Restoration Roundup Episode 2: Native Tree Stock transcripti...

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SPEAKERS

Liz Woodhull, Alison Adams, Lynda Prim, Annalise Carington

A Alison Adams 00:07

Welcome to restoration Roundup, a monthly podcast that explores recent research on new and emerging best practices for and stories about riparian forest restoration. I'm Alison Adams. I'm the watershed forestry coordinator with University of Vermont Extension and Lake Champlain Sea Grant and I run the watershed forestry partnership.

L Liz Woodhull 00:25

And I'm Liz Woodhall, a junior at UVM Rubenstein School of the Environment and Natural Resources, studying Environmental Studies and parks, recreation and tourism.

A Alison Adams 00:47

Welcome to the second episode of restoration Roundup, where today we'll be talking about the shortage of native trees for restoration work in Vermont and why that matters. Our guests are Annalise Carrington, and Lynda Prim. Annalise is the conservation specialist with the intervale center, a position she holds through a partnership between the intervale center and US Fish and Wildlife. Lynda Prim is the manager of the intervale conservation nursery. For the past several months, Annalise and I have been working on a project to address the native tree supply in Vermont, which included serving 18 existing and aspiring growers and 21 buyers of native tree seedlings across the state. And what we found is that all of our nurseries are operating at or near capacity, and we're sourcing approximately half of the 130,000 trees that we plant in restoration plantings from out of state. So if we want to produce all of those trees locally, we need to about double in state production. And on top of that buyers indicated that they expect to need 50 to 60% more trees in the next five to 10 years. So soon, we'll need even more production capacity. And this issue isn't specific to Vermont either; a recent survey by American Forests found that nursery production needs to more than double from 1.3 billion seedlings per year to more than 3 billion per year in order to meet even half of the reforestation potential in the lower 48 United States by 2040. So the ultimate goal of this project is to identify ways to support growers so that we can increase the supply of

native trees in the state. And that's what sort of inspired us covering this topic on this podcast. So I will be one of the interviewers on this episode. But I may also jump in from time to time with answers and explanations. And finally, I want to mention that thanks to COVID we're recording this in my house. So you might hear the sounds of a few pets in the background, just adding that sort of real life element to this. So with that Annalise and Lynda, welcome to the podcast.

A Annalise Carington 02:32

Thank you glad to be here.

L Lynda Prim 02:34

Yeah. Good to be here.

A Alison Adams 02:35

Both of you, Lynda and Annalise work at the intervale center in Burlington in different capacities. Can you describe in a little more detail for our listeners what each of you do?

A Annalise Carington 02:43

Yeah, sure, I have worked through a partnership between the US Fish and Wildlife Service and the intervale center for the last four years. With the US Fish and Wildlife Service. I work specifically with a program called the Partners for Fish and Wildlife Program, which works with local stakeholders and private landowners in Vermont to restore and enhance wildlife habitat and I have specifically supported riparian restoration projects, mostly larger scale tree and shrub plantings. And with the interval center, I've worn a few different hats but most recently, I've been working most closely with the interval conservation nursery. I've helped coordinate our services work so we operate a planting crew that does off site tree and shrub plantings in the spring in the fall, and we do stewardship and maintenance activities for restoration projects throughout the summer.

L Lynda Prim 03:45

This is Lynda and my role as the conservation nursery manager is basically to be in charge of systems design and all aspects of nursery production sales, budget, planning, and I have been the manager only for about seven months. Half of our team is new at this time, so I bring to this role, specifically a background in seed conservation. Also have a long career as a technical service provider to farmers and some background in farm business planning through farm viability.

L Liz Woodhull 04:30

So can you guys explain a little more about how you became involved with nursery operations and what does a typical day look like in this kind of work?

A Annalise Carington 04:39

So I started engaging with nursery production more on the purchasing side of things. So through my work with Partners for Fish and Wildlife Program, I've supported riparian restoration plantings, and we've purchased plant material through the interval conservation nursery, and I've also been involved in coordinating planting projects and stewardship projects utilizing the crew that's operated through the nursery. So plantings that happen in the spring and the fall and also stewardship work that happens throughout the summer season.

