

Crummies Creek Demonstration Forest

Russ Richardson, Certified Forester

PO Box 207
Arnoldsburg, WV 25234

Phone (304) 655-8919
Cell Phone 304-377-3231
E-mail: ForestRuss@aol.com

Mechanical control of Japanese stiltgrass and stiltgrass management tips for woodland owners

Japanese stiltgrass is becoming widely known for the environmental damage it is causing to our native woodlands. In fact there are so many dire implications from invasion of our woodlands by *Microstegium* that it has rapidly become one of the most widely studied invasive plants in the Nation.

A majority of the studies and research related to control of Japanese stiltgrass rely on herbicide application as a primary treatment method. Although herbicides can be extremely important tools in efforts to control several species of destructive invasive plants, most woodland owners are not trained in the safe use of the chemicals most commonly used to control Japanese stiltgrass.

With proper timing, controlling the spread of Japanese stiltgrass through mechanical methods such as mowing roadsides and trails with a bush hog or string trimmer can be both effective and fairly inexpensive with the side benefit of temporarily enhancing the aesthetics of any treatment area.

The Key to Successful Invasive Species Eradication efforts

To understand invasive species management the first and most important thing to recognize is that you must unlearn everything you have maintained in terms of your attitude towards conservation. When dealing with invasive plant species your ultimate measure of success is when they go extinct in the treatment area. The easiest way to be successful in your eradication efforts is plan treatments at a time when the target plants are most vulnerable and least likely to recover.

Developing an Attack Plan

The first step in controlling stiltgrass is to determine how extensive the invasion is in your woodland and how long it has been present. For a majority of West Virginia property owners outside the Eastern Panhandle Japanese stiltgrass has been around less than fifteen years. If you are fortunate to identify an invasion of Japanese stiltgrass in its' early stages of development, control and containment will be much easier to accomplish

While determining how long stiltgrass has been present and how extensive the invasion has become, try to figure out how it was initially introduced or became established. Usually stiltgrass introduction into the deep woods can be traced to ground disturbing activities like logging, oil and gas well development, gas line maintenance and ATV traffic. Learning how stiltgrass initially arrived in your woodland might greatly improve your likelihood of preventing a new invasion once control has been established.

If you cannot determine how long stiltgrass has been on your property you should assume it has been present a minimum of five years. Although most Japanese stiltgrass seed germinates the year after it was produced, stiltgrass seed can remain viable in the soil for several years and it can take up to five years to eliminate the seed bank from a heavily infected area of woodland.

The best time to make an initial survey for the extent of a stiltgrass invasion is during the winter when the persistent, golden brown thatch is readily identifiable. If the proportion of the woodland covered by stiltgrass is found to be greater than 50% of the total area where stiltgrass control is being considered, developing an effective treatment strategy will take additional planning.

Timing

The best time to mow or cut stiltgrass is the period between early August and Labor Day. For most of West Virginia, Japanese stiltgrass does not go to seed until extremely late August or early September. During early August, stiltgrass will experience a flush of growth that signals maturing of the plants and the start of the seed production process. It is at this point when stiltgrass is most vulnerable and easiest to kill.

It is a complete waste of time; effort and money to mow or weed whack stiltgrass before early August if eradication of the weed is an objective. Cutting stiltgrass earlier in the growing season will train it to grow as a shorter plant and maintain a profile closer to the ground making it much more difficult to kill. By allowing stiltgrass to approach maturity before it is cut for the first time will multiply the effective mortality of the treatment.

When stiltgrass is cut or pulled prior to the end of July, seeds from the seed bank will germinate almost immediately providing enough time for the plants to complete their life cycle and go to seed before the end of the growing season. If the treatment occurs after early August seed bank plants rarely germinate and those that do will have almost zero chance of surviving to maturity.

Mowing

Mowing stiltgrass is effective along roads and trails and, when properly timed, can destroy a majority of the seed producing plants. However, mowing alone is often only partially effective at reducing overall stiltgrass numbers. To improve the effectiveness of mowing, the stiltgrass should be cut as short as possible.

