Wisconsin Public Television

Transcript: “In Wisconsin” #823

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Patty Loew:

Welcome to "In Wisconsin." I'm Patty Loew. This week, the UW arboretum in Madison fights a downhill battle with storm water runoff.

Man:

This one might be sort of the ultimate storm water plant potentially.

Patty Loew:

See how native plants could provide a solution. Plus an earthworm invasion.

Man:

This is very unhealthy. You see virtually nothing of what it should be here.

Patty Loew:

See how the lowly earthworm is changing Wisconsin's northwoods literally right under our foot. And the mystery surrounding Rhinelander's hodag creature may be solved.

Art Hackett:

Hodag or not a hodag?

Man:

That's a hodag. Definitely.

Patty Loew:

Definitely a hodag. Those reports next on "In Wisconsin."

Announcer:

Major funding for "In Wisconsin" is provided by the people of Alliant Energy who bring safe, reliable and environmentally friendly energy to keep homes, neighborhoods and life in Wisconsin running smoothly. Alliant Energy, we're on for you. And the Animal Dentistry and Oral Surgery Specialists of Milwaukee and Oshkosh, a veterinary team working with pet owners and family veterinarians throughout Wisconsin, providing care for oral disease and dental problems of small companion animals. With additional funding provided by Bike Wisconsin.

Patty Loew:

We begin this week with a quest to find the hodag. It has a reputation as a fierce beast with a mysterious past. Kind of like Bigfoot. It's a legend in the northwoods and even though Art Hackett has been to Oneida County many times, on this trip he may have uncovered the truth about this mythical or not so mythical creature in Rhinelander.

Art Hackett:

The hodag permeates the culture of Oneida County seat. The critters are all over downtown, a hodag is the high school's mascot, souvenirs, you want them, Rhinelander has got them. Then there's the big hodag in front of the chamber of commerce office.

Art Hackett:

On a foggy day, the hodag can look like the fearsome creature of the woods it was when the legend began.

Woman:

We were cross country skiing outside of Rhinelander. All of a sudden, something big crossed the trail.

Art Hackett:

The legend is spoofed in ads aimed at attracting tourists.

Man:

After a beautiful day of riding the trails in Rhinelander, we saw it.

Child:

It ate half a donut.

Art Hackett:

The official story is that the hodag is the product of the imagination of an early logger in northern Wisconsin. However, "In Wisconsin" has discovered what may be the real story of the hodag. First, the traditional version. We tracked down Chris Dries, a local photographer.

Chris Dries:

I'm the unofficial hodag researcher.

Art Hackett:

He also played a bit in the hodag TV commercials. At least we think it's him. There are a lot of elusive elements in this story. Where does it come from?

Chris Dries:

Well, pretty much went back to 1893 with Eugene Shepard. He was a lumberman, a logger, businessman and apparently had heard rumors of the hodag or a creature of such and they developed the story accordingly.

Art Hackett:

Pay attention to the words heard of the hodag. That will be important later on in this story.

Chris Dries:

It developed over a couple of years and then they actually had an official showing of the hodag and a public exhibition of the creature. About 1895.

Art Hackett:

The official historical society plaque notes this was a wooden puppet controlled by wires. There is this picture of the capture of a hodag. It is the basis for occasional pageants where the event is recreated. This one was in 1950. An actual hodag, no one claims it is.

Art Hackett:

This was just basically a tall tale told by loggers?

Chris Dries:

Well, apparently there had been prior to Eugene Shepard's discovery, it had been rumored throughout the UP that there was a creature in the woods similar to a hodag.

Art Hackett:

Dries runs a website. Hodagsightings.com. So for purposes of this story, he is our guy.

Art Hackett:

We have what we think may be a hodag sighting.

Chris Dries:

Oh, my goodness. That's wonderful.

Art Hackett:

This is an actual photograph.

Art Hackett:

A photograph taken about 350 miles northeast of Rhinelander in Lake Superior Provincial Park in Ontario. The photo was taken right at water level on the shore of the Great Lakes’ greatest lake.

