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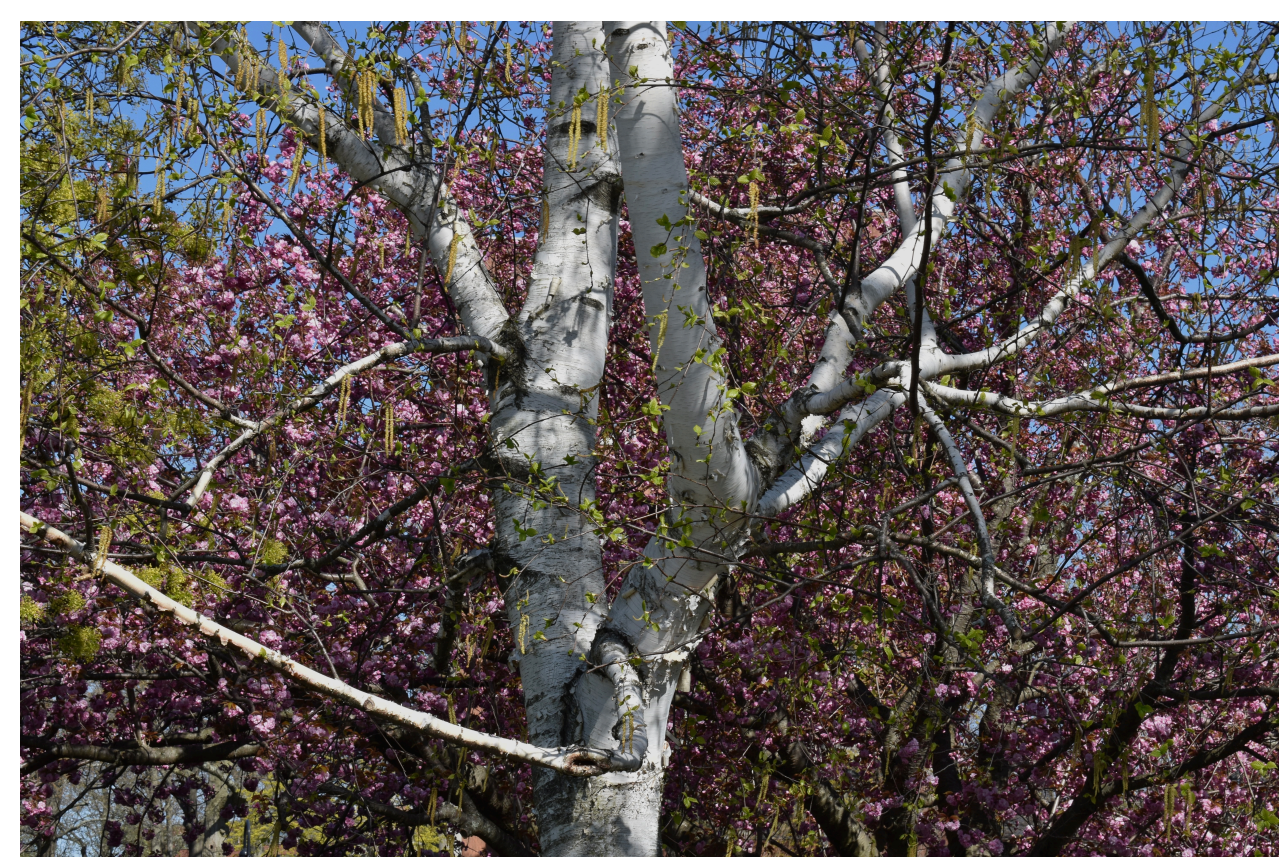
Asset Values of Trees Varying Among Age and Condition

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Breedlove, C., Cummings, K., Armstrong, T., Moss, T. 2022. Providence College Tree & Management Plan. 291.

Background

Trees are utilized everywhere for visual, physical or functional means with an example being on Providence College campus. We have 1,403 trees part of an inventory and management plan. As part of this plan that was updated this past December 2021 each tree has an asset value calculated with consideration of the size, species, condition, and location. What was not clear in the management plan was whether one factor held more weight in the calculated value compared to another factor. This research focuses on the influence that the age and condition of the tree have on the tree asset value.



Paper Birch on Slavin Lawn



Northern Red Oak behind the track field



European Beech next to the library

Methods

The tree data was gathered from the 2022 Providence College Tree Inventory & Management Plan. The collection of this data was done in December 2021 by the Bartlett Tree Inventory Solutions Team from Bartlett Tree Experts to update the previous plan from 2015. The goal was to establish a tree inventory for the Providence College campus to have something to refer to for managing inventory, recommendations and budget planning.

