

AM&RC Webinar Series: Amphibian Migrations and Road Crossings: Case Studies in Reducing Mortality at Road Crossings

February 1, 2022, 5:00 – 6:30 pm

00:00:00.000 --> 00:00:06.480

Okay, there we go. Good evening. My name is Laura Heady and

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I'm with the Hudson River Estuary Program and

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Cornell University, and I want to thank you all for joining us

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00:00:14.009 --> 00:00:17.100

for today's talk on amphibian migrations.

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I think this is the first, webinar we've given in a while in the evening where we're competing with light. It's actually light at 5 o'clock, which is very exciting.

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And a sign that spring migrations aren't too far away.

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In any case before we get started, I did want to review a few Webex

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webinar details for those of you who may be new to the platform.

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Hopefully by now, you've already connected to the audio, but if you are having any problems,

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you can choose to connect, , to the audio through both your computer or

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through your phone and phone is recommended, especially.

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if you have a poor Internet connection or your computer

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audio has problems. If you do have issues and you want to switch, you can choose to switch audio.

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By clicking on the black circle with 3 white dots at the bottom of the screen.

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You can also choose to receive a call, by entering your phone number in the "call me at" box.

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Or you can call in yourself and you may need your unique ID number from the webinar registration to do that.

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You also have the option to adjust your speaker settings, or switch your audio at the top of the menu. There's a pull down

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Menu and throughout the webinar, if you have any technical difficulties, let us know.

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Down in the chat box, which is in the lower right corner.

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During the webinar, though, please direct any questions for the speakers, or for me about the presentations to the Q and A box.

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It's very unwieldy to try to filter through chat box messages when we have, many people, on the webinar and our webinar last weekend, over 250 people. So it's a lot easier to keep track of

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questions in the Q and a box and if you can't find the Q and A box,

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Click on the 3 white dots in the lower right

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corner next to the chat, and you can expand your options and, select Q and A.

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Okay, so let's review, if you have any technical difficulties with Webex,

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Use the chat box, if you have questions for our presenters, use the Q and A box.

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Note that all attendees are muted just because we do have so many people.

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And that's why we're, we rely on the Q and A box for communicating, any questions for our speakers.

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Your video is not needed. This webinar is being recorded and we will make this available to view on the website. And that link

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to view, the recording will be shared in a follow up email after today's webinar.

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There will be a brief survey at the end of the webinar. You may see a pop up box

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that you just need to click on to get you to that survey at the end of the webinar and we really do appreciate everyone taking

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just a few minutes to answer a couple of questions so that we

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know how we're doing, and we can use your feedback to help think about future offerings and how we can improve them.

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And finally we will send out an email confirmation of attendance, right after

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the event that can be used to submit for municipal training credit for those of you on

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planning or zoning boards who need to document your attendance.

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I'd like to thank my colleagues at the Hudson River Estuary program.

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Ingrid Haeckel and Emma Clements who will be watching the chat box tonight to assist anyone having technical difficulties.

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Okay, so now that we've covered the Webex guidance, I'd like to welcome you all to our Amphibian Migrations and Road Crossings Project Webinar Series.

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I'm Laurie Heady, I'm the Conservation and Land Use Program Coordinator from the

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Hudson River Estuary Program through a partnership with Cornell University's Department of Natural Resources

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And Environment. The Amphibian Migrations and Road Crossings project is a volunteer program I started at the program back in 2009, and as we prepare for our 14th

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year of the project I'm excited to offer this webinar series to our volunteers, but also to the broader public.

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You know, in the face of climate change, habitat loss and habitat fragmentation,

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and other threats, this series was designed to help us collectively think about how we can be more proactive and more effective

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protecting this important group of amphibians, and also to conserve their habitats.

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The amphibian migrations project, and this webinar series are part of our work at the Hudson River Estuary Program.

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Which is a unique program at the New York State Department of Environmental Conservation, and it was established

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to help people enjoy, protect, and revitalize the Hudson River.

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And its watershed. The Estuary program is guided by a 5 year action agenda.

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And we work throughout the watershed counties, bordering the tidal Hudson river from upper New York harbor down in New York City

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to the federal dam in Troy, just north of Albany.

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And we work to achieve the 6 key benefits listed here.

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I'm sorry, those are 7 key benefits listed here and you can learn more about the program, read the action agenda at the DEC website, which I see Emma has put in the chat box.

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And our work on the conservation and land use team at the program

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is guided by that action agenda and the goal that we're working toward

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Is lands and waters that are recognized as regional priorities

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for wildlife and fish habitat, clean water,

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climate resilience, and scenery are incorporated into conservation and land used plans and policies

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in the watershed. Through acquisition key sites are permanently protected

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and connectivity of conserved habitats and natural areas in the watershed

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is achieved. And I like to share this goal

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just to provide greater context for the amphibian migrations project and for the topics we're exploring

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in this webinar series. Really most of our efforts to achieve this focus on local land use

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and conservation planning is the way we implement our goal.

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And we work with many municipalities land trusts,

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and other partners, and if you'd like to learn more about this work, I encourage you to visit our website,

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which is the clearinghouse of information about natural areas,

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and biodiversity in the watershed and also

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different approaches for conservation and land use planning

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that work to protect those important natural areas, and also resources that are available to assist you in these efforts.

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So, today's webinar is focused specifically on one aspect of biodiversity conservation and that is the group of amphibians that live in our forests and breed in vernal pools.

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As I mentioned earlier, this series is related to our amphibian migrations and road crossings project.

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And if you'd like to learn more about the goals and outcomes of that project, or

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About vernal pools in general I encourage you to listen to the recording of last week's webinar.

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Which was the first in this series, and I gave an overview of the project and our guest speaker Dr Marybeth Calsvari gave a very in depth introduction to vernal pools.

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But briefly, , the AM and RC project focuses on this group of amphibians species that live in the forest.

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And they migrate to woodland pools for breeding in late winter, early spring and then they return back to the forest.

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In large and fragmented natural areas, these salamanders and frogs can move to vernal pools for breeding.

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Without ever leaving the safety of the forest.

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But in landscapes shared by human communities, that habitat connectivity is often lost and these amphibians.

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As well, as other wildlife encounter roads that must be crossed to reach their destinations.

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So many volunteers and programs through the northeast, , just like our AM&RC project here in the Hudson Valley and some of the programs we're gonna hear about tonight.

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, they help to reduce mortality by locating where these road crossings are,

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and helping to move migrating, amphibians across.

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And ultimately, we hope these volunteer data, the document, the crossings and the migrations.

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Will not only help us improve our understanding of the ecology,

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But also be used to inform decisions about conservation actions and investments

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in resources, and I'm very excited today

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To, have 2 speakers here to share exactly how they've achieved this in the areas where they work.

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I met both of our wonderful presenters at conferences and personally was really inspired by their projects and their accomplishments and I've asked them both to share their stories and expertise tonight.

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Including the nuts and bolts and lessons learned about their projects. So we can all consider

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how these solutions might be reached in other locations.

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And so we'll first, hear from Brett Amy Thelan. Brett is a science director at the Harris center for conservation education in Hancock,

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New Hampshire, she's been directing citizen science programming since 2007.

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First with the Ashvelot valley environmental observatory, and now at the Harris center.

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Brett received her masters of science in environmental studies with the focus

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in conservation biology from Antioch University, New England in 2007.

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After Brett's talk, we'll hear from Chris from the Vermont Agency of Transportation. I'll introduce him before his talk.

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And so I just want to remind everybody please submit your questions.

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Through the Q and A box and Brett, welcome and I'm going to make you the presenter now so you should be able to share your slides with us.

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And Brett, thanks for being here and everybody, enjoy, her talk.

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Brett Amy Thelan: All right, can you see and hear me.

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Laura Heady: I can hear you and I can see you, and now we're just waiting for your sites to come up. There we go. All right.

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All right. Looks great. Thank you. Okay.

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Brett Thelan: Okay, wonderful. Well, thank you so much Laura for having me I'm really excited to be here tonight. .

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And to be presenting alongside Chris, whose project really inspires me as

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well, I'm going to be sharing tonight, as Laura said, my name's Brett Thelan on the science director at the Harris center for conservation education.

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We are a nonprofit land trust and environmental education organization based in the Manadnock

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region of Southwest New Hampshire, and I've been coordinating our salamander

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crossing brigade very similar,

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a very similar project to the one that Laura just described, since 2007.

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And tonight, I'm going to be sharing with you one of the most exciting outcomes

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of that project, which.

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is big night detours or amphibian road closures that we have worked with the city

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of Keene to implement over the last

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several spring seasons, so I will share just a little bit about

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this spring amphibian migration for those of you, who might not be familiar with it,

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talk a bit about

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our crossing brigade program, and then really the meat of this will be talking about these road closures and how we went about planning and implementing them.

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And some recommendations we

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have for those of you who might want to do this in your own communities.

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So, as Laura said, .

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Spring amphibian migration is just a month or 2 away. It is in my opinion, one of the

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most magical times of year in the natural world.

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And it occurs

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On the first, warm rainy spring nights after the ground has thawed when thousands and thousands.

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When thousands and thousands and thousands of salamanders and frogs

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00:12:17.049 --> 00:12:22.269

migrate on mass from the woodlands where they spent the winter.

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To vernal pools and other wetlands to breed, it's often called big night

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because it's a really explosive event with many animals.

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on the move all at the same time.

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And here in New Hampshire, in the early spring, our big nights typically involve 3 species. The spotted salamander,

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The wood frog, and in the spring keeper, and then in a few sites, we also have

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Jefferson blue spotted hybrid salamanders, which are a species of greatest conservation need in New Hampshire and in a number of other places as well.

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Then, as spring wears on and temperature warm, we have many more species that, can be.

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Can be found out and about on these rainy nighst.

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Grey tree frogs and toads don't breed in vernal pools necessarily, but they do have

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Spring migrations, and then other species, like green frogs or bullfrogs, pickerel frogs and a whole suite of salamanders might simply be out in about because it is

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warm and wet, and they are dispersing or foraging, finding new places to go.

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And as Laura said, on the modern landscape, in many cases, now.

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this means crossing roads. .

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One really vital part of the vernal pool reading amphibian ecology is that they have

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really strong site fidelity or attachment to their breeding

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sites. So they return to the same places year after year. And in many cases, it might be the

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the very pool where they themselves hatched

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from an egg. And in case of our spotted salamanders, they can live upwards of 20 years. So this is long term

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prospect.

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And when roads lay between the their

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woodlands and their wetlands,

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they have to cross them. And I often will ask people when I'm giving talks about this

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What species they think of when they think of roadkill and usually what people say

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deer or squirrels.

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Maybe raccoons or porcupines, large animals

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whose bodies stay on the road for a long time, and are very visible to us.

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And, we tend to get hit one at a time.

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00:14:28.169 --> 00:14:31.230

Amphibians are really different because

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They are small and soft bodied and active on rainy nights when visibility is poor

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so we don't often see them. They can be kind of

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crushed beyond recognition very easily, and often gone by morning. So, even though, .

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00:14:48.419 --> 00:14:53.919

Many, many many of them may be meeting

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00:14:51.440 --> 00:14:57.519

their ends on the roads on these rainy nights,

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00:14:56.120 --> 00:15:00.340

it's often an invisible problem for many

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00:14:59.340 --> 00:15:03.490

of us, unless like me and Laura, you're out

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00:15:03.490 --> 00:15:08.419

there looking. And like all of our volunteers.

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So, the, the statistics are pretty sobering about road mortality with regards to amphibians and reptiles.

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One study in Canada, that really was the thing that kind of made my

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Jaw drop when I first started looking into this was a study where they looked at just a 2 mile stretch.

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of road over the course of 4 seasons and recorded more than 30,000 dead amphibians.

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Another study from a paved rural road in New York state, found that the

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best case scenario was that 1 out of every 2 salamanders made it across.

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And another study from the Berkshires in Massachusetts found that they could actually

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lose their spotted salamander populations

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exclusively to road mortality in as few as 25 years. So, this is a really big deal for conservation.

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00:15:49.830 --> 00:15:59.169

And, of course, not all roads are created equal and these migrations don't happen everywhere.

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Primarily what we're looking at are roads

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where wetlands or water

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are within 100 meters of the road. That's where these hotspots tend to occur.

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00:16:07.259 --> 00:16:12.929

So, thankfully, this is a problem with solutions.

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And the very first course of action through Laura's program, and through the program that I coordinate

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at the Harris center is to start to gather information about

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where these breeding migrations occur.

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Where are these road mortality hotspots? What species are involved? How many of them? And that's the amphibian

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crossing brigade program, or salamander crossing brigade, where we train volunteers

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00:16:35.360 --> 00:16:38.519

to go out on migration nights,

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00:16:38.519 --> 00:16:43.169

to move these animals across the road by hand, or in buckets, faster than

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00:16:42.570 --> 00:16:48.159

the animals can move themselves and therefore to reduce road mortality.

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00:16:45.929 --> 00:16:52.000

But also to keep count of what we're finding out there by

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00:16:49.360 --> 00:16:52.600

Species,

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00:16:52.600 --> 00:16:56.799

live versus dead, some location information and so we can

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Start to kind of have a fuller picture of what's happening out there.

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And for many people, this is a really powerful experience.

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It's not often that you get to hold a wild animal in your hand in a helping way.

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00:17:08.650 --> 00:17:13.970

and furthermore.

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many people before the before they participate in the crossing brigades, have never even seen as

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00:17:18.368 --> 00:17:23.809

salamander before in their lives, because these animals spend 95% of their lives underground. So

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00:17:21.809 --> 00:17:26.318

it can be an incredibly powerful

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experience to participate in the crossing brigades, and many of our volunteers return year after year after year. It becomes a tradition for them in the spring.

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So, we trained more than 1500 volunteers.

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in our neck of the woods, since we started the program in 2006.

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Collectively, they've moved more than 60,000, amphibians across roads, about several dozen road crossings.

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But really what we know is that we can't carry every

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trog across every road. This is not the solution to road mortality.

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This is a way of

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00:18:02.430 --> 00:18:06.269

Gathering information to help inform more permanent,

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00:18:06.269 --> 00:18:09.660

longer term solutions like some of the ones you're gonna hear about tonight.

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00:18:09.660 --> 00:18:13.599

This one is just a little

209

00:18:13.599 --> 00:18:20.509

Preview of Chris's talk because it's so inspiring to me. I always include it in my talks. One solution is infrastructure and

210

00:18:17.549 --> 00:18:24.079

amphibian tunnels. This is a screenshot.

