After warm autumn, La Nina could bring more seasonal conditions

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After an unusually mild autumn, a weak La Nina system could bring more seasonal conditions to much of Indiana this winter, according to the latest long-range outlook from the Indiana State Climate Office based in the Department of Agronomy at the Purdue University College of Agriculture.

La Nina and its opposite phase El Nino are part of the natural climate system that affects regional weather patterns. Because La Nina occurs slowly over months during the transition, forecasters are calling for statistically equal chances of above, normal, or below normal temperatures through February. Normal Indiana daily high temperatures are near 39 degrees in December, 35 degrees in January, and 40 degrees in February. Daily low temperatures each month average near 23 degrees, 19 degrees, and 22 degrees.

"Reviewing the temperatures in regions north and west of us, we believe the potential for severe cold in Indiana could be limited as well," said Dev Niyogi, professor of agronomy and state climatologist.

The precipitation outlook is always more difficult to determine compared to temperature and is more uncertain, he said.

"Southern Indiana has an outlook for equal chances of above, normal or below amounts and will likely stay within the below-normal rain pattern if we follow the persistence of the current dry conditions there," Niyogi said. "Northern and central Indiana may be wetter than normal. The

upper wind pattern associated with La Nina along with the dry soils in states south of Indiana figure into the specific tendency for Southern Indiana."

Normal winter precipitation in Indiana is about 2.9 inches in December, 2.2 inches in January, and 2 inches in February. This includes normal melted snowfall equivalent amounts. Normal snowfall can vary widely from just 10 inches in extreme southwest Indiana to more than 70 inches in the South Bend area where the lake effect is greatest.

State climatologists say there is about a 70 percent chance that a La Nina system will arrive yet this autumn. Forecasters believe the system will be relatively weak and short-lived. Neutral conditions are expected to return by spring.

A short, weak La Nina system could help limit extremes in temperature and precipitation this winter, said Ken Scheeringa, associate state climatologist.

"After El Nino ended in late spring, neutral conditions controlled summer weather," Scheeringa said. "The neutral period was supposed to be quickly replaced by a strong La Nina bringing drier conditions to the state during the peak growing season in August and September, but that forecast went bust."

Instead, precipitation remained near normal in the northern half of the state, alleviating moderate drought conditions in northeast Indiana counties and setting the stage for near-record grain harvests. Southern Indiana, however, received far less precipitation than normal as a drought along the Gulf Coast intensified and spread north. By the middle of November, 16 southern Indiana counties were in moderate drought conditions. Six southwest Indiana counties had declared bans on open burning.

"Central and southern Indiana generally have received only about 10 percent of normal November rainfall to date," Scheeringa said. "Moderate drought continues to inch northward in Indiana. We will continue to monitor the situation in coming weeks."

Provided by Purdue University