



August 25, 2019

Dr. Colin D. Stewart, Assistant Director
Pests, Pathogens, and Biocontrol Permits
Regulatory Analysis and Development
PPD, APHIS, Station 3A-03.8
4700 River Road Unit 118
Riverdale, MD 20737-1238

Re: Docket No. APHIS-2019-0002; Environmental Assessments; Availability, etc.: Release of *Aphalara Itadori* for the Biological Control of Japanese, Giant, and Bohemian Knotweeds

Dear Dr. Stewart,

We appreciate the opportunity to comment upon the *Environmental Assessments; Availability, etc.: Release of *Aphalara Itadori* for the Biological Control of Japanese, Giant, and Bohemian Knotweeds*. Pollinators, including honey bees, are a vital part of U.S. agriculture, and yet honey bee health faces a variety of challenges. Overwintering honey bee colony losses are higher in the past decade compared to historical averages further adding to the health issues of pests, pesticides, pathogens, and poor forage impacting honey bees. Late fall forage opportunities for honey bees are vital in their collection of food supplies to survive the winter. Removing Japanese, Giant, and Bohemian Knotweeds from the landscape with no plan for replacing this lost nectar source will further contribute to the health stressors of honey bees. Concern must be given to the biological support the invasive plant provides to beneficial insects.

Value to Pollinators

The proposed action of USDA-APHIS to release a foreign exotic agent for the biological control of an exotic plant is narrowly focused, presents no plan for comparable replacement of a nectar source for honey bees or for water control on vacant urban lots and therefore mosquito control, or for restoration of native plant diversity to prevent soil erosion.

“When blooming (July to September), the plant puts on an attractive floral display befitting the common name ‘fleece flower’.”¹ “Japanese knotweed is highly regarded for its attractive flowers and has been planted by beekeepers for its nectar.”² “Knotweed is “ alive with pollinators and are particularly attractive to honey bees. Many beekeepers manage to harvest a monofloral honey from the vast stands found locally. And if you don’t harvest, it makes a great late-summer boost to a colony’s winter pantry.”³ “The honey is dark and flavorful, and many people compare it to a mild form of buckwheat honey.”⁴

“Bee lovers have found another use for Japanese knotweed. The hollow stems are often cut into lengths and bundled for use as native bee habitat. The stem diameters vary just enough to provide suitable housing for a wide range of tunnel-nesting bees, including mason bees and leafcutters.”⁵ Harvesting knotweed stalks, removing them from the ecosystem would hold two benefits: 1) provide a cash “crop” for local economies in the sale of nesting material for stem dwelling native pollinators; 2) remove the end of season “knotweed litter” from the ecosystem aiding the growth of native plants.

“Well-liked by bees, the blossoms provide bee forage when little else is available. The amber honey has a pleasing flavor.”⁶ “As is often the case with invasive weeds, apiarists consider *F. japonica* to be of value to bees and invertebrates, with an increase of 45 kg in hive weight in 5 days being reported from a knotweed stand ([Andros, 2000](#)).”⁷

For APHIS-USDA to release an invasive biocontrol agent to control knotweed, then a companion plan to re-introduce native plants which provide a late season nectar source for honey bees is vital. As part of the invasive weed control plan, native plants need re-introduced into the area to prohibit other opportunistic, monofloral species from taking seed. USDA-APHIS should select from regional, native plants that bloom in the fall from, for example, NASA’s Bee Forage Map <https://honeybeenet.gsfc.nasa.gov/Honeybees/Forage.htm>

