REPRESENTATIVE POLICY BOARD

LAND USE COMMITTEE

FEBRUARY 12, 2025

MEETING TRANSCRIPTION

Greg:

Okay. I'm going to call the meeting to order. First thing on the agenda is the safety moment. Preventing slips, trips and falls. Very appropriate last couple of weeks. Six guidelines to help you create a safer environment for you, your employees and at home. Create good housekeeping practices, reduce wet or slippery services, avoid creating obstacles in aisles and walkways, create and maintain proper lighting, wear proper shoes, control individual behavior. Any questions?

Bob:

Very good.

Greg:

Okay. Next on the agenda is the approval of minutes. Do we have a motion?

Mike:

I make a motion to approve the minutes.

Brian:

This is Brian Eitzer, I'll second.

Greg:

All right. All in favor?

Committee members:

Aye.

Greg:

Any opposed? Abstentions? Okay. All right.

And now we're going to hear from Claire Rutledge regarding invasive bugs update. And she's from the Connecticut Agricultural Experiment Station. Claire, it's all yours.

Claire:

All righty. Let's see if I can find where I share my screen. So you guys asked me to come and give a short update. I probably have way too much information. But I'm going to give you an update on two insects, one, that's been around for a long time and we all know and love. And then a new one that's coming down the pike. Well, it's here.

So the first one I want to talk about is emerald ash borer, which you all know, but I wanted to share some of the work that we've been doing on the biological control of emerald ash borer. And hopefully give a little bit of help on this guy.

So here's just a glamour shot of EAB. It really is a fabulous insect, even though it's incredibly destructive. And as we all know, it targets ash trees and just ash. And we have a lot of ash, as I'm sure you all know. And as we all have recently realized, even though it's only about 5% of the total forest, it really can be very locally abundant.

And this bug has a typical beetle life cycle where it takes it about a year to get around this life cycle. So right now, EAB is tucked away and it's over wintering hidey holes in the tree trunks.

And of course here's our favorite beetle going around its life cycle. And it takes about a year. So the adults will be coming out in end of May/June depending on the weather, mate and lay eggs. And the larvae of course are the ones that do all the damage feeding under the bark on the phloem.

And this thing arrived in the US probably about 1990 as far as the dendrochronology goes. But it arrived in Connecticut in, well, it didn't arrive in Connecticut in 2012, we detected it in 2012. And I'm just going to quick walk you through this, the time since 2012 through 2024 of what we know about the distribution, along with data from monitoring work that shows the intensity of the population or the relative size of the population over time.

So each of these slides that's coming up, it's just going to be a map. Green outline means that we detected EAB in that town. And then the colors ranging from if there's no color in it means that I didn't do monitoring in that town that year. And then as the intensity of EAB goes up, the intensity of the color goes up.

In 2012, it started out in north central New Haven County, very low levels of course. 2013, it's expanded. And this is just the march of the EAB through the state. But here we start to begin to see some really intense emerald ash borer pressure beginning to happen up here in northern New Haven County. And it's spreading outward. And again, still heavy in the center of New Haven, but that is beginning to spread too. And of course we're getting all the way out across the state.

And this pattern of intensity, it started really dark in the center because that's where the population first arrived and built up. But then as the population started to die down, you see this hole developing in the center as the really heavy ring moves out.

And by the 2020s, we had heavy infestation still at the perimeter of the state, but all those little green with polka dots in there, those are all towns where we did the monitoring but did not find any beetles. That's not to say they weren't there, but they were at much lower levels.

And 2024, this was even more exaggerated, we found some more towns where we had one or two EAB. But still the only really places that we looked, and again, those are just the places with the colors that had heavy infestation still were right out at the periphery of the state.

And so what this is showing you, and maybe I should have shown this figure up at the beginning of that sequence, is that emerald ash borer populations, if you look at from when they first start over the years, it goes up very high and then it comes down. So you get a period of about three or four years where there's just tons of beetles everywhere and then the population drops off.

And so in Connecticut, for the majority of the state right now, we're in that tail end of the process. So still up in some like northeastern Windsor, northwestern Litchfield, we're still seeing a lot of emerald ash borer activity. But in the rest of the state, what we're seeing is the population has crashed. And part of that of course is due to the fact that they've killed an awful lot of ash trees, as I'm sure you're all aware.

And this is just a little scale that we use in the research of trying to get a handle on what's going on with the trees, going from really healthy trees to dead trees.

So we know this thing is an invasive, but why is it a problem? And it goes into an old ecology question, why is the world green, why don't herbivores eat everything? And part of it is because the plants themselves are very good at fighting back. And we call that control bottom-up. So they're eating the plants, they can't eat all the plants, the plants defend themselves. And then the other part of the control is top down control and things like predators and parasites and diseases.

And for the emerald ash borer, when they arrived in the US, it turns out that the native species of fraxinus didn't control ... weren't able to resist attack by the emerald ash borer. So healthy trees were being killed by emerald ash borer. Whereas back home, they wouldn't have been able to attack healthy ash trees, those trees have a much bigger resistance. So that's the major cause for their population invasiveness when they got here.