L Lynda Prim 05:15

So I mentioned earlier that I'm, the new manager at the nursery and I came to this work actually, around from 2011 to 2014, I was the technical farm advisor for NOFA, Vermont for veg and fruit. And my position as a technical adviser to Farmer started the day after Hurricane Irene hit. So it was very much on my mind how to mitigate extreme climate events for farmers. So that was my first encounter with the intervale conservation nursery because we went to the nursery to discuss what trees they had available and we were writing some grant proposals to look at climate mitigation through productive riparian buffers. So that was actually my beginning to my path here. But a typical day at the nursery is anything from getting our equipment ready to go to the field. So a typical day during this time of year is we just finished transplanting, so we bring things from the greenhouse to the field. And we're getting ready for harvest, so a typical day, coming up for harvest will be that we go out with our plant lifter, which is a very specialized tool. So we are, we are somewhat mechanized, and this specialized tool goes through the field and literally lifts bare root seedlings out of the ground and then we have to protect those buried ceilings until we get back to our pack shed, where we process those and prepare them to be distributed to our partners through Fish and Wildlife, Forest Service, other conservation organizations to wherever their their destination is. And we have a pretty much state of the art cooling system so that we can either keep the plant material fresh, or store the plant material in a kind of forced dormancy until they're ready to go to the field.

L Liz Woodhull 07:35

I just have a quick question, little curious, how long does this process usually take?

A Annalise Carington 07:41

Depending on the species, the the turnaround time at the nursery will be anywhere from one season once they're transplanted out into the production field to up to three or four seasons of growth in the in our production field before harvest.

L Lynda Prim 07:58

So we have we have really unique challenges in the nursery because we have to care for the plants in the same way whether they're in the ground for one year or three years. So you know, it's a lot of labor to maintain those plants until they're ready for harvest.

A Alison Adams 08:14

Can you guys for our listeners who might be less familiar with what happens to those trees afterward? Can you describe briefly where those trees are usually headed and how they're usually used?

L Lynda Prim 08:23

So either restoration, habitat creation enhancement, buffers, farms that are mitigating runoff through crap or equip grants, things like that.

A Alison Adams 08:35

So Annalise, can you describe what made you begin to be concerned about the availability of locally grown trees and shrubs for restoration plantings.

A Annalise Carington 08:43

So for the riparian restoration work that I support, we purchase in the quantity of thousands of stems of trees and shrubs every year for plantings. And the last few years we've needed to try to place our orders much earlier in the season and it's become a lot tighter working with nurseries to secure enough plant material for our projects. And, it's become clear to me that this isn't unique to our program by any means. I've helped pull together a working group of other riparian restoration practitioners across the state the last couple of years that now the the watershed forestry partnership is coordinating and every year that we've hosted our annual meeting, plant material availability and in sourcing has has been a topic of conversation and a concern for for partners across the state and particularly appreciating the the amount of work that goes into planning a restoration project to connect with landowners and get them engaged to pull together the partners in the match funding required to implement the project, all of that is challenging enough and then to have just access to plant material be sometimes a barrier to implementing a project. That is definitely something that I want to see addressed and that I know the the riparian restoration community across Vermont wants to see addressed.

L Liz Woodhull 10:20

So why do restoration practitioners care about having locally grown trees and shrubs?

L Lynda Prim 10:26

Well, this is something Annalise and I've been working on. So the importance is that the genetic diversity of not just the seeds, but the plant material itself, and how whatever watershed or microclimate or ecozone that those trees developed in does impact their genetic makeup. And so things like adaptability to different sites can take years for a tree because trees take so long to grow. And so really being conscious of where the trees came from, and trying to make sure that we are gathering seed and plant material from very widely through different watersheds will help those trees adapt to a variety of sites or developed disease tolerance or disease resistance also keep the gene pool broad so that the trees, you know, can adapt over time.

A Alison Adams 11:24

Yeah, I had a follow up question about that, that I guess I hadn't really considered before. So when you're thinking about collecting seed, or cuttings, from different watersheds, and then bringing those up in the nursery, would you ever, I imagine it would be a logistical nightmare, but try to target you know, people who want plantings for different watersheds to get the things that are from those watersheds? Or is it better to give them sort of diversity?

A Annalise Carington 11:48

Yeah that's a great question. And so we are trying to expand our range for collection to different watersheds across the state because like Linda mentioned, you will have those locally adapted genetics then built into those those trees and shrubs that you would ultimately be reintroducing in a restoration context in those areas. It's an interesting question whether there could be some value in having genetic diversity from other places, and like the the idea of assisted migration or even introducing genetics from other areas here, generally southern or more warmer, lower elevation areas, to other watersheds in the state. And I'll just add to that, beyond the benefits that restoration practitioners see in terms of plants being better ecologically adapted to our landscape and the conditions that they're being planted in. When you think about supply chain dynamics in growing plants locally, here, we're limiting our climate footprint, we are mitigating risks in terms of transporting disease or pests across state lines; We're also supporting our local green economy here and providing jobs. And as that that national report alludes to this as an issue not just in Vermont. So I think we're going to have issues in sourcing from other states going forward. So in some ways, having that that market here builds in some resiliency, here in Vermont.

