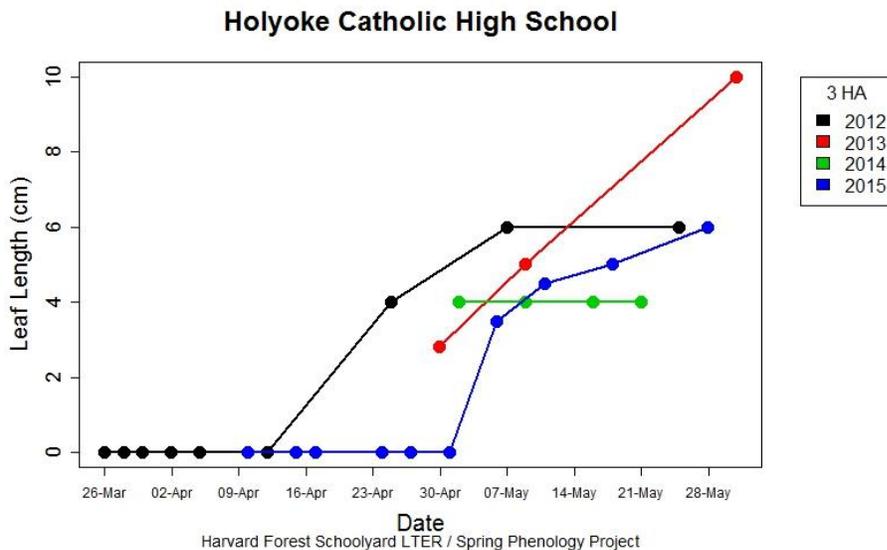


Results Statement:

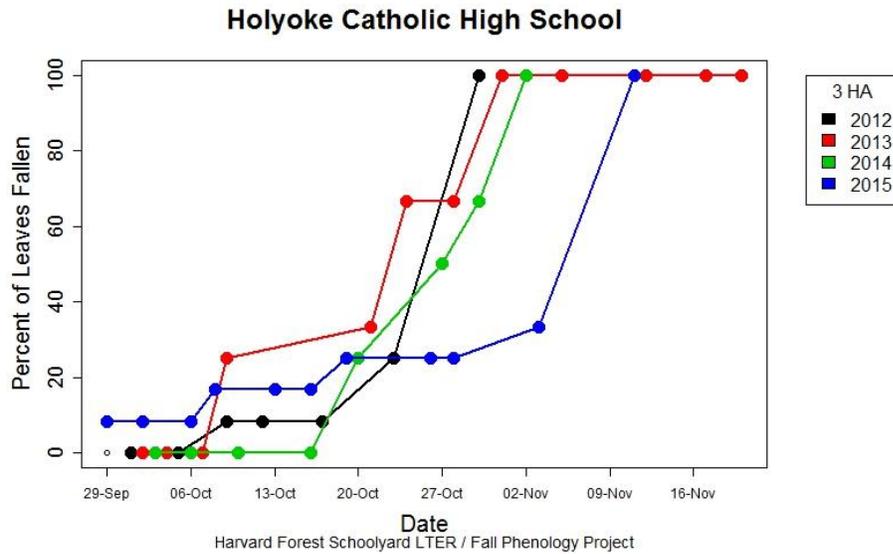
As the tree’s percent of buds open was recorded in the spring over the past four years, the percent of buds open increased later each year except for in 2013. In 2012, the buds were open 100% around April 23. In 2013, the buds were open 100% around April 26. In 2014, the buds were open 100% around May 8. In 2015, the buds were open the most around May 6.



