One Man's Battle with Invasives

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It was too good to be true! As I surveyed the property for its development potential, I noticed a patch of oak/hickory woodland in the far corner of this large field. I was looking for a piece of property to grow nursery stock. I had a list of essential criteria for the piece of land that I bought. But then there was my wish list of things that I desired just for myself. A piece of woodland was at the top of that list. Woodland would satisfy my passion for nature. The 50 acres of land would suite my needs for the nursery.

It took the next 6 months to actually purchase the land. During all this time I had only one opportunity to set foot in that patch of woods. It was a very brief walk around in early spring before leaf out. Most of the time was spent fighting my way through tangles of European Buckthorn and a species of small tree unfamiliar to me that had thorns lining its branches. The woods had a fair number of large Red oak trees interspersed with a larger number of smaller diameter Shagbark hickory trees and a sparse scattering of other species including American beech, Black cherry, American linden and White ash.

I had a general idea of what the structure of the forest was like from this brief inspection. It was a real step backwards from the healthy oak woodland that I used to own. To the novice it would appear as a healthy forest. But my eyes were taking in many years of past practices, natural forces, benign neglect and human abuses. I would do what was necessary in the future to restore it to some semblance of health and improve it for wildlife and biological diversity.

That fall was the first chance that I had to really walk the woods and see what plant and tree species were present. I knew from my earlier walk around that invasive plants were going to be a major problem but I also wanted to see what other native tree, shrub and herbaceous species were present. It was a little disheartening to see the years of neglect and abuse displayed before me in the plants present and most notably absent. Native herbaceous species were all but missing from the forest floor, obviously as a result of the years of grazing by sheep. The only plant I recognized was a few isolated Jack-in-the-pulpit plants. The native shrub and understory layer was also absent except for a few Hophornbeam saplings that somehow avoided the jaws of the sheep.

These may have blown in on the wind, but even this was hard to imagine, as the woods were isolated from any other nearby piece of forest by several hundred yards of field. Many hickory and ash seedlings were struggling to survive and grow beyond the deer browse level. Nearly the entire forest understory was colonized by three invasive species: European buckthorn, the mystery tree (which turned out to be Prickly ash), and Japanese honeysuckle. Prickly ash, although a native species, was new to me. This was the plant with the thorns that I discovered on my first walk a round. Nearly every tree and shrub was smothered by a canopy of grape and Virginia creeper vines. To make matters worse the forest floor was carpeted by poison ivy and more Virginia creeper.

The woods had obviously been neglected for many years, probably decades. As I talked to neighbors I pieced together a little of the history of the land and the woods. Sheep had grazed the woods for many years prior and the old fencing was still in evidence. The grazing had eliminated the native shrubs and plants that should have been present. The disturbed understory was prime for the establishment of invasive shrub. The large size of

some buckthorn and prickly ash was testament to the many years of previous invasion.

I was anxious to begin reclaiming the woods and it didn't take a genius to figure out the tool of choice was a reliable chain saw. I had limited time and I wanted to see some quick results, so I started cutting out the largest of the buckthorn and prickly ash. After an afternoon of chain sawing I could look with satisfaction on my accomplishment. I spent a couple more weekend afternoons that first winter cutting buckthorn and ash. I had made enough progress cutting the thickest of the thorny tangles that I could make my way through some of the previously impassable thickets.

That summer, I was to learn that a little more knowledge and a whole lot more patience would have served me better in my battles with the invaders. I discovered that summer that the stumps that I had cut the previous winter were sprouting 3 and 4 foot long suckers. Many sprouted a half dozen shoots per stump. I disgustingly realized that to control these shoots would take as much time or more to remove than I had spent originally. To save face I told myself that I had at least gained some time. I vowed then and there to work smarter. If I were going to go through the effort to control these plants, I would do it in a way that would be the most effective and permanent.

I began to do some research. From my hard earned wisdom I devised a plan of attack that was practical, effective and could be implemented in stages. First I made a vow that I would not cut any plants without following up with a herbicide treatment to the stump. The stump treatment was absolutely necessary to reliably kill the root system. I decided that I would focus my attention on the largest plants and the female plants that were setting the most fruits. The male plants could be left for a later time. I would attack the plants that were the most vigorous. These plants were the ones growing on the edge of the woods or where they had access to the most sunlight. I would also remove the isolated individual, the so-called pioneer plant that would help to colonize new areas. This way I could gradually isolate the larger populations in smaller and smaller areas.

Most shrubs and trees will require a herbicide treatment to ensure that they will not resprout from the roots. If you choose not to use herbicides then timing of the cut should coincide with the point of lowest nutrient reserves. This point is usually in late spring after the plant has fully leafed out but before it has begun to manufacture and store surplus food reserves.

In this woods European buckthorn was my nemesis, but my efforts to control and eradicate it can be aptly applied to other invasive shrubs and trees as well: Japanese honeysuckle, Autumn olive, Black locust, Tree of Heaven. I learned that it is important to learn about the invader and how best to eliminate it. Define its inherrant survival weaknesses, if any, and use these to your advantage. Eliminate seed production and dispersal. Reduce vegetative reproduction and isolate large populations and finally introduce and encourage native species.