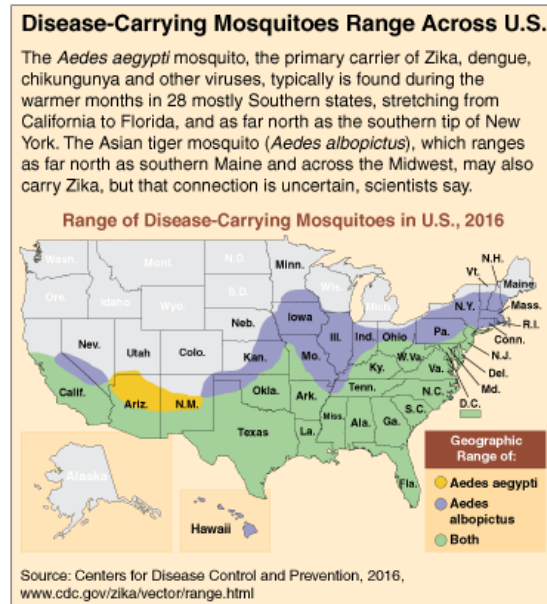
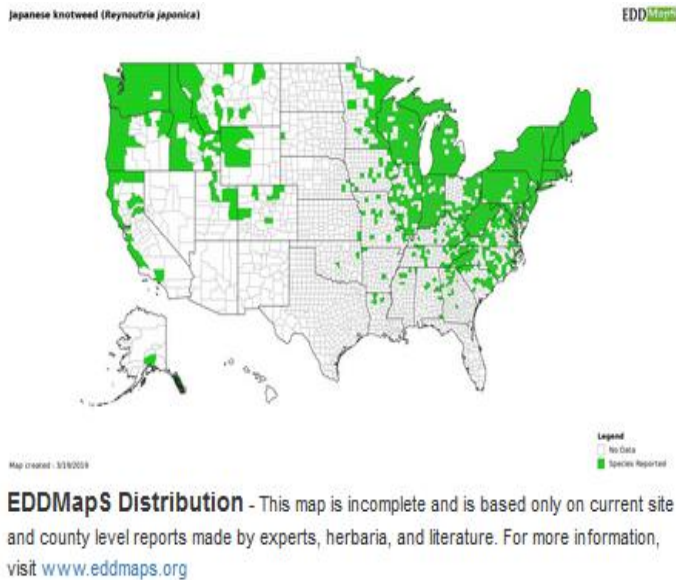
“Where it is introduced *F. japonica* is claimed to be of value to bees and invertebrates as it flowers later than most native plants.”⁸

Range of Invasive Plant

Like many invasives, knotweed is beneficial in some areas, and damaging to the ecosystem in others. “There are approximately 50,000 (Pimentel, 2004) non-native species in the United States today. However, of that 50,000 species, approximately 4,300 have been considered invasive species.”⁹ Knotweed is found throughout most of the United States, “especially in urban and suburban landscapes, roadsides, gullies, and waste areas.”¹⁰ “It is often associated with moist but well-drained sites with nutrient-rich soil, and it tolerates semi-shaded environments. It has also been planted in sandy sea-shore areas where it stabilizes soil and withstands salt and low nutrients.”¹¹ “It has been planted along highways to control soil erosion and has been used for revegetation of strip-mine spoil and to stabilize land affected by volcanoes.”¹²

“It is reported to be a poor invader into grass cover and can be crowded out by taller trees. It does not survive frequent mowing.”¹³ “It is also prized for its tolerance of harsh conditions like rocky soils with limited nitrogen and low pH.”¹⁴ “Knotweed has been used to stabilise riverbanks and other steep slopes, and the microclimate under its canopy has been likened to that of oak woodland ([Gilbert, 1992](#)).”¹⁵

When we compare the range of the Knotweed with the range of disease-carrying mosquitoes, the plan to remove Knotweed is problematic. It is a plant found on vacant lots in urban areas and which absorbs standing water; breeding sites for mosquitoes. Vacant lots would benefit from the implementation of a native plant re-introduction plan that will absorb standing water, mitigating the risk of mosquito breeding sites, and the spread of disease. The eradication of knotweed in urban areas will impact minority populations increasing exposure to disease carry mosquitoes. Removal of knotweed with no plan for replacement with native plants or mitigation of standing water will support mosquito habitat, thus impacting human health concerns from disease carrying mosquitoes.



Management

To manage invasive species of plants Physical or Mechanical Control, Chemical Control, Cultural Management, and/or Biological Controls are the methods in place now. As Japanese knotweed exhibits great tolerance to most herbicides¹⁶ it is critical to have a variety of “tools in the toolbox,” to control this non-native plant. Mechanical controls appear to have the best success, whether from weekly mowing, or digging up the plant. However, if another plant is not put in place, then knotweeds’ resilience to survive will lead to its return.

“However, the scale of the knotweed invasion in North America, the inaccessibility of some of the infestations, and the difficulty with which the plants are killed, all suggest that complete eradication of this plant is unlikely.”¹⁷

Your assessment states, “Existing options for management of invasive knotweeds are expensive, temporary, ineffective, and can have non-target impacts. Biological control has the potential to provide widespread and sustained reduction in knotweed abundance at a very low cost. Without a biological control program, chemical and mechanical inputs are likely to be needed on a permanent basis with variable to limited success.”¹⁸ The “low cost” to implement this non-native biological control shows no

concern for the long-term impact on bee forage, mosquito habitat, soil erosion, and native plant protection. The narrow focus on the single pest and the single invasive plant, and the “low cost” to release a “bug,” shows a lack of concern for the economic cost of lost forage for a beekeepers’ livestock, and the economic value of this plant to the livelihood of the beekeeping industry.

