In the past, farmers tapped trees on their farms by inserting metal tubes and hanging buckets to catch the sap. Today, most commercial orchard taps are interconnected by a series of plastic tubes leading to a sugarhouse, eliminating the cold and difficult task of carrying buckets of sap through the snow. Maple syrup producers boil the sap in the sugarhouse to make maple syrup. It generally takes about 40 gallons (151 L) of sap to make one gallon of syrup.

The geographic trends in maple syrup production may hint as to how global warming is affecting the industry. In the 1950s, the United States produced 80 percent of the world’s maple syrup, with Canada producing the other 20 percent. Since the 1970s, however, Canada has more than tripled its maple syrup production, making it the current world leader. Canada now provides 80 percent of the world’s maple syrup, with Quebec alone producing more than two-thirds of the global supply. Much of Canada’s syrup dominance has been perpetuated by generous farm subsidies from the Canadian government and the strong development of markets both in Canada and throughout the world. However, researchers now believe climate change is also playing a role. While rising temperatures and more erratic weather patterns have already affected New England’s maple syrup industry, they may eventually force maple syrup production to migrate farther north into Canada.

According to the Christian Science Monitor (April 6, 2005), a group of researchers at the University of New Hampshire forecasts that if climate change predictions are accurate, oak and hickory trees—not maples—will dominate New England forests by the end of the century. If temperatures rise 6 to 10 degrees F (2 to 4 degrees C) over the next century as predicted, sugar maples will be unable to compete with oaks and hickories.

A more immediate short-term affect, however, is the temperature-driven trend toward shorter sugaring seasons in New England, according to Dr. Timothy Perkins, director of the Proctor Maple Research Center at the University of Vermont. Perkins’ research shows that Canada is not experiencing the recent milder winter phenomena that have been exclusive to New England.

The period during which “sugaring” occurs has shortened substantially over the last four decades. As of 2007, the syrup-collecting period in New England and New York begins 8.2 days earlier and ends 11.4 days earlier than it did 40 years ago.

This year’s maple syrup production in the United States equaled 1.91 million gallons (7.2 million L), down 32 percent from 2011. This figure represents the lowest production since 2007. Vermont continues to lead the U.S. producers with 750,000 gallons (2.8 million L) in 2012, down 34 percent from its production in 2011.

Strangely, the first sap runs in New England began in January and February this year, catching producers unprepared. March brought a heat wave in the 70s and 80s F (16-21 C), which forced early budding of maple trees and quickly ended the maple syrup season.

If the warming trend and erratic weather persists during sapping seasons, producers should expect a continued decline in traditional U.S. maple syrup production. We may still have maple syrup for our breakfast pancakes, but no longer will the label read, “Made in the U.S.A.”

And that is Geography in the News™. October 20, 2012. #1168.