	(2.05)	3.43	(3.07)	7.71	(6.91)	3.71	(3.32)	8.57	(7.67)	4.29	(3.84)	2.57	(2.30)	1.71	(1.53)	1.71	(1.53)	0.00	(0.00)	0.00	(0.00)	7.14	(6.39)	111.71	
GMT-9	16	30-May-11	22.57	(23.51)	20.57	(21.43)	5.14	(5.36)	2.57	(2.68)	5.14	(5.36)	9.71	(10.12)	8.00	(8.33)	8.29	(8.63)	4.29	(4.46)	1.71	(1.79)	1.43	(1.49)	1.71	(1.79)	0.29	(0.30)	0.00	(0.00)	4.57	(4.76)	96.00	
GMT-9	17	6-Jun-11	35.43	(20.39)	40.57	(23.36)	7.43	(4.28)	0.57	(0.33)	2.29	(1.32)	5.14	(2.96)	20.57	(11.84)	37.71	(21.71)	7.43	(4.28)	1.71	(0.99)	2.29	(1.32)	7.43	(4.28)	0.00	(0.00)	0.00	(0.00)	5.14	(2.96)	173.71	
GMT-9	18	17-Jun-11	28.29	(19.72)	15.14	(10.56)	25.43	(17.73)	16.00	(11.16)	4.00	(2.79)	8.86	(6.18)	8.57	(5.98)	10.29	(7.17)	13.14	(9.16)	5.71	(3.98)	4.00	(2.79)	1.43	(1.00)	0.00	(0.00)	0.00	(0.00)	2.57	(1.79)	143.43	
spring		Total	310.57		227.71		121.71		44.29		54.57		128.29		105.14		114.86		71.14		48.86		49.43		25.14		1.14		0.00		32.86		1335.43	
		(%)		(23.26)		(17.05)		(9.11)		(3.32)		(4.09)		(9.61)		(7.87)		(8.60)		(5.33)		(3.66)		(3.70)		(1.88)		(0.09)		(0.00)		(2.46)		(16.69)
GMT-9	19	1-Jul-11	21.43	(21.37)	12.00	(11.97)	18.00	(17.95)	9.43	(9.40)	1.14	(1.14)	5.71	(5.70)	6.86	(6.84)	5.14	(5.13)	8.57	(8.55)	3.43	(3.42)	5.43	(5.41)	1.43	(1.42)	0.29	(0.28)	0.00	(0.00)	1.43	(1.42)	100.29	
GMT-9	20	15-Jul-11	35.71	(27.65)	29.43	(22.79)	22.29	(17.26)	3.43	(2.65)	1.43	(1.11)	4.86	(3.76)	5.14	(3.98)	4.86	(3.76)	10.29	(7.96)	1.14	(0.88)	8.29	(6.42)	0.86	(0.66)	0.00	(0.00)	0.00	(0.00)	1.43	(1.11)	129.14	
GMT-9	21	31-Jul-11	22.89	(31.60)	7.78	(10.74)	12.44	(17.18)	1.33	(1.84)	1.33	(1.84)	4.22	(5.83)	7.11	(9.82)	3.33	(4.60)	5.33	(7.36)	1.11	(1.53)	3.56	(4.91)	0.22	(0.31)	0.22	(0.31)	0.00	(0.00)	1.56	(2.15)	72.44	
GMT-10	1	21-Aug-11	30.43	(30.74)	22.57	(22.80)	11.00	(11.11)	3.43	(3.46)	0.14	(0.14)	1.00	(1.01)	6.43	(6.49)	5.57	(5.63)	3.43	(3.46)	0.43	(0.43)	11.00	(11.11)	0.14	(0.14)	0.00	(0.00)	0.00	(0.00)	3.43	(3.46)	99.00	
GMT-10	2	4-Sep-11	52.86	(31.41)	42.00	(24.96)	36.57	(21.73)	0.00	(0.00)	0.00	(0.00)	0.29	(0.17)	20.86	(12.39)	5.14	(3.06)	3.14	(1.87)	2.00	(1.19)	3.43	(2.04)	0.57	(0.34)	0.00	(0.00)	0.00	(0.00)	1.43	(0.85)	168.29	
GMT-10	3	18-Sep-11	190.57	(28.36)	215.14	(32.02)	195.43	(29.08)	4.57	(0.68)	0.57	(0.09)	5.14	(0.77)	13.14	(1.96)	4.86	(0.72)	24.57	(3.66)	4.86	(0.72)	5.14	(0.77)	6.29	(0.94)	0.00	(0.00)	0.00	(0.00)	1.71	(0.26)	672.00	
summer		Total	353.89		328.92		295.73		22.19		4.62		21.22		59.54		28.90		55.33		12.97		36.84		9.51		0.51		0.00		10.98		1241.16	
		(%)		(28.51)		(26.50)		(23.83)		(1.79)		(0.37)		(1.71)		(4.80)		(2.33)		(4.46)		(1.04)		(2.97)		(0.77)		(0.04)		(0.00)		(0.88)		(15.51)
GMT-10	4	2-Oct-11	10.57	(8.71)	22.86	(18.82)	39.43	(32.47)	0.57	(0.47)	0.00	0.00	0.86	(0.71)	20.29	(16.71)	13.71	(11.29)	4.29	(3.53)	1.14	(0.94)	1.71	(1.41)	3.71	(3.06)	0.00	(0.00)	0.00	(0.00)	2.29	(1.88)	121.43	
