SUMMARY of the March 1998 WEATHER ON THE MONTEREY PENINSULA

General: The considerable variability in temperature and rainfall this past month netted above normal temperatures and rainfall while fog occurrence was near normal and average winds were below seasonal expectation. Snow, hail, thunderstorms and at least one pendant/funnel cloud closed out a stormy end to March 1998. The MARCH precipitation pushed the rain-year rainfall to an all-time record 40.75"—unmatched in at least 152 years!

Temperature: March had something for everyone in the temperature department. The first ten days continued a respite from the big rains of the first three quarters of February -- but not dry; temperature minimums didn't stray too far from normal while maximums ranged from well-below to well-above normal. Next came a week or more of early (low-stratus, foggy) summer conditions -- cool days and a bit of drizzle as well. Then after a two-day attempt at spring the rainy season got underway late on the 23rd with emphasis on cool to cold most of the rest of the month. Maximum temperature departures from normal reached down to -11F on the 28th and -12F on the 31st. In number summary, the average maximum of 61.8F is 0.4F below normal while the minimums averaged 1.9F above normal (46.9F vs 45.0F) resulting in a mean of 54.4F for the month -- 0.8F above normal ...

March 1998 is the fifteenth month with above normal temperatures in the last sixteen!

High for the month, 74F, was registered on 10, 11 and 23 March, while the month's low, 37F, came very late month, on the 29th.

There was a mixed bag of daily temperature records in March 1998. Minimums: 52F on the 15th is a record warm minimum (previous: 49F in 1952), while the warm low of 52F on the 16th tied the record set in 1994. Similarly, on the 24th, the 56F minimum is a record warm reading, topping 53F in 1989. On balance, the 37F minimum on 29 March is a new cold record for the date (previous: 39F in 1977).

Maximums: The very cool 51F on 31 March is a record (previous, 54F set in 1982), while the 52F maximum on 28 March tied the coolest maximum for the date, set in 1979.

The average last day with light frost at the ground (i.e., using a thermal shelter temperature of 39F or less) is 17 March. Thus for this year, 29 March, with 37F, is counted as the last day of frost.

Precipitation: Through 27 March, the rainfall was running below normal. The last four days put March 1998 rainfall in the above-normal heavy category, with a final figure of 4.20" vs. a normal of 3.14". The big news, of course, is that the rain year total exceeded the previous 152+ year record (set in rain year 1982-83) of 40.64" at about 1230 PM Tuesday 31 March. The month ended up with 40.75". If only normal amounts fall in April through June, another 2.22" could be expected. 1.43" of that fell already by 10 AM on 3 April! And, with more rain on the North Pacific Ocean horizon for the first one or two weeks of April, even 45" doesn't seem out of the realm of possibility!

In any case, March 1998 rains were of a gentler type compared to the record 14.26" in February, but 4.20" in March served to keep the soils wet and loose, with significant potential for further slides and flash flooding with expected April rains.

Weather on Friday March 27 and Saturday March 28 was on the wild side. Frequent light to heavy (cold) showers, one brief hail storm after another, thunder and even snow were recorded in those two days.
A reliable local observer recorded snow flakes in Monterey about 0540 AM on Saturday March 28, while thunderstorms were recorded late AM and late PM the same day as well as the evening before. Hailstorms with the ice particles measuring up to 3/8" or more in diameter was frequent from Friday evening March 27 through at least late evening Saturday March 28, occurring most often at night.

A Herald photographer documented the snow-covered local hills/mountains Saturday AM as well as the hail that stayed on the ground/roads through the night Friday. Snow on the ground was down to near 1000 feet by Saturday March 28 AM in the local valleys. Check your plum tree blossoms -- the hail has taken its toll!!

We are now counting nine hail-days this rain season on the Monterey Peninsula -- five is normal. No record -- yet! Also, the thunderstorm-day count is up to 12 days this rain year, which ties the record set in rain years 1972/73 and 1982/83. In general April is not a prominent thunderstorm month; only five thunder days in the last 35 April's. However, there were 23 hail days in the same period. As we go to press, yet another thunderstorm day was documented -- AM on 3 April-- thus, a new record!. The number of hail/thunderstorm days this rain year is higher for the local hills/valleys, particularly in the period of March 27-29, 1998.

