Minnesota Unraveled

EP112 - Rivers of History

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Chantel Rodríguez:

A few weekends ago, I took my dog for a stroll. I found myself in Minnehaha Park near Lock and Dam 1 in Minneapolis. Walking alongside the Mississippi River, I found myself looking more closely at all the things happening on the water. A double-decker river boat chugged upstream, headed from Saint Paul to Minneapolis. People were crowded around the railings on both decks, laughing, chatting and taking photos. As the riverboat moved further, I saw a few paddleboarders who'd been blocked from my view before. As my eye roamed further, I saw the colossal Lock and Dam itself. These are all things I've seen countless times, but never really looked at. It sparked a few questions for me. Why does the river look the way it does today? And what did it look like before? How have people interacted with this river and the countless others in our region throughout time? What are the various methods of learning stories that rivers carry about the past?

With those questions in mind, I decided to try something a little new. For this episode, I spoke to three different people and heard three different stories. Each of them looks at the past through a different lens. A historian, a Western archaeologist and an Indigenous archaeologist. First up, I wanted to learn more about the Lock and Dam I'd seen from the bank of the river. For that question, I spoke with John Anfinson.

John Anfinson:

So my name is John Anfinson and I am a retired superintendent of the Mississippi National River and Recreation Area, a unit of the National Park Service that runs for 72 miles through the Twin Cities. I have a PhD in American History with a specific focus in American Indian History. But working with the U.S. Army Corps of Engineers as an intern and then ended up as their head of Cultural Resource Management, I learned about the Mississippi more and more and more, and that became my focus over time.

Chantel Rodríguez:

Question number one for me was what counts as the Upper Mississippi?

John Anfinson:

So the Upper Mississippi, people break it up in different ways. It runs for 650 miles through Minnesota from Lake Itasca to our southern border. But when you think about the Upper Mississippi geographically, it could be from Cairo, Illinois at the mouth of the aisle all the way up, or it could be from St. Louis up. When I wrote my book, The River We Have Wrought, I was looking Twin Cities to St. Louis. So there's 29 locks and dams between Saint Anthony Falls, Owámniyomni, as the Dakota call it, down to St. Louis. So 29 locks and dams control the Mississippi River now. So what locks and dams do is when it's at flood stage, they just roll up the gates and the river runs free. As the river starts falling, the gates start coming back into the river more and more and more, creating these reservoirs that allow deep navigation. So it's really a series of lakes is what we have or reservoirs on the Upper River right now.

Chantel Rodríguez:

I wanted to know more about when and why the locks and dams were built. As it turns out, that's the question John set out to answer in his book. First, he needed to know what the river looked like back before all these structures were built. To find out, he read the accounts of people who traveled this way in the 1600s, 1700s, and 1800s.

John Anfinson:

It surprises people when I tell them that the average depth of the Mississippi from the Twin Cities to Prairie du Chien in Southwestern Wisconsin, the average depth was about 16 to 20 inches over the sandbars, all the way to St. Louis is only about two feet. Zebulon Pike comes up the Mississippi in 1805, the first American explorer. He heads up from St. Louis in a keelboat, and he gets just north of St. Louis and he's pushing his boat over sandbars. In 1820, Henry Rowe Schoolcraft, the explorer heads down from Fort Snelling, which is being under construction to Prairie du Chien, and he said they hit sandbars without number. He was in a birch bark canoe. So in hundreds of places between the Twin Cities and St. Louis, you literally could have waded across the Mississippi River at low water with the water up to your knees.

And then ecologically, 1766, Jonathan Carver, an English colonist comes to Saint Anthony Falls and he says there's all kinds of eagles nests at Saint Anthony Falls because of all the fish trying to migrate above it. Pike when he gets to an island in St. Louis, he said it held a rookery of what was the passenger pigeon, now extinct. He said they clubbed 295 birds within 15 minutes. There were so many of them.