Another factor is that they don't have any specialized predators. So woodpeckers do eat EAB larvae, they're very fond of EAB larvae. And here's just a graph of some of the mortality in the US of EAB in North America. And this blue, most of the mortality that was being caused was being caused by woodpeckers. And woodpecker populations actually go up when EAB is in town. And there's some tree resistance, that's the red; and some native parasitic wasps, generalist parasitic wasps that hit it. But none of that really slowed down the spread and the population boom, the outbreaks of EAB.

I was able to be part of a nationwide project looking at bringing in additional parasitoids, additional mortality factors for emerald ash borer. So I'm just really quickly going to go over some of what we did in that program. We're at the see if it worked phase of things, but it's still going to take a little while before we know that.

But the native parasitoids are more generalist parasitoids, so that means that they'll attack things that are in a tree, that's their niche, they're just attacking things in a tree, but they're not specific to emerald ash borer. However, when we went back over to the native range of emerald ash borer in far eastern Asia, in China and Russia and the Koreas, I didn't get to do this part, but USDA folks went over and they looked for parasitoids that were attacking emerald ash borer that were very, very specific.

And in this picture you can see the three parasitoids that eventually were released in Connecticut. Going from counterclockwise, we have Spathius galinae, which is a larval parasitoid that has a long ovipositor. So it can go into larger trees to lay its eggs. And it lays its eggs into the host and the babies eat the host larva, so they're killing the EAB.

The second little tiny guy there is an egg parasitoid. And she puts her ovipositor into an EAB egg and one single baby grows up inside that egg. And then finally the next little guy down, Tetrastichus planipennisi, lays her eggs into the body of the host, and then they develop and eventually eat the host from the inside out.

These guys all have faster life cycles than EAB. So EAB is taking one to two years to get round its life cycle. These have multiple generations a year, so they have a numbers advantage. And they're very specific. So that means if emerald ash borer gets rare, which it is now in a lot of the state, they're still going to hunt for it.

So there's a big long process of how parasitoids or biocontrol agents are chosen. And I'm happy to talk more about that but I don't want to, I'm going to talk about some of the steps, but I'm going to [inaudible 00:20:11] a lot just because I know we don't have a lot of time. But I'm happy to answer more as we go along.

I came into the project after the host range testing and the government approvals and the rearing had all been worked out. And we were lucky here in Connecticut because EAB was first detected in 2002 in Michigan, and we didn't get it till 2012. So by the time that we got it, those parasitoids had already been discovered and tested and approved and reared. So I was able to call up and say I would like to start releasing parasitoids next year. And was able to start releasing those parasitoids very soon after they arrived. And in a lot of the Midwest, they weren't able to do that because they weren't available until seven/eight years after the initial discovery.

So this just shows it by year. But essentially what we were doing each time is we would release at a site for two years. And we started in north central Connecticut and spread out with the spread of EAB as it went. And our last releases were up here in Union, and we finished those up in 2022. So that's the first step. Well, the third or fourth step is letting them go.

And then this just shows you the numbers. I don't expect you to read any of these little numbers. But large numbers of wasps were released. It was a pretty incredible program. It is still, I mean, it's ongoing. We just decided that Connecticut had enough because we're tiny, and we had already had 150,000 Tetrastichus and 9,000 Spathius, etc.

So after you release the parasitoids the next thing you have to do is see whether or not they actually took. And so the standard procedure was after your two years of releasing, you'd go back to the same spot a year later and see if they made it through the winter. And we did in fact find them. And these pictures, I don't know how clearly you can see them, but these little wiggly larvae in here are showing you the larval parasitoids. And Ashley, one of my seasonals, peeling a tree here. We've done a lot of tree peeling.

And we've recovered them, the different colors are just like which species we've found, the yellows are both of the species, the pinks are just one and blue is the other, but pretty much we've found them throughout the state. Where we've released them, we found them. So that's the first step in grading your effort. What's the word I want? Quantifying, monitoring, figuring out what happened after you released. Are they still there?

And then what sort of rates are they doing parasitism in? And this is from work that I did with my big collaborators, Dr. Jian Duan at USDA ARS in Delaware and Dr. Roy Van Driesche up in UMass. And we peeled and counted and looked at a bunch of different sites in Connecticut, Massachusetts, and New York state. And Connecticut actually did really well. We got very high rates of parasitism.

And one of the cool things you can do is to look at the EAB population growth rates with and without parasitism. So what you do is you take what you got in the field and you divide all the causes of death. You say, okay, we found this larva and it was dead because it was eaten by a parasitoid. And we found this larva and it was dead because it got some sort of ick, some sort of disease. And we saw this larva and it's dead because it got eaten by a woodpecker. And you take all of that data and look at the numbers of one that are alive and the numbers of ones that are dead. And if you remove the individual causes of death, you can look at how much each cause of death impacts the population growth.