Invasive species are the number one threat to plant communities and ecosystems world wide if you overlook outright conversion to human uses. There is something insidious about the threat from invasive species. It is a chronic threat that is created by humans but that is perpetuated by natural mechanisms. This requires that humans must intervene to stem the tide and to try and restore the balance that has been upset by human activities.

Invasives mostly live and thrive in disturbed habitats, they can and will colonize and dominate certain habitats. Some species become invasive because they have no check or control on their abundance, reproduction and spread. The battle between native species and invasives is a zero sum game. The more invasive plants there are the less space is available for native species to grow and as invasive species begin to reproduce the threat continues to increase in an ever increasing cycle. Once established on a site, there is no natural control to the plant's growth and reproduction. Only human intervention will remove the unwanted plants. Time is clearly on

the side of the invasive plant.

European buckthorn is an introduction from Europe. It was probably introduced in the late 1800's and since then has become establish in all of the eastern US. Buckthorn's invasiveness is enhanced by its abundant fruit production, its rapid dispersal by birds and its ease of germination and growth in many habitats such as old fields and shrub lands.

Buckthorn is diecious, which means that individual plants produce either male or female flowers. Female plants produce prodigious quantities of small round purple/black fruit that remain on the plant through out the winter. Birds eat these fruits and spread the seed in their droppings. The fruit is not highly sought by birds but it is abundant and readily available throughout the winter when other food sources are limited. This relationship with birds has helped contribute to Buckthorn's epidemic spread throughout the northeast. In many human impacted landscapes, buckthorn is the only game in town for wildlife, as there are no other native pants around for native wildlife to use.

Buckthorn can be easily recognized in late fall and early winter. It holds its leaves much later into the fall than any native species. In mild winters some plants hold their leaves until heavy snowfall and freezing temperatures finally remove the leaves from the plant. The leaves do not have any appreciable fall color and they normally remain a faded green even after they have fallen. Buckthorn also has very black bark and long straight thorns, which are actually modified twigs and branches. Young cherry trees would be the only other plants that one could confuse with buckthorn.

Buckthorn has the ability to dominate a variety of disturbed and natural habitats. Buchthorn will dominate shrublands and woodland understories to the exclusion of native plants. Buckthorn casts a dense shade and is also shade tolerant. This dense shade virtually excludes any understory species beneath its canopy. Its seedlings will form a dense matte under the parent tree and the seed will remain viable in the soil ready to germinate given the opportunity. Even heavy deer pressure does not have an inhibitory effect on Buckthorn growth. Except for very succulent growth, deer seem to avoid it and heavy deer browsing on native vegetation only contributes to Buckthorn's domination in the understory.

One more invasive plant warrants special mention, because of its potential to invade and dominate woodlands. Garlic mustard is a biennial herbaceous plant that is rampantly spreading throughout the northeast. It is particularly dangerous because it is shade tolerant, produces large quantities of seed and thrives in woodlands. It has the potential to replace our abundant woodland flora and replace it with a monoculture of Garlic mustard. Once established it is all but impossible to eliminate because of the enormous labor and monitoring involved . This plant is one that is best controlled before it becomes established. If young plants or small groups are detected they can be eliminated by rouging or herbicide. It is important to remove the plants before they mature and set seed during their second year of growth. The seed is most likely spread by birds as the plants appear in out of the way places. Learn to identify young plants and be ever vigilant.

Prevention is worth a pound of cure. Practice identifying plants, both the common and the uncommon. Only by recognizing the multitudes of common plants in your woods and fields can you notice the new invader or the uncommon and unusual plants that may need your protection. By learning to recognize more of the species that live on your land, you will develop a greater appreciation and relationship with your land. Learn to identify plants during all seasons of the year and all growth stages. Recognizing a seedling and removing it is far easier than having to remove a large one. Every piece of land is a potential host for colonization so walk your property with an eye towards spotting invasive seedlings. Look in likely spots where birds commonly perch and germination is likely, such as in hedgerows, fence rows, and under telephone wires. Educate your neighbors and friends about invasive species. Invasive species do not respect boundaries.

Controlling invasive species once established is only half the battle. Nature abhors a vacuum. Something will inevitably grow in the space that was once occupied. If native species are not present and ready to occupy the space vacated then the invasive species will eventually return. Most likely dormant seeds will germinate or roots will resprout. Competition from native species for sunlight and nutrients is an important tool used to reduce the recolonization by invasives. Ground covered by native species can better resist the establishment of invasive species. I have noticed that large intact forest ecosystems have the greatest resistance to invasive species. Many areas are totally devoid of native species and their potential to reclaim a site is nonexistent. Take an active role in introducing natives species by planting seedlings or dispersing collected seeds.

The unpleasant fact is, invasive species are here to stay, but the problem can be addressed on a local basis. You have probably heard the term “think globally, act locally”. You and I can’t address the big problem, it is too large for any one of us. But we can and must take action in our own backyard. Each one of us must make it our personal responsibility to remove invasive species on our property and promote native species in their stead. This is the only way that native plant communities will be preserved for the future.