



An Expansion of the Kudzu Coalition

Chinese Privet Removal Protocol

August 27, 2013

Situation: Chinese privet (*Ligustrum sinense*) is one of the most widely spread invasive plants in the South, forming thickets 30 feet high, particularly in bottomland forests and along fencerows. Animal-disbursed seeds are thought to be viable for only one year. Privet is shade tolerant. A single plant can produce up to 10,000,000 seeds in one season. Hence, it is helpful to remove privet before it blooms (small white flowers) in the spring and produces seeds in the fall.

Treatment Method Overview:

Bush hogging: Simply cutting privet down does not kill the plant. For example, bush hogging cuts the stems. As a result, if the bush hogging takes place before the fall, none of these plants produce seeds that year or the next. However, neither are any privet plants killed. Since the roots survive, even more stems come back the following season (or maybe even the same year, depending on when the bush hogging takes place.) Merely cutting privet encourages more sprouts from surface roots and multiple stems from stumps.

Mechanical: A Bobcat equipped with specially designed forks proved effective on SPACE property.

Manual: Many stems can be removed by hand and this is easier when the soil is moist. A trained worker can manually remove about 100 privet plants per hour in typical infestations. This is hard work and requires bending, sometimes working on the knees, and is tiring. The manual removal rate declines after about two hours because the workers get tired.

Herbicidal: See below for “cut and treat”.

Foliar spray: Not covered here. The Trees Coalition has no experience with this method.

Background info: In most privet infestations, the sprouts come from runner roots which generally grow in a straight line and at about one to two inches below ground. These roots can grow to two inches or larger in diameter. These roots often run five or six feet long, usually in a straight line. Sprouts come up every eight to twelve inches.

It is important to pull up these roots. If left in the ground, they will continue to be the source for new sprouts.

An interesting and helpful tip, discovered by member Paul Savko, is that we can determine the direction of the main root without removal of any soil. The plant will bend at the stem in two directions (opposite or back and forth) but will not bend in the two directions that are perpendicular to the root. The main root runs in the direction in which the stem resists bending. This is helpful in the removal process for one inch and larger stems.

Knee-high and shorter plant removal is easy. They usually have hair roots instead of a connection to a large running root. Seedlings that come from seeds pooped by birds are typically stand-alone plants.

Simply grasp and pull them up—much like weeds in the garden.

Removal of 120 to 200 per hour is practical.

Short sprouts coming from privet stumps (often cut in the previous year) are not included here but have to be dealt with based on diameter of the stump.

Unfortunately, privet thickets have a majority of taller and larger plants.

Waist high plants and those with one-half inch or smaller stems can usually be removed by a three step process:

1. Using a hand tiller, strike under the stump and leverage it up. Usually this loosens the stump.
2. Pull up the main root ball.
3. Pull up the main root on each side of the main root ball. If these roots are left intact, the privet will definitely come back. If these roots do not come up with the root ball, grasp around the root on one side and pull it up. The forked end of the tiller can be struck under the root at successive six inches or so intervals further away from the root ball in order to loosen the root and allow pulling it up. A pruning saw can also be used to cut the hair roots coming from and below the main root.

Other leverage tools: A commercially available Weed Wrench™ can be used to leverage larger stems out of the ground. Other leverage devices such as the Weedpopper® are available. These are available in different sizes. They are heavy and often take more time than a well-aimed stroke with a pick.

A modified shovel can work well as an alternative to swinging the tiller or pick.

Head high plants and those with one to two inch stems usually require several strokes with a long hand tiller or pick. Use the same process as outlined above augmented by the following:

1. Use a pruning saw to cut the root on one side, thereby releasing the plant from that connection. This makes the root ball easier to pull up.
2. Pull up the largest roots as described in #3 above.

Manual removal of 10 to 40 plants per hour is practical. The rate of removal depends on several factors including the strength of the worker.

Often, the size of the roots for larger plants is an inch in diameter or larger. It may take as long to pull up the main root on both sides as it takes to dig and pull up the root ball.

Manual removal of two inch and larger stems is hard work. It can be done manually but there is a far easier process.

Herbicidal approach: A different approach, called “Cut and Treat”, has the advantage of not disturbing the soil. This is especially important along river banks and areas likely to flood. The treatment is systemic, meaning that it works down into the roots. The process is to:

1. Cut the stem about 12 inches above the ground. The rougher the cut, the better since rough cuts increase the surface area.
2. Put on protective rubber gloves.
3. Prepare a solution of 25% Glyphosate (generic name for the chemical in Roundup®.) Note: regular Roundup (18% glyphosphate) does not kill privet of this size but Roundup Weed & Grass Killer Super Concentrate (50.2% Glyphosphate, but use it half strength to get 25%) does. Mix in food coloring – blue is our preference – in order to see which stumps have been treated and which haven't, while working.
4. Fill a mustard or ketchup squeeze bottle with the colored solution. Write “Weed Killer” on the container.
5. “Paint” the privet stems by squeezing the liquid onto the cut ends.

Note: Dr. Gill Newberry has shown that the “Cut and treat” treatment is practical for all privet plants, even for knee high and smaller sprouts.

“Rodeo™, a terrestrial and aquatic labeled glyphosate, works great as a foliar treatment when performed in the fall - mid winter but not once the privet starts to drop leaves in late winter. Using a back pack, I'd mix a 4-5% solution + 1% non-ionic surfactant and cover all foliage.”

Travis Rogers, DowAgro

Another herbicide that works on privet is triclopyr ester, sold under the brand names Garlon 4™ and Pathfinder II™. Note that triclopyr ester is not recommended for use near bodies of water.

“Pathfinder II herbicide works great as a basal treatment on larger stems and as a cut stump treatment.”

Travis Rogers, DowAgro

Timing: Remove plants before spring to prevent blooming and seed formation in the fall. Clearance in the winter has the advantage of avoiding most of the briars and permits easy recognition because Chinese privet retains its leaves.

Follow-up treatments:

Sprouts return from remaining roots and from the germination of seeds in the soil. Seeds are thought to be viable for only one year. If true, aggressive removal efforts can make a huge difference in two years.

A second removal (clearance) before seed formation in the fall is recommended.

A third removal during the following spring will be necessary.

Since birds will continue to poop forever, ongoing maintenance will be required.

Future work is needed to determine:

- The percent reduction in stems for the first, second, and third clearances.
- Time and cost of “cut and treat” versus manual removal.
 - One-half inch, one inch, two inch, etc.
- Can we kill the whole plant by “cut and treat” for 50% or 75% of the stems?

“Good question...I've never tried this experiment. We've always trained folks to treat "all of them" if they wanted to control it. My guess is it could survive.”

Travis Rogers, DowAgro

Your info is solicited:

If you have experience on any of the above treatments or the questions in “future work”, please pass it along to us at TreesCoalitionSC@gmail.com.