And when we look at the population growths taking out the parasitism rates, you can see that the population growth, the R nought, which is what's here on the R axis on both of these, we can see that the observed population growth of EAB, which is going down, down, down, if we took parasitism out, it would be a much higher population growth. So the crash that we saw would not have been as fast if we didn't have these parasitoids.

And of course, what we really want to know is if these larval parasitoids, okay, great, we found them fairly soon after we released them, we documented these growing levels of parasitism, and we also

showed, and I took these slides out, that they're spreading from their original release sites. So are they still here? Do they stick around when we have very low levels of EAB? Which we currently do. And what sort of long-term impact on the forest is it going to have? Are we going to be able to have ash trees in the future? Which is the big question.

So we did a bunch of studies on this. And again, short time, so I don't want to ... I'm happy to talk forever about this, but I'll try not to. This is a complicated figure, there's a lot of stuff in it. But essentially what I wanted to show here is that we divided our release sites up into ones that were the original old release sites, middle-aged release sites and new release sites. And we also had control plots that were nearby those release sites.

And so we looked at these sites by age and by density, larval density and parasitism rate. And I just want to show this is the number of living EAB and this is the proportion of larvae that were parasitized. And if we look at the oldest sites, like say Sleeping Giant, very, very few larvae per meter squared, so the EAB population has really crashed. Whereas a newer site like out in Stores, lots and lots of larvae, but the parasitism rates were the same, which is really great. Because if there's one larva out there, it was really hard to find larvae when we were peeling trees at these older sites, but it was really likely that it would be parasitized if we found it. And that's what we really need for the population control to be successful because if they ignored the EAB when they were rare, then the population could just rebuild even if the ash trees were growing back.

And then the other thing we did was to try to characterize our plots by looking at the trees, looking at transects. And overall statewide in 2022, we actually had a lot of trees, about half of the trees, that were healthy, which was great. I didn't think there'd be that many.

However, what we did see is that, here we have on this part of the access, we have the really, really healthy trees, and on the end, the five, the one in the hot pink, those are dead trees. And on the Y-axis here is DBH. The healthy trees are a lot smaller than the dead trees. So most of the surviving trees, even though a lot of trees are still healthy, are the little ones. So they're ones that came in after EAB had already crashed. So we're seeing regrowth in the wake of the EAB crash.

And we are seeing a lot of sapling regrowth, and it's increasing year over year. And ash saplings, when they have sun, when they have a place to grow, that picture that's there just shows you, all of that on the ground is ash saplings. Obviously not all of them are going to survive. And that's the next question is, what are we going to be able to do to help those survive?

Oh, I just also wanted to show you, as I said, we had control and release plots. And the control plots were plots where we are about 10 kilometers away from the plots where we did our parasitoid releases. And so what you can see here, I'm not going to explain the graph it takes too much work, but essentially in the release plots, a larger proportion of the trees that were alive had a bigger diameter than in the control plots.

So most of the trees in the control plot, tiny little regenerating trees. Whereas in the release plots where the parasitoids had been, we still have some larger trees hanging on. They tend to be ones that started growing right when the EAB was starting to crash but the parasitoids were protecting them during that initial growth period before the EAB completely crashed. And that's really exciting.

So if we're thinking about ash management implications, so for the parasitoids, they're established, we know that they're here, they're spreading, they seem to be sticking around in places where even the EAB populations are quite low. And initial evidence that they're impacting the forest structure. And so it seems that there's a good chance that EAB is not going to rebound to its previous levels.

And then the next challenge really is thinking about how to encourage this ash regrowth in the forest and looking at silvicultural things like light, invasive plant management. And Jeff Ward's successor in the forestry department, Eli Ward, no relation, has taken over a lot of my sites where we did the releases and is looking at more forestry oriented cultural soil types, all that good stuff, ways to encourage that ash growth. So she's really picking up the torch on that piece of it now that we've got the bugs in.

But I think that's about all I have on the ash. I don't know if you want to do any questions now. I think it might make sense to do questions now and then I can go into SLF. I can't see any of you.

Mark:

I had a question. Is there any pesticides that could be used to kill these bugs too?

Claire:

Oh Yes, Yes, Yes, Yes. I'm so sorry. Yes, emerald ash borer is one of the things, the first things that people jumped in on is developing reliable, effective ways to do a chemical control. And there's several materials that are effective. The gold standard is a material called emamectin benzoate, which is a new class of insecticide that was actually ... the registration got hurried along to get EAB, it was on emergency use basis for a while. But it's an injectable, so it's expensive because it's new, it's called triage, and it's expensive because you have to do the injection, which takes longer. But it's extremely effective even for very large trees, even under very heavy EAB pressure if there's a lot of them around. And it lasts for three years before you have to do it again.

Mark:

Was any done in Connecticut, any trees?

Claire:

Oh Yes, Yes, lots are done.

Mark:

And those trees made it?

