**Could a Christmas Tree Farm Be Viable in North Texas?**

As a child, getting a live tree at Christmastime was always a highlight of the season. But while picking a tree out from a lot or from a nursery was fun, I always thought it’d be more fun to cut down our own tree at a farm. Unfortunately, there weren’t any tree farms near my hometown of Dallas, so that was an unrealized dream. But even though tree farms were non-existent when I was growing up, the question is clear – could some sort of Christmas tree species actually grow in the greater North Texas region?

After some quick research, it was obvious that certain species of conifers would not be worth considering in greater Dallas. The large fir trees – Noble, Fraser, and Douglas among others – all have native habitats that are much colder and, more importantly, much higher in elevation than Dallas. Digging further, I found a couple less common, but still certainly adequate, species of pine trees potentially capable of growing in North Texas.

With that, this capability analysis will determine the viability of growing the Virginia Pine tree (Pinus virginiana) and the Eastern White Pine tree (Pinus strobus) in an area within 150 miles from my parents’ home in Dallas.

A tree next to a body of water

AI-generated content may be incorrect.

In order to assess whether conditions near Dallas could support the Eastern White Pine or the Virginia Pine, I relied primarily on the USDA Forest Service’s ecology report for each tree. The two reports detailed many factors present in each tree’s native habitat, and I homed in on average annual temperature(C), average annual precipitation(mm), typical soil pH, and typical elevation(m). The following table summarizes the associated GIS layers I gathered for these factors:



The analysis was completed using an Ordinal Combination Addition of Factors. For each of the four factors, a rating of 0 (not capable), 1 (somewhat capable), or 2 (capable) was assigned. Using the Raster Calculator tool, the individual ratings for each factor were added together to get a total score which ranged from 0 to 8. Here is a summary of the factors, ranges, and ratings:



Two maps were produced to display the ability of North Texas and surrounding areas to support growing the trees (see each map at the end of this report). Each map shaded the raster calculations in a green to red color band covering the values from 0 to 8. The deeper the red, the less capable the land is for the tree, and conversely, the darker the green, the more capable the land. Focusing on the 150-mile radius out from Dallas, the results appeared to be promising for young Will Georgia. Both trees appeared to have viable stretches of land primarily to the east of the city that might work. In particular, East Texas – specifically near Tyler, Texas – looked like a strong candidate for Christmas tree farms. And the Virginia Pine looked to have a wider range of highly capable land with large stretches having values near 6. It was striking how areas to the west of Dallas were far less capable of supporting the trees. Neutral to light red values dominate the western halves of the areas for both trees. This reflects Dallas’ location near the geographical border between the wetter, lusher Southeast and the dryer, more barren Southwest.

Overall, there were more viable areas than I expected. While I knew East Texas and other points east were relatively lush, I thought ideal conditions would be limited to the fringes of the 150-mile radii. Looking at the factors mapped individually for both trees, it appears that temperature was the most limiting factor. Each tree’s map showed temperature values across the 150-mile radius that were almost all 0. If the temperature ratings were higher (meaning actual average temperatures were lower), then perhaps Christmas tree farms would already be ubiquitous in the area. Given the current state of global climate conditions, temperatures are likely only going to increase on average in Texas and elsewhere. As a result, if I were to prepare this analysis again, I might reevaluate the calculation by introducing a weight to each factor. In particular, I might consider giving temperature a much higher weight than the other factors. Those results might dash all hope for viable Christmas tree farms near Dallas.

A map of the united states

AI-generated content may be incorrect.A map of the united states

AI-generated content may be incorrect.

References:

U.S. Department of Agriculture, Forest Service. (n.d.). *Pinus strobus: Eastern white pine*. U.S. Forest Service, Southern Research Station. Retrieved March 1, 2025, from <https://www.srs.fs.usda.gov/pubs/misc/ag_654/volume_1/pinus/strobus.htm>

U.S. Department of Agriculture, Forest Service. (n.d.). Pinus virginiana: Virginia pine. U.S. Forest Service, Southern Research Station. Retrieved March 1, 2025, from <https://www.srs.fs.usda.gov/pubs/misc/ag_654/volume_1/pinus/virginiana.htm>