Art Hackett:

Hodag or not a hodag?

Chris Dries:

That's a hodag. Definitely.

Art Hackett:

Actually, it is misshepehieu, a figure drawn by Ojibwa. Bob Birmingham is an anthropology professor at the University of Wisconsin-Waukesha.

Bob Birmingham:

Misshepehieu is a part of a tradition that extends throughout the eastern part of the United States and even going into the Great Plains of a great manitou or spirit being or beings that inhabit water.

Art Hackett:

The Ontario ministry of natural resources estimates the pictographs were created between 150 and 400 years ago. The representations of the spirit are common enough that one is seen in an effigy mound near Bob Birmingham's home in Madison.

Bob Birmingham:

Head, leg, another leg here, body coming across here and then terminating in a very long tail.

Art Hackett:

Dr. Theresa Schenk of the UW Madison Native American Studies department is Ojibwa. She agrees misshepehieu was a powerful spirit.

Theresa Schenk:

It’s often translated as a panther or lynx, even a lion, who lives at the bottom of the sea, this could be one of the Great Lakes, and who draws men down to their death.

Art Hackett:

But she had to look up a picture of the hodag.

Art Hackett:

Did the pictures of the hodag you saw remind you of misshepehieu?

Theresa Schenk:

No way. He was composed of too many animals.

Art Hackett:

Theresa Schenk says people are thrown off by the projections on the creature's back.

Theresa Schenk:

I know that everybody wants those things along his back to be something connected to a lizard, but it's really the way they depicted the hair.

Art Hackett:

But Birmingham, who is a former state archeologist says Eugene Shepard did likely meet Ojibwa.

Bob Birmingham:

It is possible they came across paintings of this particular image. Many of the loggers themselves were Ojibwa or part Ojibwa.

Art Hackett:

They may have told a European there was a cat-like being.

Theresa Schenk:

On the lakes but not in the forest.

Art Hackett:

When we showed Chris Dries the photo, he was intrigued.

Chris Dries:

That indicates some of the research I've done as well, Art. I have some manuscripts that go way back by the French explorers that indicate in French, the language, that there was a creature as rumored when they came through here.

Art Hackett:

When you're in the business of promoting Rhinelander to visitors, an exotic, cultural connection sells, if there is one.

Theresa Schenk:

Oh, no. I think they created their own hodag.

Patty Loew:

To add to the mystery, after our interview, Theresa Schenk did more some checking and found references to a water spirit that had serpent-like qualities. But she did not find anything in Native American tradition like the hodag that combines serpentine and feline characteristics. The University of Wisconsin arboretum is celebrating 75 years of innovative research in its world-class collection of restored ecosystems. But with all of this success, the arboretum now faces an environmental quandary, a challenge that faces many cities in Wisconsin. The scientific minds are looking for answers and turning to native plants in the hopes of a solution in Madison.

Liz Koerner:

People are drawn to the university arboretum for many reasons. A walk in the woods, a stroll through a prairie or a bike ride along the tree lined drive. It's an island of nature surrounded by city.

Kevin McSweeney:

We've got nearly two square miles. 1200 acres, right in the middle of a medium sized city.

Liz Koerner:

The arboretum staff welcomes visitors but their primary mission, in addition to research, is to restore and conserve this rare collection of historic plant communities. It's a mission that's become harder since they started back in 1934, especially when it rains. The cities around them have grown larger, adding rooftops, sidewalks, driveways and parking lots. Today, rain water no longer soaks into the ground where it falls.

David Liebl:

The arboretum is downhill and water flows downhill so there is some inevitable consequence of being at the bottom of a water shed surrounded by an urban area.

Liz Koerner:

An estimated 470 million gallons of storm water pours into the arboretum every year. This storm water carries with it a whole host of problems.

David Liebl:

We're especially concerned about sediment and nitrogen and minerals, salts and other contaminants from around the water shed entering into the wetlands of the natural areas of the arboretum.