211

00:18:21.509 --> 00:18:28.049

A trail cam shot from the Monkton Vermont tunnels, which we're going to hear about later.

212

00:18:25.250 --> 00:18:30.059

these are the most effective.

213

00:18:29.460 --> 00:18:36.930

Effective way of preventing amphibian and mortality, creating a situation where the amphibians can cross under the road rather than over the road.

214

00:18:34.730 --> 00:18:40.880

Any time they are on the move

215

00:18:38.369 --> 00:18:43.809

however, this is also a fairly

216

00:18:41.609 --> 00:18:47.289

costly strategy and it.

217

00:18:45.000 --> 00:18:52.029

might not be feasible for all communities and so another option, which is.

218

00:18:50.430 --> 00:18:54.519

less effective in terms of

219

00:18:53.519 --> 00:18:59.079

amphibian passage, but much more

220

00:18:57.119 --> 00:19:01.670

cost effective is to close

221

00:19:00.279 --> 00:19:06.720

roads where migrations are taking place on the nights when the most number of amphibians.

222

00:19:06.720 --> 00:19:12.539

are going to be present on that road. So the reason I say this is

223

00:19:12.539 --> 00:19:18.759

not as effective as tunnels is that the tunnels are there all the time and so

224

00:19:16.079 --> 00:19:22.960

the amphibians can use them whenever they're migrating. And the young of the

225

00:19:20.759 --> 00:19:27.859

year can use them to leave their wetlands. Whereas road closures are really trying to target

226

00:19:25.259 --> 00:19:29.519

the times when you have the most

227

00:19:29.519 --> 00:19:33.190

number of amphibians present at any given time.

228

00:19:33.190 --> 00:19:41.960

So, you might miss out on, you might catch the big nights, but you might miss out on the small nights, or you might miss out on the end of summer outbound migration.

229

00:19:39.190 --> 00:19:44.009

of the end of the year.

230

00:19:44.009 --> 00:19:47.950

But it is still a really effective

231

00:19:47.950 --> 00:19:52.650

And exciting strategy that is being used in more and more communities.

232

00:19:52.650 --> 00:20:03.599

This picture is from, Beakman road in East Brunswick, New Jersey, one of the first communities to do amphibian road closures for the salamander migration.

233

00:20:03.599 --> 00:20:08.440

So, now I'm gonna just share a little bit about how we did

234

00:20:08.440 --> 00:20:15.039

This in Keene, New Hampshire, and are continuing to do this. This is an ongoing project.

235

00:20:12.569 --> 00:20:18.289

The first thing was, , really figuring out who needed to be

236

00:20:15.839 --> 00:20:18.890

part of the planning.

237

00:20:18.890 --> 00:20:26.000

And of course, this is going to be somewhat different for every town in city, depending on your governance.

238

00:20:23.329 --> 00:20:27.599

as well as

239

00:20:27.599 --> 00:20:33.970

city departments. Our first point of contact and the was the Department of Public Works.

240

00:20:31.769 --> 00:20:37.769

Who knows the Department of public works? We actually had one of our salamander crossing brigade volunteers who had a

241

00:20:37.569 --> 00:20:42.880

friend who worked in the department, and she arranged a meeting where we could talk about

242

00:20:40.680 --> 00:20:47.650

this and he was.

243

00:20:46.140 --> 00:20:49.680

fond of frogs and supportive of

244

00:20:49.680 --> 00:20:56.049

the project, and so I was able to shepherd it through to other departments, but Department of public works because of.

245

00:20:53.880 --> 00:21:02.049

their work with roads was a really key first partner for us. But they were not the only partner.

246

00:20:59.849 --> 00:21:04.460

We also had to have discussions with emergency

247

00:21:03.660 --> 00:21:08.589

services, so, police department and fire department who are very concerned.

248

00:21:06.990 --> 00:21:11.430

about the potential for road closures to

249

00:21:11.430 --> 00:21:17.319

impact their ability to respond to emergencies.

250

00:21:14.460 --> 00:21:19.680

In our case, at our site, it was bounded by city parks.

251

00:21:19.680 --> 00:21:24.319

and a cemetery that is also managed by the parks department, so they were part of the conversation

252

00:21:22.920 --> 00:21:26.000

and team. We have.

253

00:21:26.000 --> 00:21:33.250

A City Council and a mayor, and we needed approval from the city council to do this. They viewed it kind of like any other.

254

00:21:30.450 --> 00:21:41.250

event where you want to close a road, like a parade or a road race. And so we had to submit a letter and ask for permission to do that.

255

00:21:38.819 --> 00:21:42.269

And then none of it,

256

00:21:42.269 --> 00:21:47.779

it wouldn't be possible really without a lot of support from members of the community who showed.

257

00:21:47.579 --> 00:21:50.789

up at those city council meetings to voice their

258

00:21:50.789 --> 00:21:55.819

support for these road closures. When they were very first being considered, we put the word out to

259

00:21:54.420 --> 00:22:01.420

our salamander crossing brigades and it was a standing room only meeting and

260

00:21:58.619 --> 00:22:02.619

everybody showed up in their reflective vest so that even.

261

00:22:02.619 --> 00:22:08.460

if they didn't get up to speak, the council would know that they were there in support of the road closures.

262

00:22:08.460 --> 00:22:15.250

And so our message to city council was threefold: One was that

263

00:22:12.450 --> 00:22:16.690

these road closures would

264

00:22:16.289 --> 00:22:21.829

protect amphibians in the local ecosystem,

265

00:22:19.440 --> 00:22:26.200

they would create a safe place for families to observe the migration because, as you can imagine these

266

00:22:23.670 --> 00:22:28.119

salamander crossing brigades are an

267

00:22:27.720 --> 00:22:31.470

amazing experience and also safety is.

268

00:22:31.470 --> 00:22:35.910

Is a concern because we're out on roads at night in

269

00:22:34.980 --> 00:22:38.250

poor visibility conditions and so

270

00:22:38.250 --> 00:22:46.450

by closing the road, we could create a safer place for people with young children and families to come and see this and that it wouldn't cost the city very much.

271

00:22:43.650 --> 00:22:49.680

All 3 of these were important parts of the message.

272

00:22:49.680 --> 00:22:56.980

And then, we also thought really carefully about which site we wanted to try this with.

273

00:22:54.779 --> 00:22:59.960

So we know of 3 kind of significant amphibian crossings

274

00:22:58.559 --> 00:23:04.559

in the city of Keene, and we started with one.

275

00:23:02.519 --> 00:23:07.160

At North Lincoln street, and the reason we chose that.

276

00:23:06.359 --> 00:23:09.359

site is because it was a simple,

277

00:23:09.359 --> 00:23:14.150

there were no people living on the stretch

278

00:23:12.750 --> 00:23:19.609

of road that we wanted to close, and so nobody would be impacted driving

279

00:23:17.009 --> 00:23:23.039

To or from their residences and it also is the site with the largest number

280

00:23:20.339 --> 00:23:27.740

of amphibians on any given migration night.

281

00:23:25.619 --> 00:23:31.500

So, it was really the, the most, made a good first

282

00:23:28.650 --> 00:23:37.950

choice. We're now talking with the city about expanding to a second site that is much trickier.

283

00:23:35.279 --> 00:23:42.690

But that site has these Jefferson complex salamanders, which are species of conservation concern and so.

284

00:23:42.690 --> 00:23:46.529

There is a different argument to be made for that site.

285

00:23:46.529 --> 00:23:52.279

This is our site North Lincoln street just to give you a sense, that drones eye view.

286

00:23:50.390 --> 00:23:55.549

we've got a forested, not sure if you can see my cursor.

287

00:23:54.150 --> 00:24:01.660

forested hillside right here and then a wetland. It's

288

00:23:58.769 --> 00:24:06.509

not technically a vernal pool, it's more of a, a permanent wetland or beaver empoundment, but this is where all the critters go.

289

00:24:06.509 --> 00:24:11.359

Here's another closeup. Look to see you can see that. They're

290

00:24:09.960 --> 00:24:15.990

migrating out of these woods and across the road, and into this wetland area here.

291

00:24:15.990 --> 00:24:21.990

So, on a typical big night at North Lincoln street will have 25 or more of volunteers.

292

00:24:19.789 --> 00:24:27.849

they'll move nearly a 1000 amphibians across a stretch of road that's really just a 10th of a mile long

293

00:24:27.849 --> 00:24:32.460

in just 4 hours or so . This is a big frog site. We have lots of

294

00:24:31.460 --> 00:24:36.190

wood frogs and spring keepers and a lesser number of spotted salamanders.

295

00:24:35.190 --> 00:24:40.670

But it's also a site where many families come and so that was also an important

296

00:24:38.670 --> 00:24:45.539

consideration in the road closure discussion.

297

00:24:45.539 --> 00:24:52.970

And when we presented this to the city of Keene , these were our numbers for the course of about 10 seasons.

298

00:24:51.170 --> 00:24:56.960

And for the course of about 10 seasons, we had moved more than 9,000 live amphibians

299

00:24:54.759 --> 00:24:59.359

and recorded more than 6,800 dead amphibians.

300

00:24:59.359 --> 00:25:03.880

But truly, the most important thing about those numbers is that they are

301

00:25:02.880 --> 00:25:09.569

Inaccurate. They are under estimates, under representations of what's actually happening

302

00:25:07.440 --> 00:25:11.369

on the roads on these migration nights and that's

303

00:25:11.170 --> 00:25:19.289

for a few reasons. One is that we might have variable volunteer effort. So maybe one night we have 5 people out there

304

00:25:18.089 --> 00:25:24.089

and another night we have 25 people out there, and even if we had the exact same number of amphibians,

305

00:25:21.690 --> 00:25:24.900

stands to reason that

306

00:25:24.900 --> 00:25:29.509

more people would encounter more amphibians and be able to count more of them.

307

00:25:29.069 --> 00:25:35.710

Also, our volunteers tend to be out between sundown and 10 or 11 at night

308

00:25:33.910 --> 00:25:40.119

or maybe midnight, so early evening only, which means that all of the amphibians who are

309

00:25:37.329 --> 00:25:42.390

crossing the road after midnight are

310

00:25:42.390 --> 00:25:46.109

largely uncounted and then

311

00:25:46.109 --> 00:25:52.829

there's also kind of a bias towards counting and helping the living animals, even when people are on

312

00:25:50.549 --> 00:25:56.230

the road, their focus is really helping the animals that are still alive. And so

313

00:25:53.630 --> 00:25:57.839

this is really helping the animals that are still alive. And so sometimes the dead might

314

00:25:57.240 --> 00:26:02.960

go uncounted, especially if it's a really busy night and there's just not,

315

00:26:01.349 --> 00:26:06.079

enough crossing brigade volunteers to go around.

316

00:26:05.880 --> 00:26:11.099

They will really focus on shepherding the living animals across and so our

317

00:26:09.900 --> 00:26:16.019

counts of dead animals are almost certainly under representations.

318

00:26:16.019 --> 00:26:23.849

So, part of our road closure plan, here are 3 elements, there's the detour itself. The timing and then

319

00:26:22.049 --> 00:26:28.319

how often we were going to do this. So, the first was pretty simple.

320

00:26:25.920 --> 00:26:29.720

But we did need to talk with the city about

321

00:26:29.720 --> 00:26:35.369

what barricades and signage were involved. So some advanced signage as

322

00:26:32.900 --> 00:26:39.970

as well as, in this case, on these a-frame, these light barricades,

323

00:26:37.170 --> 00:26:43.170

and those were important for emergency

324

00:26:40.470 --> 00:26:44.970

services, because they can be very

325

00:26:44.569 --> 00:26:50.750

easily removed. If a fire truck or ambulance needs to get through these, these a-frame barricades are.

326

00:26:48.750 --> 00:26:57.440

are lightweight and designed to be temporary and so that was an important consideration.

327

00:26:55.109 --> 00:26:59.789

New Jersey barriers or anything here. Especially because this is just really one night at a time.

328

00:26:59.789 --> 00:27:03.359

The timing was tricky. .

329

00:27:03.359 --> 00:27:06.569

So, because of the staffing.

330

00:27:06.569 --> 00:27:11.720

in the Department of public works, and because of their needs to communicate road closures to the

331

00:27:10.920 --> 00:27:15.369

public, , we needed to make a decision by noon on any

332

00:27:15.369 --> 00:27:20.019

given day about whether we were going to close the road that night.

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00:27:18.450 --> 00:27:24.839

And so the amphibian migration is entirely weather dependent. We're looking for

334

00:27:24.839 --> 00:27:30.200

thawed ground, nighttime temperature is 40 degrees and above,

335

00:27:28.200 --> 00:27:33.400

and wet weather at night. And as any of you who live in New England

336

00:27:31.200 --> 00:27:36.98d

New York know, spring weather is incredibly fickle and

337

00:27:34.380 --> 00:27:38.579

and so it can actually be very difficult to

338

00:27:38.579 --> 00:27:42.779

know by noon weather conditions will be right for a migration at night.

339

00:27:42.779 --> 00:27:46.839

So, we just have to do the best we can.

340

00:27:46.440 --> 00:27:52.359

But that is one of the reasons that tunnels are more effective.

341

00:27:49.920 --> 00:27:53.359

For the number of,

342

00:27:53.359 --> 00:27:59.720

They can, they can pass because there's less room for human error there, in terms of weather prediction.

343

00:27:57.480 --> 00:28:05.920

But they would stage the barricades for us before their shift ended. They, it was important to them to not have to incur overtime

344

00:28:04.720 --> 00:28:13.480

by coming in at night. And then our volunteers would actually put the barricades up at dusk when we go out to the site for the night.

345

00:28:11.009 --> 00:28:20.160

Even though the road is closed, we still have volunteers out there to count critters because we want to have a sense

346

00:28:17.259 --> 00:28:23.180

for

347

00:28:21.059 --> 00:28:25.549

the impact that this is having.

348

00:28:24.150 --> 00:28:33.950

We did have volunteers out there anyway and then, , what was really important to me was that we could keep the road closed all night. There was some discussion about whether the road should only

349

00:28:31.150 --> 00:28:34.549

be closed

350

00:28:34.549 --> 00:28:38.789

when the humans were out there from the safety perspective,

351

00:28:38.789 --> 00:28:44.440

keeping people safe, but the, the amphibians will migrate all night long.

352

00:28:42.240 --> 00:28:49.089

if conditions are right, and so we successfully advocated to leave the road closed all night and then at 7 am.