Results Statement:

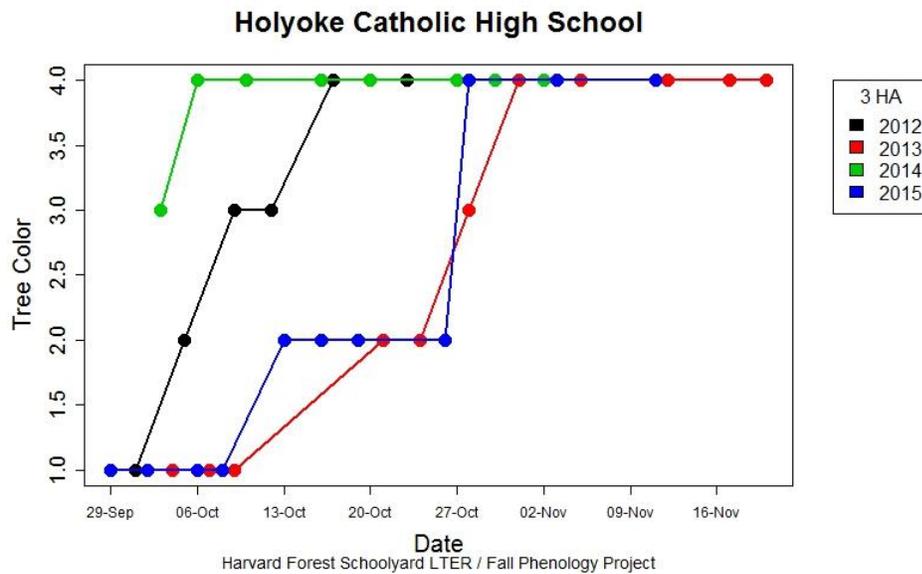
As the leaf length was recorded over the four past spring seasons, the time when the largest leaf reached its full length varied. In 2012, the leaf reached its full length around May 7. In 2013, the leaf reached its full length around April 30. In 2014, the leaf reached its full length around May 1. In 2015, the leaf reached its full length around May 28.

Student 1- Regular Level
 Harvard Tree – Buds and Leaves



Results Statement:

As the percent of leaves fallen was recorded over four fall seasons, each year the tree reach 100% leaves fallen later. In 2012, the tree’s leaves had all fallen around October 28. In 2013, the tree’s leaves had all fallen around October 29. In 2014, the tree’s all of the leaves had fallen around October 31. In 2015, all of the leaves had fallen around November 9.

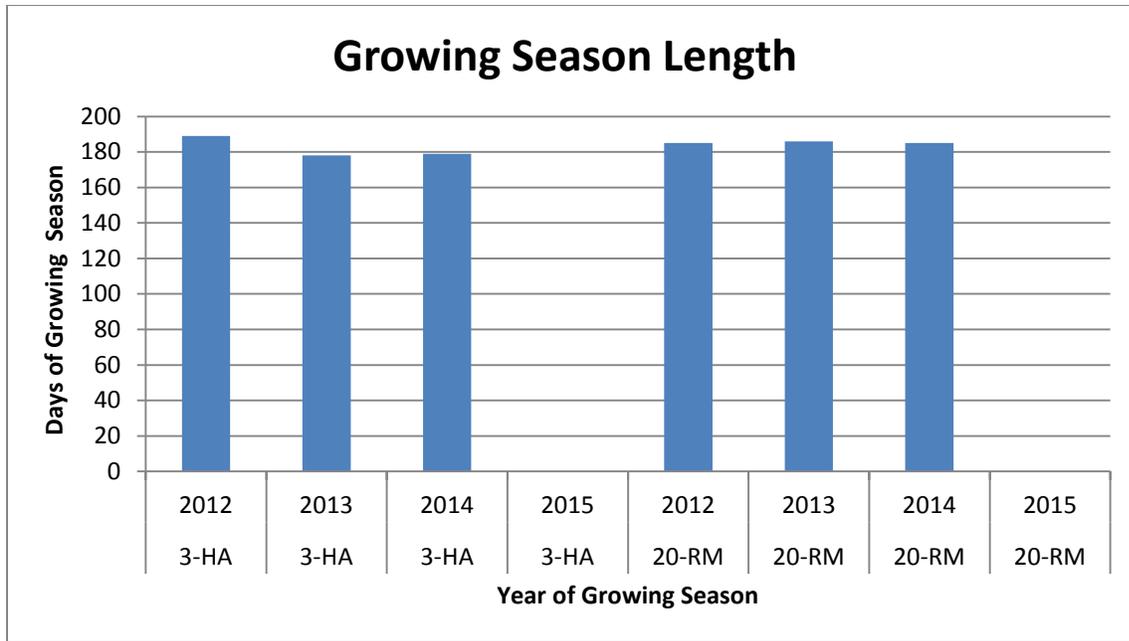


Results Statement:

As the tree color was recorded each of the four past fall seasons, the time the tree reached 100% not green each year varied. In 2012, the tree reached 100% around October 15. In 2013, the tree reached 100% around November 1. In 2014, the tree reached 100% around October 6. In 2015, the tree reached 100% around October 28.