Claire:

Yes, those trees made it. I mean, there is a point at which that's not going to work because the injectables, there are systemic insecticides, so if you have ... they're traveling through the circulatory system of the tree, through the xylem and the phloem. And the phloem is what EAB eats. So if the tree has already been sufficiently damaged, then the material will not be able to circulate properly in the tree because the tree is not circulating anything.

So most commercial folks will try it at about if 70% of the canopy is still intact. But in research they can come back from 50% or so. But Yes, it's very effective. The problem is, of course, with any chemical treatment is that it has to be ... you can't use it on a forest scale. So the biocontrol is really more of a forest scale solution, whereas the chemical control is a landscape for specimen trees.

Mark:

I remember the gypsy moths and everybody in the ... my brother had a spray truck and was spraying like crazy to kill the gypsy moths when they're ... You remember those days?

Claire:

I have very clear memories of the '81 outbreak, I grew up in New York, just across the state line essentially from Connecticut.

Mark:

Everybody had a spray truck.

Claire:

Yes, Yes, I know, I have-

Mark:

And then all of a sudden they died. All of them died.

Claire:

Well, Yes, I mean, they have cyclical outbreaks. I mean, we had a pretty impressive outbreak in 16/17/18, do you remember?

Mark:

Yes.

Claire:

In Eastern Connecticut.

Mark:

I heard that, Yes.

Claire:

Yes. And the last couple of years, this year, not so bad, but the last two years before that, there were some pretty good pockets up in Litchfield, like Kent, Warren, up in around there.

And really now we have a naturally occurring, well, spontaneously occurring biocontrol which popped up which is a Japanese, came from Japan, nobody quite knows how it got here, but it's a soil living fungus called Entomophaga maimaiga. And it can stop those outbreaks just as they just start going, but they need rain. So if you don't get rain at the right time, it doesn't do much. If you do get rain, then it stops because they kill them off.

Mark:

That was very interesting this talk. Does anybody else have any questions from our group?

Brian:

Claire, this is Brian, I've got a question. What percentage of the older ash trees in the forest actually survived, do we know an approximate percentage statewide? Do we have ...

Claire:

I know a little bit about what's going on in my plots, and I think the answer is pretty small, but it really also depends on the species of the tree. So the ash themselves within the genus, there's lots of differential in the North American species, so black and green ash. And green ash is the most common ash found in landscaping and it's also what you find along the floodplains. And black ash really likes wet environments. They're very susceptible, they don't put up much of a fight at all.

White ash on the other hand, has a lot more natural resistance. And so the lingering ash, when you look, it's about 30%/40% in the Midwest. I don't feel like I have real good stats for you here. But we do see some larger trees surviving, but it is not a lot. And I think that big ash tree in the middle of the forest component, there's going to be a few survivors here and there, but I think that's going to be gone for a while.

Because ash is a pioneer species, so it's really growing at the edges of things. It needs to have holes in the canopy, a big hole in the canopy, or it needs to have a field that's growing up, which is of course not a common habitat here in Connecticut. So I think it's going to be a while before we get those mature trees in the middle of a forest again. Unless we clear cut everything and then they'll be all over the place. But we don't want to do that.

Greg:

Claire, this is Greg, you mentioned about peeling back trees. Does that do any damage to the trees when you do that?

Claire:

Oh Yes, oh Yes, it kills them.

Greg:

I just wondered.

Claire:

It's funny, especially when we're going to these older sites where there's so few ash trees, and we're like, "Okay, we want to sample for parasitoids now. Let's see, is there a tree alive? There it is, let's kill it." Feel very guilty about doing that. And we've stopped actually, we've been using other methods to do parasitoid sampling, even though the peeling is the most direct and accurate. Because you don't want to kill your babies when there's so few of them left. On the grand scale of things, we're doing five trees a site, it's not ... But still, Yes, it kills them.

Mark:

Okay. Anybody else have any questions?

Naomi:

Yes, Claire, this is Naomi, I have a question. A couple of years ago in New Haven they were going through the city cutting down all the trees. Were these ash trees here in New Haven?

Claire:

Yes, there were ash trees in New Haven, and most of them, the city cut down. I was not thrilled. I think it's, the slide that I have up right now, worth keeping ash trees in town alive by injection. And that's something I try to convince cities about. And there's actually a lot of really great economic modeling that's been done in the Midwest in the areas showing that, especially in the Midwest. I mean, there their canopies are really heavily dominated by green ash. It took over from elm trees after Dutch Elm. We're not as dominated by any one species out here in the east just because we have so many trees.

But injecting the trees or protecting them with Imidacloprid is another chemical that works is more expensive upfront than doing nothing. But then you get into situations like I saw a great talk a number of years ago by a guy from Fort Wayne, Indiana, and a quarter of their city canopy was green ash, and they were just doing the, we'll wait until they die and then take them down approach. And the growth curve and the death curve is exponential. So it was a few trees every year until suddenly it was 8,000 trees. And they were running out of people with chainsaws to hire. It was ridiculous. And so you end up with no cost for the first few years, but then these huge crazy spikes in cost and you lose all of your forest canopy.

