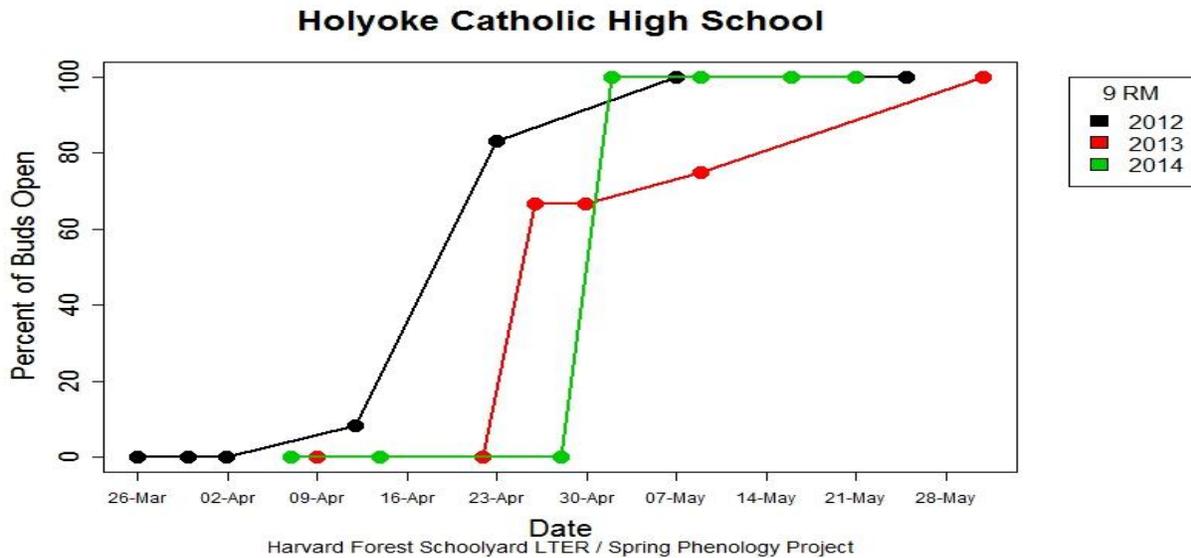
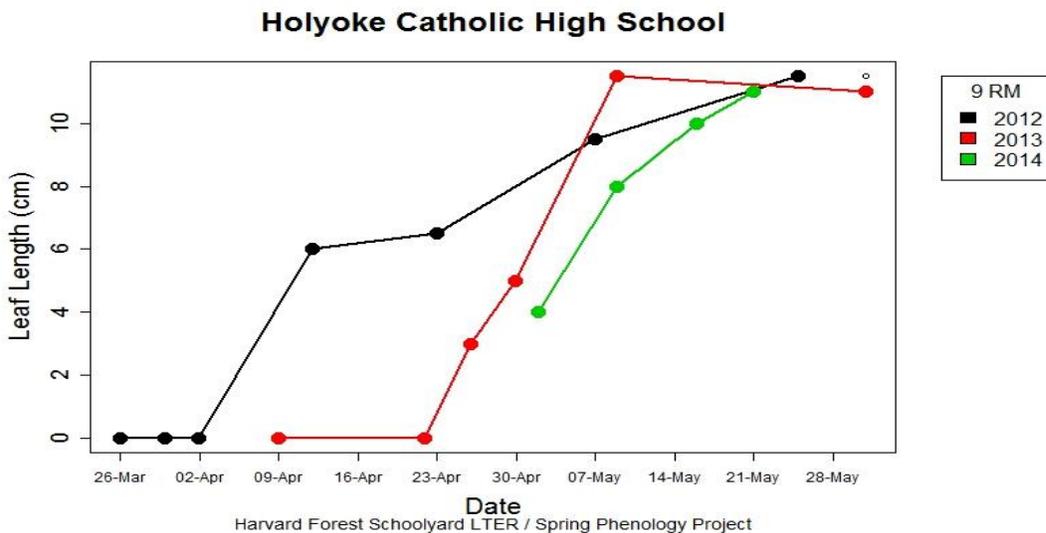