L Lynda Prim 13:17

Annalise mentioned the supply chain. And actually the intervale conservation nursery itself, when it was founded in 2002, was kind of in direct response to the state nursery in Vermont closing and that is still happening. Increasingly, it may be that smaller nurseries that are doing the more kind of ecological management, really being concerned with with more local regional germ plasm there's some movement towards that and you know, this is a longer discussion probably, but the state nurseries are highly subsidized. So that leaves commercial nurseries and you know, there's a lot of fossil fuel involved in both the way they grow trees and also using herbicides and HTA crews to run these industrial nurseries and then transhipping the trees. So, you know, all in all, I think there's there's a lot of reasons to look at more regionalized nurseries that are managing for biodiversity.

L Liz Woodhull 14:32

Do you know how many nurseries like within the state of Vermont or Chittenden County specifically, there are?

A Annalise Carington 14:39

So, through the survey work that Alison and I did, we connected with seven existing growers in the state which we believe captures all of the existing nurseries growing native tree and shrub material specifically for the conservation or restoration market. And the scale really varies, the inner Conservation nurseries the largest, there are a couple of other nonprofit nurseries that are affiliated with conservation districts in

the state that grow a mix of bare root and container material and then there are several smaller for profit nurseries that primarily grow container material. And it became clear in our survey work, that the dynamic in the state with some for profit growers and some nonprofit growers, that will be a consideration to address as we're thinking about what the needed supports are and how we consider market development, given that dynamic.

L Lynda Prim 15:39

To give you an idea, you know, kind of like nationally, what's happening is that, I just participated in a webinar series on conservation nursery technology with a national webinar, and it was very interesting because either the nurseries participating were very industrial scale, or they were maybe producing 1000 buried stems a year. There were no other nurseries in our category. So like, for instance, this year, we propagated 55,000 stems and we are looking to harvest probably in the 60,000 plus range. So there was a lot of interest in our nursery in this webinar, because we represent a new scale and a new approach to nursery management. So there was a lot of interest in what we're doing.

A Alison Adams 16:41

Can you explain the difference or sort of what specifically you mean by how many stems you propagated versus how many you're harvesting.

L Lynda Prim 16:48

So the difference is that we propagate, from seed and from cuttings. So whatever we propagate in the nursery from seed or cuttings, and then transplant to the field, that's what that's what those 55,000 stems represent. Then once they get in the field, some trees take one year, some trees take three years before we will harvest them. So the 60,000 number for harvestable stems represents the bare root that we will take out of the ground starting next week. So the numbers that we harvest represent orders to certain degree for trees that we have from projects. So some years we have new projects, and other years we have projects that have been ongoing. So right now we somewhat plant for the demand of the projects that we know are out there. And we do have plans to expand the nursery, but we're not sure what the ceiling is. Right now I'm projecting the ceiling for us, given our productive capacity, is probably around 85,000 trees a year. And that is just a fraction of the demand in the state of Vermont.

A Alison Adams 18:09

And when you say productive capacity, you're referring to how much land you have available and the current infrastructure that you have or?

L Lynda Prim 18:16

Land, infrastructure, and staffing.

L Liz Woodhull 18:19

So what are some of the key challenges that producers and restoration practitioners face related to growing and sourcing native tree stock?

A Annalise Carington 18:28

Yeah, I can speak to that, from the perspective of restoration practitioners or those purchasing materials. So the the key federal and state programs and other grants that fund restoration work have limits on what you can pay for plant material through those projects and that has limited our ability to purchase local material that inherently is at a higher cost for the reasons that Lynda was describing around the the way that plant material is grown at smaller scales here, most of those price points are set at a federal level. So if you are thinking about the price point that a large industrial scale nursery is able to sell their plant material for, it's different than what a nursery here in Vermont is able to sell material for. And with that you have variability year to year in funding available through programs specifically, an example would be a watershed group or a conservation district here in Vermont that is funded through grants that run on an annual basis, and there might be unpredictability year to year and what funding is secured and thus what projects they're able to pay for and implement and thus how much plant material they would be wanting to purchase every year which leaves nurseries unsure of what to expect for sales at any given year.

