

# Exotics:

## Whether to Plant the Honeysuckle

by

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Saturday mornings were earmarked for tackling household chores—especially since the weekdays were so busy now. He really just wanted to buy some shrubs, head home, and get them planted. He had hoped to get the front yard landscaped this morning so that he could watch the football game this afternoon. It was one of the last games of the season. Yet here Brian stood at the garden center, scratching his head and wondering what to do. Should he say something to the sales clerk or ask to speak to the manager? He was thinking he would really like to leave work at work for once. After all, his desk was covered with news articles, memos, phone calls, and projects about this issue [see pp. 5–6]. Sometimes he wished he could just walk away and forget he ever saw them. Pretend they didn't exist. But he knew this problem wasn't going to go away any time soon. He wasn't a public policy maker, and he certainly didn't see himself as a tree-hugging activist. As a park naturalist and director of Franklin Park, a city-owned natural area, he questioned his ability to really make any headway on the problem. Yet, how could he ignore them standing there in all their glory? All leafed out, with their red berries glistening in the sun. *Grrrrrr.... Those red berries*, Brian thought to himself.

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“Mr. Brian, do monkeys eat those berries?” a little girl had asked last Tuesday as Brian was leading a group of school children on a hike through the park. With a chuckle he had explained that there were no monkeys in the woods of Tennessee but that other animals ate the bush honeysuckle berries. “And that causes us problems. Birds eat those berries and then fly to other places in the woods. When they poop, the seeds from the berries are in their poop.” The kids had giggled over that, of course. “The seeds then end up in the soil and germinate next spring to form new plants. The plants grow very quickly, and in a few years they're the only shrubs under the trees. Many years from now, when the trees die, there won't be any baby trees to take their place. Only these bushes. Some people don't like that. They think these plants don't belong here because they came from Asia. People call them ‘exotics’ or ‘biological pollution.’ Today, bush honeysuckle has spread over most of the eastern United States and parts of Canada.” Brian had paused and then pointed, saying. “See those woods over there? Now *that's* what a wooded area in Tennessee is supposed to look like...”

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“But the berries add color and contrast to my garden in the winter,” declared a man sitting in the front of the room at the Chandler's Glenn Garden Club luncheon when Brian spoke there on Wednesday.

The men and women in the gardening club had listened politely as Brian told them about how *Lonicera maackii* was deliberately introduced into the United States. They had nodded knowingly as he read aloud several passages from a U.S. Soil Conservation Service brochure that claimed honeysuckle could be used to “Invite Birds to Your Home” and that it “Competes well with other vegetation.”

Brian liked to provide some historical context when he gave these talks. He described how in 1897 an agricultural explorer working for the U.S. Department of Agriculture had sent honeysuckle seeds back from Russia to Washington, D.C. Some of those seeds were sent to the New York Botanical Garden as part of a Plant Introduction Experiment that involved shipping seeds to the United States to see how well the plants would grow here. By 1927, *Lonicera maackii* had been imported and released at least seven times in the U.S. By 1931, at least eight commercial nurseries were selling it in this country. “Today, as many of you know, local nurseries sell a cultivar called Rem-Red, which is just one of the cultivars that the Soil Conservation Service developed for use by government agencies and property owners to stabilize soil, to attract birds and other wildlife, and as ornamental landscaping.”

Sensing their interest, Brian had continued. “But the problem is, these non-indigenous plants don’t stay where you plant them. In the mid-1920s, the Morton Arboretum near Chicago reported that *Lonicera maackii* tended to spread readily. Today, you can find bush honeysuckle throughout Franklin Park, where it has spread from neighboring yards. Non-indigenous plants like *Lonicera maackii* can lead to the homogenization of the park by displacing native species. If this ‘biological pollution’ continues, the plant species composition of our park will look just like everywhere else and there won’t be anything unique or special about it.”

