CIPWG 2016 Symposium Wrap-up*
Charlotte Pyle, Landscape Ecologist

We are coming to the close of the 8th Biennial symposium of the Connecticut Invasive Plant Working Group. It's been a wonderful day. **Please give a hand to the organizers of this symposium**.

I know that most of us are from Connecticut, but I want to tell you that we had attendees from 10 states... all of New England, plus New York, New Jersey, and Maryland. And, our attendee from farthest away was from Tennessee.

I have attended all the CIPWG symposia beginning with the first one out at Sessions Woods in 2002 -- and I really have enjoyed this one. (That's not to say that the others were lacking or that we can't do even better in 2018.)

Our Keynote Speaker, Jil Swearingen, has done much over the year to promote awareness of invasive species including factsheets, the Mid-Atlantic Invasive Species booklet, and mapping of invasive species locations. Jil's insightful talk this morning about factors that affect invasive species movement and the potential for invasive plants of the Mid-Atlantic States to come to Connecticut gave us a lot of things to think about. And, Bryan Connolly's talk in the afternoon zeroed in a little closer on some new species we might be seeing very soon.

What I particularly like about this year's program was the way it builds on previous symposia; and also the way people are applying such a wide variety of expertise to invasive plant management. For example in the posters and concurrent sessions there was information on collecting spatial data with quad-copters, using livestock to go after invasive plant infestations and finding ways to include native plants in situations such as farms and roadsides where the previous standard has been non-native plantings.

Now, as you know, the trouble with those concurrent sessions in the afternoon is that until we learn to clone ourselves, we can't attend all the sessions. Session 3, Management Success Stories and Progress Reports, was particularly uplifting in the way volunteers really made a difference. Of course, that doesn't happen without someone seeing to the big picture and doing a lot of planning and organizing.

We have learned that invasive plant management isn't just about getting rid of invasives, it is managing invasives so that the human goals for the site can be reached. And, it was good to see that protecting native plants and habitats are at the forefront. It was particularly uplifting to hear about groups of people who have stuck with the picture for many years and know their site very well and have made a lot of good progress in protecting native habitats.

Have you ever noticed that when you get heavily involved in something, there comes a point where you are so involved in the topic that everything you run across seems to have a connection to that topic? Take the topic of invasive plants, in my situation. The other day I watched the old movie *Invasion of the Body Snatchers*. Here is a quick summary of the story viewed through the lens of **invasive plant issues**.

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The situation involves an *invasion* of previously unknown *plant* seeds. The exact *pathway* of the invasion is glossed over, but we know the seeds are *not native*. (In fact, they are extremely alien; they fell from outer space!) Once *introduced* to Earth, the seeds take root in the fields where they landed. They ultimately produce extremely large seed pods. When the pods open, we discover they contain duplicate copies of individual people. And the Pod People then take the place of the original people. I will note that the *details of the biology of the invaders don't seem to be very well understood.*

At first, *the replacement of native individuals with the invaders goes unrecognized*. To the casual observer, things seem normal. And, like many of our invasive plants, the invaders are pretty well-established before the nature and gravity of the problem becomes obvious.

The pod people turn out to have a *huge potential to cause change* -- not ecosystem change (as is the case with invasive plants), but change in the very fabric of society. Although the pod people easily displace the original people, they *don't provide the same functions* in society. They lack something that is needed -- in this case, the invaders are described as lacking emotion; they lack a sense of individuality and purpose.

The hero meets with skepticism and has a lot of *trouble convincing other people there really is a problem*. Also, the *extent of the invasion turns out to be much greater than he first realized*. And, finally, to top it off, the hero discovers that people are actually *propagating* the invasive pods.

It becomes obvious that *control* of the invasion is going to be very difficult. The movie ends without us really knowing whether stopping the invasion is going to be possible.

I think *Invasion of the Body Snatchers* unwittingly captures a lot of dilemmas we have faced in the management of invasive plants. We don't really know where the next invasive is going to come from. (Probably NOT from outer space.) But, as we have heard today, we can certainly expect some new invaders in Connecticut.

If we are to have any chance at controlling new invaders, it will be important to understand their biology. It was good to see that students like Allysa Matz are studying invasive biology -- in her case trying to understand how the beetles used for bio-control of Purple Loosestrife find new plants.

