

Muskegon's McGraft Park: Disc Golf and the Potential for Oak Wilt

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by

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Photo 1

Introduction:

Oak Wilt (OW) is a lethal disease of oak trees caused by the fungus *Bretziella fagacearum*. As an invasive, introduced disease, the fungus spreads overland by insect transmission (primarily sap beetles) to fresh wounds on oak trees. Fresh wounds on oak trees may be created by pruning, storm damage, disc golf, lawn mowers, weed trimmers, etc. Once established in an oak tree, the fungus may be transmitted to nearby oaks through underground root grafts. The disease is exceedingly difficult to manage. Containment and eradication measures often cost several \$10,000s per oak wilt infection....without the measures, the disease will likely keep spreading through a community, woodland or forest.

Human activity is responsible for many of the new Oak Wilt outbreaks every year in Michigan. These activities range from wounding trees to the transportation of "infected" firewood and other wood products. Disc Golf has become an area of concern and controversy in relation to oak wilt infections. I was invited to review the potential for OW at the Disc Golf Course (DGC) located in McGraft Park on May 15, 2018. This report will summarize my observations and findings during my examination of the trees on the DGC. The DGC layout is featured in Figure 1.

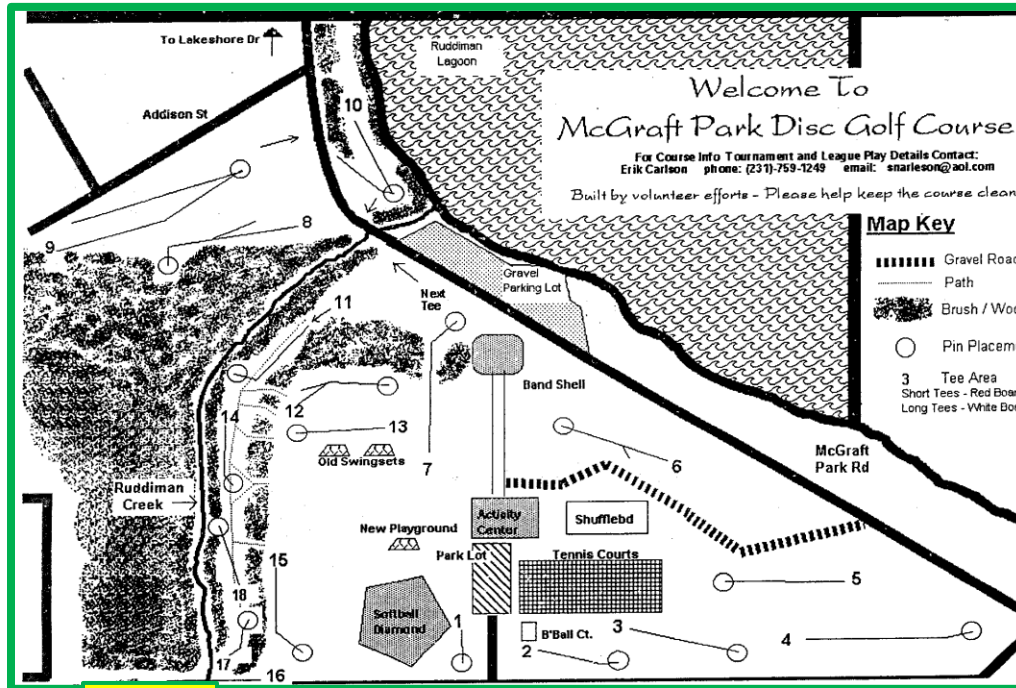


Figure 1

Observations:

“Injury” from disc golf strikes were noted on many trees. The first 7 holes, along with #12 and #13 contained primarily large, old oak trees, as revealed in Photo 1. On these large, old oak trees, the damage on the trunks were primarily noted as “scuff marks”. Photo 2 represents the most significant damage I observed to the trunks of these large, old oak trees. This kind of damage does not expose the cambium tissues that could attract sap beetles potentially carrying the lethal Oak Wilt fungus. Because the DGC at McGraft has been open for 19 years, one of the oldest DGC in Michigan, I would not judge this damage as threatening to the health of the trees. While there could be compression effects on the trees’ cambium from the blows of the discs, I witnessed no obvious decline in these large old oak trees.



Photo 2

On some of the large, older oak trees with lower branches, bark damage to these lower branches was observed; this damage exposed the cambium tissues, which could attract sap beetles carrying the lethal OW fungus (Photo 3). There was also evidence of old damage on many of these branches; note old injuries and healing callus in Photo 4.



Photo 3



Photo 4

In my opinion, Fairway #6 (Par 3, 315 feet) posed the greatest danger for potential Oak Wilt infections at McGraft Park. Whether on the first throw for a good disc golfer or second throw for a less experienced disc golfer, the discs invariably strike the low-hanging branches of the trees towards the end of the fairway (Photo 5). Photos 3 & 4 represent the damage observed on the trees in Photo 5.