On the 25th, another day with unusually unstable (convective) weather on the Central Coast, a pendant/funnel cloud was observed around 9 AM between Salinas and Monterey. See The Herald, Section B, 26 March for a discussion of this phenomenon.

Fog: The mid-month summer-like fog period totaled nine fog days, which is slightly above the norm of eight.

Wind: Average March 1998 wind at the Monterey Airport (for first 24 days only) was 5.3 miles per hour (mph), which is below the recent ten-year average of 6.8 mph. High gust at the National Weather Service Climate Station (Ft. Ord) was 31 (33) mph on the 18th (28th).

90-Day Temperature and Precipitation Outlook for the Central Coast: The National Weather Service 90-day outlook for April through June indicates that above normal temperatures are expected throughout the period, on the average, with normal to above normal rainfall. Following are normals for the National Weather Service Climate Station (47-year data base), Monterey, California.

<table>
<thead>
<tr>
<th></th>
<th>Normal Max/Min Temps (F)</th>
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<tbody>
<tr>
<td>April</td>
<td>63.8/45.9</td>
</tr>
<tr>
<td>May</td>
<td>64.7/48.1</td>
</tr>
<tr>
<td>June</td>
<td>67.0/50.2</td>
</tr>
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</table>
Comparative Weather Data for Stations on/near the Monterey Peninsula and Salinas March 1998

Following are comparative figures from seven local observation sites: 1) the National Weather Service Climate Station (NWSCS), (elevation 385') located in the western hilly section of Monterey; 2) the National Weather Service Forecast Office (NWSFO) site (elevation 122'), located in the flat area of eastern Monterey, on the NPS Annex grounds adjacent to Airport; 3) the Naval Postgraduate School Campus (NPS), Monterey; 4) the Ft. Ord site (Ft. Ord (NPS)) (elevation 167') located just northwest of the Marina Municipal Airport (formerly Fritschie Field). This is the site of the Naval Postgraduate School's wind profiler (managed by Department of Meteorology); 5) Site SE end of Marina, located about 2 « miles ESE of Monterey Bay (elevation 80'); 6) Carmel Valley site (CV) near Village (elevation 500'); south facing slope; 7) SW Salinas (SAL) vicinity of W. Blanco Rd. within « mile of S. Main St.

<table>
<thead>
<tr>
<th>Location</th>
<th>Temperature (F)</th>
<th>Precipitation</th>
<th>Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avg. Highest</td>
<td>Avg. Lowest</td>
<td>Mar this rain yr (% norm)</td>
</tr>
<tr>
<td></td>
<td>Max.</td>
<td>Min.</td>
<td>(inches)</td>
</tr>
<tr>
<td>1) NWSCS:</td>
<td>61.8</td>
<td>46.9</td>
<td>74</td>
</tr>
<tr>
<td>2) NWSFO:</td>
<td>64.1</td>
<td>46.5</td>
<td>77</td>
</tr>
<tr>
<td>3) NPS:</td>
<td>62.5</td>
<td>46.1</td>
<td>75</td>
</tr>
<tr>
<td>4) Ft. Ord (NPS):</td>
<td>60.0</td>
<td>44.9</td>
<td>73</td>
</tr>
<tr>
<td>5) Marina:</td>
<td>62.9</td>
<td>45.5</td>
<td>75</td>
</tr>
<tr>
<td>6) CV:</td>
<td>65.3</td>
<td>43.3</td>
<td>78</td>
</tr>
<tr>
<td>7) SAL:</td>
<td>Unavailable at publication time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FOOTNOTES:
- Observations for precipitation:
  - a, e = 6 PM
  - b, d = midnight
  - c = 4 PM
  - f, g = 8 AM
  (NOTE: for f, g: 24-h rainfall measured 8 AM, first day of the month counts for previous month)
- @ = 47-year average
- # = 40-year average
- % = 10-year average
- * = Winds NWSFO from
- & = 14-year average
- d = on two days
- Mry Pen Airport
NWS Climate Station, Monterey, CA

March 1998

Temperature (degree F)

Precipitation (inches)

Total = 4.20
Average = 46.9
Average = 61.8