It also will continue to be important to understand what habitats invasive plants grow in, how they spread and reproduce, and how they disrupt our native ecosystems. Also, for each species, we need to know what control measures are effective and what time of year should they be done.

If you've been around for awhile, you will have heard of "EDRR" (Early Detection and Rapid Response). The more modern version is ED-*R**A***-RR (Early Detection followed first by *Rapid **Assessment***, -- and then, Rapid Response).

For Early Detection, we will likely be "fortunate" that some of our new invaders will be known from further south. From the work of Jil Swearingen and others, there will be readily-available information on what they look like and suggested ways of managing them.

How many of you saw some plants you had never seen before at the live plant displays? CIPWG can play an important role in disseminating information on plant ID. I was particularly pleased to see some of the Research List plants included.

You can visit the CIPWG website for more information on species identification and management (cipwg.uconn.edu - click on *Meet the Plants*). You might not know it, but in addition to all the links for Fact Sheets about invasive and potentially invasive plants on the State's official list, the CIPWG website also has links to information on what the State calls the "Research List." This is a list of plants that the State would like to find out more about.

It is worth looking at the Research List because it can serve as an early detection list. But do note that it is but a Research List. When more information is gathered, it may turn out that some plants on the list are not really behaving invasively in Connecticut.

But, we won't know if plants are *behaving* invasively or not; and, we won't know if *new plants* are coming into Connecticut, unless YOU (yes, **You** -- All of us) keep ourselves informed and keep our eyes open. If you find one of the Research List plants or have something to report about it you can email CIPWG at ReportInvasives@uconn.edu.

By the way, funding for the State's Invasive Plant Coordinator was cut to zero in 2016, so CIPWG could use a volunteer to coordinate these reports. If you are interested, contact Donna.Ellis@uconn.edu.

Also, as Jil Swearingen noted, another way for the locations of new invasive plants to be reported for Connecticut is via EDDMapS (Early Detection and Distribution Mapping System) which hosts the Invasive Plant Atlas of New England's (IPANE's) online reporting system (http://www.eddmaps.org/ipane/). You may click on the *Report* tab or you may scroll down to the links to the *OutSmart* Apple and Android phone apps for IPANE users. The phone apps are particularly useful for mapping exact plant locations and submitting photos of invasive plants directly from the field in New England. Let me encourage you to check this out.

Going beyond the *detection* of new invaders, we need to work to find ways to ensure that there will be timely *action*. We need contingency plans. And, we need to know that equipment, materials and labor also will be readily-available when they are needed. I think that CIPWG should think about setting up a committee to create some sort of template for Rapid *Assessment* that would fit the political realities of Connecticut (something that would be relevant at the Town level; and something that would also help Towns along with private groups like Land Trusts to become more cognizant of ways to leverage materials, equipment, and labor).

As for Rapid *Response* itself: CIPWG, the *organization*, has helped by organizing weed pulls, or publicizing weed pulls organized by other groups. But it will have to be CIPWG *members* and other interested citizens who provide the political pressure to make sure the needed funds and other resources are in place to be called upon when needed.

In the *Body Snatchers* movie, the people propagating the *pods* are pod people whose intention is to destroy the human race. In real life, I don't think there is anyone propagating invasive *plants* with the intention of wreaking ecological havoc, but I do think that the propagation and the **purchase** of invasive plants is a problem, in Connecticut, and in other states.

CIPWG has been working on a list of native herbaceous alternatives to invasive plants (see http://cipwg.uconn.edu/cipwg-publications/ and scroll to the bottom of the page under Native Alternatives). That particular list is restricted to Connecticut native plants (and only those that [1] are able to be propagated by nurseries, and [2] are not rare or vulnerable to having people go out and dig them up to sell). Although we chose to provide a list of Connecticut natives, it is important to keep in

mind that the over-riding issue is not that you always select only Connecticut native plants, but rather, that you do not spread invasive plants.

You have a copy of the herbaceous alternatives list in your packet. You should view it as a work in progress. We need more information, particularly: (a) in what situations are some of the plants too weedy, (b) which plants are toxic to livestock, or people, and (c) are there other plants, native to Connecticut, that have been successfully propagated somewhere and should be added to the list?