Liz Koerner:

Erosion is also a concern. Curtis Prairie is considered by many to be the jewel of the arboretum because it's the oldest restored prairie in the world. Snaking through the center is a deepening trench carved out by storm water. Even worse, an invasive species called reed canary grass seems to thrive in storm water and now grows along this trench, threatening to crowd out the native species that belong here. This aerial photo shows how the green swath of reed canary green survived even the fire used to control weeds in the prairie.

Kevin McSweeney:

The recipe is right for the growth of the canary grass.

Liz Koerner:

Another set of environmental problems has crept up downstream. Storm water flowing through the arboretum ends up in Lake Wingra.

David Liebl:

The west end of Lake Wingra is filling up with sediment from storm water from the west side of Madison and you can see in the lily pads and the fact that fish and other species can't move into the area anymore that it's choking off that part of the lake.

Liz Koerner:

State storm water rules require that the arboretum capture much of this sediment and the phosphorus that comes along with it in detention ponds. Phosphorus is a problem because it feeds algae in lakes. Old detention ponds are scattered around the perimeter of the arboretum but they’re no longer up to the job. So a large group of stakeholders, including the city of Madison, committed to spending some $6 million in a five-year effort to address the problem. One of the newly dredged ponds has features designed specifically for urban settings.

David Liebl:

It's a containment forebay that's designed to collect any kinds of petro chemical spills that might come from a trailer tipping over on the Beltline, for example, gasoline or diesel fuel. And we can collect that in the forebay behind me and remove it before it gets into the pond itself and onward into the arboretum.

Liz Koerner:

In addition to the ponds, the arboretum is working on an unconventional element. It's a wetland basin that will serve as the first stop for storm water. Here they're planting seeds for an experiment using native plants.

Brad Herrick:

The general question, is can native plants be used in storm water structures like we have at the arboretum to improve water quality and decrease water quantity that eventually goes into Lake Wingra.

Liz Koerner:

They want to find out if the plants can perform specific functions like crowding out invasive species, soil retention and the ability to quickly channel water deep into the ground. One plant in the mix is false sunflower.

Brad Herrick:

And this actually is fairly good at all of the functions, potentially. It has a fair amount of above ground biomass, a lot of leaves growing. A fair amount of roots in the upper six inches of the soil and then also a fairly deep root system itself. So this one might be sort of the ultimate storm water plant potentially and we'll find out from the research.

Liz Koerner:

The seed mix includes a total of 27 native species planted in different densities in a grid pattern. It will take more than a year to learn the initial results from this research. Information that will help other Wisconsin communities struggling with the negative effects of storm water runoff.

Kevin McSweeney:

There are lots of other green spaces around the country, around the world, that face similar issues so again, if we can find creative solutions to these impacts, then I think there's a real upside to that.

Patty Loew:

Natural solutions to storm water are more important than ever. Consider this recent report by the Wisconsin Initiative on Climate Change Impacts. It projects in the next 45 years, extreme storms that dump two or more inches of rain will increase in Wisconsin, resulting in more flooding. Homeowners can also take steps to reduce storm water runoff. Just log on to our website at wpt.org, then scroll down and click on "In Wisconsin" for more information. Next week "In Wisconsin" takes you back to the UW arboretum for a look at the science of phenology. It tracks the firsts for every season, first robin, first snowfall and when things sprout, bud and blossom in any given year. It's information important to the study of climate change. We hope you join us to watch the seasons change at the arboretum, next Thursday at 7:00 on "In Wisconsin." It's a sure sign of spring when you spot an earthworm. They're good for plants in the garden. In fact, Europeans imported seven different species of earthworms when they first arrived in the new world. And for decades, anglers have been dumping leftover worms. Now the little worms are causing big problems. This week "In Wisconsin" reporter Jo Garrett shows you how earthworms are changing the northwoods, literally right under our feet in Bayfield County.

Jo Garrett:

This is a tale of two forests running on either side of a gravel road. Think of it as forest A and forest B. Two forests that together tell a story.