Maximum stiltgrass control is obtained when spot treatment of mowed areas with a string trimmer is completed three days to a week after mowing. Usually when mowing with a bush hog, especially when the stiltgrass plants are tall and vigorously growing, a certain proportion of the plants will get knocked down or flattened rather than severed by the mower. In as little as a day after mowing the stiltgrass plants that escaped the mower will remain very green and try to stand again...making them easy targets for a person with a string trimmer walking through the area.

If the area where stiltgrass control is desired includes a lawn that is infested, all regular mowing of that portion of the lawn should cease around July 15 and allowed to grow for a month before mowing again. Normally, during this 30 day period the stiltgrass will significantly outgrow all other lawn cover making it both easier to identify and easier to kill. To ensure the highest proportion kill possible in the stiltgrass the best option is to mow the lawn, especially where the stiltgrass is present at the lowest blade setting. Completing the mowing during the hottest and driest conditions possible will further enhance the kill in the stiltgrass. If the mowing of the lawn is successful, regular lawn grass will begin to fill in the dead spots almost immediately. If the stiltgrass is mowed before it is allowed to go to seed the number of stiltgrass seedlings on the lawn will greatly decline in succeeding years.

String trimmers and weed whackers

String trimmers are an extremely common power tool owned by nearly every rural West Virginia property owner. Trimmers are one of the least expensive power tools to operate and one of the most effective pieces of equipment available in the battle to control Japanese stiltgrass. Use of a string trimmer does not require any special training to operate.

Cutting stiltgrass with a string trimmer is most effective if it is begun after the first week of August. When treating the stiltgrass it should be cut as closely to the ground as possible and right into the dirt if necessary. When stiltgrass is cut back to bare dirt it will be killed and many species of native perennials that had become dormant beneath the accumulating stiltgrass thatch will respond with a renewed flush of growth that will start almost immediately.

Several species of native grasses found in West Virginia complete their annual growth cycles and go to seed earlier than stiltgrass. Carefully planned timing for mowing or string trimmer work can be very effective at dispersing mature seed of native plants and rapidly convert the cover of some roads and trails from the annual Japanese stiltgrass to more desirable mix of native perennial species.

Where to start

When selecting a place to begin, the first choice should be the infested corridors of roads and trails or paths passing into or through the property that appear to be the major pathways for the invasion.

Within the woods the best option is to treat the leading edge of an invasion. Usually the invasion front does not have many (or any) seeds in the seed bank and a single carefully timed treatment may bring the spread of an invasion to a complete halt.

Deer are extremely effective at spreading Japanese stiltgrass. If the property has a heavy deer population it is advisable to treat the stiltgrass in areas where the deer may frequently bed down or congregate especially old apple orchards and food plots. Because deer often favor stiltgrass thickets in old logging trails and woods roads as resting and bedding locations, the benefit of treating these specific areas to prevent seed production can amplify the impact of treatments towards reducing overall stiltgrass populations.

Safety considerations

Use of some personal safety equipment when operating string trimmers is recommended. Proper equipment recommended during heavy use of a string trimmer in a full fledged stiltgrass attack should include: sturdy shoes, gloves, a long sleeved shirt and long pants, safety glasses and ear protection. Additional suggestions for safety equipment include a hardhat with attached ear muffs and a face screen for additional eye protection and chaps used to protect the legs against briars and brambles.

The best time to mechanically treat stiltgrass is also when the likelihood of encountering hornets or wasps in underground nests is highest. By covering as much of your body as possible with clothing the potential for getting stung is greatly reduced.

Final thoughts

Mechanical control of Japanese stiltgrass can be accomplished with annual diligence and is worth the effort if a diverse understory, vibrant wildlife habitat and natural regeneration are any of your forest management objectives.

To enhance the potential for having native vegetation reclaim dominance in a stiltgrass infested site it is worthwhile to learn more about the life cycle and requirements of locally found species of woodland forbs and grasses.

For additional information on the control and management of Japanese stiltgrass and other species of invasive plants please check the following links:

http://www.forestguild.org/ecological_forestry/rg_se_harvesting_and_invasives.pdf

http://www.forestguild.org/ecological_forestry/Stiltgrass_and_woodsroad_maintenance.pdf