Japanese Knotweed Control

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Mid-Michigan Stewardship Initiative (MMSI)

The Stewardship Network
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Japanese Knotweed (*Fallopia japonica*)

Photo: L. Kuhn

- Introduced from Asia as an ornamental in mid-1800's
- Flowers in late summer
- Invasive in US by 1900
- Reddish reeds, alternate leaves
- Also called Mexican bamboo

https://en.wikipedia.org/wiki/Fallopia_japonica

Michigan Law on Invasive Knotweed

Prohibited Plant Species (Natural Resources and Environmental Protection Act (Act 451 of 1994, as amended): Prohibited species identified under this Act cannot be sold **or grown** in the state. Any of the following plants**, fragments [e.g, by cutting/mowing],** seeds or a **hybrid** or genetically engineered variant thereof are specifically prohibited…

Photo of variegated Japanese knotweed cultivar
from Washington State University Clark County Extension

Where is Japanese knotweed found in Michigan? Ask misin.msu.edu

misin.msu.edu

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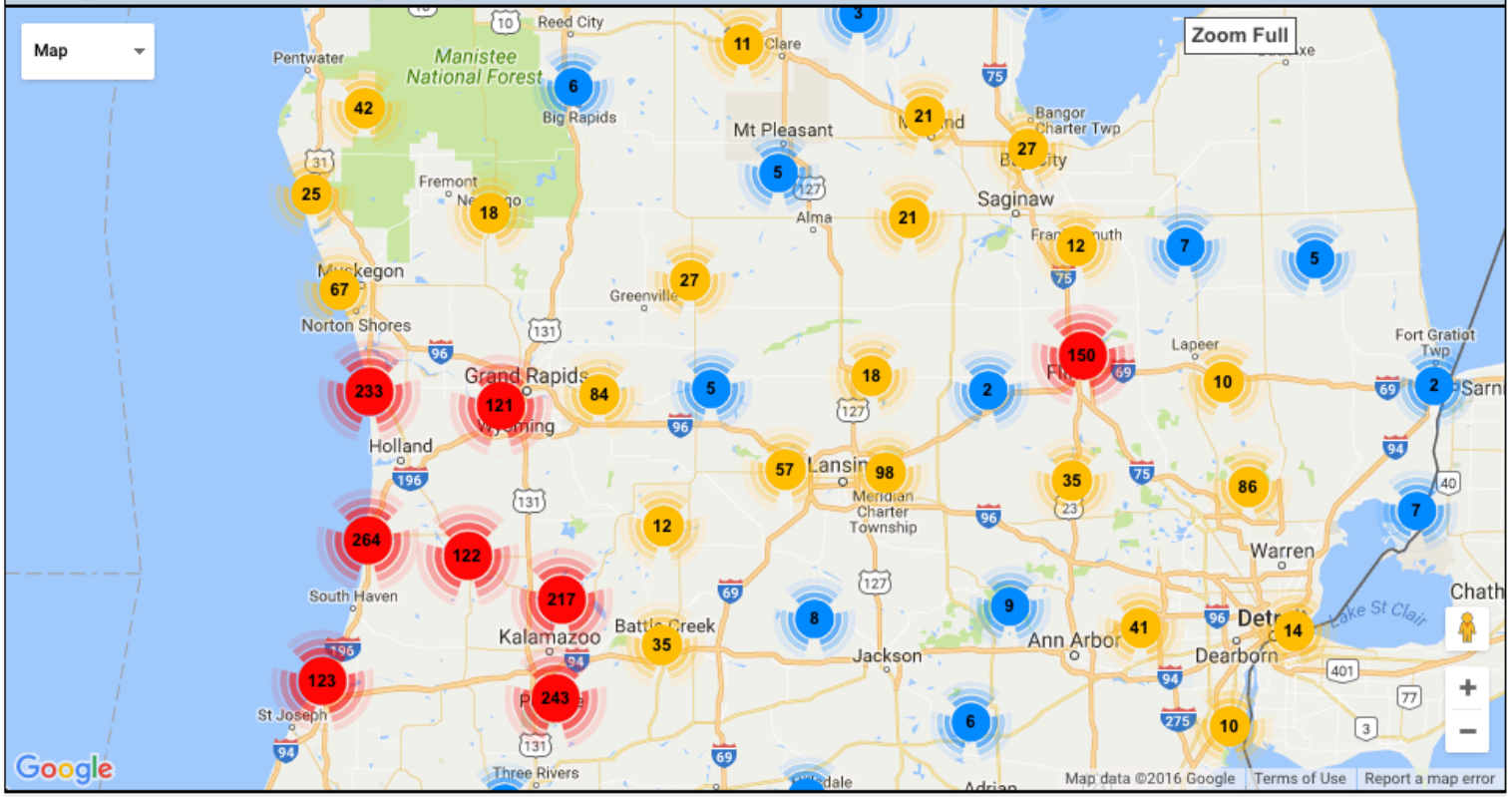
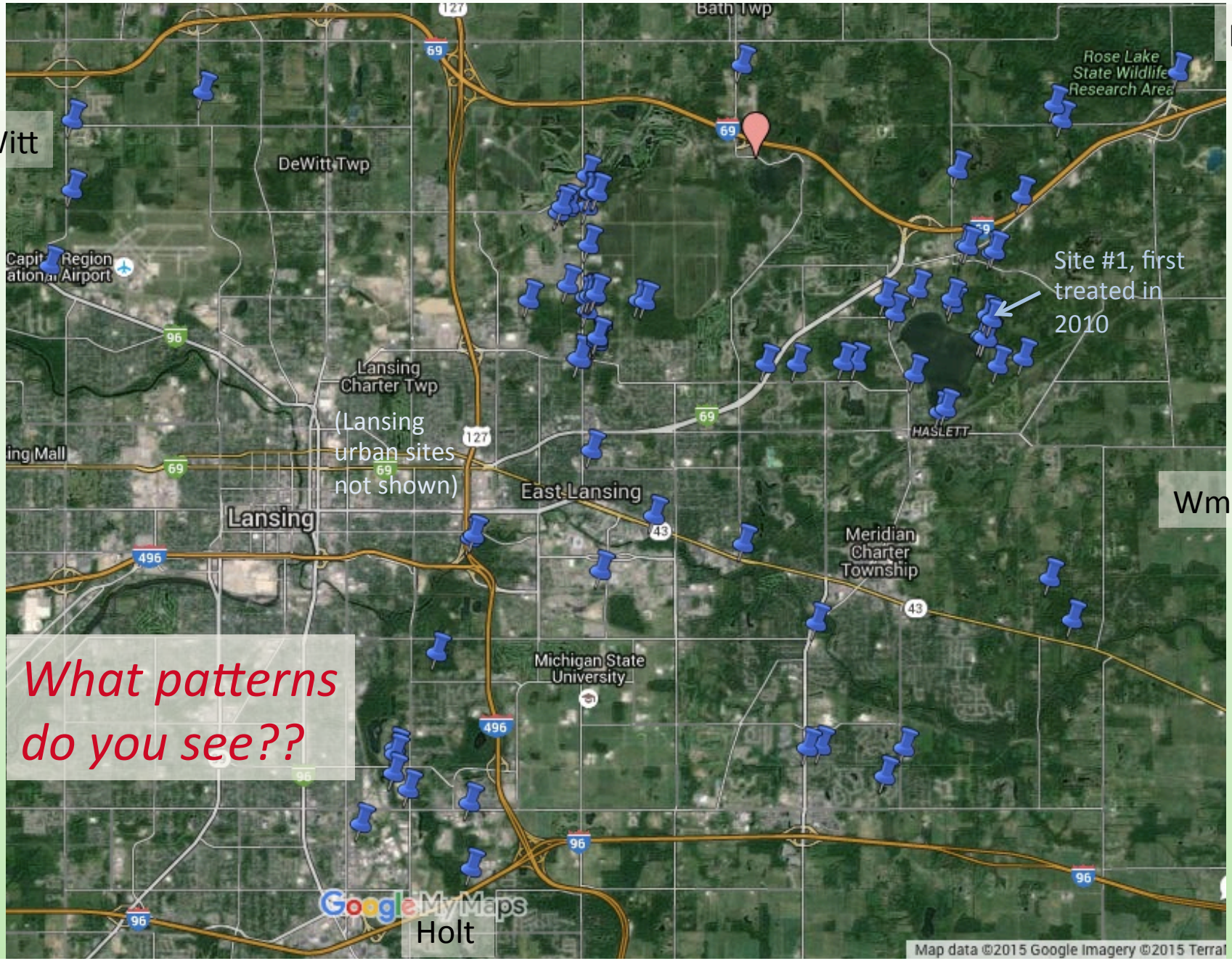
Japanese knotweed