“How many of you have been on wildflower hikes in the Great Smoky Mountains National Park in eastern Tennessee?” Brian had asked. “I see that several of you have. Well, the staff there report that 400 of the park’s 1,500 vascular plant species are exotic and that 10 of these are displacing and threatening other species in the park. While our problem here in Franklin Park isn’t that extensive, we encourage homeowners to remove invasive exotics like *Lonicera maackii* from their gardens and plant native species instead. There are lots of attractive native species that serve many of the same purposes as the exotics that gardeners commonly plant. Many of the native species require less maintenance and are more cost-effective in the long-term. I have with me copies of a brochure <<https://www.se-eppc.org/pubs/landscape.html>> that lists native species you can use in home landscaping that I’d like to distribute to you....”

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“Why don’t we just bring some bugs from China to eat the berries so that the plant won’t spread anymore?” The best questions always came from the high school kids, Brian thought to himself. The students in Hillmead High’s ecology club had listened intently to him on Friday morning during the exotic plant pull he had organized at the park.

“You’re right in realizing that this plant has no natural competitors, no enemies, nothing to keep it in check. In their fight against invasive exotics, some biologists have used various means of ‘biocontrol.’ Sometimes it works, like when beetles were introduced from Eurasia, Europe, and Africa to control St. Johnswort, an introduced plant that had destroyed millions of acres of rangeland in this country. But sometimes things go awry. The mosquito fish *Gambusia affinis* and *Gambusia holbrooki* were introduced to control mosquitoes but the fish also preyed on native fish species and are now hybridizing with native fish species in Texas.”

One of the students had interrupted at this point and asked, rather nervously, “How will we know which plants are honeysuckle? What if we pull up the wrong plant?”

“Let me show you how to identify bush honeysuckle, which is also called Amur honeysuckle. This time of the year, most of the native herbaceous plants have died back and the native shrubs have dropped their leaves. Amur honeysuckle is one of the few shrubs that keeps its leaves until late autumn. These plants also produce new leaves earlier in the spring than the native species so it’s fairly easy to identify them. Also, look for opposite leaves and striped bark.”

“Some of these plants are huge. They’re at least six feet tall. Do we remove those, too?” another student had asked.

“Amur honeysuckle can grow six to 20 feet tall, but we’ll leave the ones that are over six feet. Later, park staff will come through and cut them down with chainsaws and then apply a herbicide. Today, we’ll just remove the smaller plants, making it easier for the park staff to work in this area with their chainsaws.”

“Do we just chop the plants down?” a particularly eager student had asked.

“We’ll use our Weed Wrenches® and mattocks to pull the plants up, making sure to get as much of the root as possible. If not, the plants can easily grow back from the roots. Amur honeysuckle is an aggressive plant. It grows quickly, and each bush produces a lot of berries. The berries germinate throughout the year under a wide range of light conditions, and the plants can tolerate a wide range of light and moisture. They grow well in disturbed sites, like along the edge of this picnic area where we are working today. So use your mattocks to ...”

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“Are these berries also from amur honeysuckle?” Jinnie had asked on Friday afternoon as she and Brian were walking through a wooded area of the park. They had been discussing Jinnie’s research for her college senior thesis project.

“No, these are from an endangered hawthorn found here in the park. This is the plant we want to protect,” Brian had told her. “I was hiking this south ridge last week and noticed that some trees had fallen. They probably got blown over in the storm last week. I’m concerned about that small stand of native hawthorns over there. I want to do everything I can to protect it. This is also a great area for native spring wildflowers.”

“I don’t understand,” Jinnie had said. “What does a fallen tree and some endangered hawthorns have to do with exotic plants?”

“Last time a tree blew over in the park, the gap quickly filled in with honeysuckle. Then the honeysuckle began to invade the woods beyond the gap. We need to know more about how exotics invade the core of the park and how their presence affects the overall biodiversity of the area. Scientists aren’t sure whether exotics cause damage to natural ecosystems by competing with native species or by changing the ecosystem processes in the area so that the natives are no longer able to survive. Regardless of the process, I would sure hate to lose those hawthorns.”

