

Brad: Hey, welcome to another episode of Wildlife word!

The word for today is: Propagation. For those wondering what exactly the word means, it's the breeding of plant or animal species from the parent stock in order to increase its numbers.

We have an exciting interview today talking about captive propagation for the Federally-threatened American hart's-tongue fern in New York.

Joining me today is Mike Serviss from New York State Office of Parks, Recreation and Historic Preservation. He is the project coordinator for propagation of the American Hart's-Tongue Fern (AHTF). I'm excited to hear about the work he has been doing on getting more AHTF plants back in New York State

Mike: Thanks Brad, glad to be here!

Brad: Before we get into your project could you give your description of AHTF and some of its distinctive features for people who may not be familiar with the fern??

Mike: Yeah absolutely so the AHTF, first off it's a Federally and State-threatened species. Essentially it's a fern species that doesn't look like your typical fern species, It has more of a tropical appearance to it - where the leaves are undivided so they look like long straps as opposed to what you would think a typical fern frond with lacey type leaves.

Brad: Jurassic-like..

Mike: That's right. So it looks a little bit different and it has a weird distribution in the United States having a couple southern populations, one in Tennessee and one in Alabama, then you don't have any AHTF along the east coast until you get to New York where we got 16 populations - then it continues into Ontario Canada and the upper peninsula of Michigan. So kind of a weird distribution.

Brad: It's such an interesting plant and it's amazing that you are responsible for almost 100% of the isolated population in New York?!

Mike: Yeah, pretty close, so we got the 16 populations in New York but they're only in Onondaga and Madison counties and I work at Clark Reservation and Chittenango Falls State Parks and between those 2 state parks we have 9 populations which is about 95% of all Hart's tongue fern in New York State, so we've got a lot to protect in terms of species in the state.

Brad: I listened to your previous podcast interview with "The Field Guides" before summer where you were just getting started at Sonnenberg. Can you tell us how State Parks got involved with this project and how the propagation work is going?

Mike: Yeah absolutely, so this propagation project was really started at the SUNY College of Environmental Science and Forestry, so they started working on it sometime in 2010 and they started working in Professor Dr. Danny Fernando's lab at ESF and started working on how to grow these things which are historically known as very difficult to grow. Then I came into the project in 2015 when I started my grad work at ESF working in Dr. Fernando's lab and I started working at parks as a summer internship, working on my graduate and working on conservation of the fern and it just continued to go hand in hand so I continued working on the fern which has led to today working with parks and SUNY ESF to reposition the propagation from more of a research base type of project to now more of a practitioner type of project at parks.

Brad: How many plants do you have currently?

Mike: So currently we transitioned the project from SUNY ESF to Parks and with that came about 100 ferns from ESF that are larger and more what we expect to see out in the field. They are also at Sonnenberg Mansions and State Historic park where we are doing most of the propagation work in one of our 2 greenhouse facilities in New York State parks and we have our Plant Materials program there which grows native plants for restoration projects. What we have going on there is also all these spore cultures and we have about 800 spore cultures that we are working on now. So we don't have any of the grown ferns yet but we are currently propagating them from spores, we are coming along with that so we will know how many ferns we have soon.

Brad: Why do you think this effort has been more successful than in the past? What does having this program enable for the conservation of AHTF?

Mike: So in the past, this should definitely be mentioned, that propagation of AHTF has been attempted several times in the past, also translocating them to other areas has been attempted as well and they have really been successful in the past for a couple reasons 1) It's a very difficult plant to grow 2) It doesn't like to survive very well from a lab setting or greenhouse setting into the field. But you get that with even garden plants at home, you take plants from inside and put them outside - you will probably see some mortality at least, and those are plants that are somewhat easy to grow. I think the biggest difference between what we are doing now opposed to what they were doing in the past is our increased effort in monitoring them and really studying what is important for them to survive once you plant them out in the field. When I was at ESF a focus of our study was looking at the plant in its different life stages, how long do you have to grow them in a lab/greenhouse before you can transplant them and get some appreciable survival on the other end. Basically what we found is that you probably have to grow them for about 3 years before you bring them out into the field and you have to harden them off a bit so you have to transition them from the lab to greenhouse and actually over-winter them outside before they're ready to be transplanted - and even then you only get 30-40% survival.

Brad: Is there any places people can go and see the fern?

Mike: So where the fern grows it's kind of hard to see in the wild and they live in dangerous habitats and we don't really want people going down in there, obviously because they can have an impact on them but if people really want to see the fern I highly encourage that people do - at our nature center at Clark Reservation State park we have a terrarium set up where we are growing AHTF where you can see it, or you can visit Sonnenberg Mansion and State park Gardens in Canandaigua NY where we have the plants from ESF that you can see there.

Brad: Last question: What would you want the folks at home or in their car listening to this to take home knowing about the AHTF? What can they do to support the conservation of AHTF?

Mike: Yeah that's a really great question so I think what is important is to make a distinction on a rare species vs. a threatened species. First off there a lot of rare plants out there that aren't considered threatened and the main reason is because we have lost so many populations due to impacts from humans from quarrying, deforesting, urban expansion - all of those kinds of things have led to a decline from being a rare plant to a threatened plant. So in terms of what people can do about protection in their habitat - propagation is great because we can repopulate the species in an area if we have to, but protecting their habitat is key. Very niche habitats, very specific habitats associated with dolomitic limestone and these ravines and lunge basins that maintain a specific temperature and humidity. The main thing to do is respect the trail system and follow the rules of the parks such as keep your boots clean. If you would like to do even more, you can volunteer with parks to help us with things such as invasive plant management and things like that. We have "I love my park" day every May in New York State parks and they help us pull things like garlic mustard which is an invasive plant that is threatening AHTF, and things like that are how you can get actively involved with the conservation as well.

Brad: Thanks for coming on I appreciate your work! Good luck in the future!

Mike: Yeah thanks Brad it was great, I appreciate it!