

## Southern Indiana Purdue Agricultural Center Forestry Research

**Title:** Bush honeysuckle and Japanese honeysuckle control in a hardwood forest understory

**Date Initiated:** 2005

**Location:** SIPAC, P

### Background

Amur honeysuckle was planted at SIPAC beginning in 1974 for wildlife habitat around farm ponds. It along with Japanese honeysuckle have since spread to forest edges and continue to infiltrate forest interiors.

### Objectives

Gain experience in integrated vegetation management methods for controlling non-native invasive brush in a forest environment.

**Site:** Hardwood forest. Medium to moderately high site index. Steep slopes and major ravine. Stands: Oak-hickory forest of various age composition, clearcut and selection harvesting having occurred 1964-65. Large, mature bush honeysuckle densely established along Woods P forest edges and infiltrated canopy gaps to spread into the forest interior. Japanese honeysuckle occurred commonly along forest edges and in patches, including a large (~0.5 acre) patch. Autumn olive and multiflora rose occur in lesser amounts, mostly on forest edges. Treatment Area: 21 acres

### Treatments

#### Equipment

- 50 gal., 3-point hitch mounted sprayer with PTO-driven 6-roller pump with 22 gal/min. flow rate all attached to a JD850 4x4 24 hp tractor. Herbicide was sprayed by the tractor operator using a gunjet type hand wand at ~50 psi pressure. The tractor was operated at ~ avg. 25'/min or 0.28 mile/hr. for forest edge spraying. 100 ft. retractable hose reel for spot application.
- Husqvarna clearing saw
- Stihl 260 chainsaw
- Solo piston pump backpack sprayer
- Solo diaphragm pump backpack sprayer
- Sideswipe synthetic knap herbicide applicator
- Household hand pump spray bottle

#### November 7-21, 2005

- Conducted controlled experiment to test herbicide rates and timing for effectiveness of foliar treatment as a late-fall application (see *2005 Late Season High Volume Foliar Herbicide Application for Control of Asian Bush Honeysuckle* SIPAC Forestry Research Note). Foliar sprayed target vegetation with a range of 1-4% glyphosate (41% a.i.) + 0.5% non-ionic surfactant and a range of 0.125-0.5% Arsenal + 0.5 non-ionic surfactant on three different weeks from Nov 7-21. Herbicide was sprayed along the forest edge using JD855 tractor and 50 gal. sprayer.

Results – Excellent control using glyphosate to mid-November. Level of control dropped off with late Nov. application. See above SIPAC Forestry Research Note for more detailed results.

#### October 7 – November 1, 2011

- Foliar sprayed target vegetation with 2.1% glyphosate (41% a.i.) + 0.5% non-ionic surfactant, along forest edge on south edge of tract using JD855 tractor and 50 gal. sprayer.

Results – Good kill of BHS and JHS. Spotty, inconsistent control of AO and MFR.

November 7-8, 2008

- A ¼ acre plot of dense BHS in mature oak understory treated. Low-volume foliar spray using backpack sprayer to apply 4% glyphosate + non-ionic surfactant to shrubs < 8 ft. tall. Some also sprayed with JD855 tractor and 50 gal. sprayer. Shrubs > 8 ft. tall treated with a basal bark application of 20% Garlon 4 + 80% AXIT basal oil.

Results – BHS dormancy occurred early with many shrubs experiencing yellowing and falling foliage at time of treatment. Only partial kill achieved one year later with mostly larger shrubs in the middle of the patch surviving.

November 11, 2011 – February 1, 2012

- Husqvarna clearing saw used to cut target shrubs. 50% Garlon 3A applied to stumps using a Sideswipe applicator. Did not cut shrubs on edge since they were recently foliar sprayed.

Results – Poor kill, 80-90% of stumps sprouted.

October 22-25, 2012

- Spot foliar sprayed BHS, AO, MFR sprouts and JHS with 2% glyphosate (41% a.i.) + 0.25% non-ionic surfactant using the JD855 tractor and 50 gal. sprayer with 100 ft. hose reel and Gunjet 43 spray gun. On one ~0.25 acre patch of JHS, boomless nozzles were used to broadcast spray. Although summer drought reduced amount of foliage, foliage was mostly green on BHS, JHS, and AO. MFR had yellowing and sparse foliage, so green stems sprayed along with foliage. Hose reel was pulled from interior trails and forest edge to systematically and thoroughly treat the area.

Results – As of Sept. 20, 2013, excellent kill of BHS and JHS. Good kill of MFR, with canes still green on some, but no foliage. Not much AO occurred to begin with. Still found surviving AO.

October 25, 2012

- Cut BHS and AO on inaccessible slopes using Stihl 260 chainsaw. Sprayed stumps with 6% Arsenal.

Results – ?

## **Results**

The Husqvarna clearing saw has sufficient power to easily cut through stems up to 3-4 inches in diameter when proper technique is used. Garlon 3A applied in winter as a cut stump treatment at a 50% dilution provides poor control. The Sideswipe applicator reduces the amount of herbicide applied, eliminates overspray, is easier to use in a forest and brush environment than a backpack sprayer, and thus improves herbicide application efficiency and reduces cost.

Directed spray foliar application of 2% glyphosate in mid-fall produces excellent kill of BHS and JHS, good kill of MFR, and inconsistent control of AO. Small tractor or ATV/UTV-based customized spray rigs provide versatility to more efficiently handle a wider array of invasive vegetation conditions.

## **Planned Management**

Follow-up treatments to control remaining pockets of invasive brush. Monitor for new infestations.