Questions:

1. Yes, I can determine how long my tree's growing season is. In 2012 the growing season started around April 23 and ended around October 28. In 2013, the growing season started around April 26 and ended around October 29. In 2014, the growing season began around May 8 and ended around October 31. In 2015, the growing season began around May 6 and ended on November 9. The growing season was about six months in 2012. In 2013, the growing season was about six months also. In 2014, the growing season was about a little less than six months. In 2015, the growing season was about six months also.
2. The leaves burst out first in 2013 around April 23. The leaves fell off first around in 2012. The leaves burst out last in 2014 around May 8. The leaves fell off last in 2015 around November 9.
3. In comparison to my data, Tree #4, which is a Hawthorn also, in 2012 had the same growing season. In 2013, they again have similar growing seasons. In 2014, there is no data for the start of the growing season, but they end around the same date. In 2015, tree #4's growing season starts within a week of each other but there is no data of tree #4's growing season ending.
4. In comparison to my data, Tree #1, which is an Eastern Hornbeam, the growing season in 2012 and 2013 started around the middle of April and ended around the middle of November. In 2014 and 2015 the growing season started around the end of April and the beginning of May and ended around the end of November. Their growing season is longer because it starts around the same time but ends later.
5. The tree's growing season in the last four years have all been around six months, but each year the leaves burst later each year except for in 2013, and the leaves fell off later each year.



Results Statement:

The growing seasons of the trees on our campus were observed. The growing season of Tree 3 – Hawthorn in 2012 was about 190 days, in 2013 was about 180 days, in 2014 was about 180 days also, and for 2015, we were unable to calculate the data because we did not have the data entered for when the leaves were 50% fallen. Tree 20 – Red Maple’s growing season was about 185 days in 2012, 2013, and 2014. We were unable to determine the growing season for 2015 because the data was not entered for when the leaves reached 50% fallen.

Conclusion

The purpose of this observational study was to determine the growing seasons of the trees on our campus and how they changed over time. I observed Tree #3 which was a hawthorn. Each time I went outside in the fall of 2015, I recorded the tree color and percent of leaves fallen. The tree had also been observed in the fall and spring for the past four years, meaning the first data was collected in 2012. The major findings were the growing season of Tree #3 was about six months, but each year the buds open later with the exception of 2013 and the leaves fall later. This may be due to a change in climate, summer lasting longer and winter lasting longer. The leaves senesce, or die, and fall off for many reasons but mainly because the water becomes unavailable to them in the winter. The date when my tree reached 100% not green and its longest leaf reached its full length varied from year to year. The average growing season of my tree was 182 days. Another type of tree's growing season I recorded was a red maple tree. Red maple #20's average growing season was about 185 days.

My hypothesis that stated hawthorn trees have a longer growing season than Eastern hornbeam was not supported. Tree #8, an Eastern hornbeam's growing season in 2012 was 217 while in 2012 Tree #3, a Hawthorn's growing season was only 190 days. In comparison, Tree #4, a hawthorn also, had a similar growing season to my tree's growing season. In 2012, the two trees had the same growing season. In 2013, they again have similar growing seasons. In 2014, there is no data for the start of the growing season for tree #4, but they end around the same date. In 2015, the trees growing seasons start within a week of each other but there is no data for when tree #4's growing season ending.

I did not expect the buds on my tree to be fully open later each year. I can explain this by assuming that the buds would open earlier each year because of the climate change of the Earth and that spring would start sooner. To improve this observational study, I recommend observing the trees more often for a more accurate result of when the growing seasons end. For further study, I recommend observing trees of the same species in an area with a slightly different climate to see the effects of temperature and weather on a tree's growing season.