Results

The age and condition of the trees significantly effect tree asset values (Anova, $X^2 = 762.29$, $df = 4$, $p < 0.001$: Anova, $X^2 = 108.67$, $df = 2$, $p < 0.001$). Within each condition (poor, fair, good) the mature, over-mature and semi-mature trees have a significant p-values ($p < 0.001$) compared to the young trees (p -value = 0.3936, p -value = 0.9998).

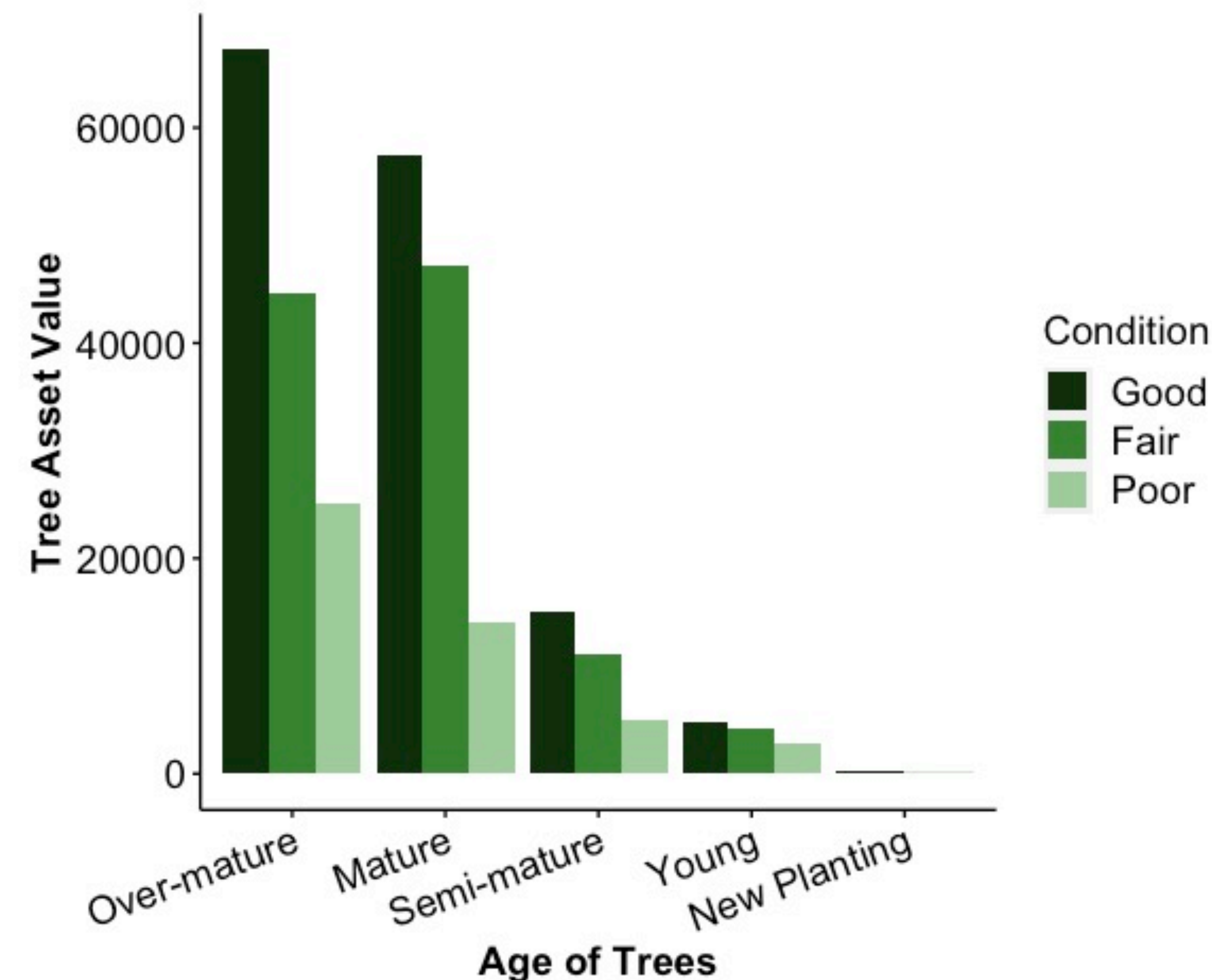


Fig. 1 Age of trees on PC campus v. their listed asset value in respect to the condition the trees are in.