Man:

We're in the Great Divide District in Bayfield County. This is pretty typical of northern hardwood forest. A sugar maple dominated forest.

Jo Garrett:

Steve Spickerman, a plant ecologist with the United States forest service, is very unhappy with the part of the of the Chequamegon we call forest A.

Steve Spickerman:

This is very unhealthy. You see virtually nothing of what should be here.

Jo Garrett:

Look down.

Steve Spickerman:

The thing that I'm looking at here is the ground.

Jo Garrett:

The story is in the ground.

Steve Spickerman:

Kind of an invasion front moving through the forest.

Jo Garrett:

An invasion in the soil. To see how it works, take a look at the floor of forest B, the healthy forest. Forest B has duff. What is duff?

Steve Spickerman:

Duff is the accumulation of leaves and other organic material that has fallen and it creates a layer over the mineral soil. It can be anywhere from an inch to six or seven inches deep.

Jo Garrett:

Duff is not the same as soil. It sits on top, like frosting. Take a closer look at forest A, the unhealthy forest. Forest A is losing its frosting.

Steve Spickerman:

So what's happened over the course of, say, the past 20, 30, maybe 100 years, is that the soil has literally changed. It's gone from a soil that was very deep in leaf litter and the stuff from the trees to a soil that's literally just dirt.

Jo Garrett:

The duff has vanished. It's down to bare dirt. Contrast with forest B.

Steve Spickerman:

When you have duff, the earth is spongy feeling.

Jo Garrett:

Forest B, the healthy forest, still has the right stuff, duff. What happened to forest A?

Steve Spickerman:

We’ve been wormed.

Jo Garrett:

That's right. Earthworms. To the dismay of forresters and ecologists, the forests of northern Wisconsin have been invaded by seven different species of European earthworms. And they're plowing through this duff layer like contestants at a pie eating contest.

Steve Spickerman:

They literally eat it. They pull it down, they digest it, they consume it.

Jo Garrett:

What? Weren't there always worms wiggling through the northwoods? Answer, no. These trees are rather recent.

Steve Spickerman:

8,000 years ago, 10,000 years ago this was covered by a mile thick sheet of ice. When that ice melted, glaciers retreated. Over several thousand years, this area went from barren to tundra to boreal forest. Probably 3,000 years ago, the species we see here now moved in and established the forest. The forest was established in the absence of earthworms.

Jo Garrett:

In their natural state, the woods are worm-free. And this is where conventional wisdom...

Steve Spickerman:

The assumption is that worms are a good thing.

Jo Garrett:

...collides with reality.

Steve Spickerman:

Many of the plants that evolved in this kind of system need the duff. It won't do well on raw mineral soil.

Jo Garrett:

Without duff, some plants can die. Plants like spring ephemerals.

Steve Spickerman:

White trilium, the violet, wild leeks, spring beauty, bloodroot.

Jo Garrett:

These plants blossom in spring and then they fade. Now they seem to be gone for good.

Steve Spickerman:

Those plants simply ceased to exist here.

Jo Garrett:

Spickerman sifts through the evidence in the wake of the worms.

Steve Spickerman:

Another tell tale sign that there were worms here, what looks like small sticks are the rib of last year's leaves. All they left behind were the ribs of the leaves.

Jo Garrett:

The loss of these downed leaves, the duff, can affect standing trees.

Steve Spickerman:

Take a look at the base of the sugar maple. You can see the moss that should naturally be on the maple. It's a line on the bottom of the tree. The soil has literally gone from here to there. We’ve seen places where the forest floor has literally dropped six, seven, eight inches. You lose the soil around your base and it's going to have some real effects. We've actually seen trees that are maybe half this diameter begin to topple over because they no longer are rooted in what they need to be rooted into.

Jo Garrett:

They need the duff. It's true for standing trees, it's true for seedlings.

