Bud Buds and Honeysuckle, Episode 6

Intro music: **8-10 seconds. Music is 'Ragtime Annie' as performed by George Ainley and the Stringfield Springers. It is used with permission.**

Welcome and Introduction

Elizabeth Hello and welcome to Bud Buds, the podcast that takes you into the budding realm of invasive plants and their seasonal changes, and what you might be witnessing out your window or in the woods in Vermont. I'm Elizabeth, a scientist for the Vermont Department of Forests, Parks & Recreation. I'm joined today, as usual, by my co-host and bud, Lina …

Lina Hello! I'm Lina, a natural resources steward for the Vermont Department of Forests, Parks and Recreation. Somehow, it's spring again, Elizabeth – and it's one of my favorite times of year....

Elizabeth Oh?

Lina Well, it's currently April. The sky is bright blue with little white puffy clouds, the sunsets are amazing, and…
Elizabeth And??

Lina Well, this one may not be so widely appreciated, but it's one of the best times of year for spotting invasive plants where I work in western Vermont. And plants growing is kind of the point of this podcast....

Elizabeth Ha! That's right!

Topic 1: Invasive Plant Adaptation – Extended Leaf Phenology

Lina Yeah, it's actually a good time to see these plants all across the state. One of the interesting adaptations many invasive plants have is called extended leaf phenology.

Elizabeth That means they get their leaves early in the spring and keep their leaves longer in the autumn compared to most of our locally evolved species.

Lina ...and we have fellow National Phenology Network observers who have studied this phenomenon in their 'Shady Invaders' project. They're trying to tease apart what the regional impacts from extended leaf phenology might be on not just the success of invasive plants, but also how that early spring shading from invasive plants impacts deciduous forest ecosystems...

Elizabeth ...and their research showed that at more northern climes, both invasive and local plants are limited by cold spring temperatures. And this might seem like a bonus for Vermont, except that spring temperatures are expected to increase across New England due to climate change, which might give invasive plants like shrub honeysuckles a competitive advantage, like what is being observed right now in more southern climes...

But we should also talk briefly about ***why*** this phenomenon is even occurring!

Lina Well, there are a couple reasons this adaptation could be useful. One is that the earlier a plant can start photosynthesizing, the more energy it can generate to grow and reproduce.

Elizabeth And another advantage of leafing out early and shading out potential competitors, is that these plants are making it harder for local plants to get the energy ***they*** need to survive.

Lina Without anthropomorphizing too much, it's a pretty clever adaptation. We'll link to the Shady Invaders project and their results in the show notes.

It's funny, but I have a lot of respect for their adaptations, and this is one of the most obvious ones, so it's sort of exciting to see in this weird way.

Elizabeth agreed…I think we can both recognize the remarkable features of these plants while understanding the lasting negative impacts they can have on things we value...

Lina Aaand, as an invasive plant manager and observer for the various phenology projects ***our*** program runs, it's nice to be able to see where they are!

Elizabeth Yes! Tracking phenology is crucial for our work as land stewards. We'll tease the phenology projects a few more times, and then later in the episode we'll share how you can get involved...

Lina ...if you aren't already!

What are you seeing in your neck of the woods, Elizabeth?

Elizabeth Things in central Vermont aren't too far afield from what you're seeing – many trees and shrubs are experiencing bud swelling, and one species in particular is getting pretty close to bud break...

Topic 2: Science Words of the Day

Lina Bud swell? Bud break? We're dropping the....

Together ~* science ***words*** of the day *~

Lina .....early in this episode, aren't we, Elizabeth?

Elizabeth You know it! It's so exciting! We're the bud buds, and we finally get to talk about buds! Anyway, some trees and shrubs that have scaled buds....

Lina scaled buds means the buds have scales -- kind of like how snakes use scales for protection...

Elizabeth ...Right, and in this instance, the scales are used to protect parts of the plant that are forming, like leaves and flowers. And for some trees and shrubs, those scaled buds are formed at the end of the growing season, go dormant, and when the conditions are right in the following spring, the tight-packed scales loosen as internal growth occurs, and visually, it looks like the buds are "swelling" up!

Lina And then they hulk out – I mean break out -- like a chicken out of an egg and that's called "bud break" or "breaking leaf bud". It's pretty cool to see.

Elizabeth It really is cool. Bud swell gives us and other phenology observers a heads up that phenophases like "breaking leaf bud" are about to occur.

Lina I'm watching invasive plants like shrub honeysuckles and common buckthorn really closely this spring as part of the Vermont Invasive Plant Phenology Project, and they seem to be at breaking leaf bud and bud swell, respectively.

Elizabeth And today we're going to do a deep dive on one of those plants.....

Topic 3: Honeysuckles

Together Honeysuckles!

Lina Now, I remember picking honeysuckle flowers as a kid, and being able to drink the nectar from the base of the flower. I've tried that with shrub honeysuckle in Vermont, though, and had no luck. Do you think that could have been a different species?

Elizabeth Oh, definitely. There are hundreds of species of honeysuckle worldwide, including some that evolved in this region. And one invasive vine honeysuckle that is extremely common across the U.S. is probably the one you're remembering – it is quite fragrant and produces a lot of nectar. Here in Vermont, there are also four species of invasive ***shrub*** honeysuckle – they behave and look very similar, so we usually just refer to them collectively as "shrub honeysuckles" or "honeysuckles".

Lina It is definitely hard to keep them straight, but there are ways to identify them from the local honeysuckles

Topic 3a: Identification

Elizabeth Totally! Invasive honeysuckles have some pretty notable characteristics. As we already mentioned, it's among the first plants to get its leaves in the spring, so if you see something with leaves now – especially if it's shrubby looking (...it has many stems and branches with woody bark, and it's not a tree) – there's a good chance it's honeysuckle

Lina Another characteristic is that bark – it tends to be khaki colored tending toward gray as the plant gets older, and can be pretty shaggy

Elizabeth And a quick, key feature to distinguish invasive honeysuckle at any time of year are....

