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As frost fades, berry rivalry heats

Temperatures pit Maine, Quebec growers

Valerie Maltais (right), 14, and her sister, Myriam, 16, harvested blueberries in St.-Jean Lake, Quebec. (Dina Rudic/Globe Staff)

By Beth Daley
Globe Staff / November 1, 2007

DOLBEAU-MISTASSINI, Quebec - Decades ago, the flat fields of wild blueberries more than three hours north of Quebec City posed no threat to Maine's standing as the world's wild blueberry capital.

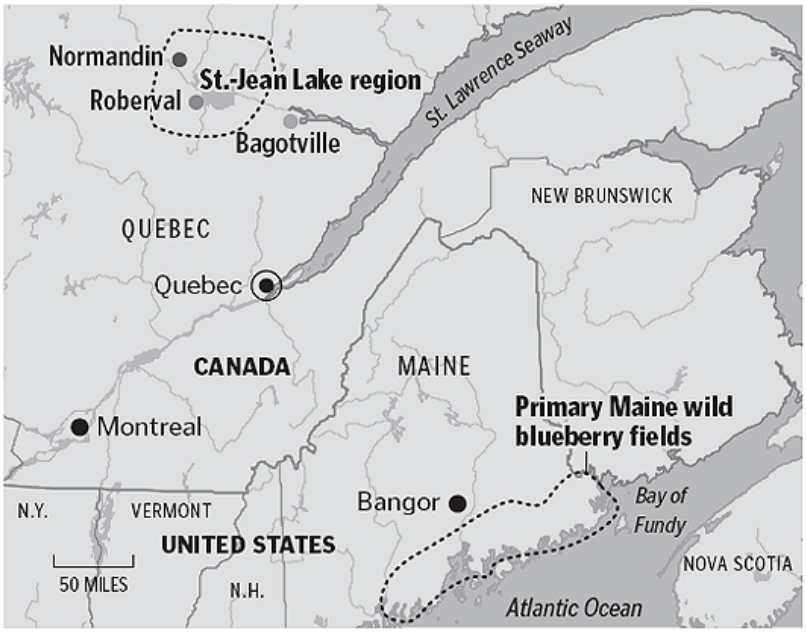
Every four years or so, killing spring frosts hit Quebec, nearly obliterating the year's harvest around St.-Jean Lake, while Down East Maine, some 350 miles southeast, reliably produced millions of pounds a year for use in jams, pie fillings, and muffins.

But temperatures are rising in Canada, and so too are the annual blueberry harvests - giving a whiff of how global warming could shift economic fortunes.

Killing spring frosts occur half as often now as in the 1950s - with the decline most noticeable in the last 20 years - and Quebec growers have gained the confidence to expand production to take advantage of skyrocketing worldwide demand. As a result, Maine blueberry producers are uneasy about competition from their northern neighbor - and their future.

"No question we are worried about Quebec . . . in a way we are envious," said Ed Flanagan, president and CEO of Jasper Wyman & Son in Milbridge, one of Maine's largest blueberry producers. "It's not clear yet if we are going to lose or win with climate change."

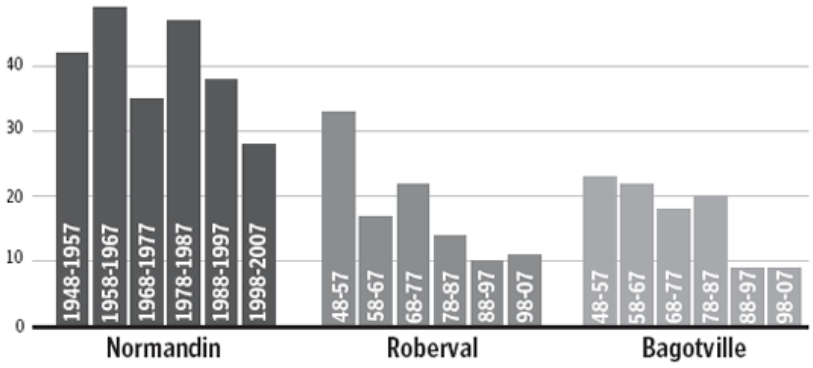
Spring frosts that periodically wiped out wild blueberries around St.-Jean Lake in Quebec do not occur as frequently as they did years ago, giving producers confidence to expand fields. Quebec's success has some Maine producers worried about competition.



