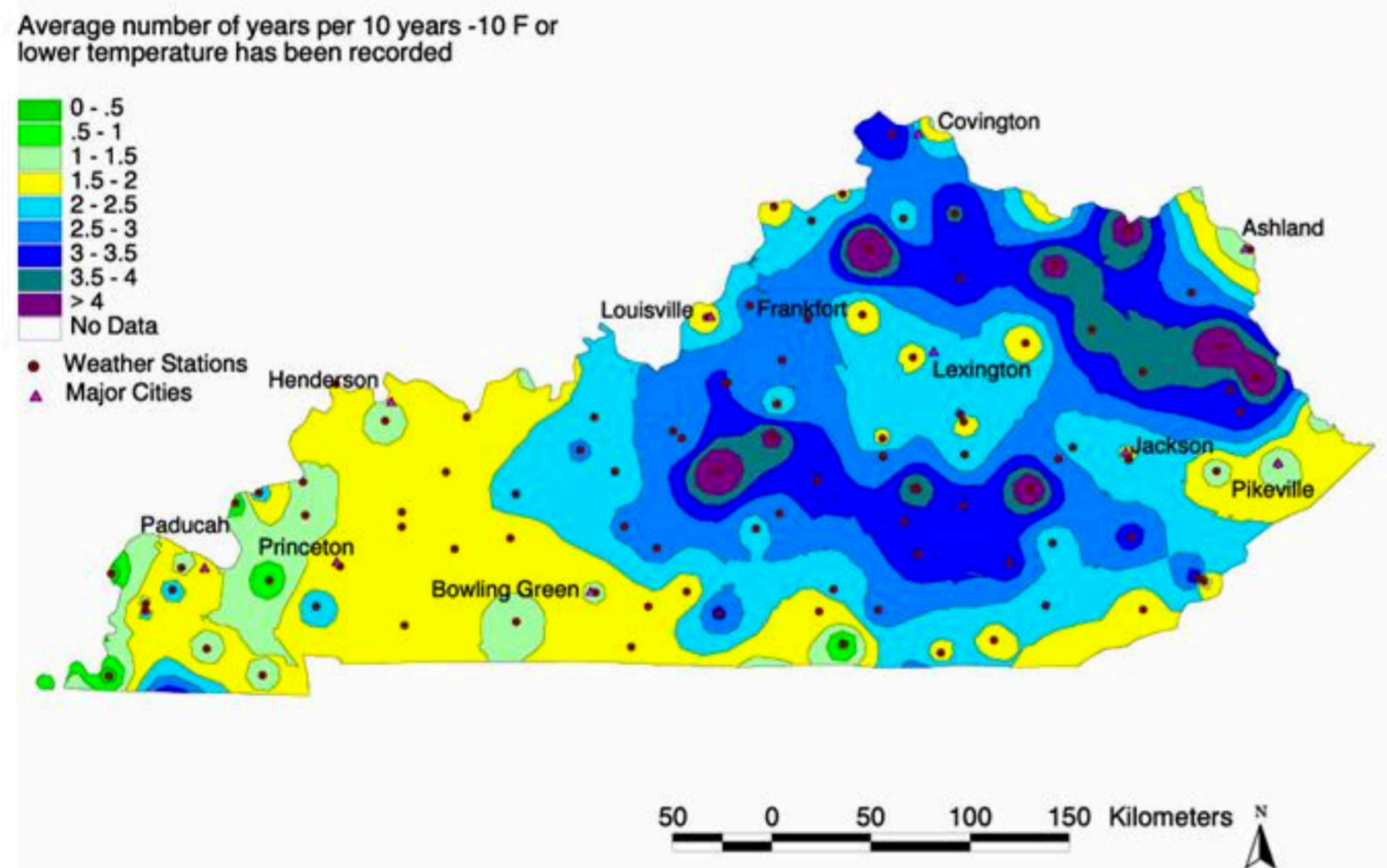


# Site Selection for Thornless Blackberries Based on Past Kentucky Low Temperature Weather Data

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Thornless blackberries are less able to survive cold winters than thorny blackberries. Consequently this map has been developed to show areas of Kentucky that tend to be historically warmer and more suitable to thornless blackberry production, as well as areas that are much colder and less profitable for production. In order to understand winter injury, a brief explanation of terms may be helpful. Blackberries produce canes the first season and these are called **primocanes**. These do not normally produce fruit. (The exception to this rule are the new primocane fruiting varieties.) Once the primocanes winter over they become **floricanes**, which fruit and die after fruit production. It is generally accepted that when the winter temperature reaches  $-10^{\circ}\text{F}$  or lower, thornless erect and thornless semi-erect blackberries sustain serious floricane injury, and as a result there is little or no fruit production in the coming season. Temperatures this low do not injure the root system, so the plants survive and primocanes are still produced in the spring. Once the chilling requirement for blackberries has been satisfied, they begin dehardening upon exposure to warm temperatures. Then, as spring approaches the floricanes may be injured at temperatures considerably warmer than  $-10^{\circ}\text{F}$ . Blackberries may also sustain late spring frost injury that reduces the current season's crop. Thorny varieties generally break bud earlier in the spring and are consequently more prone to late spring frost injury than thornless varieties. The following map was developed using National Weather Service records from many weather stations in Kentucky and surrounding states.

## Freeze Danger for Thornless Blackberries in Kentucky -10 degree F. threshold



For each weather station, the average number of years that  $-10^{\circ}\text{F}$  or lower was reached over a 10 year period was calculated, using the temperature data for as many years as was available. Temperature records used to calculate these averages ranged from as little as 12 years at some stations to 106 years at others. If  $-10^{\circ}\text{F}$  or lower was reached more than once in a winter, this was still recorded as one incident. In other words, if there were multiple  $-10^{\circ}\text{F}$  events during a winter this did not add to our average. A site that received multiple injurious events in a winter would be considered colder and less desirable than a site where  $-10^{\circ}\text{F}$  was reached only once. Thus, the numbers on this map are conservative in this respect. Please keep in mind that we do not know the elevation at which these temperatures were recorded. There can be substantial temperature differences based on the elevation of a certain weather station relative to your location. Lower sites tend to be colder and higher sites tend to be warmer. Rivers and large bodies of water can substantially warm sites. Consequently, where temperature measurements were taken very close to large bodies of water, these data were removed from this analysis.