353

00:28:46.279 --> 00:28:51.000

the next morning when the new

354

00:28:51.000 --> 00:28:56.970

shift would come on for the day at DPW they would come by and remove the barricades.

355

00:28:56.970 --> 00:29:03.230

We also had some discussion about how often we were going to request this.

356

00:29:00.240 --> 00:29:04.380

Any of you who've been out

357

00:29:04.380 --> 00:29:09.720

on these nights, or have participated in these amphibian crossing projects know that, .

358

00:29:09.720 --> 00:29:16.380

there's a wide variety of weather conditions that leads to variability

359

00:29:13.980 --> 00:29:20.170

in in amphibian, , activity and so

360

00:29:17.279 --> 00:29:21.180

sometimes you have

361

00:29:21.180 --> 00:29:27.960

2 or 3 or 4 really big nights. Sometimes we have some medium nights and some small nights and we, we weren't going to close the road

362

00:29:26.160 --> 00:29:31.359

every single time there was rain in the forecast.

363

00:29:30.960 --> 00:29:36.490

The city agreed to close the road for up to 6 nights and we really tried to

364

00:29:35.490 --> 00:29:42.119

our best to predict which nights would have the most amphibian movement. And in our neck of the woods, this meant from

365

00:29:39.720 --> 00:29:42.720

mid March,

366

00:29:42.720 --> 00:29:51.269

Late April or even early May, but if you live further south, these migrations, of course, can start in February. And if you look further north, they can extend well into May.

367

00:29:51.269 --> 00:29:54.809

So that would be something that would depend on where you are.

368

00:29:54.809 --> 00:30:02.559

So, our first season, 2018, this is just a little snapshot of what that looked like for us.

369

00:30:01.960 --> 00:30:06.410

We actually closed the road on 4 nights that first year, but

370

00:30:05.410 --> 00:30:08.839

one of the nights, the rain never materialized,

371

00:30:08.839 --> 00:30:12.480

so there were 0 amphibians on the road and that night is not on this table.

372

00:30:12.480 --> 00:30:17.960

The nights the dates are white are the nights when the road was closed.

373

00:30:15.589 --> 00:30:21.220

The dates in red are nights when we did not close the road,

374

00:30:19.619 --> 00:30:23.069

but there was a small migration.

375

00:30:23.069 --> 00:30:27.559

And so we had very many,

376

00:30:26.759 --> 00:30:31.339

had very minimal road kill recorded that year.

377

00:30:29.940 --> 00:30:33.990

2000 live animals over the course of that season, only 23 dead.

378

00:30:33.990 --> 00:30:38.490

And again, remember that these are under representations, cause they really only

379

00:30:36.990 --> 00:30:40.490

show the times when people were out there.

380

00:30:40.490 --> 00:30:45.930

to count the animals not the times when animals are moving out of our view.

381

00:30:45.930 --> 00:30:54.240

So, looking just also kind of across the board, I took a look at the years

382

00:30:54.240 --> 00:30:57.779

when we've got kind of good data.

383

00:30:57.779 --> 00:31:03.160

And how many how many nights we've been out on the road and years in rather than nights when we've

384

00:31:00.980 --> 00:31:07.150

had road closures and the numbers, and parentheses are the number of nights you close the road. .

385

00:31:04.759 --> 00:31:07.920

For instance,

386

00:31:07.920 --> 00:31:13.990

in 2019, we had volunteers out serving on 9 nights, but the room was only closed 5 times.

387

00:31:11.720 --> 00:31:17.710

Only closed 5 times. 2020 you'll see, we didn't do road closures and that's because.

388

00:31:14.910 --> 00:31:19.720

we're concerned about

389

00:31:18.720 --> 00:31:22.390

crowds and we often have

390

00:31:22.390 --> 00:31:30.289

a lot of people coming out to see the frogs at our site so because of the pandemic, we took a break that year, but.

391

00:31:27.930 --> 00:31:31.440

392

00:31:31.440 --> 00:31:37.670

Looking at these together, I'm hesitant to put too much weight on any of these figures yet.

393

00:31:35.670 --> 00:31:41.789

Because, of all of the factors we've already talked about.

394

00:31:39.460 --> 00:31:45.630V

variable volunteer effort, we only have 3 years of data from when the road was closed,

395

00:31:45.630 --> 00:31:51.750

But it is interesting to see that your average percent mortality in the years without road closures was about

396

00:31:49.349 --> 00:31:52.789

13% and

0

397

00:31:52.589 --> 00:31:56.160

And the years with road closures, just only about 3.

398

00:31:56.160 --> 00:32:02.210

And here's another way of just looking at that. So the reason we don't have 0 mortality again

399

00:32:00.210 --> 00:32:05.910

on the years with road closures is that we didn't close the road every single night.

400

00:32:05.910 --> 00:32:09.000

That it means, we only closed the road of the nights when.

401

00:32:09.000 --> 00:32:12.390

we thought there'd be the highest number of amphibians out and about.

402

00:32:12.390 --> 00:32:16.660

And it does seem that even with those road closures, not being

403

00:32:15.589 --> 00:32:21.509

not completely covering the entire migration, that they are making a difference.

404

00:32:21.509 --> 00:32:28.769

And, of course, amphibians is one part of the puzzle, but there's, there's more to this too.

405

00:32:26.970 --> 00:32:34.460

One of the other outcomes was a really inspiring level of public engagement.

406

00:32:31.859 --> 00:32:35.059

The 1st year that we

407

00:32:35.059 --> 00:32:39.410

closed the road, this made big news, because noone had done this in New Hampshire before.

408

00:32:38.609 --> 00:32:42.369

still to my knowledge, there's, there's no other communities doing this. And so it.

409

00:32:42.369 --> 00:32:49.900

was all over the media, local newspapers state newspapers, the public radio station.

410

00:32:48.099 --> 00:32:54.240

The city would be sharing their

411

00:32:51.269 --> 00:32:57.839

announcements about the road closures through press releases and social media.

412

00:32:55.240 --> 00:33:02.660

And then after every night that the road was closed, we would write to the

413

00:33:00.240 --> 00:33:05.259

city the next morning and share with them the

414

00:33:03.660 --> 00:33:08.569

amphibian counts from the night before so that they could see how many

415

00:33:07.200 --> 00:33:13.819

amphibians benefited from their, this action and then they would share that

416

00:33:10.859 --> 00:33:15.549
through their social media too.

417

00:33:13.950 --> 00:33:18.410
And it turned out that those were the most popular

418

00:33:17.609 --> 00:33:20.789
posts of theirs all year long. They reached.

419

00:33:20.789 --> 00:33:26.500
tens of thousands of people and then one thing that really surprised us at first was

420

00:33:24.690 --> 00:33:29.299
the in-person level of interest

421

00:33:27.700 --> 00:33:35.099
Normally we'd have our trained volunteers who are coming out there. They're on our email list. They they know about the

422

00:33:35.099 --> 00:33:40.279
Migration. They're coming out there to help prevent roadkill. But the

423

00:33:38.670 --> 00:33:42.079
first night that we closed the road,

424

00:33:41.680 --> 00:33:48.660
there was a whole bunch of people who heard about it, not through our channels, not through our amphibian crossing program, but through the city.

425

00:33:47.460 --> 00:33:51.000
And they were really curious and

426

00:33:50.799 --> 00:33:56.190
so our first night, we actually had 50 visitors to the site many of whom had had no idea about

427

00:33:54.990 --> 00:33:59.190

the amphibian migration, they just wanted to come and check it out.

428

00:33:59.190 --> 00:34:05.109

And that was wonderful, and also presented us with, a surprising people.

429

00:34:03.509 --> 00:34:08.219

management challenge. So we were used to kind of

430

00:34:08.219 --> 00:34:11.619

managing for safety and thinking about traffic and.

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00:34:11.619 --> 00:34:15.690

we weren't really used to managing

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00:34:14.690 --> 00:34:18.489

crowds, and I'm trying to kind of quickly get a lot of

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00:34:17.889 --> 00:34:25.130

people up to speed and also make sure that they weren't inadvertently stepping on any critters while they were out there.

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00:34:24.329 --> 00:34:29.429

So it's a good problem to have, but it, it definitely caught us off guard that first night.

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00:34:29.429 --> 00:34:37.559

So, in terms of just some recommendations, if this is something that you would like to think about for your community, I would say.

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00:34:37.559 --> 00:34:43.130

The first thing is to start small.

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00:34:41.130 --> 00:34:46.360

We coordinate crossing efforts now through a

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00:34:44.190 --> 00:34:50.309

dozen primary sites, and a couple more.

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00:34:47.730 --> 00:34:51.320

primary sites and a couple more dozen

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00:34:51.320 --> 00:34:56.659

kind of secondary sites and it's a big effort, but you can start with one site

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00:34:54.449 --> 00:35:00.420

in your town and in fact, I'd recommend

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00:34:58.019 --> 00:35:04.280

doing some, some surveys to see where these crossings are. And

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00:35:01.679 --> 00:35:06.079

collecting data at one or

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00:35:06.079 --> 00:35:11.489

for just a few sites, , start with something manageable and really start

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00:35:09.090 --> 00:35:15.170

to collect some information and also remember that you're not going to

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00:35:13.170 --> 00:35:20.469

close the road for amphibian the very first, year that you're collecting data. This takes time.

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00:35:20.070 --> 00:35:26.199

To make sure that it makes sense to close the road, to see what kind of species you

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00:35:23.400 --> 00:35:29.000

have out there, to see if there are rare species out there, to see if

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00:35:29.000 --> 00:35:32.159

you have 10 salamanders or 500

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00:35:32.159 --> 00:35:36.739

salamanders crossing a road at a given spot on a migration night.

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00:35:36.539 --> 00:35:41.849

So start with a site and collect some information about that.

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00:35:41.849 --> 00:35:45.489

I also really recommend starting early.

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00:35:44.889 --> 00:35:52.809

Early, so our conversations about spring road closures with the city started the prior October,

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00:35:50.449 --> 00:35:56.420

and that gave us a lot of time to bring all the

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00:35:53.820 --> 00:35:59.619

partners to the table to work through in our case, the city council

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00:35:57.420 --> 00:36:01.489

meeting schedule, which

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00:36:01.489 --> 00:36:05.670

They only were meeting, once or twice a month and so it took some time and

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00:36:05.670 --> 00:36:11.619

they had questions to kind of go back and answer those questions and then return

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00:36:09.059 --> 00:36:12.510

to the next meeting to discuss it.

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00:36:12.510 --> 00:36:19.110

But it also just takes time to plan this. So, I, I do hear from people every March or April, or we're really excited about this.

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00:36:16.909 --> 00:36:22.500

They want to just jump, jump in and start looking at

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00:36:19.980 --> 00:36:25.969

at road closures in their town that year and

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00:36:24.269 --> 00:36:28.510

it'd be great if it worked that way, but you

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00:36:27.309 --> 00:36:32.670

really need to to start early. So if you're thinking about this in April, maybe you're thinking

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00:36:30.469 --> 00:36:36.139

about road closures or crossing efforts, not for that April.

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00:36:35.340 --> 00:36:43.610

But for the next year, cause it does take some time to really have these conversations,

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00:36:40.920 --> 00:36:44.409

Really important to

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00:36:44.409 --> 00:36:49.210

engage your community and to talk with all the partners who might.

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00:36:47.610 --> 00:36:53.519

be affected by this. So, in our case, it's a really great partnership because

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00:36:51.119 --> 00:36:57.320

city of Keene has expertise in transportation planning. They've got the

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00:36:54.519 --> 00:37:01.030

expertise in transportation planning, they've got the equipment for actually closing the road. They've got the communications

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00:36:59.119 --> 00:37:06.340

for getting the word out to people.

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00:37:04.500 --> 00:37:12.550

But also we bring as a nature organization expertise around reading the tea

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00:37:09.929 --> 00:37:13.019

leaves for when a migration might take

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00:37:13.019 --> 00:37:16.170

place and being able to

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00:37:16.170 --> 00:37:19.230

educate the community about

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00:37:19.230 --> 00:37:25.079

the ecology and the kind of magic of these big nights. And so I don't think that we could.

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00:37:23.800 --> 00:37:31.190

do it without one another. We, we really need them as the city to

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00:37:28.650 --> 00:37:33.590

handle the road end of things, and they need us

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00:37:33.590 --> 00:37:37.210

as a partner to, to tell them

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00:37:37.010 --> 00:37:43.280

when to close the roads and to handle the education and ecology and of things. And of course, none of this really

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00:37:42.079 --> 00:37:45.449

possible without

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00:37:45.449 --> 00:37:50.289

all of our volunteers who came together, to help make this happen. In fact.

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00:37:48.690 --> 00:37:54.500

10 years before these road closures, there was someone who

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00:37:51.909 --> 00:37:55.590

who asked the city to

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00:37:54.989 --> 00:38:00.590

consider putting amphibian tunnels in at this site, and the city asked me to come in and talk to them

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00:37:58.289 --> 00:38:03.630

about that. And I, I did that and I said, you know.

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00:38:01.829 --> 00:38:07.51

tunnels are expensive and may not be appropriate for this site cause.

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00:38:06.519 --> 00:38:11.579

we don't have rare species here, but, road closure.

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00:38:10.349 --> 00:38:15.329

are inexpensive and are certainly something that you could consider and they were

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00:38:15.329 --> 00:38:19.559

very polite and they smiled and they nodded and they said

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00:38:18.329 --> 00:38:22.809

Thank you for your time and we don't think that we want to do that.

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00:38:22.030 --> 00:38:29.869

Ten years later, we're back at the table with them. We've got 10 more years of data under our belt, but we also now have year after year

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00:38:29.070 --> 00:38:34.909

of volunteers and community members who are part of this project

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00:38:32.429 --> 00:38:35.670

And they packed the house.

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00:38:35.670 --> 00:38:41.280

And that was a really compelling argument for city council. So, what a difference it made to show up by my

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00:38:39.480 --> 00:38:43.239

by myself versus showing up

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00:38:43.239 --> 00:38:49.199

with our salamander crossing brigade folks until, I think it made all the difference really.

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00:38:49.199 --> 00:38:57.750

So, this might not be possible for everyone, but an organization like ours, the Harris center, we have naturalist on staff and what we found is that when

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00:38:57.750 --> 00:39:05.079

so many people from the public were coming to the site, and it is really helpful to have 1 or 2 staffers on hand to

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00:39:03.170 --> 00:39:12.500

orient people to the site, to let them know what's going on out there, people who've never seen an amphibian migration before,

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00:39:09.900 --> 00:39:14.070

Don't know what wood frog is or a peeper.