Messages: Please note that User Login is required to view contributor details.

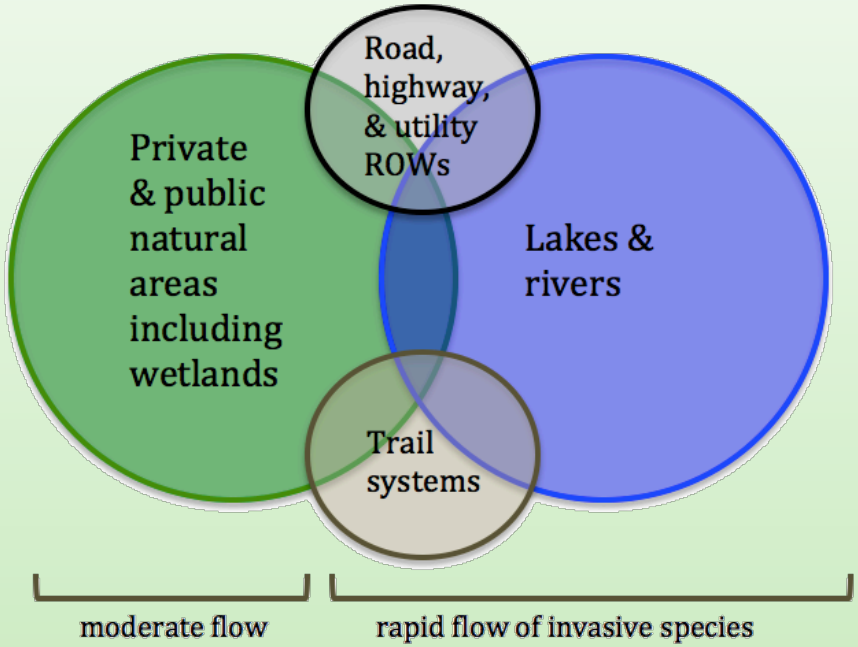


Homing in on Mid-Michigan Japanese Knotweed



How to Prioritize?

- For invasive knotweed, rapid spread along rivers and trails and roadsides is caused by cutting/mowing and stems being dragged along roads, railroads, and streams



Tallman Rd. Bridge over the Looking Glass River in Eagle, MI; photo by Nick Babcock, MSU Vets to Ag

- Outliers of a main population (satellites) are like burning embers!
- Highest priority: colonies or spread in/near high-quality habitats
- We aim to control all the observed sites in a defined area, systematically

Contacting landowner to:

- inform them about invasive species
- describe why treatment is important for them as well as nature
- gain multi-year permission to treat, plus liability waiver

