

Tipping the Scale

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IT'S PRETTY WELL KNOWN that exotic invasive vegetation can negatively affect wildlife and their habitat. Some of the biggest offenders on State Game Lands are bush and vine honeysuckle (*Lonicera spp.*), multiflora rose (*Rosa multiflora*) and autumn olive (*Elaeagnus umbellata*). These invasives can readily outcompete our native vegetation and deprive them of invaluable sunlight. Additionally, invasives soak up soil moisture at an alarming rate, stealing it from natives in the process. This is evident when attempting to plant seedlings in areas with extensive invasive shrub infestations that have not been completely killed. The established invasive root system pulls in most of the soil moisture, leaving little water available for the growing seedlings. This battle often trickles over and affects our wildlife species.

Some recent research found that nesting success of some songbirds and American woodcock (*Scolopax minor*) appeared to decrease when nests were located in dense invasive stands. Additionally, it was suggested that some of the species avoided these dense invasive stands and selected nest locations with a higher percentage of native stems. It would seem that perhaps a line exists where just enough native vegetation present can provide the needs of our wildlife so not all is lost.

Our native vegetation is quite tough and, given a slight edge, can compete with or even outcompete the invasives. We have been experimenting with different methods to tip the scale from a stand dominated by invasives to a stand with a higher percentage of native vegetation.

So far the most promising method is a multi-pronged attack. First, the invasive stand is mowed with a brush cutting machine. We reserved stands of native vegetation, such as silky (*Cornus amomum*) and gray (*Cornus racemosa*) dogwood to provide a seed source for the regenerating stand. The invasive vegetation is then allowed to re-sprout and grow, and then hit with a foliar herbicide well into the growing season. Again, measures are taken to protect native stands from herbicide overspray. The reason we chose to mow first was because re-sprouts are easier to achieve full herbicide coverage and subsequently better mortality on the invasive shrubs.

In some instances we can use herbicide to treat invasives when our native shrubs are dormant and, in turn, have no overspray concerns. Japanese honeysuckle is considered semi-evergreen and maintains its leaves throughout the winter. On warm fall or winter days, this vine honeysuckle actively conducts photosynthesis and is susceptible to foliar herbicide, while our native shrubs are safely leafless.

On other occasions, herbicides are not required because there is enough fuel loading on the ground to carry a fire hot enough to kill the invasives. The key to using fire is the ability of the fire to carry under the shrub and remain hot enough for a long enough time (residence time) to damage the cambium layer. We recently experimented with this scenario on Game Lands 176 with promising results.

After the invasive shrubs have been dealt a fatal blow, we then begin to concentrate on promoting the native vegetation with rotational mowing. Mowing should only occur as necessary. At first mowing may be needed annually to stimulate the native shrubs and to keep any surviving invasives from dropping seed. Shrubs such as gray dogwood respond well to mowing as they spread through rhizomes and can form beneficial thickets. Silky dogwood can form thickets by seed or when live branches touch the soil and cause nodes to sprout.

Once native shrubs are established, managers really only have to maintain them as needed. Often, other beneficial trees and shrubs such as hawthorn, crabapple and viburnum

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may begin to develop from seed consumed by birds attracted to the shrubland. The structure provided by a diverse shrubland that includes a low basal area of trees is important to many species. American woodcock seem to be drawn to shrublands with sporadic trees. One important thing to consider is that too many trees can be a detractor.

When trees such as red maple (*Acer rubrum*) begin to invade the stand, a basal bark herbicide treatment may be necessary to maintain appropriate structure. Many herbicides are designed to be applied directly to the bark of the trees, as opposed to the foliage. We use basal bark spraying as opposed to felling the tree, because the instant canopy gap may provide an open door for the invasives that we've worked hard to keep at bay.

Getting back to the point of this article — it is important to know that eradication of invasives from a stand is unlikely, however our native wildlife and habitats seem to be able tolerate and compete with them given a fair playing field. One should not get discouraged when invasives pop up in a newly established stand, as it's nearly unavoidable, so our best action is to do what we can with what we have. Furthermore, we should not shy away from a project based on fear of potential invasive issues. Keeping the scale tipped in favor of native vegetation is all that is needed.

The Game Commission has an incredibly dedicated habitat team with a united goal, to provide quality habitats for Pennsylvania's wildlife, and we won't let invasive vegetation stand in our way.