So I've been trying to convince people to treat trees, but it's a hard thing to, well, it's hard to convince people who are on a limited town budget with lots and lots and lots of other competing resources to do that. There were a couple of towns that really went for it. And there were more towns that had specific important trees that they protected, like the ash on the green in Guilford, or I know in Southbury they treated a number of trees, in Woodbury they treated some trees. So it was done here and there but not as much as I would've liked.

Mark:

Naomi, you got to talk to the mayor about cutting all the trees down.

Naomi:

Well, I mean, they cut them all down, and then Yale came up with this grant, they came back through the neighborhoods and they started planting more trees.

Claire:

Yes, I mean, the thing is with the New Haven Forest and the Urban Resource Institute, which is the main tree planters, done the tree inventories, and it was about 3% of the street trees that were ash at that point when we started all this. But it was concentrated in neighborhoods. So ironically, the neighborhood around the station, the streets on both sides of us, had a lot of really beautiful big ashes, and they're all gone now.

Mark:

Any other questions for Claire? Hey, thank you very much for a great-

Naomi:

Thank you, Claire.

Mark:

Pardon. Somebody have a question?

Naomi:

No, I just said thank you.

Mark:

Thank you very much, everybody. Thank you, Claire.

Claire:

No, you're welcome.

Brian:

She was going to talk about the second insect, she's not done, she's halfway through.

Mark:

Okay, halfway through, okay, I'm sorry.

Claire:

Well, no, no, no, I mean, I realize I am excited about this EAB results, but I can also, I mean, I have some information about spotted lantern fly, but I don't know ...

Mark:

Well, it's a good-looking insect.

Claire:

Should I keep talking or should I-

Mark:

Yes. Sure.

Attendee:

You've got the floor.

Mark:

You got the floor.

Claire:

Okay. Well, EAB has been with us for a long time. This is our new one, SLF, spotted lantern fly. Have you guys seen it yet?

Attendee:

Yep.

Yes.

Definitely.

Claire:

So this one first showed up in Pennsylvania in 2012, and it's a lantern fly, which is a group of bugs, true bugs, related to aphids and cicadas. And this guy over here, the little one with the red body and the blue and purple wing is native to the southern US, southeastern us, but we don't have any other of this group here in the northeast. So it's very exotic, exciting one.

And the ones in the tropics, a lot of them have these big outgrowths of their cuticle over their heads, and that's why they're called lantern flies because people thought maybe they were lit up. Which seems ridiculous, but Yes, lightning bugs exist, so it's not that crazy. If you get a dead one of these and look at it and think, well, maybe they have a little lantern in there. But anyway, so there they are. And they are suckers and they suck on the sap of trees and they drink sap just like aphids.

So they originated over here in northeastern Asia again, however, they've been invasive in other parts of Asia, and particular the Korean peninsula there was a ... they were invasive there in 2004 and had a big impact on the grape and wine industry in Korea. And they're now here in the US, as I say in 2012, and originally found in Bucks County, Pennsylvania.

And they gave a real boy scout try at keeping it there. But these guys are excellent hitchhikers and have spread since then to ... I think the last I read, there's 18 states that they've gotten to now. And you can see from all the little blue counties that are outlined there, highlighted there, they are really good at moving with people. They're not flying on their own for the most part, they're moving along.

And you can see that here in Connecticut, this is from I think the 2023 data from sightings, and by the way, if you see them, we have a site that you can report it to online, but all of these little red dots are places where they were found. And you can see that they're going along ... pretty much they move along the transportation corridors. They're moving with people, with truck stops. This is the Elephant Flea Market was the epicenter of this infestation. So they're hopping on people's cars, they're laying their eggs onto people's trailers and moving along that way. So we expect to see them moving along the 95 corridor, up the 91 corridor as we continue on. And there's now an infestation that started up in Norwich. But you can see there's quite a few of them in southern Connecticut.

So the life cycle of this little guy, it's a bug so it doesn't go through a complete body transformation, right now they're over wintering as eggs. And they have, here's the individual eggs, and then they're covered with this coating. And I'll show you some pictures of that. But they have three, when they first hatch, they're really quite tiny, they almost look like black-legged deer ticks when you first see ... when they're tiny, tiny. And they jump really well, they're big jumpers. And so they move through these first three instars through July. When they get to the fourth instar, right before they become grownups, they ditch the black and white and get this snazzy red coat. And then the adults are actually quite pretty. And they're big, they're about an inch. So if they're sitting on your finger, they're about that big.

Yes. So here's a couple of them on a grapevine. And this actually looks very pretty and bucolic, but it's actually taken from on a fence. I took the picture on a chain fence outside of a truck repair site where they had inhabited. So really not so pretty. Anyway.