Most landowners are keen to treat, but find specialty herbicides intimidating

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June 5, 2015

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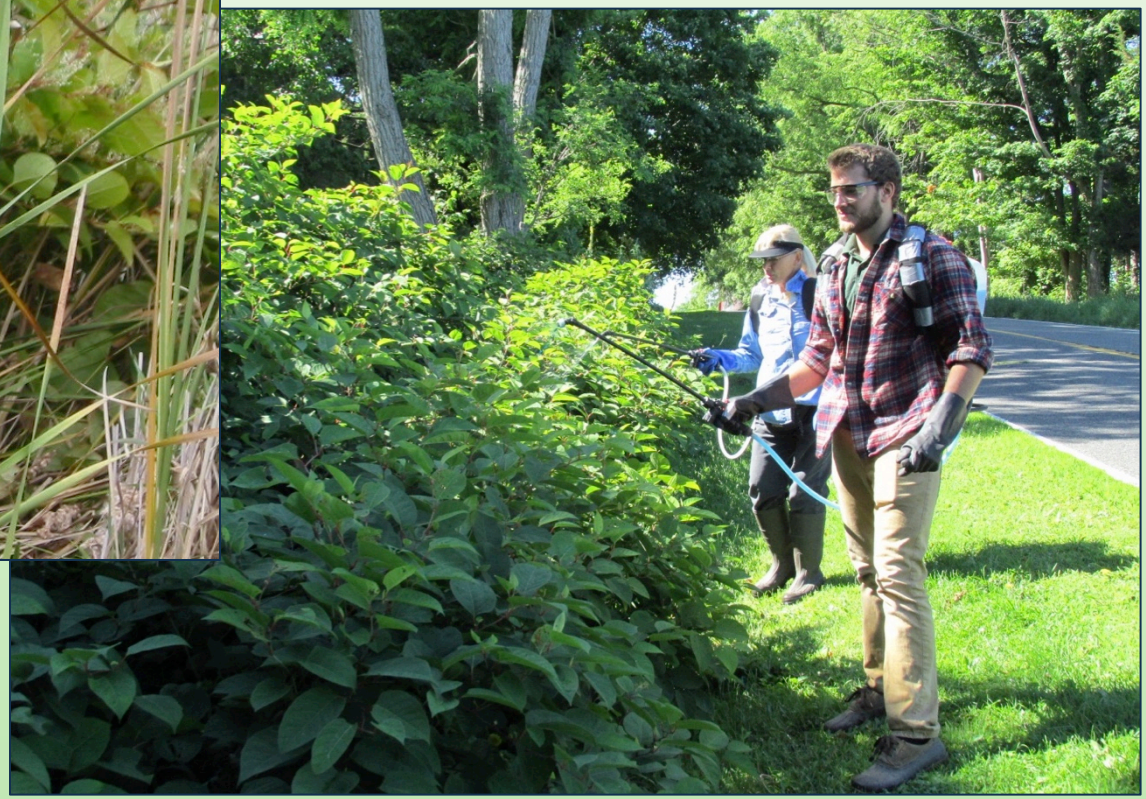
Dear property owner,

I am contacting you regarding the reedy shrub, Japanese knotweed (*Polygonum cuspidatum, also called Fallopia japonica*), which is growing on your property at [redacted] Drive in Haslett. See th photos below of Japanese knotweed in bloom and a close-up of its leaves. The reddish, streaky coloring of the stems, which are bamboo-like when mature, is characteristic. This plant is a very aggressive, non-native, invasive species that consumes wetlands and surrounding upland areas by forming a tall, dense wall of reeds. It spreads rapidly. This plant evolved to grow on lava in Japar and its roots can break through road surfaces and foundations of houses. Japanese knotweed spreads via stalk segments, root segments, and seeds. For all these reasons, planting or moving any part of this plant is now prohibited in Michigan (http://environmentreport.org/show.php?showID=617). Unfortunately, there is no natural competition (native insects or browsers) to keep Japanese knotweed at bay.

In the field: It's fun! A great workout and you meet lots of interesting people and habitats!



Daily Summary Sheet for Each Treatment Site

Leader Blake Price Date Sept. 20, 2011

Start & stop times 1-4:30pm

Phragmites/Japanese Knotweed Treatment Summary

Describe the weather, especially was there precipitation during or soon after treatment (if so, how many hours later?)

60's, overcast to 60% sky cover, no rain but fog in the morning

Provide the following info for each site:

- Site name: Swan
- Chemical used: Glyphosate 1.5%
- Phragmites or Japanese knotweed? Phragmites
- What percentage of the original infestation still had living stalks?

100% - this was the first treatment

- Did you treat the site fully? If not, describe: Soil too mucky to negotiate? Couldn't finish it today? If the latter, did you mark the part left to be treated with neon string, or can you describe it by landmarks, or draw the site showing the part that's remaining?)

Blake sprayed from the perimeter inwards. Dense colony and did not walk through, so probably 60% coverage.