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00:39:14.070 --> 00:39:20.090

It's really helpful if you have access to, you know, to naturalists through your local nature center.

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00:39:17.489 --> 00:39:23.210

to encourage them to come out and

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00:39:21.820 --> 00:39:25.440

to be out there with you and helping.

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00:39:25.440 --> 00:39:31.010

I just have a couple more slides. I see Laura is giving me the Time's almost up.

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00:39:31.010 --> 00:39:37.150

One thing we discovered our first year was, it was really important to have, in addition to, to having people on site who can

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00:39:34.409 --> 00:39:40.840

orient folks was to have a really simple communications plan.

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00:39:38.750 --> 00:39:44.329

for the public and here's what's a part of our communications plan.

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00:39:44.130 --> 00:39:50.099

The migration happens after dark and only in wet weather. So the 1st year,

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00:39:47.480 --> 00:39:53.099

they were staging the barricades, right? At the end of their

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00:39:50.500 --> 00:39:54.690

day shift around 3:00. P. M.

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00:39:54.690 --> 00:39:59.489

And it wasn't getting dark until 7:00 P. M. But people saw these barricades and they were going out and looking for

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00:39:59.489 --> 00:40:02.920

frogs and were very disappointed that there weren't any frogs.

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00:40:02.519 --> 00:40:07.239

And then we also, as I said, had a couple of nights where we closed the road, but then the rain

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00:40:07.239 --> 00:40:10.670

never quite materialized and so there were no amphibians out and about.

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00:40:10.469 --> 00:40:19.289

And so some really basic, this basic ecology concepts many people didn't realize that it was only on rainy nights that this happened. So, that was the first part

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00:40:16.440 --> 00:40:22.489

of our plan: only expect to see frogs after dark and if it's wet.

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00:40:19.690 --> 00:40:26.190

Second part was if you plan to come to the crossing, bring

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00:40:23.789 --> 00:40:28.210

a flashlight, one for each member of your party,

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00:40:27.809 --> 00:40:33.010

and cell phone flashlights are not good enough, and dress for the weather.

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00:40:31.210 --> 00:40:38.530

So we would have a family of 7 or 8 with 1 flashlight between them and

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00:40:36.639 --> 00:40:43.559

people without rain jackets on, because it didn't occur to them that it was, but that's what it was going to be like.

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00:40:41.159 --> 00:40:45.960

Even though the road's not open to cars, it's not

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00:40:45.960 --> 00:40:52.170

a particularly safe situation for all the spring peepers, who are the size of quarters hopping across the road if people can't see them.

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00:40:52.170 --> 00:40:58.179

And then the other thing was to kind of remind people that there are nights when the road is not

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00:40:55.980 --> 00:41:00.719

closed and if you visit on those nights

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00:41:00.719 --> 00:41:07.090

these safety considerations wearing a vest and being vigilant about traffic became important, because people came to expect

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00:41:06.369 --> 00:41:15.610

the road will be closed and so we had to be really clear about when it was closed and when it was not closed.

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00:41:12.809 --> 00:41:17.429

So that is on the end of my time, for my formal

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00:41:17.429 --> 00:41:23.199

slides and I don't know if there's time for questions now, Laura or if we want to wait.

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00:41:21.599 --> 00:41:30.329

Laura Heady: Yes, no, we have about 5 minutes for questions, and we have lots of questions coming in. So, Brett, thank you so much

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00:41:30.329 --> 00:41:38.610

for that wonderful presentation. I'm also just getting people's responses saying this is wonderful.

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00:41:38.610 --> 00:41:41.969

So, , let's see where to begin. .

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00:41:41.969 --> 00:41:45.900

Well, more of a kind of a generally ecology question that

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00:41:45.900 --> 00:41:50.489

Has been asked is how do amphibians migrate back

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00:41:50.489 --> 00:42:00.750

to their vernal pool? And I'm assuming they mean, the pools that they use for breeding. And then, well, I don't know if you want to start with that. That's kinda the beginning of the story. Brett Thelan: Meaning how,

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00:42:00.750 --> 00:42:07.369

is there any more information on what they mean by how, like, how they're navigating, or how far.

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00:42:07.369 --> 00:42:13.559

Laura Heady: I'm guessing how they navigate to a pool. Brett Thelan: Yeah, that's an interesting question. I mean, there's a lot of scientific

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00:42:13.559 --> 00:42:21.150

discussion about that. I don't know that there's a lot of consensus about it. There's some thought that there, , salamanders may leave pheromone trails.

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00:42:21.150 --> 00:42:28.989

Frogs, once they get to the pool are pretty loud about it. The mail frogs are singing and so that may be

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00:42:27.699 --> 00:42:34.349

an audio queue for other frogs to find their way back there and then there may just

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00:42:34.349 --> 00:42:42.909

be some knowledge that we don't know about as humans that that helps draw them just like, you know, with bird migration or something like that.

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00:42:40.309 --> 00:42:44.730

Laura Heady: and the fact that

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00:42:44.730 --> 00:42:56.159

they're moving on rainy, dark cloud covered nights too. It's, you know, that doesn't bode well for following anything. You know, I would think in terms of light, although the opening.

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00:42:56.159 --> 00:43:03.360

in the canopy above vernal pools does create a slight differential. Perhaps. Brett Thelan: There's some speculation about that

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00:43:00.960 --> 00:43:04.010

beyond light, yeah.

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00:43:04.010 --> 00:43:10.210

But also remember that spotted salamanders spend the rest of their lives underground where it's pitch black so probably sight

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00:43:07.610 --> 00:43:12.820

is less important, at least for them. Mm. Hmm.

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00:43:11.039 --> 00:43:16.920

Laura Heady: And then, , let's see.

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00:43:16.920 --> 00:43:23.280

Well, 2 people have asked and I know we brought this up at our last

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00:43:23.280 --> 00:43:30.750

webinar, you know, that we don't post any maps of known crossings in the Hudson Valley because of concern about the pet trade. And so

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00:43:30.750 --> 00:43:36.000

I guess with the road closure, in particular drawing kind of attention from the public,

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00:43:36.000 --> 00:43:41.130

there's a couple of questions about whether you were concerns at all about collectors who might want to illegally

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00:43:41.130 --> 00:43:46.099

collect the amphibians. Brett Thelan: That's a really good question. It's a really good question.

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00:43:44.500 --> 00:43:51.929

I would say that we haven't had that on our radar as much. And our thoughts have been that

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00:43:51.929 --> 00:43:56.489

it was better to connect volunteers to the sites where they could go

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00:43:56.489 --> 00:44:04.829

that they were more likely to be in the grand scheme of things, more helping than harming. But we also aren't

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00:44:04.829 --> 00:44:11.059

I know for for something like turtles or rare species, it would be maybe more of a concern.

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00:44:10.059 --> 00:44:13.230

Be more of a concern so we have taken

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00:44:13.230 --> 00:44:17.940

A different tack with that, but, , there's certainly is a pet trade and there's certain

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00:44:17.940 --> 00:44:22.719

trade offs, I think that we're making about trying to provide access

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00:44:21.719 --> 00:44:30.110

to folks who want to go out and volunteer. We've erred on the side of providing more information, but you can make a really good argument for not doing that.

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00:44:29.309 --> 00:44:34.139

For not doing that. Laura Heady: Well, and it's hard because without the information, you can't take any action.

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00:44:34.139 --> 00:44:41.880

Right. So there has to be some level of publicizing and there's some folks who feel like, too if somebody really wants to

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00:44:41.880 --> 00:44:45.239

make money in the illegal trade of of wildlife,

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00:44:45.239 --> 00:44:52.800

they're going to they, they already know how to figure this stuff out. I mean, the science is out there, it's readily available on the Internet. But I think what we can do is just.

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00:44:52.800 --> 00:45:01.889

not reveal everything super easily and make it super accessible, but try to be strategic about what we do share, with these migration locations.

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00:45:01.889 --> 00:45:06.320

Brett Thelan: You know what I would say, like, where our road closure is, these are extremely common species.

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00:45:04.889 --> 00:45:10.280

Spring peepers, frogs, you can find them. Anyone who wants to

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00:45:07.920 --> 00:45:15.000

can find them by listening for them. So, for those

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00:45:12.079 --> 00:45:17.550

I'm less worried about that 'cause they are abundant and

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00:45:17.550 --> 00:45:28.289

common. Laura Heady: Right, and then there was a couple of questions regarding signs. One comment was that your data is striking and so sad to see.

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00:45:28.289 --> 00:45:34.889

And have you considered putting up a sign during the migration with this disturbing data to educate everyone that uses the road?

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00:45:34.889 --> 00:45:45.690

Brett Thelan: That it'd be interesting. I mean, it'd be tough to find something concise enough to put on a sign. We do have, you can maybe see behind me these

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00:45:45.690 --> 00:45:50.510

Salamander crossing signs that that go up, at certain of our sites where we have a lot of

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00:45:49.710 --> 00:45:52.860

amphibian activity or volunteer activity.

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00:45:52.860 --> 00:45:59.849

We do find that those signs, if they're not attended that they walk away, because they're really cool. So.

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00:45:57.809 --> 00:46:01.449

we don't leave them out when

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00:46:01.449 --> 00:46:05.519

we're not there. We have been talking with the city

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00:46:05.519 --> 00:46:09.809

about some more, rugged signage that

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00:46:09.809 --> 00:46:17.690

looks more official. We have a few sites where cities have made big orange, official, looking signs like, the kind that you would see in a

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00:46:15.090 --> 00:46:21.590

construction zone, and that definitely, slows traffic way

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00:46:19.860 --> 00:46:24.059

down compared to these, these kind of more

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00:46:24.059 --> 00:46:29.960

Plastic, smaller, more difficult to see signs.

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00:46:27.570 --> 00:46:32.159

We do signs like this, but I haven't we haven't really

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00:46:32.159 --> 00:46:38.829

for the idea of science, with any of the data on them or numbers, it's hard to read them when you're driving fast, you know.

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00:46:36.030 --> 00:46:39.420

Laura Heady: Right.

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00:46:39.420 --> 00:46:47.099

And we've also, because of the concern about raising too much awareness about locations,

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00:46:47.099 --> 00:46:53.730

we have never encouraged signage, but we did create signs that, at least volunteers could put out while they're on the roads.

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00:46:53.730 --> 00:46:58.530

To draw attention to them, and also for that educational component that is really important.

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00:46:58.530 --> 00:47:01.780

To try to get out every way we can.

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00:47:01.780 --> 00:47:04.980

Brett Thelan: The signs the, the primary,

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00:47:04.980 --> 00:47:10.780

They say salamander crossing, but they're really about people being on the road. They're really about the

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00:47:09.179 --> 00:47:12.320

the safety of the volunteers.

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00:47:12.320 --> 00:47:18.429

Because if you're not driving 10 miles an hour or less, you're very not likely

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00:47:15.900 --> 00:47:20.190

to see the critters on the road.

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00:47:20.190 --> 00:47:25.989

But we really want to slow traffic down for our volunteers and say, make it as safe as possible for them. So that's really

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00:47:23.789 --> 00:47:27.630

where we're going with the signage.

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00:47:27.630 --> 00:47:32.190

Laura Heady: And then, so I'm going to switch gears to Chris.

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00:47:32.190 --> 00:47:37.409

Just let you end with this one question that really speaks to the positive

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00:47:37.409 --> 00:47:41.250

, benefits of things like your road closing.

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00:47:41.250 --> 00:47:44.699

The question is, have you noticed any positive feedback loops?

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00:47:44.699 --> 00:47:50.309

With crossing amphibians, that is the more you rescue, the more that need rescuing each year?

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00:47:50.309 --> 00:47:56.340

So, are you seeing the results, the results or the, the benefits of saving more?

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00:47:56.340 --> 00:48:11.275

Brett Thelan: And any location, our data kit, we haven't looked at our data that way, but I really don't think it can tell us that. I'm very cautious about year to year comparisons. Because if all of our rain comes at 2:00 am one year, our numbers for our accounts are gonna be very low cause there's almost nobody out looking

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00:48:08.880 --> 00:48:14.079

At 2:00 am but it doesn't mean that there aren't a lot of

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00:48:12.480 --> 00:48:16.969

amphibians out and about. It just means we didn't count them

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00:48:16.170 --> 00:48:21.679

that year so I'm, I'm very cautious about year to year comparisons in that way.

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00:48:19.679 --> 00:48:27.550

I will say I have noticed a positive feedback loop in a human way, in that we were very concerned the first year that

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00:48:25.949 --> 00:48:29.300

there would be a lot of pushback and

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00:48:29.300 --> 00:48:32.579

and concern and criticism about this.

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00:48:32.579 --> 00:48:40.750

And instead, it's become a real source of pride for the city of Keene.

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00:48:37.949 --> 00:48:44.820

People love that their city cares enough about wildlife to do this and really our.

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00:48:44.820 --> 00:48:50.530

sharing the word and kind of wanting to tel.

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00:48:49.530 --> 00:48:54.590

people that this is something that happens in their community, which is really cool.

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00:48:53.789 --> 00:48:58.139

And the opposite of what we were afraid might happen where people thought

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00:48:58.139 --> 00:49:01.860

it would be stupid or a waste of time or that sort of thing.

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00:49:01.860 --> 00:49:15.219

Laura Heady: Well, that's encouraging and and I just, , there was a question about how many years of data you had prior to being able to propose the road closing it was 11 years, wasn't it? Or 9?

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00:49:14.820 --> 00:49:21.150

Brett Thelan: I mean, our early years were pilot seasons, and so our data were pretty incomplete from 2006 and 2007, but we

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00:49:19.219 --> 00:49:26.340

started getting good data in 2008 and so 10 years.

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00:49:23.380 --> 00:49:28.550

but I don't think you need 10.

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00:49:26.429 --> 00:49:30.300

Yeah, but I don't think you need 10 years of data. It's just what

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00:49:30.300 --> 00:49:35.840

our situation is, I think if you had 3 or 4 years or 5 years of data, that could be enough for what we did.

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00:49:34.170 --> 00:49:41.909

Laura Heady: That could be enough and I think your your comment, though, it's true. I mean, we see the numbers not only amphibians

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00:49:41.909 --> 00:49:46.530

appear to be low if the migration happens at 2 or 3 in the morning.