And then Father Louis Hennepin, when he goes down to the Mississippi with the Dakota Indians in 1680, he says that the Dakota often sent runners along the shore when they saw bison to get the bison across the river. And so imagine canoeing down the river and having a herd of buffalo cross in front of you. Pike said they come

to an island with a passenger pigeon, he said their noise in the woods was like a constant roaring of the wind.

So physically and ecologically, it was a very different river.

Chantel Rodríguez:

So I'd like to pull on each one of those threads there for a second. So we talked about the sandbars as one example of something that maybe was an impediment for traveling on various kinds of boats, birch bark, canoes, et cetera. Are there other elements of the natural river itself that are posing problems or risks to life and limb and boats that are traveled at this time?

John Anfinson:

Yeah. Snags. There are trees that have fallen into the river and pilots kind of name these different kinds of snags, steamboat pilots. You had sawyers, Tom Sawyer, sawyers swayed back and forth with the current. Preachers bowed in and out of the water. Planters became lodged in the river bottom and they could skewer a riverboat pilot if they didn't see it. And sleepers kind of hid beneath the surface, and those are the ones you really had to be careful about. So they were so frequent, they categorized them in those different categories. And then there was no continuous channel. It would run deep enough for a steamboat along one shore, then stop, and then pick up on another shore.

Chantel Rodríguez:

It sounded like the Upper Mississippi had not been easily navigable for a whole host of reasons. How big of an issue were those islands John mentioned? Like the one that served as a rookery for passenger pigeons.

John Anfinson:

I should mention another obstacle. I mentioned islands a couple of times, but Pike complains about islands all the time. He said they were never clear of islands in the Mississippi coming up. And George Featherstonhaugh in 1835, this geologist and explorer, he says, only mosquitoes outnumbered the number of islands in the Mississippi. And it's hard for us to imagine all those islands when we look at the big reservoirs created by locks and dams today.

Chantel Rodríguez:

So much of what John knows about how the Upper Mississippi once looked is through the eyes of these early explorers. But it wasn't just explorers who were

writing about the river. Tourists documented their experiences as well in travelogues and journals.

John Anfinson:

But then there's the treasures you find like Juliette Starr Dana. She wants to see the Mississippi in 1852, so she takes a train from New York with her 10-year-old son and a friend. And they get to Galena, Illinois, they have to take a boat down the river. I'll maybe say more about that later, but then they head up the river and she keeps a journal of her trip. And she says that she can feel the bottom of the boat scraping over the sandbars, the shallow bars and she describes in detail. And she talks about multiple places having to stop for the night because they got hung up on a sandbar and it took a while to get off of it.

So there's these journals of early travelers that are also really valuable. And they turn up the Mississippi. And she says "The Dr. Franklin, which had let up, but feeble puffs winding slowly through the intricate navigation of the Fever River, now came out in all its high bustle noise and majesty, shaking our very souls within us, and I went to bed knowing I was indeed on the Father of Waters and had turned over a new leaf in my existence."

Chantel Rodríguez:

So early travel on the Upper Mississippi required caution around a whole host of obstacles, fallen trees, branches overhanging the river, islands and sandbars blocking passage in the middle. And on top of all that, the water level of the river wasn't consistent month to month.

John Anfinson:

The river had this natural pulse. It would flood in the spring and then by early summer it would start falling to its natural low water level, where you could cross those sandbars by wading across the river.

Chantel Rodríguez:

I'm starting to get a sense for, as you're describing, the sort of natural river and geography of it, why it was considered to be so unpredictable and undependable, but I'd love to hear you speak very directly to why folks were interested in making it more navigable. What were the reasons in the 1860s, 1870s?

John Anfinson:

So the steamboats are... The first steamboat goes down the Ohio to the Mississippi River in 1811 to 1812. And then the Lower River really comes alive with steamboat traffic. The first steamboat doesn't come up the Mississippi until 1823. And then after 1823, steamboat traffic on the Upper Mississippi is going to really increase. A steamboat might draw or sit 18 to 24 inches into the water. That's all the deeper it sat in the water, but that was too much for those sandbars that time. And a bad sandbar could separate one end of the river from another. If you couldn't get over that bar, navigation ended at that point. Or if you got snagged by a snag, it could sink your boat. Juliette Starr Dana comes across the steamboat, Danube, which has been snagged and is sinking and her boat takes on their passengers.

