

SOUTHWESTERN “MONSOONS”

(NOTE: This was an internet bulletin-board posting written in response to a posting that asserted that the Phoenix area has a monsoon season, and that the term, “monsoon”, was a proper usage in describing the summer thunderstorm season of the area.)

Online is hardly the place to look up definitions. Try a textbook of climatology or a meteorological reference book. None of the materials that I have collected in fifty years of teaching and research in the atmospheric sciences make any reference to any kind of "monsoon" anywhere in North America.

Use of the term by a few NWS people who should know better does not make it correct. (Are you sure that they are NWS, and not just local TV types and newspaper writers?) The LCD (*Local Climatological Data*) for Phoenix is the official NWS summary of Phoenix weather. It makes no mention of any monsoon season. It simply refers to a "summer thunderstorm peak in July and August".

One of the two major characteristics of the true monsoon is the directional persistence of the monsoon winds. Typically, the winds will blow from the prevailing quadrant more than eighty-percent of the time, and often from the prevailing octant almost as often. Nothing like that is found anywhere in the Southwest. A monsoon is not simply a change in the wind. You get that with almost every change of season. A monsoon climate is characterized by a marked change in the wind—almost always a complete 180° shift in the direction.

The second major characteristic of the true monsoon is the widespread and persistent rains associated with the rainy monsoon. These rains are not brief and spotty thundershowers, but cover tens of thousands of square miles at a time, and can persist for many hours, even several days. Thunder is rarely heard during the heart of the monsoon, although it may make an appearance during the "burst" that characteristically starts the season. The light thundershowers that Phoenix gets can hardly be considered monsoon rains by anybody familiar with the monsoon phenomena.

Dew point has nothing whatsoever to do with monsoons. The high dew points that you mention for Phoenix in July and August are shared by most of the United States, from San Francisco to Maine, and from the Dakotas to the Florida

keys. They all have mean dew points over 50°. These elevated dew points simply go along with summer temperatures. Many places that have no monsoon characteristics have higher dew points, and many monsoon areas have lower ones. I have never read any study that related dew point to monsoons.

In summary, the Southwestern United States does not have any of the characteristics of a monsoon climate. It does not have the reversal of winds, it does not have the persistence of winds. It does not have the seasonal contrast in precipitation patterns. Finally, the scale of the phenomena simply doesn't have the scope of a true monsoon.

If you insist on calling it a monsoon, go ahead if it makes you happy. But all it is, in reality, is a little summer thunderstorm season. Its like is equaled and surpassed in dozens of desert areas all over the world.

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