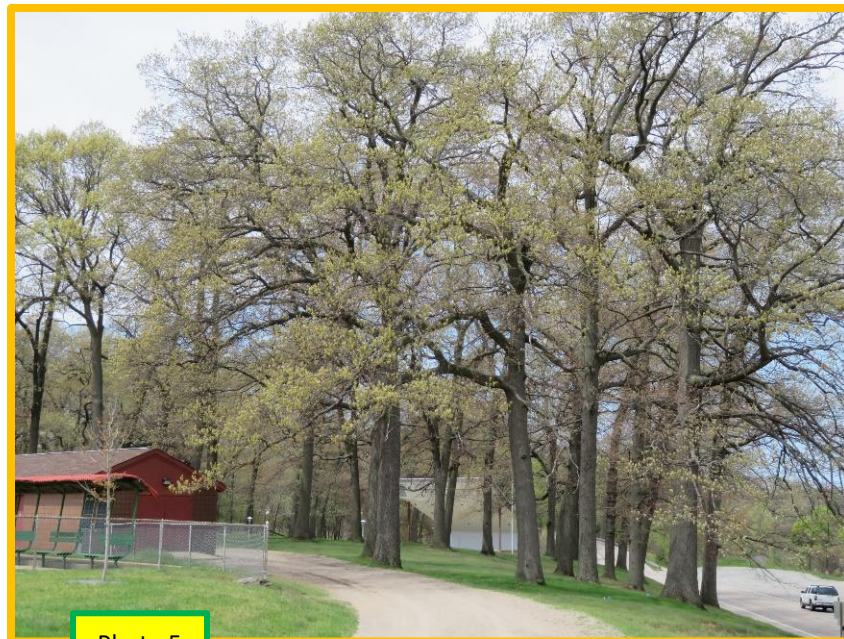
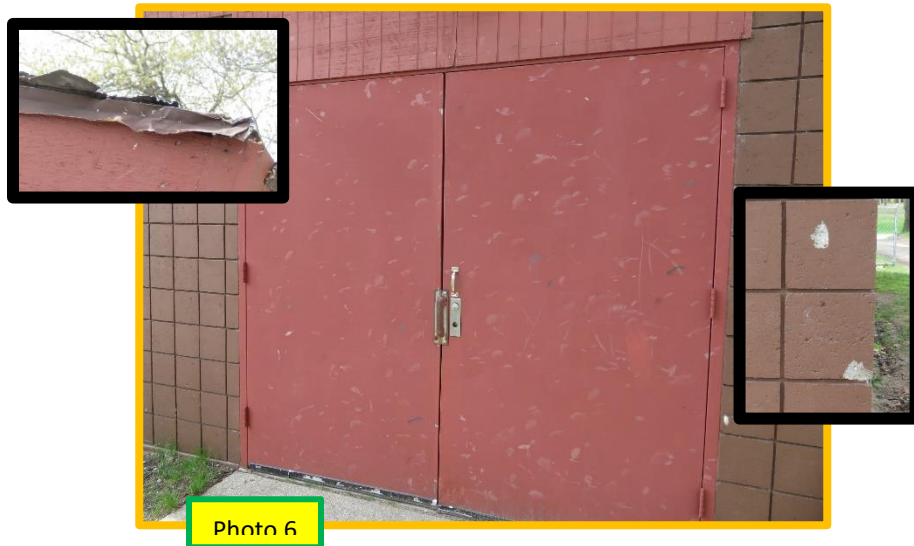


Photo 5

Because most disc golfers are right-handed, a fairway shot (Hyzer) on #6 may not only strike the lower branches of the trees in Photo 5, but may also slice to the left and strike the building. Note strikes to doors, cement structure and roof (Photo 6 and Insets), showing the impacts of the discs.



Many of the other Disc Golf fairways/holes also had large old oak trees but often mixed with other species of trees. Other species of trees showed significant damage from disc golf strikes (Photos 7, 8 & 9), particularly along Ruddiman Creek. The predominant trees along the Ruddiman Creek area were sassafras, various maple species, cherry, oak, etc. Species of trees other than oak did not seem to be succumbing (dying or exhibiting severe decline) from the disc strikes. Most were healing despite the numerous "cankers" that had formed. And, there was no evidence of diseases or severe pest problems associated with these other species of trees impacted by disc strikes. While one side (in the direction of throw) of these affected trees exhibited severe damage, the opposite side was largely unaffected; this characteristic shows the amazing recuperative abilities of trees to compensate for tissue damage.



As would be predicted for such an old park and an old DGC with an interesting diversity of terrain, erosion was noted on slopes from the foot traffic of disc golfers, hikers and other park users (Photo 10).



Photo 10

Recommendations:

Overall, I do not believe Oak Wilt (OW) presents a serious threat to the oak trees at McGraft Park ***provided*** some simple measures are implemented. In this recommendations section, I've also included some other measures that may ameliorate the impact of Disc Gold on the ecosystem of McGraft Park (which in full measure may require other visits and assessments).



