NOAA, NATIONAL WEATHER SERVICE, WEATHER FORECAST OFFICE

Miami, Florida 33165

Summary of Historic Cold Episode of January 2010

Coldest 12-day Period Since At Least 1940

January 14, 2010: A historic cold snap of both duration and magnitude came to an end yesterday (January 13th) as high temperatures are expected to reach the 70 degree mark and remain that way through the upcoming weekend. A blocking pattern in the middle and upper levels of the atmosphere allowed for a continued flow of arctic air to sweep across the eastern half of the country (Figure 1). An established snow pack over the central U.S. prevented significant modification of the arctic air masses as they made their way towards Florida.

The cold snap began on New Year's Night when the first of 2 arctic cold fronts moved through south Florida. After a brief warm-up on Friday, January 8th, a stronger arctic front moved through during the pre-dawn hours of Saturday, January 9th. Several daily low and low maximum temperature records were either tied or broken during this period. As a result of the extended period of much below normal temperatures, records for consecutive number of cold days have also been established. Following is a summary of these records for the four primary climate sites in south Florida:

West Palm Beach:

- Average 12-day temperature of 49.9 degrees between Jan 2 and Jan 13 is lowest on record for any 12-day period (previous record 50.9 degrees set from January 16-27, 1977).

- Set new record of 12 straight days of lows at or below 45 degrees (previous record 9 set in Jan 1956).

- Tied record of 12 straight days of lows below 50 degrees (previously set in Jan 1956 and Dec 2000-Jan 2001).

- Set new January record of 5 total days of high temperatures below 60 degrees (old record 4 days in 1940, 1958 and 1970).

Naples:

- Average 12-day temperature of 48.8 degrees between Jan 2 and Jan 13 is lowest on record for any 12-day period (previous record 51.3 degrees set from January 9-20, 1981).

- Set new record of 13 straight days of lows below 50 degrees (previous record 12 days in Dec 1980/Jan 1981 and Feb 2006).

- Set new record of 12 straight days of lows at or below 45 degrees (previous record 8 set in Jan 1977).

- Set new January record of 6 total days of high temperatures below 60 degrees (old record 4 days in 1956, 1958 and 1970).

Moore Haven:

- Average 12-day temperature of 46.4 degrees between Jan 2 and Jan 13 is lowest on record for any 12-day period (previous record 46.5 degrees set from January 21-February 1, 1940).

Fort Lauderdale:

- Tied record of 12 straight days of lows below 50 degrees (previously set in Jan 1956).

- Tied January record of 10 total days of high temperatures at or below 65 degrees (previously set in 1940).

- Average 12-day temperature of 52.1 degrees between Jan 2 and Jan 13 is the third lowest on record for any 12-day period and the **coldest such period since 1940** (record 51.1 degrees ending February 1, 1940).

Miami:

- Set new January record of 10 total days of high temperatures at or below 65 degrees (previous record 8 days in 1940 and 1977). This also ties the record for any single month (previously set in February 1958).

- Average 12-day temperature of 52.7 degrees between Jan 2 and Jan 13 is the 10th lowest on record for any 12-day period and the **coldest such period since 1940** (record 49.3 degrees ending January 31, 1940).

IMPACTS (Updated March 1)

Impacts from the extended cold temperatures were significant, particularly to the agricultural industry. Estimated crop losses as of March 1 are in the $500 million range. Heavily-agricultural areas west and southwest of Lake Okeechobee, primarily over Glades, Hendry and inland Collier counties, registered anywhere from 5 to 7 days of freezing temperatures. Readings as low as 24

degrees were recorded in Palmdale and Moore Haven in Glades County, and Airglades Airport west of Clewiston in Hendry County.

In the south Miami-Dade County agricultural areas, the lowest temperature recorded was 26 degrees at Tamiami Airport on January 11th. This is the second coldest reading registered in this area since records began in 1948.

Two fatalities were noted from exposure to the cold. A homeless man died in Hollywood on January 4th, and a 77-year-old man died from cold exposure in his non-heated apartment in Miami on January 12th. Seven injuries have been noted, including a family of six in North Miami who were treated for carbon monoxide poisoning from using a charcoal grill inside their home. Increased electricity demand from the usage of heaters overwhelmed the electrical grid and caused power outages to an estimated 35,000 customers area-wide. Several reports of house fires were reported, likely due to heating equipment malfunctions.

Cold weather shelters were open for over 10 consecutive nights in many areas of south Florida.