Our Experience with Herbicides for Foliar Spray on Japanese Knotweed
Leslie Kuhn, Mid-Michigan Stewardship (www.stewardshipnetwork.org/midmich)

Herbicide (Brand Name)	DEQ Aquatic Approval	Approximate Cost from Vendor*	Initial Conc.	Final Conc.	Dilution for Spot Treatment	Cost per Gallon of Spray Solution	Aquatic Adjuvant & Dye Needed	Foliar Spray Timing	Efficacy	Upsides	Downsides
Our wetland choice: **Imazapyr (Habitat)**	Yes	$115/gal	28.7%	0.50%	2.3oz, then fill with water to 1 gal	$2.07	Must add; see last two rows	Late Aug to 1st hard frost	Very good	*0.5% concentration an effective choice	*Residual soil activity for 2-3 years; mortality of nearby trees at higher (1-2%) concentrations; notable invasion of Canada thistles after use, requiring other treatment
Imazamox (Clearcast)	Yes	$258/gal	12.1%	5%	51.2 oz, then fill with water to 1 gal	$103.20	Must add; see last two rows	Late Aug to 1st hard frost; some recommend >60 days before frost (helps avoid bees, too)	Variable/ moderate control	*Least residual soil activity	*Large amount of chemical applied and can be ineffective on well-established knotweed; 250X as expensive as aminopyralid and 50X as expensive as ~~imazamox~~ **Imazapyr** to treat
Our upland choice: **Aminopyralid (Milestone)**	No	$78/quart	40.6%	6 oz/acre**	~2.5-5ml, then fill with water to 1 gal**	$0.41	Must add; see last two rows	When stems are >3' tall, while growing (early summer)	Very good	*Very little chemical enters environment; can be used early in season and can return for follow-up same year; broadleaf selective; controls thistles that may enter site	*Residual soil activity for ~18 mo. Do not spray under redbud, locusts, cedar, juniper, grape, mimosa, mulberry, rose, spruce, caragana, pinyon pine. See Milestone link on Helpful Resources page at end of this document. Info via Katie Grzesiak, IPN.
D-limonene non-ionic surfactant (Cygnet Plus)	Yes	$45/2.5 gal	100%	0.50%	Add 0.6oz=19ml to 1 gal herbicide solution						
Aquatic marker dye (Cygnet Select)	Yes		100%		Add 1-2ml to 1 gal herbicide solution						

*Red River Specialties (http://www.rrsi.com) and Cygnet Enterprises (http://cygnetenterprises.com)

**Must calibrate sprayer to achieve 6 oz/acre rate; see pg. 8 of Invasive Plant Management with Milestone in Section 8 (pg. 17) of http://static1.squarespace.com/static/50d37c2ce4b09ff030bc2f7b/t/524d8eb6e4b0b5e2e0816529/1380814518272/IPguide.pdf

Green = best
Blue = moderate
Red = worst

Get the Word Out: Stop Spreading Invasive Knotweed by Roadside Mowing and Yard Waste Dumping

How Long Does it Take to Win the Battle?

- **Imazamox: 30-95% of invasive knotweed remained after 2 years or treatment** (little control at more established sites; we ceased using it)
- **Imazapyr: 5-15% JK remained after 2-3 years of treatment**; important to use lower 0.5% concentration to not hurt nearby trees
- **Aminopyralid: ~50% JK reduction after 1 year of treatment**
- **Expect to keep monitoring for 4+ years** after apparent control. Japanese knotweed will rebound in wet years due to giant root mass.
- **Stem injection or cutting-and-filling is highly effective but much more labor intensive**; trade-off between # sites to treat and rate of control

Stem methods contacts: Carolyn Henne (NW MI CWMA; Emily DuThinh, Oakland County CISMA)

Stem injector kit; can be connected to herbicide reservoir (lower right) or hose to herbicide container

0.5% Imazapyr Treatment at Maguire Park, Lansing: Good Japanese knotweed control with no harm to neighboring trees

Success on Japanese Knotweed Control: Upton Road, Bath

Established Japanese knotweed colony was reduced from 6’ tall to 2’ after one Milestone treatment (6oz/acre)

July 21, 2015

August 28, 2016