So as I say, now they're egg masses; in May, the nymphs are emerging, they develop over the summer, and then you begin to get adults in the end of August, mid-August. And they have this really long

lifespan as adults. They feed and disperse and mate, and they start laying eggs in October, and they don't die until the first hard frost. So they have this really long lifespan as adults. And that's when they do the most damage.

But here's some pictures of the nymphs. Maybe get a little bit more of an idea of the size of them. They're really quite small when they start. Here's just another couple of pictures. Here's some adults clustered together on a tree, on a maple. And this is an egg mass over here. And as you can see, this egg mass covering is very well camouflaged. And this is one of their really good tricks for hitchhiking. Because they'll lay eggs on all sorts of surfaces, including wheel wells of cars and inside of posts and on seat cushions and under your deck. But they'll lay their eggs on things that can move. And because this covering on them, it's like with the spongy moth when the egg masses would move, but in this case they're even more well camouflaged and they look just like a smear of dirt. So it's something that you really need to keep an eye out for.

So in that fall phase where they're living really long, they're feeding. And then in August to September, they're moving to tree of heaven to eat. At this time of year, you will find them on tree of heaven, which is their major host. They eat a lot of stuff, including grapes, but they really love tree of heaven.

And I took a picture of this female to show you she lost her wings, I don't know, a bird ate them or something, but you can see her belly here and how chunky she is. And so this really long feeding period before they mate and start laying eggs is building up these fat reserves to lay their eggs. And so usually with an insect, what you see is the exoskeleton, the plate armor they have on the outside. And here what you're seeing, all of this yellow, is the skin under those hardened sclerites because she's just poofed out. It's like when you're wearing sweatpants at Thanksgiving or something, enough room for your belly to go. And then they start laying those eggs in October.

Here's just some pictures. They're most impressive in that they appear in these very large numbers. And because they're drinking sap, which is not good nutritionally, they have to drink a lot of it, they poop out a lot of it. And so this black here that you can see on the leaves, that is sooty mold, which is a non-parasitic mold, it doesn't hurt the tree except that they're just growing on the layer of sugar that's left over from all of these spotted lantern flies pooping on everything. And that sugar excretion is also very attractive to wasps and bees. So one of the symptoms of a heavy SLF infestation is you'll see a lot of bees and wasps and ants showing up to drink that sugar.

They have a lot of hosts, a bunch of trees, stone fruits, grapes, which is really important, walnut, poplar. When they're little, they'll go on ... they love roses, multiflora rose, they like a lot of different things. But tree of heaven is really their preferred host. And a lot of studies have shown that they can reproduce without tree of heaven but they don't do nearly as well, they don't have as many babies. They're much less fecund if they don't have tree of heaven to feed on. And as you know ... Do I have my thing about the tree of heaven? I do. It's down here. So during the season, they're going from small things to larger things. And so tree of heaven is, as I say, their main host.

So I'm just going to do three little protective actions that we can do. And this is geared toward agriculture but is also works for other areas. So protective action number one is to kill tree of heaven. And as I'm sure you all know, tree of heaven is an invasive plant. It has been here for a very long time. I think our first tree of heavens were imported as horticultural plants in the 1700s at some point. So you could argue that they're naturalized, but they still act invasively, they're colonial, they have abundant seeds, they're smelly. And you see them in disturbed soil. And they're all along the highways, et cetera.

They do look a lot like sumac. But they don't have ... sumac has serrated leaves and doesn't stink. And killing tree of heaven is actually really hard because of that clonal growth habit. So if you cut down a

tree of heaven and don't do anything else about it it just sprouts right back up or all of its roots will send up sprouts. So it's like cutting the head off a hydra, you just get a whole bunch more of them.

And so Penn State has done a lot of research into the best ways to kill them. And the method that seems to be the most effective is ... got the beautiful name of hack and squirt. So the idea is that you're going to try to kill the roots not just the tree. So you're going to put a systemic herbicide on during late July through early fall. So you want to get it at a time of the year where the tree is translocating sap aggressively from the leaves down to the roots for winter storage.

And so you hack on the side of the tree, create openings in the phloem, not all the way around, don't girdle it, and then squirt the herbicide in. And then the idea is that then that herbicide will be translocated down to all the roots, kill the roots. So that when you cut the tree off at the end of the fall, not only will that tree be killed, but its roots and its colonial offspring do it as well. And there's a lot of information on that on the Penn State website as well as other techniques. But this seems to be the most effective way.

But it's tough because there's an awful lot of tree of heaven. And if that was the only thing that spotted lantern fly ate, we'd be very happy because tree of heaven is invasive and they do kill tree of heaven. But they eat a lot of other things. And unfortunately also grapes, which is the big agricultural target, as well as things like apples and peaches and things like that.

So this edge monitoring piece, this is again more for our agricultural fields, but most of ... they seem to be an edge species so you'll find them at the edges of woodlots. You don't find them in the woods as much, you will find them in woods, but they do seem to be more on the edges. Of course, I guess, in Connecticut, a lot of our woods are becoming all edge. But for the most part, that's where you're going to find them.