SOURCE: ESRI; Wild Blueberry Extension Office, University of Maine

KILLING FROSTS AROUND ST.-JEAN LAKE

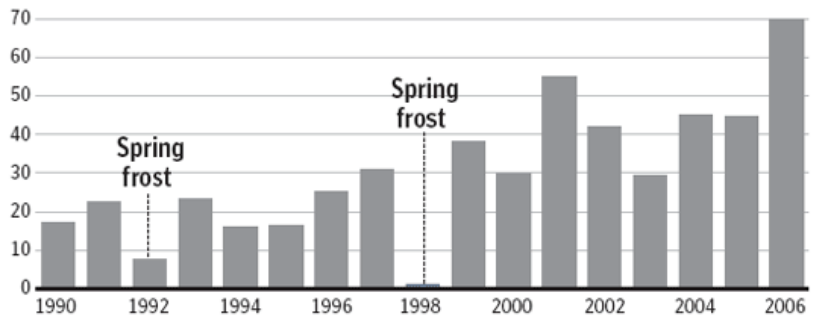
Wild blueberry blooms can die if they are exposed to even one hour of 26.6°F temperature in May or June. Number of days that the temperature dropped below 26.6° during May or June since 1948:



SOURCE: Environment Canada

QUEBEC WILD BLUEBERRY PRODUCTION

Millions of pounds



SOURCE: Wild Blueberry Association of North America

DAVID BUTLER/GLOBE STAFF

Wild blueberries are different from their cultivated, fatter cousins, which are planted on traditional farms and sold in supermarkets' fresh fruit sections. The low, scrubby plants grow naturally on the forest floor, producing sweet, pea-sized fruit. If the trees are cleared, the plants spread in the sun by sending out underground stems called rhizomes. Less than 1 percent of wild blueberries, which are grown commercially only in New England and Eastern Canada, are sold fresh; the rest are flash-frozen and sold the world over.

To promote plant growth, thousands of acres of jack pine and other trees that ringed the vast St.-Jean Lake have been cut in the last decade, nearly doubling the area where the blueberries grow. Every August, workers push homemade contraptions that look like giant dustpans attached to old bicycle wheels to harvest millions of pounds. Blueberry art - from painted shutters to oversized lacquered lawn ornaments - adorns homes and barns to celebrate the region's growing blueberry success.

Regions owe their signature crops and industries - grapes in the Bordeaux region of France, leaf-peeping in New England - largely to the accident of their climate and geography. Those environmental niches will expand, contract or shift as temperatures continue to rise because of the release of heat-trapping gases from power plants, vehicles, and factories.

Anxiety about global warming in New England has focused on its direct effects on treasured industries and pastimes: Will warming nights devastate maple syrup production? Will thinning lake ice wipe out snowmobiling? But major economic disruptions could also come about indirectly - if other places become more formidable competitors.

In the mid-1990s, evidence began trickling out of laboratories that blueberries are packed with antioxidants, chemicals that may be able to combat brain aging, cancer, and heart disease. Gradually, the blueberry became a favorite on breakfast menus, delivering a sweet dose of good medical sense atop granola and in pancakes.

In Canada, farmers rushed to slice down forests to let the wild fruit thrive. They soon began noticing they were getting more reliable harvests as killing spring frosts declined. In May and June, even an hour below 26.6 degrees Fahrenheit can allow ice crystals to form on the blueberry bloom, killing it.

Global warming talk

At first, Quebec farmers chalked up the improved weather to good luck. But after a few more good years, they began calling it something else: Global warming.

"I remember my dad not sleeping at night worrying about the frost," said Samuel Côté of Quebec Wild Blueberries, one of the biggest producers in the St.-Jean Lake region. "I'm not necessarily worried because it's getting warmer with global warming."