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00:49:46.530 --> 00:49:54.809

But also, our numbers of volunteers appear to be low that year because, you know, folks aren't going out and they're not reporting anything if they're already

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00:49:54.809 --> 00:50:02.639

wrapped it up for the night, at those late hours. So, anyway, thank you so much. , we have lots more great questions and some of which

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00:50:02.639 --> 00:50:09.900

relate back to our program and I'm going to try to put some links in the Q and A box to help folks find some of the resources they need. But now, let's.

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00:50:09.900 --> 00:50:14.909

cu up, Chris and Chris, you should be able to share your screen Brett. Thank you again.

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00:50:14.909 --> 00:50:18.599

We'll have more time for some Q and A, at the end with Brett and Chris both.

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00:50:18.599 --> 00:50:24.150

So to introduce Chris, Chris, is the environmental resources

633

00:50:24.150 --> 00:50:29.369

coordinator at the Vermont agency of transportation also known as VTrans.

634

00:50:29.369 --> 00:50:34.019

And Chris coordinates the work of the biological, archaeological, and historic

635

00:50:34.019 --> 00:50:40.349

preservation staff at VTrans. He works closely with environmental stewardship initiatives that support

636

00:50:40.349 --> 00:50:44.070

the agency's mission and environmental stewardship initiatives

637

00:50:44.070 --> 00:50:47.969

with the focus, especially on habitat connectivity.

638

00:50:47.969 --> 00:50:51.179

Outside of his work in state government, Chris is a member of the

639

00:50:51.179 --> 00:50:54.570

Vermont reptile and amphibian scientific advisory group.

640

00:50:54.570 --> 00:50:59.280

And he was the volunteer municipal project manager for the design and construction

641

00:50:59.280 --> 00:51:11.250

of the wildlife crossing in the town of Monkton in Vermont that Brett mentioned. This amphibian wildlife crossing project, received a federal highway administration, 2017, environmental excellence award for ecosystems,

642

00:51:11.250 --> 00:51:20.150

Habitat and wildlife, so thank you, Chris so much for joining us today and for sharing the Monkton story with us. Chris Slesar: Oh, my gosh. Yeah. Thank you.

643

00:51:17.699 --> 00:51:24.110

Oh, my gosh. Yeah Thank you. hopefully you can see my screen and hear me aokay.

644

00:51:21.150 --> 00:51:25.260

I mean, that looks great.

645

00:51:25.260 --> 00:51:31.239

Thanks for inviting me and Brett what an awesome, awesome project. And, , it just.

646

00:51:29.260 --> 00:51:32.639

And it just, it gives me goosebumps.

647

00:51:32.639 --> 00:51:37.519

To think that your project is actually

648

00:51:35.920 --> 00:51:39.599

Project is actually changing human behavior.

649

00:51:39.599 --> 00:51:43.139

and getting the humans to adapt.

650

00:51:43.139 --> 00:51:46.469

To to wildlife so, , it's really cool stuff.

651

00:51:46.469 --> 00:51:50.429

Thank you, I'm Chris from VTrans.

652

00:51:50.429 --> 00:51:53.760

With this project, my professional

653

00:51:53.760 --> 00:51:59.730

And volunteer worlds, and work overlapped quite a bit. While I work a lot

654

00:51:59.730 --> 00:52:06.690

With habitat connectivity in my day job, like Laura said, I served as

655

00:52:04.329 --> 00:52:07.889

the municipal

656

00:52:07.489 --> 00:52:12.280

project manager for this project on a volunteer basis.

657

00:52:11.880 --> 00:52:17.739

So, conservation is no sport for the short winded.

658

00:52:15.630 --> 00:52:21.539

I love that quote, , it's from the former interior secretary

659

00:52:21.539 --> 00:52:29.329

Stewart Udall under the Kennedy and Johnson administrations.

660

00:52:27.329 --> 00:52:30.690

And it really rings true with projects like this.

661

00:52:30.690 --> 00:52:38.349

And no sport for the short wind, it does not mean conservation requires droning on in a long winded, tedious

662

00:52:36.349 --> 00:52:41.630

way. It means that conservation is

663

00:52:39.900 --> 00:52:43.139

a marathon.

664

00:52:43.139 --> 00:52:48.750

Brett showed with her project, and I'll try to show with mine.

665

00:52:48.750 --> 00:52:53.250

I'll show you a case study of a public private partnership

666

00:52:53.250 --> 00:52:57.599

That was brought together to retrofit a busy rural

667

00:52:57.599 --> 00:53:02.039

Road in Vermont, with wildlife crossings

668

00:53:00.840 --> 00:53:04.710

Specifically targeting amphibian populations. I'll give some

669

00:53:04.710 --> 00:53:10.920

background context on the project, talk about

670

00:53:08.280 --> 00:53:11.920

actual construction and the structures

671

00:53:11.920 --> 00:53:16.489

themselves and then share some

672

00:53:15.119 --> 00:53:18.269

Lessons learned.

673

00:53:18.269 --> 00:53:22.500

Once again, here's the wetland. This is for the wetland at our site.

674

00:53:22.500 --> 00:53:28.650

It's known locally as the Heisingus swamp,

675

00:53:25.929 --> 00:53:30.000

it's part of the part of the Heisingus farm in Monkton.

676

00:53:29.400 --> 00:53:33.809

they are awesome neighbors. Awesome partners with the project.

677

00:53:33.809 --> 00:53:36.809

And this is where the our huge population

678

00:53:36.809 --> 00:53:41.030

of amphibians come to breed in the spring.

679

00:53:41.030 --> 00:53:47.690

Not so much what a vernal pools as a huge wetland with lots

680

00:53:46.619 --> 00:53:51.780

With lots and lots, hundreds of fishless vernal pockets within.

681

00:53:51.780 --> 00:53:57.380

Adjacent to the wetlands is this gorgeous steep rocky upland.

682

00:53:57.380 --> 00:54:05.579

hardwood forest and like Brett was saying, this is where the amphibians or at least the salamanders spend

683

00:54:05.579 --> 00:54:13.329

95% of their time, mostly underground. And

684

00:54:10.679 --> 00:54:14.670

some of this salamanders we're talking about are

685

00:54:14.670 --> 00:54:19.320

Known as fossorial salamanders because of the

686

00:54:19.320 --> 00:54:24.449

life cycle spending so much time underground,

687

00:54:22.590 --> 00:54:27.019

bisecting the wetlands and the uplands is

688

00:54:27.019 --> 00:54:33.650

The Monkton-Vergennes road, it's built at the toe slope of the hardwood forest, and partially in.

689

00:54:31.619 --> 00:54:36.250

in the wetland, it's become an increasing.

690

00:54:36.050 --> 00:54:45.889

increasingly busy rural connector, with an average daily traffic of around 2000 vehicles a day, which isn't, you know,

691

00:54:43.760 --> 00:54:46.889

by most U. S standards that's not

692

00:54:46.889 --> 00:54:52.880

a ton, but, if you're an amphibian trying to cross, it's a big deal.

693

00:54:50.360 --> 00:54:54.590

For just under a mile,

694

00:54:53.789 --> 00:55:00.130

on this road, there are crossing areas, so it's.

695

00:54:58.050 --> 00:55:03.480

so it's a big crossing area and

696

00:55:01.190 --> 00:55:06.900

you know, for thousands of years, it was going on uninterrupted.

697

00:55:04.949 --> 00:55:11.570

It really came to kind of public attention

698

00:55:08.969 --> 00:55:12.420

1997.

699

00:55:12.420 --> 00:55:18.239

When Jim Andrews, the coordinator of the reptile and amphibian Atlas project in Vermont.

700

00:55:18.239 --> 00:55:22.739
brought attention to this site as a significant crossing site.

701
00:55:22.739 --> 00:55:29.340
So starting right around there around 1997, a local biologist

702
00:55:29.340 --> 00:55:33.860
Steve Parrin who used to work at fish and wildlife, he was retired now,

703
00:55:32.340 --> 00:55:35.460
He began the annual monitoring,

704
00:55:35.460 --> 00:55:39.699
of the migration at the site, and he would record the number,

705
00:55:38.699 --> 00:55:45.599
of individuals and the species of animals crossing and the number.

706
00:55:45.000 --> 00:55:51.900
of individuals that didn't make it across and what species they were.

707
00:55:49.170 --> 00:55:55.929
I got plugged into this monitoring when I first moved.

708
00:55:53.099 --> 00:55:59.929
To Monkton around 2005. And it became pretty.

709
00:55:59.130 --> 00:56:04.809
evident, that it was just a really bad.

710
00:56:03.809 --> 00:56:09.869
scene, even with, like, I don't know, maybe like 5 or 6 volunteer.

711
00:56:08.309 --> 00:56:13.659
out there. At least

712

00:56:11.340 --> 00:56:18.090
50% of the animals were dying and this is not a

713
00:56:16.289 --> 00:56:20.610
site conducive to volunteers. It's

714
00:56:20.610 --> 00:56:24.059
just dark, cars move fast.

715
00:56:24.059 --> 00:56:28.199
So, anyway, this is our flagship species the spotted salamander.

716
00:56:28.199 --> 00:56:33.599
But there are rare species here too. There are some spaces you'd be hard pressed to find

717
00:56:33.599 --> 00:56:40.610
elsewhere in the state, a lot of the overlap with Brett's site

718
00:56:38.130 --> 00:56:42.010
And despite how absolutely charming

719
00:56:42.010 --> 00:56:48.530
his animal is in order to justify spending a lot of public and private money on

720
00:56:48.530 --> 00:56:54.420
An infrastructure fix, we needed a more compelling argument than charming critter. Right?

721
00:56:52.420 --> 00:56:56.130
So.

722
00:56:56.130 --> 00:57:00.840
The Monkton roadside really rings

723
00:56:59.639 --> 00:57:05.289
many bells in terms of justifying.

724
00:57:03.269 --> 00:57:09.690

putting in an infrastructure fix and that kind of boils down.

725

00:57:08.489 --> 00:57:14.800

To 3 or 4 major factors. One: diversity. This is

726

00:57:11.889 --> 00:57:18.599

an extremely diverse site. Lots of amphibian, spotted salamanders,

727

00:57:16.400 --> 00:57:22.710

Blue spotted, the blue spotted Jefferson complex. We have four

728

00:57:22.110 --> 00:57:25.539

toads here, as well as the more.

729

00:57:25.539 --> 00:57:28.739

Common migrating amphibian species, , like.

730

00:57:28.739 --> 00:57:35.409

spring paper and wood frog we have. So we have the rare species here, diversity.

731

00:57:33.130 --> 00:57:36.179

We have a

732

00:57:36.179 --> 00:57:41.429

really large population, and extremely large, large number of individuals here.

733

00:57:41.429 --> 00:57:47.409

It's utterly amazing on a crossing night. And then the other factor.

734

00:57:44.610 --> 00:57:50.980

If this was on the dirt road, it wouldn't be a big deal. But the increasing traffic

735

00:57:49.380 --> 00:57:55.920

volumes at this site, put the population at risk.

736

00:57:55.920 --> 00:58:04.380

So this is where the long winded part comes into play, right?

737

00:58:02.539 --> 00:58:10.289

We had that idea around 2005. And Steve, and I were out walking on the site thinking.

738

00:58:07.780 --> 00:58:12.409

Well, maybe we could, we could do an.

739

00:58:11.159 --> 00:58:14.460

infrastructure fix

740

00:58:14.460 --> 00:58:21.420

Here, , and it seemed like a really good idea at the time, but, .

741

00:58:21.420 --> 00:58:26.269

essentially, it took 10 years of hard work.

742

00:58:24.480 --> 00:58:30.869

and fundraising to make that happen.

743

00:58:29.070 --> 00:58:33.469

I'll try to condense 10 years into one slide.

744

00:58:33.469 --> 00:58:39.400

It took us 2 attempts to land a transportation

745

00:58:36.869 --> 00:58:42.800

alternatives grant for 25,000 dollars that allowed us

746

00:58:40.199 --> 00:58:43.199

to do a

747

00:58:43.199 --> 00:58:46.510

feasibility study, and at the end of the study

748

00:58:46.510 --> 00:58:53.570

we came away with conceptual plans, but we still needed a lot

749

00:58:51.179 --> 00:58:54.510

of money to construct. So,

750

00:58:54.510 --> 00:58:58.320

another 2 tries at the transportation alternatives pot.

751

00:58:58.320 --> 00:59:01.550

And, the 2nd time again was a

752

00:59:01.550 --> 00:59:07.489

charm and we got I think it was about 150,000 dollars for construction.

753

00:59:07.289 --> 00:59:11.070

This was followed quickly by a US Fish and Wildlife.

754

00:59:11.070 --> 00:59:17.320

SWIG grant. These 2 large federal grants

755

00:59:15.179 --> 00:59:21.179

really like, got the momentum going,

756

00:59:18.380 --> 00:59:22.780

and we cobbled money from

757

00:59:22.780 --> 00:59:32.130

Of other sources. We did an indiegogo campaign that was actually really fun

758

00:59:29.380 --> 00:59:36.630

and raised a lot of money, and then there were a lot of smaller grants. And there was even a

759

00:59:36.630 --> 00:59:41.400

a bake sale that one of the local daycares held.

760

00:59:41.400 --> 00:59:44.829

So.

761

00:59:44.630 --> 00:59:49.260

Eventually, eventually we got enough money to build.

762

00:59:49.260 --> 00:59:53.719

We didn't get enough money to build .

763

00:59:52.920 --> 00:59:57.719

a to sort of retrofit and mitigate the entire

764

00:59:56.119 --> 00:59:59.400

site, so.

765

00:59:59.400 --> 01:00:03.179

You know, like Brett's saying there's trade offs right? .

766

01:00:03.179 --> 01:00:10.320

They can't close the road on every night, but we didn't have enough money to mitigate the entire mile.

767

01:00:08.519 --> 01:00:14.619

So we had to like, pick and choose, which are the sites that.

768

01:00:12.210 --> 01:00:18.420

would be most conducive to fitting the structures in

769

01:00:18.420 --> 01:00:23.949

and which ones overlapped with our with our data and

770

01:00:22.139 --> 01:00:28.989

it's important to note that in

771

01:00:27.000 --> 01:00:30.239

in the design team, we had

772

01:00:30.239 --> 01:00:37.500

Biologists. Herpetologists who worked with the designers and tried to pull all of the best components that they

773

01:00:34.639 --> 01:00:39.099

could find from amphibian crossings and

774

01:00:38.300 --> 01:00:42.949

wildlife crossings throughout the world and plug

775

01:00:41.909 --> 01:00:46.199

them into our project and they actually also came

776

01:00:45.000 --> 01:00:52.409

up with some really creative innovations that, we're certainly more than happy to share.