Chantel Rodríguez:

Wow.

John Anfinson:

So it's a real thing. And so there's these dangers, but as settlement increases rapidly in the Midwest, steamboat traffic becomes more and more important to commerce. Railroads aren't there yet. So how do you make navigation safer? How do you avoid snagging boats? How do you get them over sandbars? How do you avoid them crashing through trees along the bank? And so I think you think about historians is there's the what and there's the why. And I always try to get to the why.

Chantel Rodríguez:

The why here, John told me, had a lot to do with farmers. In the mid 1800s, railroads were the only option for many farmers along the river to get their goods to market. This meant that no matter the price railroad companies set, farmers had to pay it. For many farmers in the region, like Oliver Kelley, the price was too steep. In the 1860s, Oliver Kelley organized farmers and started The Grange Movement or Granger Movement. They advocated for laws to make railroad pricing more fair, but those laws were not upheld by the courts. Instead, farmers pivoted toward working to make the Upper Mississippi navigable, a viable alternative to the railroads for transporting their crops. They thought that if there were another option, railroads would be forced to lower their prices. This is where the Army Corps of Engineers comes in. This federal agency has existed in some form since the American Revolution. But in the wake of the Civil War, its purpose was to study, map and transform rivers for navigation.

They broke river regions down into districts based on watersheds. The Upper Mississippi is divided into three districts managed by the Army Corps of Engineers,

St. Paul, Rock Island and St. Louis. It was through this agency's careful records that John was able to learn so much about this period of the Mississippi River's history.

John Anfinson:

There's a wonderful documents called the Annual Reports to the Chief of Engineers. And so a district engineer is the commander of a district. And they would gather reports from their engineers out in the field. Then they would write a summary and they would send it up to the Chief of Engineers in Washington. And those would be published as part of the record of the Corps of Engineers. So you can get the guy who's working out on the river telling what he is specifically doing on the river. And so they're phenomenally detailed.

Chantel Rodríguez:

John told me about one account he came across from a young woman. She described the construction process for one of the structures the Army Corps of Engineers was implementing to improve the river's navigability, something called a wing dam.

John Anfinson:

And there's another account by a woman who was actually in her 90s, but she grew up on the Quarters Boat with her father's fleet that was building wing dams. The brush is in the water and the men are throwing rock off a barge to sink the mat. Well, she describes the rocks being thrown on in a rapid fire rage and the splashing growing louder and louder as it goes into the water. And then as they're laying the mat, she said that they used a creosote and marlin twine and she said, "The smell came to me every time the men hoisted a swishing bundle of brush to their shoulders." So smell, sight, sound, she's describing it all.

Chantel Rodríguez:

The Army Corps of Engineers' work on the Upper Mississippi happened in stages. In 1866, Congress authorized a four-foot channel. This essentially just meant dredging shallower parts of the river's deepest channel, yanking trees out of the path and clearing the banks. But between the river's natural pulse and vegetation's constant growth, this was not a long-term solution. So in 1878, largely thanks to The Granger Movement, Congress authorized a four and a half foot channel. The Army Corps of Engineers worked to achieve this through things like wing dams, structures built out from the bank, perpendicular to the flow of the river.

John Anfinson:

Think of it as a garden hose with the nozzle being turned down tighter and tighter, or if you've got a newer hose attachment, you can turn the nozzle to jet. That's what they're trying to do. They're trying to turn it to jet and have the river scour through those sandbars that pinch between the wing dams so it'll make the channel deeper.

Chantel Rodríguez:

Next, they build a six-foot channel authorized in 1907. Then finally, the nine-foot one we have today that was completed in the 1930s. The stages of this process are a testament not only to the difficulty of the work, but to how many agencies and individuals were required to advocate for, approve and finally do this work.