Photo 11

- 1) On some trees, simply prune off some lower branches that are likely to be hit with the discs in the direction of play (Photo 11, arrow). In general, I did not notice many cases where exposed small branches needed to be pruned from trees. If pruning during the warm season, it is vitally important to treat the wound with a sealant *immediately* after the cut is made.
- 2) The major fairway needing work was #6. With a right hand slicing throw into large, lower branches, significant numbers of impacts and wounding were noted (Photos 3, 4 and 5). Carefully pruning off some of the large lower branches on the first tier of trees should reduce or eliminate the risk of Oak Wilt infections. One disc golfer contacted me and suggested the trees could be removed. I do not think such drastic measures are needed-I would not recommend cutting down any trees unless absolutely necessary. It is my understanding that disc golfers like the obstacles to test their skills; hence these trees can be left to add ambiance to McGraft Park but also to provide for the enjoyment and challenge for disc golfers.
- 3) A few seedling oaks were found along Ruddiman Creek (Photo 12, arrow, barely visible). These can simply be removed. Although it is unlikely that these small oaks are root-grafted to nearby large oak trees, it would still be prudent to seal stem (trunk) wounds immediately or cut the seedling off below grade. Some of these seedling oaks growing in a mature forest ecosystem are much older than we might think.
- 4) There are several steps we can take to minimize erosion from disc golfer traffic on slopes (Photo 10). Mulch can be placed on the slopes (and for that matter in most traffic areas along Ruddiman Creek). A series of terraces applied laterally using landscape timbers or small dead tree trunks (eg. Ash trees) across slopes would help to stem the soil and mulch erosion.
- 5) To alleviate compaction (and erosion) throughout the DGC, it might be advisable to move the basket (disc pole hole) every couple of years. Another option would be to vertical mulch the area around the basket to correct compaction issues and allow better penetration of oxygen and moisture for root development and maintenance. As an example, Fairway #4 (325 feet) leads to Disc Pole Hole #4 encircled by large, old oak trees (Photo 13). Compaction is somewhat evident and could be ameliorated to some extent by the aforementioned techniques.
- 6) It is important to monitor McGraft Park for any potential problems in the coming years, whether the problem is Oak Wilt, other invasive pests or diseases or other maladies that can affect the ecosystem within the park.



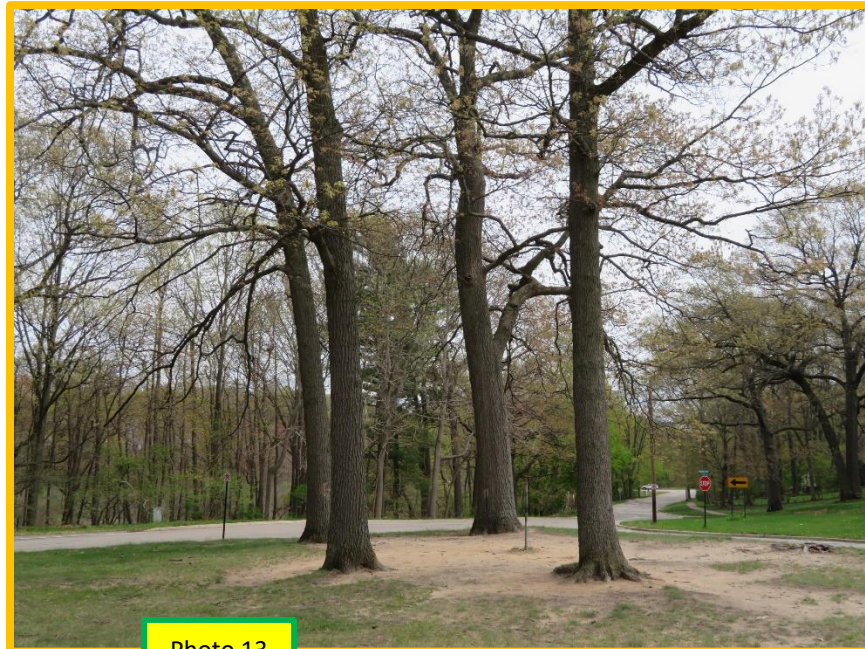


Photo 13

Conclusions:

Muskegon City Officials have been criticized in the Press and by private citizens for what some refer to as a “Knee Jerk Reaction” for their decision to abruptly close the park in early May 2018. Due to the seriousness of the threat of Oak Wilt around Michigan, I think their decision was wise given the potential cost of Oak Wilt remediation, often costing in the many \$10,000’s for a single incident. The value of a large old oak trees if killed by Oak Wilt is often assessed in excess of \$10,000 per tree. The Disc Golf Course at Muskegon’s McGraft Park (which is over 100 years old) was established 19 years ago and is one of the oldest DGC in Michigan. It is a well-designed course with significant attractions and challenges for disc golfers. Due to the age of many trees and the species distribution throughout the park, McGraft Park is a natural environment for typical park activities, which are quite diverse there, including Disc Golf. With some minor trimming of oak trees, while taking proper precautions to guard against Oak Wilt during the trimming process, I believe the DGC at McGraft can be reopened as soon as the work is completed. Furthermore, with proper monitoring of the health of the trees and ecosystem, I believe the DGC can remain open throughout the year and for years to come.