“Has this park ever lost any endangered species because of exotics?” Jinnie had asked.

“I’m not sure about here in this park. We don’t have any records of that happening. But almost half of the species and subspecies listed as federally endangered are primarily threatened by competition with or predation by non-indigenous species. Some endangered species are threatened by exotic diseases carried by introduced species. Many are threatened by the habitat destruction caused by invading exotics.”

“Will other people be working on exotics in this area?” Jinnie had wanted to know.

“Not in this area. There are other parts of the park where we depend on volunteers to help us control exotics by manually removing the plants. Controlling and monitoring exotics is expensive and very little federal or state money is available to help. Recently, I read somewhere that the federal government spends only about four cents per acre to control exotics on federal lands. We’ve certainly found that keeping the exotics out is much easier than removing them once they’ve become established. Your research project will help us to better understand the rate of invasion and the impact exotics have on the more pristine core areas of the park.”

Jinnie had mulled this over and then remarked, “So, it seems like over time we would want to record the number of honeysuckles and other species in the gap as well as beyond it, including the area where the hawthorns currently exist. What other kinds of data do you envision collecting?”

“Let’s head back to my office and talk about the various ecological and environmental data you might consider...”

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“Excuse me, sir.” Brian jumped as the sales clerk interrupted his thoughts. “Do you want to buy some honeysuckle? It’s our best-selling shrub, grows in a wide range of conditions, and has beautiful red berries that...”

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## Questions

1. List the characteristics of exotics (ecological and biological) that can enable them to be effective invaders.
2. List the reasons (social, political, and economic) that people have deliberately introduced exotics into the U.S. Name some ways in which exotics have been accidentally introduced.
3. Is there a difference between an “invasive exotic” and an “exotic”? Think about the tulips commonly seen in yards in the spring—or potatoes and rice grown in the U.S.
4. What characteristics of communities increase their invasibility?
5. What are the effects of exotics on community structure?
6. Defend or dispute the statement: “Exotics increase the biodiversity of an area.” [Hint: explore the various meanings of the word “biodiversity.”]
7. Defend or dispute the statement: “Exotics play an important function in urban landscapes.”
8. Should legislation be enacted to regulate the import, sale, and distribution of exotics? If so, should this legislation be at the local, state, or federal level? If not, then why not?
9. Assuming that legislation of exotic species should be enacted, what should it include and what information should be used to determine the laws governing exotic species?
10. Should Brian say anything to the sales clerk or manager about the honeysuckle? What role, if any, do you think biologists should play in forming public policy?



INTER-OFFICE MEMORANDUM

TO: Brian Farley  
 FROM: Mark Taylor  
 RE: Exotics update  
 DATE: 10/19/99

My sister sent me a couple of articles from the *Washington Post* about dogwood anthracnose. You might want to take a look. Here are the references:

"Deadly Fungus Attacks Symbol of Springtime; Area's Dogwoods are Falling to Disease that Got Its Start in Northeast." May 10, 1999.

"Bioinvaders on the March." May 26, 1999.

I don't think any of the dogwoods in the park are infected, but I recommend that the park staff do a survey. I suspect that we are going to get a lot of calls about this so how about including a program on this topic, geared towards homeowners, in our spring workshop series? I could pull it together if you want!

Also wanted to let you know that I spoke with the landscapers at those new condos going up near the south edge of the park. You were right – they are planning to plant manhattan euonymous, crimson pygmy barberry, nandina, and Russian olive. All exotics, but only the Russian olive is thought to be a threat – at least now anyways! The landscapers said they could buy these plants for \$1 each down in Mintville where all the nurseries are. When I suggested planting with natives, they scoffed and said native shrubs are going for \$15-\$20 a plant. Doesn't it matter to these folks that the plantings at every commercial property in this city look exactly the same? Monotonous, predictable landscapes – is that what the general public wants? All green plants look the same to them! What do you recommend that I do now?

