

Introduction: Oak trees are an important species in forest and savanna ecosystems for both flora and fauna. Many oak forests are failing to repopulate naturally due to a variety of anthropogenic impacts that both directly and indirectly inhibit reproduction. The St. John's Abbey Arboretum in Collegeville, Minnesota has been a leader in experimenting with oak regeneration methods. The surrounding Avon Hills region which St. John's is part of is a well wooded area. It contains a prominent population of oak trees which are currently failing to reproduce successfully. Could Saint John and other landowners seeking to regeneration oak improve their efforts by sharing information and resources? This study looks at how oak regeneration methods have been and could continue to be implemented in the Avon Hills through mutual support between landowners in the Avon Hills and St. John's as well as looking at the barriers to a cooperative relationship. If a cooperative relationship could develop, it could spread interest and ideas in oak regeneration and could ultimately help create healthy and lasting oak forests and oak savannahs in the Avon Hills.

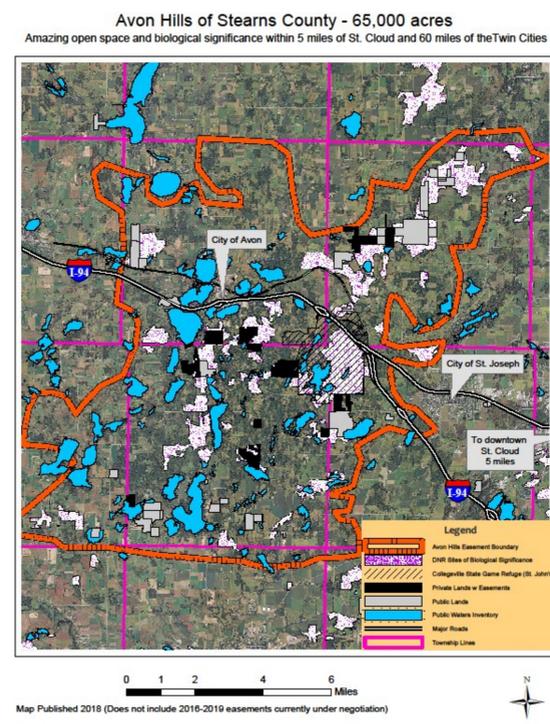


Above: A fenced in deer enclosure (Photo Credit Matthew Genereau)

Methods:

- A literature review was performed of oak regeneration techniques and benefits to gain an a better understanding of oak regeneration and the issues it faces.
- Conducted interviews with the current and retired head land managers at Saint John's, John Geissler and Tom Kroll.
- Conducted interviews with three private landowners in the Avon Hills

Right: Map of Avon Hills in Central Minnesota. (Map Credit John Geissler)



Right: A cut, planted but not enclosed oak forest which has had more oak failure as a result (Photo Credit Steve Genereau)



Above: Shelterwood Cut at St. John's Arboretum (Photo Credit Matthew Genereau)



Above: Protected oak sapling (Photo Credit Matthew Genereau)

Key Points from Interviews:

- Labor, money, time, and expertise are barriers to most landowners.
- Very little incentive to engage in oak regeneration for people who are not invested in the forests.
- People who do regrow oaks do it for a variety of reasons, such as timber, beauty, ecological value, habitat etc.
- Saint John's methods and ideas are not always applicable to landowners.

Natural Regeneration:

- Oak trees require a higher level of sunlight to survive than other species and rely on disturbances to regenerate such as wind and fire.
- The loss of predators has given deer, turkeys and other herbivores a chance to multiply. These species feed heavily on the acorns and young oak saplings which also hinders regeneration.

Oak Regeneration Techniques in Avon Hills:

- Cut a shelterwood cut, this opens up sunlight to oak saplings
- Tend to oak saplings by clearing competing plants
- Fence in saplings to prevent deer browsing until saplings are taller than deer.



Barriers and Solutions:

- Lack of supplies, time, knowledge or motivation hinders oak regeneration in the Avon Hills.
- More reliable cooperation must be developed between the different groups.
- Oak regeneration is already happening in the Avon Hills at Saint John's and a handful of other private locations.
- Making information and supplies available would develop more effective regeneration.
- Oak regeneration would become easier for smaller landowners if additional labor for the cutting, planting and fencing was available, perhaps in the form of a private company.
- A potential monetary benefit for oak regeneration could motivate more people to try to regenerate oaks.