One of the next steps for the CIPWG Native Alternatives Committee is to do a nursery survey to find out which of the Connecticut native plants on the list are currently being sold in Connecticut. I believe if there is a demand for native plants, people will propagate them. So, it is up to us to educate people to create that demand. And it is up to us to plant natives and to contribute to the communal wealth of experience about which plants work best in different situations in Connecticut (or where-ever your home state is).

I found Jessica Lubell's poster on native shrubs very timely. And, it really got to the place where the rubber meets the road -- the challenges for the nursery industry in developing the market and the know-how for propagating native shrubs. It's not just a question of what natives can we ecologist-types recommend for what situations. There also is the question of whether or not those plants can be propagated profitably.

Returning to the *Invasion of the Body Snatchers*, we saw that *control* of the invaders was going to be difficult. And that certainly is true here in the real world.

When I first got involved with invasive plant management, I had the belief that we could eradicate invasives -- that we could go into a place and get rid of invasives once and for all. But, there are multiple reasons we won't get rid of invasives once and for all. First, we live in a landscape where there are too many places that serve as seed sources for invasive plants. Second, these invasive plants are amazingly vigorous, both in their re-growth and in the amount of seed they produce. (As most of you have probably noticed, even if you think you have gotten rid of all the invasives at a site, when you go back in subsequent years, the invaders will often still be present to some degree.)

Third, there are more invasive plants than there are people. So, we will always have to *prioritize* where we are going to put our time and energy. And, we will have let other sites go.

One of the things about invasive plant biology that I didn't used to grasp is that for invasive species (which are non-native species that are successful invaders for reasons usually including their ability to rapidly reproduce), a 90%, or even a 99% reduction in population density still leaves the door open for the invaders to bounce back. And often they bounce back pretty quickly.

So I have come to realize that for most species and most sites, the goal is not eradication. Rather, it is keeping the invasive plant size and population density down to a level that native plants and animal life can continue to flourish at the site.

This means that we need good understanding of the invader's biology -- how quickly will their populations rebound and at what point in their life cycle are they most sensitive to control measures. And we need understanding of the biology of the species we are attempting to promote. For the desired trees and shrubs, how can we give them a boost so that they can get ahead of the invasive

growth and hopefully shade the invaders out. And we need to take into account what conditions in the ecosystem are most important for the animals we are trying to support.

This brings me to the need for monitoring after control activities. I think that it cannot be stated enough times that management plans must include follow-up monitoring. Along with monitoring, we need contingency plans that take into account what level of invasive presence is too much. Further, the initial planning needs to plan for the money, labor, materials, and equipment that will likely be required to deal with invasive resurgence.

Now, you may be starting to think that if we spend all our energy on control and then on follow-up, we will never have time to enjoy the woods. And, that's not a good situation.

When I worked for the United States Department of Agriculture's Natural Resources Conservation Service, one of the landowners we worked with walked his land frequently and pulled a few invasives every time while he was out enjoying the land. He did not set himself with a goal of pulling X plants every time he was out there. Rather, he enjoyed walking the land and occasionally he pulled some seedlings or clipped re-sprouts.

Over a year, this had an impact. And, the enjoyment of frequent walking of the land also gave him on-the-ground knowledge of where more intensive follow-up management would be most beneficial.

This leads me to my final point. You can think of invasive plants a lot of different ways. First, they are generally undesirable additions to our landscape (though things could be a lot worse --- think Big Box Stores and acres of asphalt).

Invasive plants also are a wake-up call -- calling us outside to get to know our natural landscapes NOW. So get out and just enjoy the natural landscape on your own land, on Town land, on Land Trust land, or in State Parks and Forests; and so on.

The more time you spend out on the land, the more you will be alert to changes . And, you will be more likely to spot invasive plants in earlier stages of invasion when they are easier to manage.

The more time you spend out on the land (even in places where invasive plants have taken hold), the more you will come to learn what is special about different places. And, the more you know about what is special about different places, the more able you will be to offer help in prioritizing where limited funds and energy should be spent so that we preserve the native habitats and the character of the landscape that makes it home for us and home for native wild-life, both plant and animal.