BTW: Speaking of money, I was searching on the 'net recently and saw that 3 million acres/year are lost to invasive plants and that the federally estimated costs caused by invasive species in the U.S. are nearly \$123 billion per year (<<http://www.invasivespecies.gov/>>). This includes the costs incurred in natural ecosystems as well as those related to agriculture. Who'll pick up this tab?

FOR: Brian	Date: 10/8/99	Time: 10:20 a.m.
FROM: Chris Patrick		<input checked="" type="checkbox"/> Phoned
OF: Tennessee Exotic Pest Plant Council		<input type="checkbox"/> Returned your call
PHONE: 297-7291		<input type="checkbox"/> Please call
MESSAGE:		<input checked="" type="checkbox"/> Will call again
Wants to talk to you about endorsing legislation to prevent sale and distribution of exotic pest plants in TN. You can see more about the organization at < <a href="http://www.se-eppc.org">http://www.se-eppc.org</a> >.		<input type="checkbox"/> Came to see you
He'll call back soon.		<input type="checkbox"/> Wants to see you
		SIGNED: DP

FOR: Brian	Date: 10/10/99	Time: 2:45 p.m.
FROM: Eleni Galatos		<input checked="" type="checkbox"/> Phoned
OF: Channel 7 News - TV		<input type="checkbox"/> Returned your call
PHONE: 299-3967		<input checked="" type="checkbox"/> Please call
MESSAGE: Wants to do a story about exotics in Franklin Park. Recalled hearing an NPR <i>Living on Earth</i> radio spot < <a href="http://www.loe.org/shows/shows.html?programID=99-P13-00006#feature1">http://www.loe.org/shows/shows.html?programID=99-P13-00006#feature1</a> > about some Presidential Order on exotics. And a White House Press Release < <a href="https://clinton-whitehouse5.archives.gov/textonly/CEQ/020599.html">https://clinton-whitehouse5.archives.gov/textonly/CEQ/020599.html</a> >. She wants to bring a camera crew to the park and interview you.		<input type="checkbox"/> Will call again
		<input type="checkbox"/> Came to see you
		<input type="checkbox"/> Wants to see you
		SIGNED: DP

From: Anagha Dahr (anagha.dahr@fpnc.org)  
 Date: Thurs, 20 Oct 1999 09:35:11  
 To: Brian Farley (Brian.Farley@fpnc.org)  
 Subject: Conversation with Tennessee DOT

Brian:

An update on my phone conversation with Ralph Gorlin, Director of our state DOT. I called to talk about those California poppies they planted along the southeast side of the park after they widened the highway there. Ralph said, and I quote him, "Anagha, everyone loves California poppies. The public thinks they are beautiful. We love them. They are easy to plant, good for erosion control, grow fast, and are cheap. Survival of the fittest and competition—isn't that what natural selection is all about? Don't they increase the biodiversity of the park if they end up in there? Isn't biodiversity what you park naturalists are trying to protect?"

I know that some folks believe that exotics can play an important ecological role in urban landscapes, especially when indigenous species are absent or niches are unfilled. But I just have a hard time seeing how exotics can fit into our preservation management plan for the park. Or the city.

How are we ever going to impress upon these folks that scientists have a process for determining whether or not a non-indigenous species might pose a threat to natural areas? Is it too much to ask if the plant is invasive elsewhere, what its native range is, how it reproduces, how rapidly it grows, how easily the seeds germinate, or whether it is related to other species that are already invasive?

I wish we had an easy way to quantify the damage caused in natural areas by exotics so that we could convince employees of these various government agencies and politicians to pay attention. They seem to only care when agriculture, industry, or human health is at risk. But what about the loss of REAL biodiversity?

How do you suggest I follow up with Ralph?

Anagha