L Lynda Prim 19:50

There was a question on the survey about contracting, about nurseries contracting, and that would be helpful of nurseries being able to build into their cost of production, a specific number of trees in any given season.

A Alison Adams 20:09

What would contracting mean in this context? Can you just describe briefly what that would look like?

L Lynda Prim 20:14

Yeah, that basically, and this is done with food crops systems, like the nursery would be contracted for certain species and a certain number upfront each year. And then you can sort of build that into your cost of production. And there's not quite that level of predictability, as Annalise was saying right now. So and it might vary, you know, for some smaller conservation groups, for instance, often their funding comes through, and so they couldn't forward contract like that. Developing more nurseries does require a significant capital investment, in order to scale up. So if we can streamline these systems and make them more efficient, that will make a capitalization investment that any nursery wanting to scale up to the level we are with know the cost involved, would know the systems involved. And I think that could help, because there's not much known about scaling up in our industry, except that you hire a lot of labor and use herbicides and very heavy machinery. So it's, that's I think, the other issue.

A Alison Adams 21:26

And when you say scaling up, are you talking about increasing the production to a level where it would actually reduce the cost of the plant material or just scaling up at all sort of what do you mean, specifically?

L Lynda Prim 21:38

Both really, like, you know, this has been a real big challenge for the nursery. How do we keep our cost in line with the kind of price points that our partners have to purchase the trees, and that means creating a lot more efficiencies, but the biggest challenge is like being able to pay people a living wage to do this work. And like any other business out there, right now, it's very, very hard for us to hire temporary seasonal crews. So it's a real challenge to look at, you know, cost of production and revenue in the context that we're in right now and that's a problem in agriculture right now. It's just we look at Farm Viability, and essentially, the nursery as a farm has cost of production and net return. And what we need right now is policy.

A Annalise Carington 22:31

Exactly. So like what I was, I was speaking to before with those federal and state programs that fun the majority of restoration work that ultimately, is purchasing plant material grown at nurseries like the interval conservation nursery, those the policy levers that can be pulled are the amount of funding that's available in those programs for purchasing to allow for, in our case, prioritization of plant material in Vermont that is at a higher price point.

L Lynda Prim 23:00

And right now, the nurseries like ours don't have much access to lobbying at the federal level for things like funds in the new infrastructure package. There's, no one's really thinking about trees. And, even though there's a recognized national need for more trees for conservation and climate mitigation specifically, so we're not in the position as a operating nursery to lobby. So again, it's working at the state and federal level on policy, I think, to help to help fund nurseries to both do the the research and design, but also to kind of grow jobs. A Conservation Corps would be immediately applicable to the needs of nurseries.

A Alison Adams 24:01

This is true for anything, but it always strikes me as how embedded this is in the broader system and how hard it is to kind of, you can identify all these individual issues, and then they're linked to each other and linked to some bigger level scale that is harder to affect. And so I really appreciate you both highlighting that and that there maybe are things that could happen at the sort of funder level or at the policy level that could help address some of the native tree stock shortage that we're seeing right now. So something that made us - being me and Annalise - want to explore this question in Vermont was the recent report from American Forests showing that this is actually a national issue. And so I'm wondering if you can tell our listeners a little bit about what's happening at that national scale and how that relates to or is similar to, different from what we're seeing here in Vermont?

A Annalise Carington 24:46

Yeah, there are a lot of parallels in what we're seeing nationally to what we're experiencing here in Vermont. That report through American Forests, speaks specifically to an increase in production to meet

needs related to climate change mitigation, job creation, fire recovery goals out west. There will only be an increasing demand and focus on restoring forests as a important nature based solution to climate change to increase the demand for production, which unfortunately, we're seeing in tandem with challenges on the production side of things.

L Lynda Prim 25:22

And because we're at the intervale, which is an organization deeply involved in the food system, this might be a stretch for some listeners to the podcast, but it was really apparent in the aftermath of Hurricane Irene that these riparian forest and edges and farms adjacent to wild lands is really important for the future of the food system because as we saw in Irene, entire farms were washed down rivers; because nothing was holding the soil, and that the flooding was really also damaging to existing crops because the floodwater touches a crop for a certain amount of time, then that crop can't be sold. So it directly impacted the livelihood of farmers. In a lot of Indigenous communities. I am not an Indigenous person, and I don't speak for Indigenous people. But I have worked a lot with Indigenous communities and the reintroduction of native trees is very, very important to indigenous communities in terms of food sovereignty, and food security. And I think that now we're getting a glimmer that that's really true nationally.