777

01:00:52.409 --> 01:00:56.340

This is a picture of

778

01:00:56.340 --> 01:00:59.909

one of our culverts being delivered on site.

779

01:00:59.909 --> 01:01:04.500

All of the components of the crossings were precast

780

01:01:04.500 --> 01:01:07.860

offsite and then assembled onsite.

781

01:01:07.860 --> 01:01:13.469

Closing the road here was not a good option.

782

01:01:11.070 --> 01:01:14.369

Either for

783

01:01:14.369 --> 01:01:18.510

amphibians or for construction. If we could close the road, then it's really

784

01:01:18.510 --> 01:01:23.539

great and efficient for the contractor. They don't have to worry about traffic, but this is a.

785

01:01:22.739 --> 01:01:28.530

remote site and closing this road is a pretty significant

786

01:01:26.730 --> 01:01:32.909

inconvenience for people traveling through. So we utilized what's called

787

01:01:32.909 --> 01:01:37.469

Phased construction where we would work in one lane at a time

788

01:01:37.469 --> 01:01:42.170

with the traffic controllers spinning the signs.

789

01:01:41.159 --> 01:01:45.179

We did close the road for 2 days

790

01:01:44.579 --> 01:01:48.900

, to allow us to cut the pavement.

791

01:01:48.900 --> 01:01:52.230

And, and put the box culverts in.

792

01:01:52.230 --> 01:02:00.289

Here's some closeups of the culverts. They were

793

01:01:57.510 --> 01:02:04.110

All, well, the two culverts were pre-cast

794

01:02:04.110 --> 01:02:09.889

bottomless box culverts, 5 feet wide by 8 feet tall. Now that 8 feet

795

01:02:07.889 --> 01:02:13.329

is is kind of confusing because

796

01:02:11.130 --> 01:02:14.159

It's not

797

01:02:14.159 --> 01:02:19.530

feet of head room. Once it was installed, we installed it so that

798

01:02:18.929 --> 01:02:24.789

The footings, the sides of the culverts, were buried.

799

01:02:23.789 --> 01:02:29.809

So a moose is not gonna get through there. They're pretty low.

800

01:02:27.329 --> 01:02:32.340

Let's see that other image

801

01:02:32.340 --> 01:02:36.880

on the right shows the our southern

802

01:02:36.880 --> 01:02:41.760

culvert as it was being backfilled. So it was set into the ground

803

01:02:41.760 --> 01:02:48.619

And then we started back filling it. The goal was to mimic the natural

804

01:02:46.050 --> 01:02:56.099

environment as much as humanly possible inside of the culverts, to allow airflow, some ambient light,

805

01:02:53.250 --> 01:02:58.510

as much as possible and

806

01:02:58.110 --> 01:03:04.539

for moisture to wick up from the bottom and drop in through the top.

807

01:03:02.969 --> 01:03:09.070

And we also matched the grade as much as possible. So if they're walking down hill and they get to th.

808

01:03:06.269 --> 01:03:13.230

culvert, they're still walking downhill when they're in there.

809

01:03:13.230 --> 01:03:18.650

One of the

810

01:03:18.000 --> 01:03:24.789

absolute biggest challenges, and one of the absolutely most critical parts of the project

811

01:03:21.960 --> 01:03:27.000

were the retaining walls. The drifts fence.

812

01:03:27.000 --> 01:03:30.059

And

813

01:03:30.059 --> 01:03:35.059

These are designed to keep the amphibians off the road and then guide them into the structures.

814

01:03:34.059 --> 01:03:37.969

We needed these to be as economical as

815

01:03:37.659 --> 01:03:44.360

possible, but we also needed them to be really sturdy and we wanted minimum.

816

01:03:42.360 --> 01:03:46.159

maintenance requirements.

817

01:03:46.159 --> 01:03:55.550

We were aware of some, proprietary amphibian diversion walls, which are really awesome, but they come with some longterm.

818

01:03:52.949 --> 01:04:00.639

B maintenance and reinstallation requirements. We didn't want any of that.

819

01:04:00.239 --> 01:04:03.260

What we settled on was concrete

820

01:04:03.260 --> 01:04:10.699

waste blocks and the low bidder on the con on this contract was a huge contractor.

821

01:04:08.099 --> 01:04:12.530

I was surprised they were the low bidder, but they're a concrete manufacturer.

822

01:04:11.730 --> 01:04:16.019

And so we got a really good

823

01:04:16.019 --> 01:04:20.559

Price on the concrete and these are these blocks are waste

824

01:04:20.159 --> 01:04:23.599

blocks and they're relatively inexpensive.

825

01:04:23.400 --> 01:04:28.429

And so when SBIreland had a job anywhere in the area

826

01:04:26.780 --> 01:04:32.469

and there was left over concrete in the truck, they would bring it back and

827

01:04:30.030 --> 01:04:33.690

make these

828

01:04:33.690 --> 01:04:36.780

Jersey barrier type

829

01:04:36.780 --> 01:04:42.300

building block. Things that we use for our retaining walls and drift fence.

830

01:04:42.300 --> 01:04:47.610

It is important to note these are dry culverts.

831

01:04:45.840 --> 01:04:52.969

They're not designed to carry streams or drainage or water. Their sole purpose

832

01:04:52.289 --> 01:04:55.489

is to move animals and

833

01:04:55.489 --> 01:04:59.889

so they have to be installed above the

834

01:04:58.889 --> 01:05:03.030

drainage ditches so they're separated

835

01:05:03.030 --> 01:05:09.610

from the drainage system alongside of the road, which is carried below

836

01:05:07.429 --> 01:05:11.730

the entrance to these culverts. And we have numerous

837

01:05:11.730 --> 01:05:16.679

pipes that that go under the road to

838

01:05:16.679 --> 01:05:23.260

drain water from one side to the other. Now, they're dry culverts, but they actually need

839

01:05:21.059 --> 01:05:24.260

to be somewhat moist.

840

01:05:24.260 --> 01:05:29.650

Right. And so we wanted to put a grate right across the

841

01:05:27.300 --> 01:05:34.829

Top like they have on the Amherst project. The town would not

842

01:05:31.849 --> 01:05:36.230

go for that. They felt

843

01:05:36.230 --> 01:05:40.210

it was kind of hazardous, and they finally

844

01:05:39.409 --> 01:05:45.449

Settled on, agreeing on

845

01:05:43.050 --> 01:05:46.050

These

846

01:05:46.050 --> 01:05:51.000

iron manholes for lack of a better word. Covers that are slotted to allow

847

01:05:51.000 --> 01:05:58.550

airflow and moisture in from the top, and they're centered on each lane.

848

01:05:56.010 --> 01:05:59.349

So, what are some of the

849

01:05:59.349 --> 01:06:05.199

take home messages? I love this water color.

850

01:06:02.380 --> 01:06:07.570

This is by Woody Jackson and

851

01:06:05.969 --> 01:06:13.989

I guess one of the big messages is it sort of takes the village, right? And we, when we did our indiegogo

852

01:06:11.400 --> 01:06:17.039

campaign,

853

01:06:14.579 --> 01:06:20.989

we asked Jackson if he would paint some watercolors.

854

01:06:19.590 --> 01:06:23.909

Paint some watercolors for us that we could use as promotional

855

01:06:23.909 --> 01:06:30.710

Items as bumper stickers and posters. And he's kind of a

856

01:06:28.969 --> 01:06:32.659

famous local artist. He has these

857

01:06:32.460 --> 01:06:35.670

He painted those iconic Ben and Jerry's ice cream

858

01:06:35.670 --> 01:06:38.940

Containers from way back.

859

01:06:38.940 --> 01:06:42.539

That with the, with the holsteins on them .

860

01:06:42.539 --> 01:06:46.679

So.

861

01:06:46.679 --> 01:06:51.760

A big take home message is the, it's safe to say that the public.

862

01:06:50.789 --> 01:06:54.090

public perception for habitat connectivity

863

01:06:54.090 --> 01:06:59.960

has evolved considerably since we conceptualized this project.

864

01:06:57.489 --> 01:07:01.550

One of our ongoing job

865

01:07:00.750 --> 01:07:07.570

As road ecologists is to, like Brett was saying, is to educate the public

866

01:07:04.829 --> 01:07:09.369

and not just the people who already care

867

01:07:08.570 --> 01:07:12.869

about wildlife and habitat connectivity, but to talk to people who

868

01:07:11.670 --> 01:07:17.840

are asking those hard questions, and to answer the hard questions.

869

01:07:14.940 --> 01:07:20.679

And to stick with it. When we first got

870

01:07:19.800 --> 01:07:25.940

our, our federal highway grant

871

01:07:24.010 --> 01:07:29.389

for construction, we were euphoric. It went

872

01:07:27.090 --> 01:07:31.789

viral. I think the local papers picked

873

01:07:30.190 --> 01:07:35.110

it up and the next day it was in the

874

01:07:34.110 --> 01:07:38.940

Taipei times, in the Seattle times, in the New York Times.

875

01:07:38.940 --> 01:07:45.599

And we were just euphoric. Day after that, I'm driving to work, and I hear on the radio that Senator Coburn

876

01:07:45.599 --> 01:07:52.329

has identified this as one of the government wasteful spending projects

877

01:07:50.039 --> 01:07:56.489

of the year, so that put a damper

878

01:07:53.730 --> 01:07:56.849

on the euphoria.

879

01:07:56.849 --> 01:08:00.000

But when I got back to, and when I got

880

01:08:00.000 --> 01:08:03.119
in the office, my phone was blinking

881

01:08:03.119 --> 01:08:09.150
and it was a message from Senator Leahy's staff saying, "Give us a call.

882

01:08:07.349 --> 01:08:11.57
We're gonna push back. They don't know what they're talking about."

883

01:08:10.380 --> 01:08:20.239
It's true they called it an earmark and it was really, you know, this was a competitive grant.

884

01:08:17.880 --> 01:08:21.840
Project won a

885

01:08:21.840 --> 01:08:27.460
2017 Environmental Excellence Award from the federal highway administration. Talk about

886

01:08:25.060 --> 01:08:30.460
The federal highway administration talk about a , a huge stamp of.

887

01:08:28.859 --> 01:08:33.800
A huge stamp of legitimacy for this kind of work

888

01:08:31.979 --> 01:08:39.350
and then I don't know if folks were able to read the New York Times

889

01:08:37.949 --> 01:08:43.970
article in June of 2021 by catcher 9, when she did at.

890

01:08:41.170 --> 01:08:44.569
2021 by Catrin Einhorn, she did at an amazing

891

01:08:44.569 --> 01:08:50.590
overview of wildlife crossings in the U. S. and it featured...it didn't feature,

892

01:08:47.619 --> 01:08:55.310

but it showcased the Monkton road project as

893

01:08:52.890 --> 01:08:57.710

an example of yeah, we're not just trying to cross.

894

01:08:56.310 --> 01:09:01.279

elk and mule deer.

895

01:09:00.119 --> 01:09:04.729

So one thing that was incredibly interesting

896

01:09:03.329 --> 01:09:07.880

about that article

897

01:09:07.100 --> 01:09:13.390

were the public comments. I avoid the public comments like I avoid the plague

898

01:09:10.680 --> 01:09:18.159

but because I had a vested interest in, in this article, I decided to go against

899

01:09:15.989 --> 01:09:20.359

my rule and read them .

900

01:09:19.159 --> 01:09:24.279

There were, I don't know, 3 or 400 of them

901

01:09:22.680 --> 01:09:25.739

with the exception of two

902

01:09:25.739 --> 01:09:30.939

kind of neutral wise cracks about why the chicken did or did not cross the road,

903

01:09:28.939 --> 01:09:34.020

the other 300-

904

01:09:32.000 --> 01:09:37.399

whatever comments were overwhelmingly

905

01:09:35.220 --> 01:09:41.380

positive and, I couldn't believe it. When was the last time that

906

01:09:38.550 --> 01:09:44.949

happened where the public comment on an environmental

907

01:09:42.180 --> 01:09:45.989

article

908

01:09:45.989 --> 01:09:51.689

were 100% positive. I don't think. Never. So anyway, the thinking has changed.

909

01:09:49.289 --> 01:09:52.689

We've come a long

910

01:09:52.689 --> 01:09:56.039

way with amphibian wildlife and

911

01:09:56.039 --> 01:10:01.909

habitat connectivity. So yeah.

912

01:09:59.310 --> 01:10:02.310

Road crossing

913

01:10:02.310 --> 01:10:05.470

101 – needs to consider future land

914

01:10:05.470 --> 01:10:10.079

use on both sides of the, this big public investment, right?

915

01:10:08.479 --> 01:10:13.470

Public investment, right, you don't want to make a big investment and then have a strip mall

916

01:10:13.470 --> 01:10:18.369

pop up on the other side.

917

01:10:16.500 --> 01:10:19.890

We built that role a little bit, but

918

01:10:19.890 --> 01:10:24.890

In Monkton there were no formal conservation measures in place, but the land is

919

01:10:22.890 --> 01:10:29.569

protected by default. We have this massive wetland complex that it's, it's not going to be

920

01:10:28.170 --> 01:10:34.409

developed and then across from that, the hardwood forest is owned

921

01:10:31.609 --> 01:10:36.409

by a lumber company and we asked them, "Would you be

922

01:10:35.210 --> 01:10:39.659

interested in putting that into a conservation easement?" Ad they're like,

923

01:10:39.659 --> 01:10:46.649

"No, we wouldn't,". But they're a good neighbor and they were like

924

01:10:43.859 --> 01:10:48.670

"You know, we're not going to sell that property.

925

01:10:48.270 --> 01:10:51.840

We're not going to develop it so

926

01:10:51.840 --> 01:10:55.619

don't worry." So that was that was

927

01:10:55.619 --> 01:11:04.579

good news by default both sides of the culverts are conserved. Preimposed construction

928

01:11:02.100 --> 01:11:08.729

construction monitoring – critical. Brett talked about this a lot.

929

01:11:05.789 --> 01:11:10.779

And at Monkton road,

930

01:11:09.029 --> 01:11:17.430

we wouldn't have gotten any of that federal highway or U. S fish and wildlife money without

931

01:11:16.590 --> 01:11:23.449

data that Steve Parrin started collecting in 1997.