Student 2- Severely Learning Challenged Student



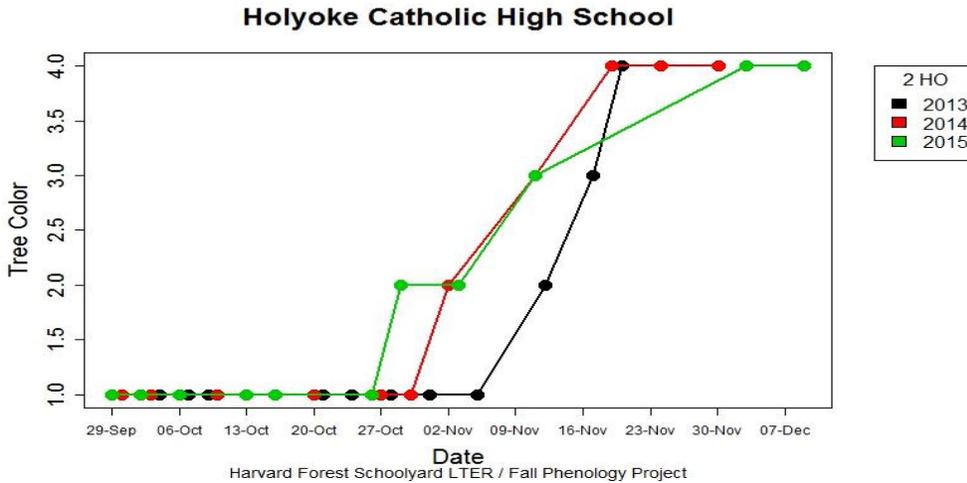
As the years went by it took slightly longer every year for the percent of open buds to go up. In 2012 the percentage didn't completely go up until between April 9th and April 16th. In 2013 the percentage went up at around April 23rd. And finally in 2014 the percentage went up at around April 30th. The time it takes for the buds to open is slowly taking longer over the span of years.



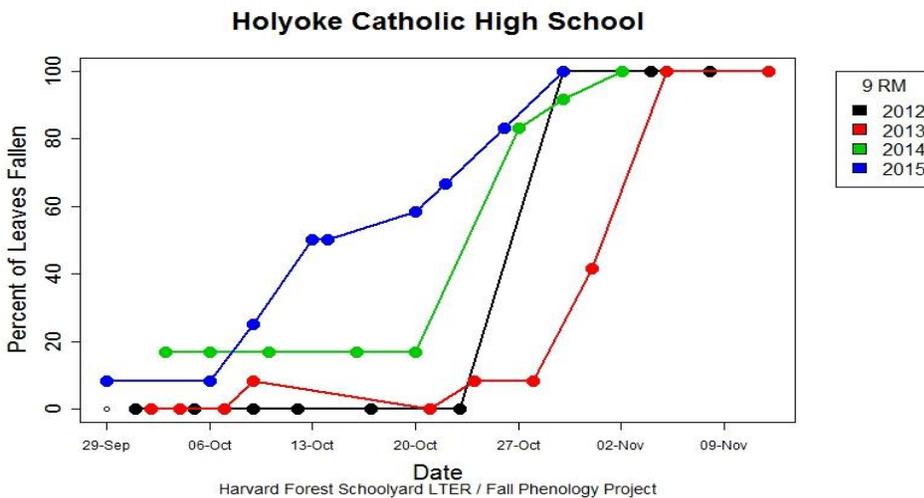
The times when the leaf length made a big change differ from year to year with big differences in each year. In 2012 the length began to increase on April 2nd. In 2013 the length didn't increase until around April 23rd. And in 2014 it took until April 30th for the leaf length to increase.

Spring

Student 2- Severely Learning Challenged Student



Over the years the tree color is starting to change earlier and earlier. In 2013, the leaves started to change color by around November 5th. In 2014 the leaves started changing on around October 30th. And in 2015 the color of the leaves started to change as soon as October 26th. By December 5th the leaves in all years had finished changing color. The earlier the leaves started to change the longer it took for the entire tree to change full color. (** This graph is actually the wrong graph, it is for Hornbeam and not his Red Maple, but correctly analyzed)



The percent of leaves fallen differ over the years. By November in all the years 100 percent of the leaves have fallen but they all start at random different times. In 2012 the percent of leaves fallen went from 0 to 100 percent between around October 24th and November 2nd. In 2013 quickly went up from about 15 percent to 100 percent between October 28th and November 2nd. In 2014 the percentage stayed at exactly 20 percent until October 20th when the percentage shot up to 80, 85 and the 100 by November. In 2015 the percentage was at about 10 up until October 6th when the slowly raised up to 100 by October 27th.