L Liz Woodhull 26:36

So thinking about your response with Hurricane Irene, and how much more riparian buffers are going to be necessary. I was wondering what sort of approach do you guys think is needed for more outreach about the importance of your guys's work in Vermont, and sort of getting more people involved? I guess.

A Annalise Carington 26:56

I think podcasts like this are one piece of the puzzle. So I do think there still is somewhat of a gap in just education, and sort of interpretation of what we're seeing on the landscape to what can be implemented to mitigate those risks that you're speaking to.

L Lynda Prim 27:16

Annalise is being understated. And trying to answer this question, because it's really something we talk about a lot at the nursery. And it's, what's the most effective way to do outreach, because people see our reports like the American Forest report, and they hear about the importance of native trees in the landscape. And, you know, there's many different ways that people come to it, but it's really important, we're finding, to get people down to the nursery, and experience working with the trees firsthand. So for us, while it's tricky to work with volunteer groups, because what we do is skilled labor, we find that almost everyone comes away from the experience of like transplanting or even weeding at the nursery with a new understanding of how fragile these ecosystems are and what it takes to grow a tree to go back out into nature.

A Annalise Carington 28:13

Outreaching to landowners or other partners around opportunities for restoration on any given property, we're really trying to figure out what angle is going to be the most compelling, you know, so you you could

speak to wildlife habitat, flood mitigation, so that that's something that we always have in mind when we're going out to outreach projects is, you know, what angle can we really speak to that's going to motivate people to care about restoration work. And there are also various models that have been developed in the state, and this is the same nationally that look at prioritization across watersheds for where this work will have the highest impact whether that be for water quality, flood resilience, habitat, and we use those as tools to to be more targeted in our outreach to landowners.

A Alison Adams 29:02

So, Annalise I think you mentioned when you're talking about the American Forest report, that we're just going to keep seeing increasing demand for native trees and locally sourced trees and shrubs. And that's also what we found when we did our survey here in Vermont. Demand for these trees here in Vermont is likely to increase another 50, we found 50 to 62%, which is conservatively at least 60,000 additional stems in the next five to 10 years. So quite soon. Can you speak a little bit to what is driving that increase?

A Annalise Carington 29:37

Yeah, sure. So it's, it is similar to what we're seeing nationally like we were speaking to before, restoring forests is increasingly seen as one of the the most important and cost effective nature based solutions to climate change to use that, that common phrase, but here in Vermont, restoration in the context of riparian and wetland work has received a lot of funding and attention as it relates to water quality, specifically reducing nutrient loading into the lake. You know, I work with the partnership Wildlife Program. So our focus is on wildlife habitat restoration. We've alluded several times now to Hurricane Irene and what we anticipate will be only sort of more frequent and more intense storms. So that has us thinking about flood resiliency and the role that specifically riparian wetland forest restoration can play in mitigating that, so all of these compounding factors have made restoration work, forest restoration work, planting native trees and shrubs only more important. So that's that's why I think we're going to be seeing only more demand over the next few years.

A Alison Adams 30:47

And so one of the things I think is really promising about the work that we did, that we saw of all of the existing growers in Vermont, everybody who responded to the survey said that they would be interested in expanding their operations if they had the resources to do so. Versus the American Forests report, found that a quarter of the nurseries that responded to them weren't really interested in expanding. So we have a really unique opportunity here in Vermont that the community of growers is really excited about trying out new things, maybe getting creative thinking about how we might be able to increase the supply of native tree stock here in Vermont. So I think that's really exciting. I'm wondering, really briefly, you know, we don't have any solutions to this just yet, but if either of you could touch on what some of the opportunities to address this challenge might be, some of the creative ideas, we've thrown around really briefly as kind of a teaser for our listeners.

L Lynda Prim 31:37

Right now the nursery has an opportunity to push the innovative edge a little bit with with what it means to do nursery production, because we've had a nursery since 2002. And the nursery has never been kind of typical, in that it primarily produced bare root stock. So we're looking at things like soil management

tailored to doing this kind of production, tools tailored to doing this kind of production. As I was mentioning before, it will be so much easier for nurseries to start up or expand if we kind of understand what those systems look like on a certain scale. And also easier to seek funding for capitalization, if we understand this the system. So while we're, you know, trying to continue producing trees and to produce as many trees as we can, we're also changing the way we look at soil management in the nursery.