Below is a listing of day-by-day temperatures from January 2nd through January 13th for the four primary climate sites in south Florida, along with the records for each date:

High Temperature/Record Low Maximum (Year Set)

(Blue values denote tied or broken record)

Jan-10	Miami	Ft. Lauderdale	West Palm Beach	Naples
2	65/46(1898)	66/61(1928)	62/43(1898)	63/60(2008)
3	62/50(1928)	63/51(1928)	63/51(1900)	57/57(1958)
4	61/54(1898)	59/54(1919)	58/54(2002)	56/55(1970)
5	60/55(1919)	59/56(1999)	56/53(1919)	55/56(2002)
6	58/62(1980)	56/63(1969)	55/57(1919)	56/64(1980)
7	62/61(2006)	64/56(1970)	63/54(1892)	61/59(2006)
8	74/55(1970)	74/56(1970)	76/52(1970)	71/57(1970)
9	63/51(1970)	62/50(1970)	59/47(1970)	56/52(1970)
10	48/53(1970)	49/50(1970)	50/50(1970)	48/51(1970)
11	62/50(1927)	61/52(1927)	62/55(1982)	52/60(1956)
12	63/53(1981)	62/53(1981)	60/54(1981)	61/56(1981)
13	66/58(1902)	67/58(1996)	65/58(1996)	62/56(1981)

Low Temperature/Record Low (Year Set)

(Blue values denote tied or broken record)

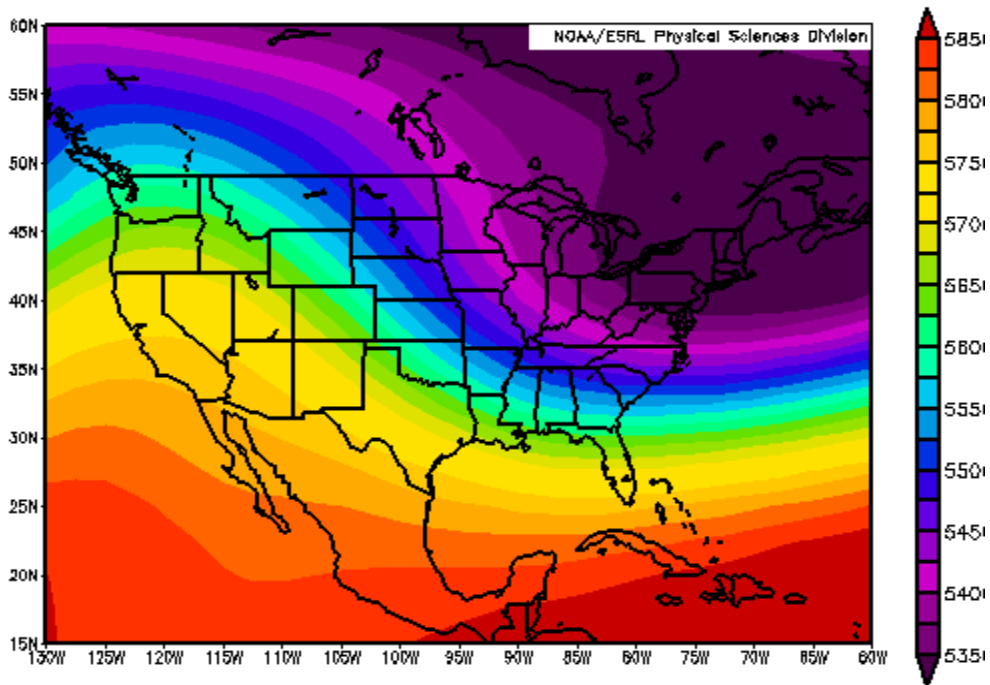| Jan-10	Miami	Ft. Lauderdale	West Palm Beach	Naples
2	49/38(1898)	47/32(1949)	43/29(1918)	45/38(1976)
3	47/35(1898)	47/39(2008)	42/31(1898)	43/34(2008)
4	44/32(1918)	43/32(1918)	39/32(1918)	40/39(2002)
5	43/37(1919)	41/36(1953)	37/34(1920)	41/31(2001)
6	40/40(1919)	38/34(1956)	34/37(1967)	35/35(1999)
7	44/40(1903)	43/38(1931)	37/38(1903)	41/35(1980)
8	49/36(1903)	49/37(1970)	45/34(1970)	44/37(1970)
9	38/36(1997)	39/34(1956)	34/31(1956)	38/32(1996)
10	35/35(1970)	34/32(1970)	32/29(1970)	35/32(1970)
11	36/37(1927)	36/33(1970)	33/34(1927)	32/30(1970)
12	43/33(1982)	41/32(1982)	38/29(1982)	37/26(1982)
13	47/32(1981)	44/32(1981)	39/31(1922)	40/27(1981)

Figure 1: Mean 500 mb heights Jan 1 – Jan 10, 2010. Deep low pressure over NE U.S. and high pressure over the western U.S. provided a steady NW flow over the central and eastern U.S., including Florida.