Lina Hollow stems and branches! The center of the stem or branch is brown, and older growth will be completely hollow, like a drinking straw. This brown, hollow center is called the "pith" – and that's a bonus science word for you.

Elizabeth If you really want to know what species of honeysuckle you're looking at, you'd turn to the leaves. They all generally are light green and egg-shaped, arranged oppositely, and some have hairs and some don't. For the Vermont Invasive Plant Phenology Project, we're observing *Lonicera morrowii*, Morrow's honeysuckle, perhaps the most common invasive honeysuckle in Vermont, and there are hairs on the top and underside of the leaf.

Lina Another common invasive honeysuckle *Lonicera tatarica*, Tatarian honeysuckle, lacks hairs on the leaves, so it's pretty clear when you're looking at one of those!

Elizabeth Yeah! And slightly confusingly, Tatarian and Morows hybridize, resulting in *Lonicera* x *bella* (which sounds like a great new collab, but not really) and though hybrid showy honeysuckle can have hairs on its leaves, the hairs are much less dense, and that's when turning to other features like flower color can help....

Lina ... uhm, ok. This sounds like an opportunity to turn to another feature of our podcast – the show notes. We'll include information and images on similarities and differences between these species in the notes

Elizabeth Ha! You're right, if you want to nerd out with us on species identification, we'll include a great comparison chart!

Topic 3b: Impacts

Lina Elizabeth, each invasive honeysuckle started as a celebrated ornamental plant but now are considered invasive plants. I know for a lot of folx it can be confusing – why do we care now, when these plants have been around for decades or longer? Is it even really a problem?

Elizabeth You're right, Lina. For many, the impacts of invasive plants like honeysuckle aren't immediately obvious. How can the pretty plant in your yard be impacting biodiversity and forest regeneration? And part of that may be timescale – it takes time for one escaped honeysuckle plant to turn into a dense thicket in the forest understory. But when that point is reached, there's a loss of local plants through that shading and outcompeting we mentioned earlier, which directly impacts the success of trees destined to be part of the canopy, like economically and environmentally important oaks and maples, and leads to a loss of co-evolved habitat and forage for wildlife and insects.

Lina For example, I've seen birds feeding on honeysuckle berries, and nesting in its branches, but we know that this is impoverished habitat for these animals. The fruit from invasive honeysuckles doesn't have the same nutritional value for wildlife as locally evolved plant species, so, even though there are tons of these fruits available they don't support a healthy population -- it's like us just eating snacks instead of healthy, balanced meals. Also, there's a potential increase of predation on nesting birds correlated with higher levels of invasive plant infestation that could negatively affect those bird populations.

Elizabeth ooof, OK, impacts to the environment, impacts to the economy...

Lina ....and impacts to **my** human health! Those sugar maple saplings getting shaded out are destined to create maple syrup, which I love maybe even more than the honeysuckle nectar from my youth!

Elizabeth and that's **all** bad news for long term forest health.

Lina So what can we do?

Topic 4: Call to Action

Elizabeth Honestly? If you're worried about honeysuckle on land you steward, the plants have shallow root systems and come up with some careful persuasion.

Lina Ha! Yeah, I have to say that the sound of honeysuckle roots popping out of the ground after a little convincing from a weed wrench is one of my favorite sounds on earth. Before we remove the plants, though, we first assess the site to determine whether the physical removal will cause more harm than good – soil disturbance is no joke – depending on where the plants are growing it can lead to erosion issues, exposing a seed bank, and more.

Elizabeth I know just what you mean! When we do remove invasive plants, we like to hang them from nearby plants with their roots up. This serves a few purposes – it keeps the invasive plants from re-rooting, **and** as the invasive plants decay, it returns the nutrients from the plants right back to the soil, helping with remediation.

Lina We call it "decorating the forest". So if you're ever on a walk through a state park and notice some shrubs drying out in some trees, that might be what you're seeing.

Elizabeth, we've mentioned it already, but I think if we're talking about what each of us can do, that we should share about how listeners can get involved with the phenology projects!

Elizabeth Of course! We've talked on the podcast before about how phenology is the study of the life cycle events of living things – and how that kind of data can help guide the timing of invasive plant management work,….like

what we just discussed...., as well as track the impacts of climate change on plants in Vermont. Our program runs a few projects geared towards tracking the phenology of invasive plants.

Lina we're spearheading a variety of projects for a wide range of ability and availability. Whether you can take part once a month or every week, are always on-the-go or want to monitor plants in your neighborhood, there's an opportunity for you to add meaningful data to our community science projects.

Intrigued? We'll include links in the show notes for how to get involved.

Elizabeth Already involved? Thank you! We're so grateful for everyone taking part – managing the impacts of invasive plants is a process, not an event, so every helping hand is meaningful.

Thanks to Sponsors and Sign Off

Elizabeth ...and if you see honeysuckle or any other invasive plants, or have a topic you'd like us to address, please let us know about that too.

Lina Until then, we'd like to acknowledge the financial and technical support provided by the USDA Forest Service, Northeastern Area State and Private Forestry that enables us to run projects and provide outreach such as this,

Elizabeth and our major project partner, the National Phenology Network, bringing together community members, scientists, managers, and educators, to advance the science of phenology.

Lina And most importantly, thanks to you, our listeners, for being interested in the science of phenology and being willing to

Together "Learn. Get Involved. And Make a Difference."

Outro music: **8-10 seconds. Music is 'Ragtime Annie' as performed by George Ainley and the Stringfield Springers. It is used with permission.**