A Annalise Carington 32:39

Two have the limitations that the majority of respondents identified were access to capital, of course, and also just an understanding of nursery standard operating procedures and understanding of business planning. So as Lynda's saying, I think those two things really go hand in hand because if existing nurseries like the intervale conservation nursery are able to support other growers in some of that sort of technical assistance around understanding example financials, and what those standard operating procedures look like that will position them to better be able to access capital.

L Lynda Prim 33:18

I think there's a lot of ways to look at this, but you know, we're also there's the urgency of producing more trees and getting more trees planted. And that's, yeah, we're kind of racing against time, a lot of respects.

A Annalise Carington 33:36

And there could be some efficiencies gained in a collaboration that could look like, someone who is propagating material to then be transplanted out at another property. So if someone had better infrastructure for propagation, a larger propagation greenhouse, for instance, they could focus on some of that propagation work. And then if someone else had a land base that was appropriate for bare root, there could be some some coordination between growers that way, that that could help increase efficiencies.

A Alison Adams 34:08

And I wanted to just jump in there and add that one of the things that we found from the report of existing and aspiring growers is there a lot of people, really, in Vermont, who are really excited about trying to get into this. So we had seven existing growers and eleven more people beyond that responded saying they'd love to try and start a nursery and are interested in getting involved in this. And so when you're thinking about that, sort of sharing those different resources, there maybe that's an option for some of those folks who can't do the whole infrastructure right away, but might be able to team up with some other folks to make that happen.

L Liz Woodhull 34:40

This is only our second episode, but something that Allison and I have talked about in each episode is towards the end, including opportunities for our listeners to get more involved if they're really interested in what they hear in the podcast. And so what can people do to support and advocate for local nurseries?

A Annalise Carington 34:58

Just as one example I know we've been involved with advocacy just at the state level with other local watershed groups and nonprofits engaged in this work, to communicate directly with our agency of natural resources around some of the true costs of production like we've been speaking to, for this work. So in that, grant funding has certain price points for purchasing materials, certain price points for implementation and certain price points for stewardship and maintenance, all of which need to be increased to actually realize the true cost of that work. But of course, that is a slow ship to turn at the state level, and then at the federal level, you know, if you're thinking about some of the programs within USDA, specifically through the the Natural Resources Conservation Service, or the Farm Service Agency, that fund this kind of restoration work. It's similar advocacy and outreach that needs to happen and communicating where there needs to be more funding or how that funding can be better prioritized in those programs to meet our needs on the ground.

L Lynda Prim 36:02

Yeah, you know, there's a lot of different levels, I was mentioning volunteers before, it's been very powerful to have Patagonia send like 60 volunteers down, and not all of them come to the nursery. But these are folks who are very interested because they're involved in outdoor recreation that involves forest and rivers. But also because Patagonia in general, is interested in regenerative agriculture. So you know, those are great opportunities for me to talk to people about like, this is how this is regenerative agriculture. And for instance, we had a group of volunteers who were basically the legal counsel for the Vermont environment department. So that was also an opportunity to really talk about policy and barriers to things like us being able to expand in our land base, which is very, might not be the case for other people getting into nurseries, but for us, because we have to comply with City of Burlington and sort of the different aspects of the of the trust that that land is under. So I would say also that, we do hire seasonal crews, and it's really tough for us to hire seasonal crews. But it's an incredible opportunity to learn from the ground up and get involved and has been a pathway for some of our crew to become staff at the nursery. And we are only in the conversational stages right now at looking at running internships. So finding support for those internships, which basically, you know, I think having relationships with all the colleges and universities here, particularly UVM, who has a long relationship to the nursery. But establishing internships, because I think we need more people trained. Honestly, you know, I applied for the job of manager and from my understanding was no one applied for this job that had real experience in the nursery trade, or even growing trees. So it's, you know, I do feel like we need some pathways for people to learn.

A Alison Adams 38:17

Well, I think that brings us to the end of our episode today. So thank you both Annalise and Lynda for being with us and sharing all of this really interesting information. I've been working on this and I still learned a lot, so I really appreciate it.

A Annalise Carington 38:29

Yeah, thank you.

A Alison Adams 38:45

Today's episode featured the call of the wood duck, a bird found in Vermont's riparian areas. It was recorded by Christopher MacPherson on November 2 2019, at Beaver Brook Great Meadow in Hollis, New Hampshire. We downloaded the song from Xenocanto.org. This project has been funded wholly or in part by the United States Environmental Protection Agency under an assistance agreement to NEI WPCC in partnership with the Lake Champlain Basin program.