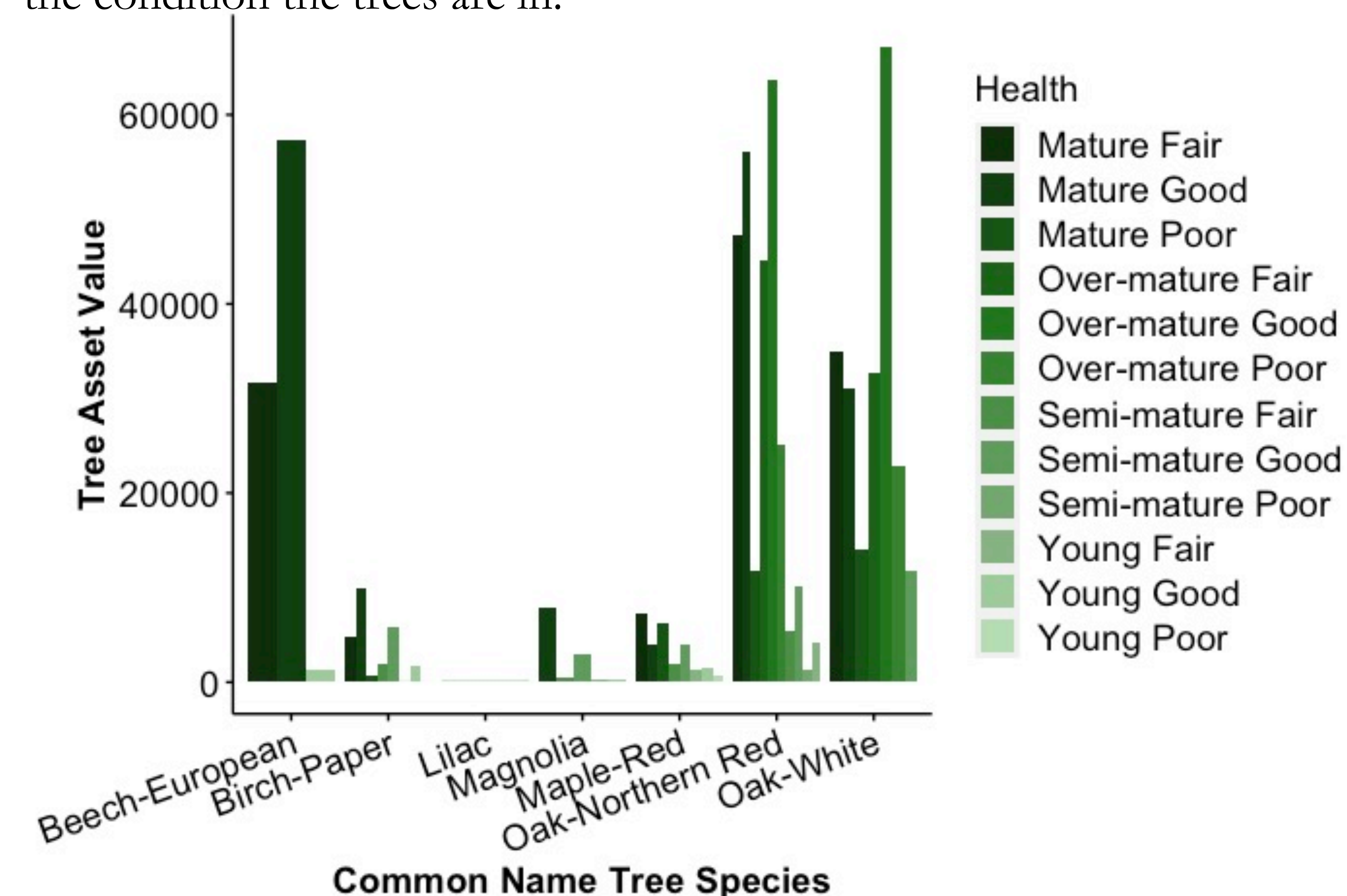


Fig. 2 Specific tree species v. their listed asset value in respect to the health of the tree (age and condition).

Conclusion(s)

Trees that are over-mature, mature, and semi-mature are more likely to have greater asset value than those of younger age regardless of condition. When looking at condition specifically, the good and fair conditions tend to have higher values than the poor with exception to a few trees. All of this in relation to species shows tendency for *Quercus sp.* (Oak trees) to be of higher asset value and flowering trees like *Magnolia sp.*, *Syringa sp.* (Lilacs), and *Acer sp.* (Maple trees) having lower asset values.

Acknowledgements

Thank you to Dr. B for helping me to find/know the existence of the Providence College Tree Inventory & Management Plan.

References

McPherson, E.G., van Doorn, N., de Gzoede, J. 2016. Structure, function and value of street trees in California, USA. Urban Forestry & Urban Greening 17, 104-115.