GMT-10	5	16-Oct-11	177.14	(31.38)	238.00	(42.16)	77.43	(13.71)	11.43	(2.02)	0.86	(0.15)	9.71	(1.72)	6.00	(1.06)	7.71	(1.37)	3.71	(0.66)	2.00	(0.35)	2.29	(0.40)	25.14	(4.45)	0.00	(0.00)	0.00	(0.00)	3.43	(0.61)	564.57	
GMT-10	6	26-Oct-11	46.86	(24.85)	13.71	(7.27)	95.43	(50.61)	2.86	(1.52)	1.14	(0.61)	5.14	(2.73)	9.14	(4.85)	6.29	(3.33)	1.14	(0.61)	0.00	(0.00)	0.57	(0.30)	5.14	(2.73)	0.00	(0.00)	0.00	(0.00)	1.14	(0.61)	188.57	
GMT-10	7	2-Nov-11	9.14	(14.29)	8.57	(13.39)	14.57	(22.77)	2.57	(4.02)	2.86	(4.46)	5.14	(8.04)	3.43	(5.36)	10.29	(16.07)	0.29	(0.45)	4.29	(6.70)	0.57	(0.89)	1.43	(2.23)	0.00	(0.00)	0.00	(0.00)	0.86	(1.34)	64.00	
GMT-10	8	9-Nov-11	10.57	(9.76)	10.00	(9.23)	8.29	(7.65)	13.43	(12.40)	24.57	(22.69)	18.86	(17.41)	3.14	(2.90)	9.14	(8.44)	2.86	(2.64)	0.57	(0.53)	0.57	(0.53)	1.43	(1.32)	0.00	(0.00)	0.00	(0.00)	4.86	(4.49)	108.29	
GMT-10	9	16-Nov-11	18.86	(10.75)	25.71	(14.66)	6.29	(3.58)	36.00	(20.52)	37.14	(21.17)	25.71	(14.66)	4.00	(2.28)	5.71	(3.26)	3.43	(1.95)	0.00	(0.00)	1.14	(0.65)	6.29	(3.58)	0.00	(0.00)	0.00	(0.00)	5.14	(2.93)	175.43	
GMT-10	10	23-Nov-11	52.57	(19.33)	59.43	(21.85)	35.43	(13.03)	19.43	(7.14)	23.43	(8.61)	28.00	(10.29)	38.86	(14.29)	6.29	(2.31)	3.43	(1.26)	0.00	(0.00)	0.00	(0.00)	4.00	(1.47)	0.00	(0.00)	0.00	(0.00)	1.14	(0.42)	272.00	
GMT-10	11	30-Nov-11	9.14	(14.81)	7.43	(12.04)	11.71	(18.98)	2.57	(4.17)	7.71	(12.50)	6.29	(10.19)	9.14	(14.81)	2.29	(3.70)	2.86	(4.63)	0.00	(0.00)	0.00	(0.00)	1.14	(1.85)	0.00	(0.00)	0.00	(0.00)	1.43	(2.31)	61.71	
GMT-10	12	7-Dec-11	26.29	(10.31)	41.71	(16.37)	33.14	(13.00)	22.29	(8.74)	24.57	(9.64)	62.86	(24.66)	16.57	(6.50)	13.14	(5.16)	2.29	(0.90)	0.00	(0.00)	0.00	(0.00)	6.86	(2.69)	0.00	(0.00)	0.57	(0.22)	4.57	(1.79)	254.86	
GMT-10	13	14-Dec-11	25.71	(12.86)	25.14	(12.57)	18.86	(9.43)	19.43	(9.71)	42.86	(21.43)	35.43	(17.71)	8.57	(4.29)	6.29	(3.14)	6.86	(3.43)	1.14	(0.57)	1.14	(0.57)	2.86	(1.43)	0.00	(0.00)	4.00	(2.00)	1.71	(0.86)	200.00	
GMT-10	14	21-Dec-11	14.29	(4.43)	28.57	(8.87)	33.71	(10.46)	9.71	(3.01)	28.00	(8.69)	25.71	(7.98)	39.43	(12.23)	18.86	(5.85)	11.43	(3.55)	2.86	(0.89)	2.29	(0.71)	2.86	(0.89)	0.57	(0.18)	101.71	(31.56)	3.43	(1.06)	322.29	
GMT-10	15	28-Dec-11	9.71	(4.39)	9.71	(4.39)	12.00	(5.43)	4.00	(1.81)	13.14	(5.94)	21.71	(9.82)	78.29	(35.40)	16.00	(7.24)	2.29	(1.03)	7.43	(3.36)	0.57	(0.26)	0.57	(0.26)	0.00	(0.00)	44.00	(19.90)	1.71	(0.78)	221.14	
fall		Total	410.86		490.86		386.29		144.29		206.29		245.43		236.86		115.71		44.86		19.43		10.86		61.43		0.57		150.29		31.71		2554.29	
		(%)		(16.08)		(19.22)		(15.12)		(5.65)		(8.08)		(9.61)		(9.27)		(4.53)		(1.76)		(0.76)		(0.43)		(2.40)		(0.02)		(5.88)		(1.24)		(31.93)
Annual		Total	1191.32		1155.49		871.73		255.05		502.62		561.22		480.97		592.33		199.33		1670.68		103.98		114.37		4.51		204.00		95.27		8000.30	
		(%)		(14.89)		(14.44)		(10.90)		(3.19)		(6.28)		(7.02)		(6.01)		(7.40)		(2.49)		(20.88)		(1.30)		(1.43)		(0.06)		(2.55)		(1.19)		