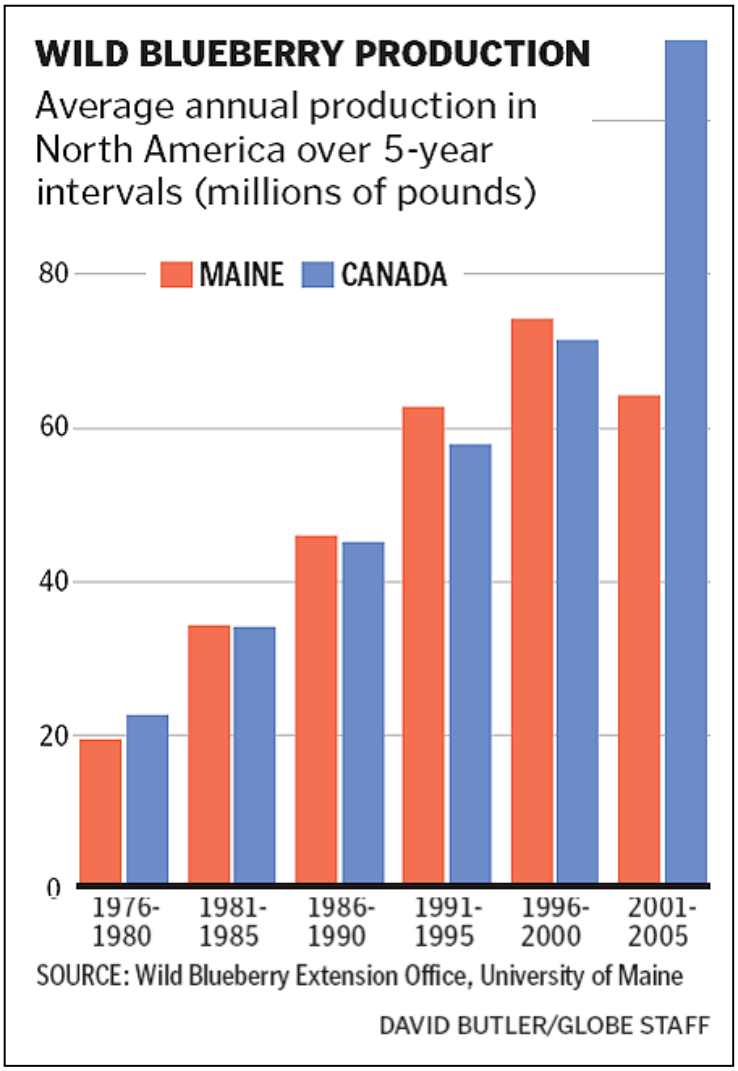
Frosts can be very localized, and historical temperature records are not available for the entire St.-Jean Lake region. But limited data back up what farmers say: Frosts have declined during May and June, especially in the last several decades, a period when the rise in world temperatures became more pronounced. For example, the community of Roberval had 33 killing frosts in the 10 Mays and Junes between 1948 and 1957, the oldest records available. It had 22 between 1968 and 1977. In the last decade, it had 11. Two other communities with long-term records showed similar declines.

The last time a killer spring frost wiped out virtually all the St.-Jean Lake region's blueberry harvest was in 1998. Other climate factors can still influence yield - this year the harvest was down because of a lack of insulating snow and an August frost in some places. But the spring freezes happen so much less that some growers are considering expanding into even more northern regions.

"Global warming is giving us opportunity," said Jean-Eudes Senneville, one of Quebec's largest blueberry growers.

The blueberry war broke out in 2000.

Starting in 1999, the size of Quebec's crop exploded, enabling Canadian production to begin surging past Maine's. In 1999, the Quebec harvest was 38 million pounds. Two years later, it was 55 million pounds.



Demand holds steady

But worldwide demand for blueberries was not growing as fast. By 2001, Canadian and Maine blueberry producers had millions of pounds of frozen fruit on their hands.

Quebec, aided by cheaper energy costs, government subsidies, and a favorable currency rate, began selling the fruit over the border, severely undercutting Maine growers. Maine prices dropped from around 45 cents per pound to 31 cents - the lowest in eight years. Angry, US wild blueberry producers, buyers, and growers signed a petition calling for tariffs on imported Canadian wild blueberries. They said they couldn't afford to stay in business much longer if Canada's cheap fruit kept pouring in.

"The warming temperatures allowed Quebec to produce consistent crops without the fear of frost," said Dave Yarborough, blueberry specialist and professor of horticulture at the University of Maine. "That was an important factor."

The tariffs never materialized, but the US Department of Agriculture bought millions of pounds of surplus Maine blueberries. A few years later some Maine farmers got a onetime payout of up to 2.8 cents a pound from the federal government to compensate for the trade imbalance from July 2002 to June 2003.

Today, tensions have eased between the two countries because demand is at an all-time high for the berries, prices are steadily rising, and the value of the Canadian dollar is rising. But if demand falls - or there is too much supply - prices could dip and hurt Maine growers again.

"That's the fear," said Yarborough. "Quebec could outstrip Maine in the future."

Uncertainty for growers

As Canada blueberry growers prosper in warmer temperatures, Maine growers face uncertainty.

Some growers say the weather has become more erratic in the last 15 years - more very hot and very cold days, longer droughts and more periods of intense rain. Scientists say manmade climate change will not only bring warmer temperatures, but also more extreme weather, including fierce storms and prolonged dry spells.

While it's unclear how or whether more erratic conditions will affect the crop in the long term, some Maine farmers are not waiting to find out.

Irrigation pipes are being laid in the bright red fields of Down East Maine. The reason? Reliability. Many growers want to make sure Maine fields stay as reliable as Quebec's have become.

"It's an insurance policy," said Wyman's Flanagan. "If we don't irrigate, Quebec - or somebody - could take our customers."

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