And then finally, there's a number of traps. The most effective trap that I've found, well, that I've used is this egg trap, which you can make out of shingle material. It looks like a little lantern. We call it the lantern shade trap. It was developed by one of my old grad school cohort actually, Phil Lewis up at APHIS in Massachusetts. But it's a piece of shingle, and you put a little collar of foam around the top, and then you staple this other piece of shingle around the top. And they really like that surface for egg laying, and it gives them a nice little hidey hole, and they love laying eggs on it.

And so here you can see a shingle with lots of egg mass, well, just a few actually, there can be more laid on. And it's much easier to find and detect the SLF than going and looking at all the vines and trying to see all those egg masses on the vines. And it also concentrates the eggs and an easy place to destroy them or detect them.

And I think that's about all I have. I am happy to answer lots of questions, but I'm going to stop sharing for now so that I can see.

Mark:

So people who make wine in the state of Connecticut have a problem, is that true?

Claire:

Yes, that's ...

Mark:

That's it.

Greg:

What was his question?

Bob:

People on the vineyards have got bad problems.

Claire:

Yes, that's the main agricultural focus is the grapes. They don't carry any diseases for plants or for people, so that's good news. They gross people out. They're a little bit scary because they're big and they jump really well. So that's why there's so much public attention on them for the most part.

But in terms of it being a pest, it's just a volume, how much they feed. And because there's so many of them sometimes, and that especially on the grapes and the tree heaven, they'll stay there for such a long time, then that's when you start seeing damage. So when they move through someone's yard, and they're only there for a couple of weeks, it's usually not going to have that big of an impact. It's when they're there for a month or two months and then they just suck it dry. They're little plant vampires. Yes.

Mark:

Okay. Anybody have any questions? Okay. Now can I say thank you very much?

Claire:

You're welcome. Thanks all.

Naomi:

I have one question. Can you please share the slides with Jennifer to get them out to us?

Claire:

Sure, sure, I can do that. I will make a PDF and send it in.

Mark:

Very good. Thank you.

Naomi:

Thank you. I thought it was excellent.

Mark:

Thank you very much. Bye-bye.

Claire:

Bye-bye.

Mark:

Okay. The updates on the land and RWA properties including invasive species update. There we go. Was John here today?

John:

I'm here. Ready to go?

Mark:

Yep.

John:

All right. For the end of January, we're at 76% for the reservoir levels raw water storage. The historical average is 77, so we were just below the long-term average. And we continue to watch how the weather turns. We have been getting a little bit more precipitation in February, that's good, to keep us above the long-term average and keep reservoirs going.

You could see what a difference a year makes. Last year at this time, we were at 98% full. And that is spoken to about with January, we only had 0.72 inches of rain compared to the previous year was almost six inches, long-term average is three and a half.

When we look at the fiscal year, which includes the dry fall and parts of our dry winter, we've had 26.41 inches of rain compared to a normal of 30.76., so we're about four inches below what we typically get from June to the end of July.

Land We Need For the Water We Use Program. In Madison we corresponded with the property owner of about 24 acres. In Cheshire, the Bis property, we corresponded with the DEEP staff about the status of our OSWLA grant. And at 56 Squantuck Road, Seymour, we attended the public hearing, which you all were at, and presented the disposition application. And we updated town staff about the progress of the disposition.

For rental houses at 233 Skiff Street, the ZBA in Hamden approved all the variances that we submitted. And the PNZ re-subdivision application went before PNZ last night, and I believe they approved it. I haven't read the minutes, but there was no questions during the public hearing or very little questions. At 2040 Litchfield Turnpike, the owner was given permission to replace the chimney in the back up against the kitchen, but it must look substantially like it originally did.

Forestry update. We located some of the West River growth plot centers out near Lake Chamberlain. Met with the Guilford town engineer to talk about improvements to Goat Lot Road. This is where we have the guy who cuts witch hazel and brings it over to the distillery in East Hampton. That's for his work over next to Goat Lot Road. It is still a town road there, the town engineer didn't realize that.

We responded to a survey about the National Agricultural Statistics Service. Casey did that stuff, he researched and responded to a survey on the National Agricultural, they needed more stuff about that, about beekeeping and honey production. Casey submitted that.

And investigated a stolen firewood complaint from a firewood cutter in Bethany. That was off of Downs Road.

For recreation. Our New Year's Day walk had 26 participants. The Winter Tree Walk had 29 participants that was led by Nicole. We submitted our annual recreation report to DPH as required about our permits. DPH issued a new recreation activity permit for a hiking trail along the Mill River between

Dixville Avenue and South New Road. We cleared trails at Lake Chamberlain. And Jeff has been contacting the summer camps about summer events.

So at the end of January we had 4,775 permittees compared to just a little bit more than that at the end of December. And a little bit more than that at the end of January of last year. We're doing pretty good for permittee numbers.