932

01:11:20.640 --> 01:11:23.909

Anecdotal information is

933

01:11:23.909 --> 01:11:30.050

not enough to secure 400,000 dollars. So, hats off to Steve.

934

01:11:27.149 --> 01:11:32.340

He, he really

935

01:11:32.340 --> 01:11:40.989

helped make this happen. Without that data, it would not have happened.

936

01:11:38.039 --> 01:11:44.970

We're also kind of obligated, to collect post construction data

937

01:11:42.060 --> 01:11:47.000

to demonstrate whether these things work or not.

938

01:11:45.170 --> 01:11:49.210

And I've done that

939

01:11:48.210 --> 01:11:51.960

on an ad hoc level to the best

940

01:11:51.359 --> 01:11:56.810

I can, and I'm happy to report that the monitoring as of

941

01:11:54.760 --> 01:11:59.810

last year has been taken over by a UVM grad student

942

01:11:59.810 --> 01:12:04.260

who is, is doing a, a proper study on it.

943

01:12:04.260 --> 01:12:10.550

And I can't wait to read his results.

944

01:12:10.949 --> 01:12:15.149

Amphibian crossings are good for the economy. This was our

945

01:12:15.149 --> 01:12:22.850

Norman Rockwell moment. One of my favorite moments, during that long process, it, it came

946

01:12:22.649 --> 01:12:25.750

At a select board meeting, we had a new select board member.

947

01:12:25.750 --> 01:12:31.760

who was reconsidering whether or not to accept the federal highway Grant and I did an

948

01:12:29.020 --> 01:12:35.000

absolutely terrible job at communicating

949

01:12:32.159 --> 01:12:38.789

why it would be a terrible idea to turn down this grant. So while I was going to.

950

01:12:37.590 --> 01:12:41.989

down in a ball of flames in the select board meeting

951

01:12:40.930 --> 01:12:45.579

a local contractors stood up and graciously

952

01:12:43.979 --> 01:12:49.930

bailed me out. Se said, "Hey, this is a good project.

953

01:12:47.729 --> 01:12:55.409

This is real money. This was a grant. The conservation commission did their homework and got this grant.

954

01:12:54.130 --> 01:12:57.340

If we don't take this money, some

955

01:12:57.340 --> 01:13:03.619

other community is going to get it, and they're going to get the 300,000 dollar booster shot into their economy.

956

01:13:01.020 --> 01:13:07.850

The contractor working on the project isn't going to go to your store, isn't going to fill up

957

01:13:06.449 --> 01:13:12.279

at your gas station."

958

01:13:09.930 --> 01:13:15.640

That's sort of common sense reality check

959

01:13:13.529 --> 01:13:19.590

was just absolutely a godsend at that moment.

960

01:13:19.590 --> 01:13:24.989

Time these things work - I can't tell you how many times.

961

01:13:22.680 --> 01:13:28.560

I answered affirmatively that yeah, of course.

962

01:13:26.100 --> 01:13:29.359

they're gonna work.

963

01:13:29.359 --> 01:13:33.810

Inside, I was like, "Oh, my God, I hope these things work."

964

01:13:33.810 --> 01:13:41.850

This is a photo of one of our first customers and I can't tell you how just how wonderful

965

01:13:39.060 --> 01:13:44.250

it was to to see an amphibian

966

01:13:42.449 --> 01:13:48.420

come through and I felt a little bad about shining a bright light in his or her face

967

01:13:48.420 --> 01:13:53.329

when they made it through, but they do work and

968

01:13:52.020 --> 01:13:58.010

and we documented over 2000

969

01:13:55.319 --> 01:13:59.050

animals each

970

01:13:58.649 --> 01:14:01.729

year using these crossings structures.

971

01:14:01.729 --> 01:14:05.550

Capturing amphibians with a motion sensor camera

972

01:14:05.550 --> 01:14:13.130

is challenging, because they're ectotherms. They're the regulation of their body temperature is based on external sources.

973

01:14:10.550 --> 01:14:14.130

So they're the same darn

974

01:14:14.130 --> 01:14:20.300

Temperature as the ground they're crawling on.

975

01:14:17.409 --> 01:14:22.100

In order to overcome this ectothermic challenge

976

01:14:22.100 --> 01:14:28.670

we program the cameras to record 1 shot per minute during the migration season.

977

01:14:25.829 --> 01:14:29.989

Starting one half hour

978

01:14:29.189 --> 01:14:36.880

before sunset until one half hour after sunrise. Now, it resulted in tens of thousands

979

01:14:35.520 --> 01:14:43.159

of images that we had to scroll through.

980

01:14:40.289 --> 01:14:45.829

But as you can see with this gif stitched together, that it's a pretty

981

01:14:43.560 --> 01:14:47.579

astonishing record.

982

01:14:47.579 --> 01:14:53.310

I think this is 3 hours and this looped again. This is the beginning so it starts out.

983

01:14:52.109 --> 01:14:58.819

slow and then it's just this massive march down to the wetlands.

984

01:14:56.819 --> 01:15:00.329

Now, this is on

985

01:15:00.329 --> 01:15:03.609

April 11th. We found

986

01:15:03.609 --> 01:15:11.649

that you know, maybe if we got a rainy day on April 15th, we'd have some amphibians moving

987

01:15:11.649 --> 01:15:16.470

the other way, coming back from the wetlands while still some

988

01:15:14.670 --> 01:15:17.819

are coming down from

989

01:15:17.819 --> 01:15:22.260

newly thawed pieces of the upland down to the wetland.

990

01:15:22.260 --> 01:15:25.850

991

01:15:25.850 --> 01:15:33.359

Another happy take home message is amphibian crossings are not just for amphibians anymore. We wanted to

992

01:15:30.649 --> 01:15:35.319

make these crossings big

993

01:15:33.689 --> 01:15:38.390

enough to accommodate other wildlife and one

994

01:15:36.989 --> 01:15:42.220

of the other ongoing questions that we got was

995

01:15:41.220 --> 01:15:44.909

aren't the raccoons and other wildlife

996

01:15:44.909 --> 01:15:50.210

predators and scavengers just going to wait at the end of the tunnel and

997

01:15:48.149 --> 01:15:52.329

Feast. And I think the answer

998

01:15:51.329 --> 01:15:56.729

Is they are already feasting on animals on the road,

999

01:15:54.329 --> 01:15:59.329

on dead animals on the road, but I'd love this this sequence.

1000

01:15:57.930 --> 01:16:01.989

Here it's gonna loop again.

1001

01:16:01.590 --> 01:16:04.729

You're gonna see bobcat.

1002

01:16:04.729 --> 01:16:09.640

He's going to sniff a green frog in the right there.

1003

01:16:07.770 --> 01:16:13.960

In the right, right there, sniffs a green frog and then passes it by.

1004

01:16:11.039 --> 01:16:15.239

And the green frog, presumably

1005

01:16:15.239 --> 01:16:18.600

breathes a big sigh of relief

1006

01:16:18.600 --> 01:16:23.159

and spends the rest of the night hopping out of its own on filth after that incident.

1007

01:16:23.159 --> 01:16:28.069

Still some questions to answer.

1008

01:16:27.399 --> 01:16:30.500

and hopefully.

1009

01:16:30.500 --> 01:16:36.550

Matt Gordon from UVM is gonna help us sort this out. One of the unanswered questions

1010

01:16:33.909 --> 01:16:40.609

is what are the amphibians do if they make a wrong turn at our drift

1011

01:16:38.149 --> 01:16:41.189

Fence?

1012

01:16:41.189 --> 01:16:44.909

We put turnarounds in there, so if they turned away from.

1013

01:16:44.909 --> 01:16:51.020

the crossing itself that they would get

1014

01:16:48.060 --> 01:16:53.109

turned back around and

1015

01:16:52.710 --> 01:16:57.600

we want to know if they work. Right? Do the animals keep trying?

1016

01:16:57.600 --> 01:17:02.649

Is there a point where they go the wrong way and then correct their

1017

01:17:00.920 --> 01:17:03.989

path, or do they give up?

1018

01:17:03.989 --> 01:17:07.020

That's something that is important to

1019

01:17:07.020 --> 01:17:10.920

learn with post construction monitoring to help inform.

1020

01:17:10.920 --> 01:17:18.390

some other similar projects and so that the progression and evolution of these projects just keep.

1021

01:17:18.390 --> 01:17:23.239

getting better and better , okay.

1022

01:17:22.140 --> 01:17:28.260

Well, here's a short video clip I took with my phone.

1023

01:17:25.380 --> 01:17:30.569

I think this was 2 years ago.

1024

01:17:28.659 --> 01:17:32.170

I sat down to observe movement at the entrance

1025

01:17:32.170 --> 01:17:36.149

of our North culvert shortly after dark, and I sat there.

1026

01:17:35.750 --> 01:17:41.760

I don't know, maybe 20 minutes. There was nothing moving.

1027

01:17:38.829 --> 01:17:44.319

After a little while

1028

01:17:42.180 --> 01:17:45.920

It was

1029

01:17:45.319 --> 01:17:53.000

literally swarmed with amphibians. There's a blue spotted, Jefferson hybrid right there.

1030

01:17:50.119 --> 01:17:55.699

And it was just astonishing. I didn't.

1031

01:17:53.250 --> 01:17:56.880

I didn't want to leave.

1032

01:17:56.880 --> 01:18:00.479

I could have stayed there all night. There's a

1033

01:18:00.479 --> 01:18:03.539

wood frog and of course, the other.

1034

01:18:03.539 --> 01:18:09.449

Here's our spotted salamanders, but

1035

01:18:07.710 --> 01:18:15.680

it was a pretty astonishing moment that's for sure. So.

1036

01:18:13.800 --> 01:18:17.970

So, .

1037

01:18:17.970 --> 01:18:22.460

Moving into the future, right? We, we hope that what we learned from

1038

01:18:22.460 --> 01:18:26.109

project in terms of kind of planning and

1039

01:18:25.710 --> 01:18:28.859

fundraising and public outreach

1040

01:18:28.859 --> 01:18:32.460

And design and construction, all of that stuff,

1041

01:18:32.460 --> 01:18:37.050

inform other projects. I know there's a project right now in Waterloo,

1042

01:18:37.050 --> 01:18:43.149

New Jersey that we consulted with and you know, they're taking some parts to the next

1043

01:18:40.949 --> 01:18:47.970

level with their design and they're also taking some stuff from our

1044

01:18:45.180 --> 01:18:52.579

design to go into theirs. We need to emphasize

1045

01:18:50.159 --> 01:18:56.180

when we're communicating about this stuff that

1046

01:18:53.460 --> 01:18:58.699

and I, I think.

1047

01:18:56.970 --> 01:19:01.699

Brett alluded to that that.

1048

01:19:00.989 --> 01:19:05.109

We're not making these big public investments

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01:19:04.109 --> 01:19:11.119

for the pet project or the conservation commission, these are significant sites so we're not doing it

1050

01:19:09.720 --> 01:19:16.300

everywhere. Should I stop here, Laura or I

1051

01:19:14.579 --> 01:19:19.699

I know, but just a couple more minutes. Okay. That's all. I think.

1052

01:19:18.300 --> 01:19:21.789

Okay, that's all. Yeah, thanks I think is my.

1053

01:19:21.789 --> 01:19:26.569

Last slide and like, the point is that we need to be

1054

01:19:25.350 --> 01:19:30.229

intentional about this hopefully

1055

01:19:28.829 --> 01:19:35.100

can start incorporating this work into the regular

1056

01:19:32.699 --> 01:19:37.619

Program.

1057

01:19:36.149 --> 01:19:41.180

The Monkton road project was a locally managed project, which meant we

1058

01:19:40.380 --> 01:19:43.800

didn't have the luxury of the

1059

01:19:43.800 --> 01:19:46.890
the federal aid funds.

1060
01:19:46.890 --> 01:19:50.649
On the horizon is the

1061
01:19:49.939 --> 01:19:55.960
infrastructure bill the IJA and that's getting a lot

1062
01:19:54.359 --> 01:20:01.180
of, , people excited and I believe there are a lot

1063
01:20:00.180 --> 01:20:05.970
of opportunities for both DOTs and communities in there.

1064
01:20:03.779 --> 01:20:08.390
Renee Callahan from ark solutions and the

1065
01:20:07.590 --> 01:20:13.250
center for large landscape kind of describes that we have these above the line programs, which are grants

1066
01:20:11.220 --> 01:20:15.159
and then below the line programs

1067
01:20:14.760 --> 01:20:20.659
which are the regular formula funds. Above the line programs, there's

1068
01:20:18.060 --> 01:20:21.56
350 million

1069
01:20:21.560 --> 01:20:25.409
new dollars in wildlife crossings.

1070
01:20:24.810 --> 01:20:29.180
The transportation

1071

01:20:28.289 --> 01:20:32.229
alternatives grant program has

1072

01:20:32.229 --> 01:20:35.829
Infusion of more money, and I believe there are even more.

1073

01:20:35.430 --> 01:20:41.909
allowances for wildlife crossings within that program and, you know, that sort of regular.

1074

01:20:39.359 --> 01:20:46.239
program stuff, DOTs are gonna be building a lot of

1075

01:20:43.529 --> 01:20:46.840
bridges.

1076

01:20:46.840 --> 01:20:52.699
And, larger bridges for resilience. Maybe not for an

1077

01:20:50.699 --> 01:20:54.880
amphibians, but if you build larger bridges for resilience,

1078

01:20:53.880 --> 01:20:58.619
you're a lot of times providing habitat,

1079

01:20:58.020 --> 01:21:01.609
habitat connectivity by default.

1080

01:21:01.409 --> 01:21:05.159
So, I I think that's kind of,

1081

01:21:05.159 --> 01:21:09.859
That's that's pretty much all I had. Thank you for the time. Thanks. Thanks for listening.

1082

01:21:09.460 --> 01:21:15.090
Listening.. Laura Heady: Thank you. Chris. It's both. You. And Brett I feel like you.

1083

01:21:15.090 --> 01:21:20.279

For those of us who are going out on rainy nights and tracking amphibians, you've been kind of

1084

01:21:20.279 --> 01:21:24.300

pioneers and inspiring us to implement these projects that

1085

01:21:24.300 --> 01:21:28.619

are going to have a really great impact that's a little bit more

1086

01:21:28.619 --> 01:21:32.220

significant and more permanent obviously, than what we can do as

1087

01:21:32.220 --> 01:21:35.760

volunteers moving them and hoping that we get the timing right and all

1088

01:21:35.760 --> 01:21:41.100

That. So both wonderful presentations. Lots of questions have been streaming in Chris.