Student 2- Severely Learning Challenged Student

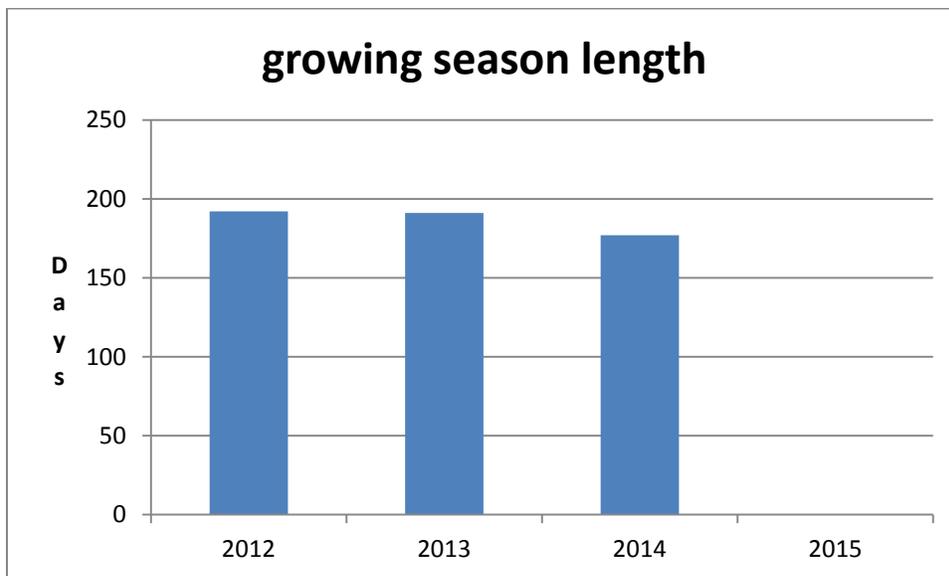
Notes

I found that in most cases in this study the later the year the earlier it took for the leaves to budburst and fall off. In some graphs the leaves would budburst the quickest and fall off the last.

After comparing my data to the data of a tree with the same species I found that they both have random times of bud bursts and fallen leaves, and also have the same pattern of beginnings and ends of each year.

In the spring, in most of the years the leaves would budburst first and die last having a longer growing season. In the fall the in some years the leaves would budburst last and be the first to fully fall showing that it has a shorter growing season in the fall and longer during the spring.

In the fall phenology graph it shows that in 2015.



This data shows that the growing season lengths have very slight differences over the years but are still getting shorter. The growing season lengths of 2012 and 2013 are nearly identical but in 2014 it is a bit shorter than the other years by about ten to twenty days. I am guessing that the growing seasons will slightly get shorter as the years go on.

Conclusion

The purpose of this observational study is to determine if there are any patterns in the lengths of growing season of different types of trees and the different years of each tree. We are also trying to determine if the growing season length of the trees is getting shorter, longer, or staying the same over the years. At first it seemed that the data of this tree was very random and had no pattern but after comparing it to the data of other trees of the same species I can tell that the trees growing seasons are very slowly getting shorter and shorter every year and may continue to get shorter as the years go on. The average growing season of the tree is about 180 days long but shortens about 5 to 10 days every year. I think this will continue until the tree either stops producing leaves or will eventually die. The earliest growing season started for this tree was in 2012 where the leaves started to bud at around April 13th. The latest growing season it had ended was in 2013 where 100 percent of the leaves had fallen by November 2nd. The latest growing season had started was in 2014 starting at around April 28th and the earliest a growing season had ended was in 2015 ending at around October 25th. So far this information makes me assume that the older the tree gets, the growing seasons may be getting shorter and shorter every year.