“*Aphalara* genus includes around 40 species, many of which are difficult to distinguish from each other and are often identified from their distinct host ranges.”¹⁹ A concern is expressed if Japanese researchers find it difficult to distinguish the species of psyllid pest of knotweed, how can USDA-APHIS ensure they are releasing the correct *A. itadori*? As *A. itadori* was released in Canada in 2015 why has it not moved across the knotweed range and entered the USA? If this species lays 700 eggs on a plant with a full generation developing in 33 days, and the adult psyllid’s can fly, has it not already entered the USA? “However, whether there is a distinct flight season and how far they can fly are unknown.”²⁰

USDA-APHIS reviewed possible non-target plants of the *A. itadori* in the genus of knotweed, and related plant types. However, you express your own uncertainty that “Native species that are closely related to the target species are the most likely to be attacked (Louda et al, 2003). If other plant species were to be attacked by *A. itadori*, the resulting effects could be environmental impacts that may not be easily reversed. Biological control agents such as *A. itadori* generally spread without intervention by man.”²¹ “Worldwide, biological weed control programs have had an overall success rate of 33 percent.”²² Yet, your report states actual impacts of *A. itadori* will not be known until post-release monitoring is conducted.

Proposed Release of Non-Native Pest

USDA-APHIS has presented a rationale for this additional knotweed control tool, but they need to complete the plan for the release of a non-native pest into the US ecosystem. We are concerned as to your statement, “These permits would contain no special provision or requirements concerning release procedures or mitigating measures.”²³

The Proposed Action needs to:

- Provide release procedures and mitigating measures relevant to the introduction of this non-native pest;
- Examine how to control the psyllid if it does attack native plants;
- Develop a replacement planting plan for native plants, especially for those that bloom in the fall and provide forage for honey bees, and native pollinators;
- Introduce a genetic marker to track the released *A. itadori*;
- Detail the post-release monitoring plan for *A. itadori*.

Management of knotweed, and other invasive plants is a “long term venture.” It is easy to destroy the ecosystem; it is difficult and expensive to restore it. Beekeepers need this valuable nectar source for their honey bee livestock. Knotweed is an invaluable honey bee forage vital to sustaining these crop pollinators through the winter so they are available for the next growing season.

Sincerely,

Michele Colopy, Program Director
Pollinator Stewardship Council



Daniel Winter, President
Empire State Honey Producers Assoc.



Tim May, President
American Beekeeping Federation



Kelvin Adee, President
American Honey Producers Association



¹ Ohio Perennial and Biennial Weed Guide, The Ohio State University, College of Food, Agricultural and Environmental Sciences, 2019, https://www.oardc.ohio-state.edu/weedguide/single_weed.php?id=60

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Knotty But Nice For Bees, Honeybee Suite, <https://www.honeybeesuite.com/knotty-but-nice-for-bees/>

⁶ Members Of The Buckwheat Family Can Be Annual, Perennial Or Shrubby, Connie Krochmal, Dec. 21, 2015, Bee Culture, <https://www.beeeculture.com/smartweeds-and-knotweeds-as-bee-plants/>

⁷ *Fallopia japonica*, In: Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc, <https://www.cabi.org/isc/datasheet/23875>

⁸ Ibid.

⁹ U.S. Fish and Wildlife Services, Frequently Asked Questions About Invasive Species, <https://www.fws.gov/invasives/faq.html>

¹⁰ Ohio Perennial and Biennial Weed Guide, The Ohio State University, College of Food, Agricultural and Environmental Sciences, 2019, https://www.oardc.ohio-state.edu/weedguide/single_weed.php?id=60

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ *Fallopia japonica*, In: Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc, <https://www.cabi.org/isc/datasheet/23875>

¹⁶ Ohio Perennial and Biennial Weed Guide, The Ohio State University, College of Food, Agricultural and Environmental Sciences, 2019, https://www.oardc.ohio-state.edu/weedguide/single_weed.php?id=60

¹⁷ Field Release of the Knotweed Psyllid *Aphalara itadori* (Hemiptera: Psyllidae) for Classical Biological Control of Japanese, Giant, and Bohemian Knotweeds, *Fallopia japonica*, *F. sachalinensis*, and *F. x bohemica* (Polygonaceae), in the Contiguous United States, Environmental Assessment, April 2018, page 2, <https://www.regulations.gov/document?D=APHIS-2019-0002-0002>

¹⁸ Ibid.

¹⁹ Ibid, page 4.

²⁰ Ibid, page 7.

²¹ Ibid, page 21.

²² Ibid.

²³ Ibid, page 3.