1089

01:21:41.100 --> 01:21:44.640

Just maybe we could jump right into some of the structural

1090

01:21:44.640 --> 01:21:48.899

questions about the culvert.

1091

01:21:48.899 --> 01:21:55.380

There's two questions, one about, that it looked like the bottom of the culverts were filled with leaves.

1092

01:21:55.380 --> 01:22:00.239

And whether those are placed there intentionally, if there's any other maintenance involved.

1093

01:22:00.239 --> 01:22:03.390

That's one question. Chris Slesar: We did

1094

01:22:03.390 --> 01:22:06.949

intentionally put the leaves in there. We wanted to have kind of

1095

01:22:06.949 --> 01:22:10.300
the natural detritus and stuff in there.

1096
01:22:10.300 --> 01:22:13.890
We also, thanks for asking that, put in

1097
01:22:13.890 --> 01:22:17.399
some blocks of slate and we've

1098
01:22:17.399 --> 01:22:21.090
put those alongside the barrier walls too. We wanted to.

1099
01:22:21.090 --> 01:22:26.789
make the inside of the culvert be as, like, natural as possible.

1100
01:22:24.270 --> 01:22:27.789
Be as natural as possible, so the leaves would

1101
01:22:27.789 --> 01:22:35.899
hold moisture and provide cover and those blocks of slate also provide cover

1102
01:22:33.350 --> 01:22:36.479
from predators or

1103
01:22:36.479 --> 01:22:41.619
you know, if it's a crossing night, and it suddenly dries up, they have a place to hunker down and

1104
01:22:39.680 --> 01:22:42.840
until the next rainstorm.

1105
01:22:42.840 --> 01:22:46.079
Laura Heady: Right. And while you're

1106
01:22:46.079 --> 01:22:49.800
speaking on the topic of moisture, somebody also asked about

1107

01:22:49.800 --> 01:22:57.119

slots on the top of the culvert to allow moisture in. And I know that you do, right, intentionally have some

1108

01:22:57.119 --> 01:23:03.819

openings. Chris Slesar: we do, we have, and we weren't able to go all the way across. The road crews would not

1109

01:23:03.819 --> 01:23:09.810

allow us to do that so we settled on these manhole covers with slots. We also

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01:23:09.810 --> 01:23:15.869

have water wicking up because it's a natural bottom.

1111

01:23:13.649 --> 01:23:19.220

So we have some water coming in from the top and some coming up from

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01:23:16.869 --> 01:23:20.520

the bottom.

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01:23:20.520 --> 01:23:24.810

I, I think there's a double edge to that.

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01:23:24.810 --> 01:23:29.199

I think the folks in Amherst may be having some challenges over the

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01:23:28.199 --> 01:23:31.859

years with the accumulation of

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01:23:31.859 --> 01:23:35.010

grit and salt and stuff that

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01:23:35.010 --> 01:23:39.600

comes along with winter maintenance that is getting through those grates.

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01:23:39.600 --> 01:23:43.300

So, I don't know what the final outcome

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01:23:43.300 --> 01:23:49.619

is but, we're pretty happy with the amount of moisture we get with what we put in.

1120

01:23:49.619 --> 01:23:55.199

Laura Heady: Yes, somebody did raise that question about salt,

1121

01:23:55.199 --> 01:23:58.229

road applications getting down, in and so.

1122

01:23:58.229 --> 01:24:02.279

You're getting lots of praise both of you for your presentation.

1123

01:24:02.279 --> 01:24:11.399

coming in. Also, as far as maintenance of the tunnel entrance is mowing required? and how often?

1124

01:24:11.399 --> 01:24:14.420

Chris Seslar: I take that on myself.

1125

01:24:14.420 --> 01:24:18.779

And I will try to work with the town.

1126

01:24:18.779 --> 01:24:22.100

I borrow a really aggressive

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01:24:22.100 --> 01:24:28.210

Weed whacker from a neighbor. I'm okay now, but

1128

01:24:25.409 --> 01:24:30.170

I sent myself to the hospital

1129

01:24:28.609 --> 01:24:33.680

trying to deal with the

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01:24:32.550 --> 01:24:39.430

poison parsnips there. I got like a jet of poison parsnips in my

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01:24:36.720 --> 01:24:41.029

my eye, despite wearing a,

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01:24:39.829 --> 01:24:47.220

anyway, that's an aside but, I've been doing the maintenance.

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01:24:44.279 --> 01:24:48.500

and.

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01:24:47.489 --> 01:24:53.229

hitting it with an aggressive weedwhacker once a year, just to keep down

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01:24:50.760 --> 01:24:54.539

the vegetation

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01:24:54.539 --> 01:24:57.689

from trying to clogging up the wall.

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01:24:57.689 --> 01:25:05.460

Laura Heady: So this is a question that either one of you might want to answer. Maybe this is more in Brett's wheelhouse.

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01:25:05.460 --> 01:25:11.789

Do you know if people have utilized GIS to find likely salamander hotspot migration locations?

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01:25:11.789 --> 01:25:18.090

Brett Thelan: Yes, that is definitely being done. Actually, the project I've heard most about is

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01:25:16.289 --> 01:25:19.289

in Vermont .

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01:25:19.289 --> 01:25:24.500

There's a project underway right now. But, yeah, we oh, go ahead. Yeah.

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01:25:22.439 --> 01:25:28.100

But, yeah, we oh, go ahead. Yeah, no, go ahead. Chris. Chris Seslar: VTrans has a

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01:25:25.460 --> 01:25:28.770

a project, thank you,

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01:25:28.770 --> 01:25:33.760

For asking that to develop a modeling hotspot and it uses

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01:25:32.159 --> 01:25:36.060

land cover data and

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01:25:36.060 --> 01:25:42.020

stuff that I don't understand like LIDAR and mix together, go through this GIS meat grinder

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01:25:39.060 --> 01:25:43.039

and then give

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01:25:42.390 --> 01:25:49.520

a value to road segments and it's not, you know, it's not a perfect

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01:25:46.529 --> 01:25:51.920

litmus test. We didn't expect it to be.

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01:25:49.920 --> 01:25:54.510

But what it does is raise

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01:25:53.109 --> 01:25:59.210

red flags and it'll sort of

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01:25:58.020 --> 01:26:02.850

contribute to our biologists' review of a

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01:26:02.850 --> 01:26:08.430

Project. So when they review a project and they're looking for wetlands. They run it through the GIS, they're looking for

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01:26:08.430 --> 01:26:12.899

T and E species (threatened and endangered), they run it through the GIS, and then they'll do the same

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01:26:12.899 --> 01:26:19.470

for amphibian passage and then if, if need be, they take it to the next level.

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01:26:19.470 --> 01:26:25.859

Laura Heady: And definitely the light are for those, not familiar with it,

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01:26:25.859 --> 01:26:36.000

It's very high resolution topographical, spatial data that really has enabled better predictions of vernal pool locations. And hopefully that is also going to lead to better

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01:26:36.000 --> 01:26:39.119

predictions of where the crossing hotspots could be.

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01:26:39.119 --> 01:26:42.180

One of the questions we frequently get about road

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01:26:42.180 --> 01:26:46.439

crossings in general is about the

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01:26:46.439 --> 01:26:50.430

emphasis just on this one group of amphibians when

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01:26:50.430 --> 01:26:54.359

other amphibians and turtles and other species are crossing all the time.

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01:26:54.359 --> 01:26:58.229

And, you know, my answer to that is that

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01:26:58.229 --> 01:27:02.579

because as Brett talked about these, this explosive migration, these concentrated.

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01:27:02.579 --> 01:27:06.060

high numbers on these just few nights, make these local population super

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01:27:06.060 --> 01:27:12.569

vulnerable, but in terms of other kinds of movements of amphibians other parts of the year, like, I don't know if either one of you want to comment on that.

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01:27:12.569 --> 01:27:17.119

Brett Thelan: I mean, I would say, that's why tunnels are great.

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01:27:17.119 --> 01:27:20.850

They can facilitate movements year round or, not winter time, but

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01:27:20.850 --> 01:27:27.189

yeah, I mean, my message for most people is, if it's raining and warm, don't drive.

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01:27:25.380 --> 01:27:30.170

Raining and warm don't drive your car if you don't have to

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01:27:28.500 --> 01:27:31.680

because you'll be running over.

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01:27:31.680 --> 01:27:35.970

And you won't even know it and so I agree or that it's just

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01:27:35.970 --> 01:27:41.430

these nights when there are thousands of animals on the road, it takes very few cars to do a lot of damage.

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01:27:39.439 --> 01:27:45.520

And so that is a pinch point of particular vulnerability

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01:27:42.960 --> 01:27:47.800

but you see

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01:27:46.109 --> 01:27:50.350

amphibian road kill on any

1177

01:27:49.350 --> 01:27:53.430

warm, rainy night, on any road near any water.

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01:27:53.430 --> 01:27:57.109

And so for sure, it's an issue.

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01:27:57.109 --> 01:28:03.890

Chris Seslar: And you alluded to the reptiles and

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01:28:02.609 --> 01:28:06.590

VTrans has a couple of projects in the

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01:28:05.630 --> 01:28:09.029

early design phase now for

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01:28:09.029 --> 01:28:13.939

to accommodate reptiles. One is wood turtle

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01:28:13.140 --> 01:28:18.659

And the other is rattlesnakes and because

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01:28:18.659 --> 01:28:21.989

both of those species are well, they're both

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01:28:21.989 --> 01:28:26.149

listed species in the state, but they're also,

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01:28:25.949 --> 01:28:29.310

rattlesnakes are persecuted and wood turtles are

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01:28:29.310 --> 01:28:33.029

poached and so we have to keep that super.

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01:28:33.029 --> 01:28:37.439

cloaked and quiet as to where they are, but.

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01:28:37.439 --> 01:28:41.789

reptiles are really vulnerable, and I don't think we

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01:28:41.789 --> 01:28:47.489

fully grasp the impact for these long-lived species that have to live

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01:28:47.489 --> 01:28:51.640

60 years, like the, the wood turtle to replace itself once or twice.

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01:28:51.239 --> 01:28:55.350

Laura Heady: Right like blanding's turtle too.

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01:28:55.350 --> 01:29:00.029

And, for those of you from New York State, the DEC

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01:29:00.029 --> 01:29:07.229

had an undercover, environmental conservation officer project called Operation Shellshock where they were actually

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01:29:07.229 --> 01:29:12.810

looking into illegal collection and trade, and they were finding species, like spotted turtle,

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01:29:12.810 --> 01:29:16.770

Wood turtle, so I think spot it's salamander even it's really sad.

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01:29:16.770 --> 01:29:20.970

I did want to draw everybody's attention before we completely wrap up

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01:29:20.970 --> 01:29:25.590

that we do have a break next week, but then the following Tuesday on February 16

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01:29:25.590 --> 01:29:28.770

we're going to pick up on the webinar series with

1200

01:29:28.770 --> 01:29:33.449

Dr. Matt Scheslinger from the New York natural heritage program

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01:29:33.449 --> 01:29:39.329

talking about a vernal pool study in New York state that was done to

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01:29:39.329 --> 01:29:48.119

better understand and map vernal pools. It's not a statewide mapping project, but they did document a lot of locations and we'll also have

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01:29:48.119 --> 01:29:52.140

Dr. Aram Calhoun, from University of Maine talking about

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01:29:52.140 --> 01:29:58.199

kind of a new method, a new approach in Maine to conserve

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01:29:58.199 --> 01:30:02.159

the vernal pools as far as habitat, and those connections that are so

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01:30:02.159 --> 01:30:07.289

vital to maintain these populations. And then for anybody interested in our projects

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01:30:07.289 --> 01:30:11.369

here in the Hudson Valley, we do have a virtual volunteer training happening

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01:30:11.369 --> 01:30:16.500

the following Tuesday on February 22nd, it's really the basics because a lot of our training

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01:30:16.500 --> 01:30:20.310

is now available online on YouTube and I know Emma has put those

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01:30:20.310 --> 01:30:31.050

links, I think in the chat. Emma, if you could do that, that would be great. But you can kind of self teach yourself. There's 5 modules, but the volunteer training we like to have it be

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01:30:31.050 --> 01:30:34.649

more interactive, it's a good chance for folks to ask questions like we are tonight.

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01:30:34.649 --> 01:30:39.000

So, I just wanted to make sure you're aware of that. And also, just to remind everybody if

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01:30:39.000 --> 01:30:42.239

you want to get emails about the amphibian migrations.

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01:30:42.239 --> 01:30:46.319

and road crossings project, and you can subscribe to DEC delivers

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01:30:46.319 --> 01:30:52.350

specifically for our project, you have to go to the amphibian migrations and road crossings webpage.

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01:30:52.350 --> 01:30:55.859

Which I have the address written in the call out box.

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01:30:55.859 --> 01:30:59.430

They are on the slide, but I think Emma has probably also put it in the chat box.

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01:30:59.430 --> 01:31:02.489

And, and you can, , I'm sorry.

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01:31:02.489 --> 01:31:06.270

You can subscribe yourself there.

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01:31:06.270 --> 01:31:11.310

I'm gonna, let's see, just stop sharing my slides.

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01:31:11.310 --> 01:31:14.609

Hold on a minute here and wrap up.

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01:31:14.609 --> 01:31:17.939

With a really big thanks to Brett and to Chris.

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01:31:17.939 --> 01:31:22.529

This is, as people are echoing, very inspiring.

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01:31:22.529 --> 01:31:30.750

Definitely exciting. I know Brett and I always sweat out the month and the weeks leading up to amphibian season because it always feels like there's so much to do to get ready.

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01:31:30.750 --> 01:31:34.050

To organize volunteers, make sure everybody's going to be safe and

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01:31:34.050 --> 01:31:39.029

ready and prepared to be out there. But seeing the results of your projects,

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01:31:39.029 --> 01:31:43.109

just, I think gives everybody even more motivation and

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01:31:43.109 --> 01:31:49.739

for inspiration to to get out there and look and to document what they're seeing. So, I thank you both so much couldn't think of a better way to

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01:31:49.739 --> 01:31:53.310

get ourselves psyched up and ready.

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01:31:53.310 --> 01:31:59.789

And just thanks to everybody who joined us tonight to share in our learning. And, I hope to see you again in one of our future programs.

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01:31:59.789 --> 01:32:05.760

Thank you both. Thank you. This is fun. Good for us too.