There have been five special permits that Linda issued during the month of January. Nothing out of the ordinary there.

Other items, encroachments and agreements. In Hamden, the Downs Road field, we corresponded to the tenant about allowing beehives. She seemed interested but then she never called me back, so I don't know how really interested she was. Sperry Road, Woodbridge, we contacted the licensee about maintaining the field there. Seymour, Clinton Road, the town issued a letter requesting a renewal, which is for five years, for the agreement for radio equipment that is at the site there inside of our building. At Saw Mill Hill Road in Guilford, we contacted the licensee about parking a car over the property line. They're allowed to have chickens free range over the property line, but not allowed to park cars.

Invasive plants. Josh documented and treated invasive plant populations in North Branford and Guilford. And we met with all habitat staff to talk about options to treat autumn olive in a field in North Branford. So over the month we documented six and a half acres of invasives and did not treat anything for January.

For the deer hunt, 160 surveys were returned, and the table here summarizes the hunter effort. So over a thousand hunting days all told for the hunters and over 5,300 hunting hours.

Beach Avenue in East Haven, DEEP staff noted that several people contacted them to oppose the project. I've talked to DEEP staff about that. They're still reviewing the application.

At 60 Middletown Avenue in North Haven, this was a easement that went through private property where we had installed the water main many years ago when it was a strip mall. It has since transformed into a manufacturing building. And the new owners wanted the easement released. So we said as long as they do all the legal stuff we would do that. And we executed the document and sent it to the new property owner for recording.

At 205 Skiff Street we met with ACES staff. This is one of the two ACES buildings that are on either side of our house at 233 Skiff Street. We met with ACES staff and the potential buyer about a lease to the school for this property. And said we would look at their question about whether or not the lease is assignable.

So just to summarize this is that this was our Hamden office for the New Haven Water Company. And when we decommissioned it, and when we bought this place in I think 1977, then the New Haven Water Company wanted to reunite all the different departments. From the period of 1959 or so to 1977, the offices were at Crown Street, you would pay your bill there, all the corporate stuff was there. But then all the operational stuff was at Skiff Street. They buy this place, everybody comes back together and then they sell Crown Street and Skiff Street. They sold it to ACES.

But at that time, we could sell class two land to someone else, but we could not sell the class one land. So what DPH required us to do is we were required to keep the class one land and convey a lease to the school for that stuff. So this is complicating their sale of the property because they want to get out of that building at this point now too. So we're talking to them and to the prospective buyers about the complexities of that parcel.

Durham Road, the cell tower generator, DPH issued a change of use permit for a diesel generator there. We were okay with it.

Beaver Brook system parcels, we responded to an inquiry from an attorney about deed restrictions on some of the parcels that we sold to Subway.

Water main easements encroachments. I sent a draft letter to Murtha to review before contacting the owners of properties where we have water main encroachments over the water main easements.

For flood ALERT and the raw water, we met to discuss the new storage figures for the West River lakes. Will Hanley had a study done of that which altered the storage figures for all the West River lakes a little bit. So we updated the spreadsheets that are related to that.

For the Lake Whitney Dam project. Nicole's been out into the park and has been doing a tree inventory of those trees that would be affected when we do the dam project. So we replaced some of them.

The Land Use Plan. We sent out a meeting invitation to several departments about the start of our latest update of the LUP. That will probably get to your meeting sometime in early of 2026.

Bren Leard and Juliette Doyle completed their seasonal employment with us through the LSR grant.

And boundaries for the month of January, we checked and remarked boundaries in North Branford and Madison.

I have a few articles for you to read. And if you have any questions, I can answer them for you tonight.

Greg:

Hey John, regarding that East Haven Beach Avenue water main, why are people opposing that?

John:

There are people in the neighborhood who are I would say NIMBY people, not in my backyard, they don't want to see any changes. Most of that neighborhood, at one time, a hundred years ago, it was all seasonal, it was all cottages, nobody lived there year round. As time went on through the 20th century, many of the cottages were converted to four season. Some were just torn down and then new four season houses were put in their place.

On Beach Avenue, the portion of Beach Avenue that we're talking about now, those are the last cottages that are there. They are the last seasonals. And some of the people who live there year round don't want to see these cottages transformed into year round. They want to keep those as seasonal cottages. So they're trying their best to stymie the water main project as best they can. That's how I would answer that question.

Greg:

Okay, thanks.

John:

Any other questions?

Mark:

Thank you, John. Again, another great report.

John:

Thank you.

Greg:

Thanks, John.

Mark:

Numbers. Other than that, as we talked about, next regular meeting will be Wednesday, March 12th. It's already March. I wish it was. 5:30 PM. Okay.

Anybody have anything else to bring up? Again, I must apologize for being late to the meeting, I'm sorry.

So can I entertain a motion to adjourn?

Greg:

So moved.

Joe:

Second.

Mark:

Okay. All those in favor of adjourning?

Committee members:

Aye.

Mark:

Thank you very much guys.