Steve Spickerman:

If you imagine something that's younger than this trying to get started out on this bare dirt, the moisture on a summer like this summer where we had almost two months without rain here, a young tree is simply not going to be able to survivor on this bare dirt. You lose that too many summers in a row, you lose a generation of trees.

Jo Garrett:

You lose the animals that burrow and live in these downed leaves.

Steve Spickerman:

Salamanders, spring peepers, wood frogs, small mammals, different types of mice that would be living in the leaf litter that are obviously not here because the leaf litter is gone.

Jo Garrett:

So if the worms around aren’t native, how did they get here?

Steve Spickerman:

When the first farmers came from Europe to North America, they brought plants, they brought animals, they brought worms. Following the cut over here around 1900, this area, a lot of it was sold off as farms. There were farms dotted all through this national forest.

Jo Garrett:

Farming brought worms and fishing brought worms.

Steve Spickerman:

You get done with your day of fishing, pull back up to the boat landing. What do you do with the worms? I'm guilty of this, too. I haven't done it in a number of years now, but, you dump the worms out. Great spot there. Worms are probably going to burrow in, they're going to live. Well, you've just introduced a nonnative invasive species to the northwoods.

Jo Garrett:

We've brought them here. What's next?

Steve Spickerman:

Two years ago we walked over 4,000, 5,000 acres, right in this area and tried really hard to find places that didn't have worms and we were unsuccessful. And our supposition is there might be only 15% of the forest now without worms. I would hate to take a guess how many worms are here but it might be in the hundreds of thousands or millions per acre.

Jo Garrett:

Given those numbers, solutions are in short supply and forest B may soon resemble forest A.

Steve Spickerman:

Worms are something you don't see. They're something you don't typically think about and the changes that they're doing are so profound, changing entire soil structure over multiple states. This is literally a problem from the east coast to the west coast. Being done by species that we can't see. When I first moved here and we bought our farm, the first thing we did is dug in the soil and found worms. The first response was oh, great, we have worms. Now I dig in the soil and I go, oh, great. Worms.

Patty Loew:

The Great Lakes Worm Watch is a website devoted to the environmental threat. And with the Wisconsin fishing opener on Saturday, May 1, it has advice for anglers. You can find the link on our website at wpt.org and then scroll down and click on "In Wisconsin." To combat the problem, it recommends dumping your extra worms into the trash, not into the lake and not on the land. Time now for a look at some of the reports we are working on for the next edition of "In Wisconsin."

Art Hackett:

I'm Art Hackett. I'll show you why it takes a researcher from halfway around the world to save one of Wisconsin's native languages.

Man:

I don't feel we'll lose the language. But we're nearly there.

Art Hackett:

Find out what the Ho-Chunk language, Germany and the University of Wisconsin have in common.

Andy Soth:

This is Andy Soth. There could be a unique catch to your friday night fish fry.

Man:

I think in Wisconsin we could really do some wonderful things with fish farming.

Andy Soth:

I'll show you how aquaculture works.

Jo Garrett:

I'm Jo Garrett here at the University of Wisconsin-Madison arboretum and we're tracking Cathy Miner and her little purple book. Find out what the connection is between Cathy's purple book and Wisconsin conservation hero, Aldo Leopold.

Patty Loew:

Those reports next Thursday at 7:00 on our statewide news magazine program "In Wisconsin."

Patty Loew:

Finally a visit to Muralt Bluff Prairie in Green County. This dry prairie contains numerous rare plants and animals. It's situated midway between the glaciated lands to the east and driftless area in western Wisconsin. The Muralt Bluff Prairie was designated a state natural area in 1977. Enjoy the view and have a great week "In Wisconsin."

Announcer:

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Patty Loew:

On the next edition of "In Wisconsin.”

Man:

I don't feel we'll lose the language. We are nearly there.

Patty Loew:

A race against time in Wisconsin to save a native language. Plus this little purple book contains mother nature's secrets. See why it's important to the University of Wisconsin arboretum and Aldo Leopold's legacy. Thursday at 7:00 on "In Wisconsin" on Wisconsin Public Television.