While much of Nebraska received what seemed like an endless stream of storms in June, more rain still is needed in July.

Although most soils across the state are soggy and saturated, crops will need some timely precipitation events to offset the risk of stress development during corn pollination, said Al Dutcher, state climatologist in the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln.

An upper air trough expected to slide across the state this weekend could sink far enough south to bring a return to heavy thunderstorm activity, especially over northern Nebraska; however, models switch between keeping the moisture across the Dakotas or shifting it further south across Nebraska and Kansas, Dutcher said. This makes predicting July precipitation difficult.

A shift south certainly would create additional concerns as river basins likely will still have above normal flows and soils will not have dried out sufficiently to absorb intense rainfall, he said.

“June rainfall reports from volunteer observers were most likely record breaking,” he said. “I fully expect that many of these locations will show June 2010 precipitation totals that exceed the records set in June 1993.”

A broad area of central and eastern Nebraska received 8 inches of moisture, with an area extending from Broken Bow southeast through Omaha receiving 9.5 to 12 inches. A couple of isolated locations reported rainfall over 15 inches.

An analysis of June moisture levels through June 23 showed no reporting site with below normal precipitation. Surpluses of 3-5 inches are common over the eastern two-thirds of the state, with the hardest hit areas indicating surpluses of 8-12 inches.

Dutcher said what the state needs is normal precipitation once a week. Excess rain will cause more flooding to already stressed rivers and streams, while dry weather could mean the

potential for shallow corn root syndrome.

Irrigators should closely monitor their growing corn crop, Dutcher said.

“It is not clear how well roots have developed with all of the June moisture that fell on soils that were already near or at field capacity,” he said.

Poor rooting structure (shallow root syndrome) concerns are being raised in portions of Iowa, Illinois, Indiana and Ohio.

“There have been isolated reports of corn plants falling over because their anchor roots were in saturated soil and hadn’t gone deep enough to support the plant,” he said. “It is possible that the same conditions may develop in Nebraska, but so far I haven’t been aware of any reported instances.”

If roots have not developed deep into the soil profile, stress likely will occur with a couple of weeks of dry weather. Periodic field scouting should be conducted to monitor plant health so that irrigators can keep ahead of crop water demands, instead of trying to play catch-up during the mid-July through August period. For dryland producers, the crop will be at the mercy of Mother Nature.

Aside from the threat of shallow root syndrome, crops generally are not as healthy now as in past years, according to the vegetative health index, which is a satellite image of vegetation. Of particular concern is much of eastern Nebraska, especially near the Platte River Valley system northward to southeast South Dakota and extending to the Platte River system to Lexington to the Loup River Valley to the Ord and Broken Bow areas.

“Vegetation in the Sandhills is phenomenal, but areas with extensive flooding are showing yellowing corn,” Dutcher said. “That leads to the question, what impact has all this rain had on nitrogen applications?”

On a positive note, the abundance of late season snows and heavy spring moisture have resulted in full pools for all Wyoming Platte River reservoirs.

“In fact, there is currently 200,000 acre feet of water being stored in their flood pools to mitigate flooding upstream from Lake McConaughy,” Dutcher said.

Lake McConaughy had 1.5 million acre feet (full is 1.7 million acre feet) in storage as of June 30, nearly 550,000 acre feet more than at this time last year. Inflows have been running close to 6,000 cubic feet per second, about four times the normal flow for this time of year.

The latest projections indicate that high flows will likely continue well into July, with an outside chance that Big Mac will reach capacity before the end of the summer. Even if it doesn’t fill completely, it is likely to reach at least 90 percent of capacity, barring the development of an intense drought.

The latest Climate Predication Center forecast suggests there will be additional inflows into McConaughy. The two-week lead forecast for July indicates above normal moisture in the eastern two-thirds of the state, coupled with below normal temperatures. CPC currently anticipates that June conditions will continue during July, although recent temperature trends would suggest that their forecast is too cool.

Much of the area south and southeast of Nebraska has been experiencing a prolonged period of temperatures in the 90s to low 100s coupled with high dew point temperatures.

“We have been on the northern fringe of this region,” Dutcher said. “With the abundance of June rainfall and full to saturated soil profiles, evaporation and plant transpiration will be adding additional moisture to the lower atmosphere, increasing the risk for heat stress for livestock producers.”

An absence of wind could easily produce a scenario similar to last June when temperatures soared into the 90s and, coupled with dew points in the low 70s, produced consecutive days of heat indices in the 105 to 120 degree range.