But there is one thread from John I wanted to circle back to, the river's ecosystem. The Mississippi River was once a vibrant habitat for waterfowl, plants, fish and animals. Human development in the late 1800s made the river an unwelcoming home for these creatures. What surprised me the most was that mussels, something I've never associated with the river today were once abundant in the Mississippi.

John Anfinson:

There's an account of the Corps dredging the river, and they came across this mussel bar in Illinois. So mussels would hang out on those sandbars, and it was about a mile long and 300 yards wide. And mussels move on the Mississippi by these glochidia or larvae they put out. And they attach the gills of host fish, certain fish. And they hang on the gills of the fish for a while, then they drop off. And they get a free ride up or down the river. Well, few fish swimming over such a mussel bar could have escaped being infected. And so the mussels were phenomenally dense. During the high water, the Mississippi would flood its backwaters and adult fish would go in those backwaters and spawn. And fingerlings became trapped in those backwaters to the tune of hundreds of millions. And it was like an all-you-could-eat restaurant for kingfishers and herons and other birds and mammals and reptiles to feed on.

Chantel Rodríguez:

From what John was saying, mussels had been everywhere but are far less common in the rivers of Minnesota today. So how can we possibly learn about their past or how humans in the distant past interacted with mussels? To answer those questions, I spoke to Western archaeologist, David Mather.

David Mather:

My name's David Mather, I am the National Register Archaeologist at the State Historic Preservation Office. I've worked in Minnesota as an archaeologist for pretty much my whole career. Before joining the SHPO staff, I was the consulting archaeologist for the Mille Lacs Band of Ojibwe Tribal Historic Preservation Office. A theme of my work throughout my career has been environmental archaeology.

Chantel Rodríguez:

David is part of a larger team that is studying the past through an archaeological site called a shell midden. In archaeology, a midden is a localized spot where humans have intentionally thrown out food remains, refuse and other domestic materials, a historic trash site of sorts. Can you tell me more about how the shell midden site, if we're going to go with that term still, how that was sort of discovered and then how you became involved in the project?

David Mather:

So it was discovered last summer, oh, actually, last fall. There was a river scientist named Tyler Winter was out on the river doing his work and he spends a lot of time on the water. And there had been a flood, a pretty significant high water event, I think in August, if I remember right, and it washed out part of the riverbank. And then that was followed by kind of a dry period. And so water levels in general were dropping below what they might normally be. And so he was on the water and he noticed this concentration of shells. And he has worked a lot with the Department of Natural Resources, the malacologists, the mussel biologists. And he contacted them and sent them a picture. And I had been in contact with them and... Anyway, I had contacted Bernard Sietman at the DNR. At that time I thought this was a really good connection for environmental archaeology in Minnesota. And we thought, "Well, maybe we can design a study to look at curated shells in archaeological collections."

Chantel Rodríguez:

I was of course curious about where exactly this site is, but David told me that that information is not available. The site's exact location is protected under state law.

David Mather:

In general, with the concern about protecting archaeological sites, we always kind of balance this contradiction. On one hand, we don't want to create some roadmap for a looter or someone with bad intentions who would vandalize and impact a site. On the other hand, if the public doesn't know that archaeological resources exist and why they're important, it's hard for them to care very much about what they are and if they're protected or not. And so in some cases, when archaeological site locations

are known like at an identified historic site, it's not unusual that the neighbors will have a sense of stewardship for it. And that's a good thing, but things can go either way. And so we try to kind of walk a tightrope between that.

Chantel Rodríguez:

So an archaeologist finds something, they abide by state laws, what then? I know what kinds of questions I would ask as a historian, but archaeologists approach the past differently. For David and the team, one of the first questions they asked was, "Is this an archaeological site?"

David Mather:

In this case, the shells were just so visible on the exposed riverbank that the person who identified recognized right away it was something unusual. And he didn't know... Well, none of us knew if it was archaeological or not. It could have been just a natural concentration of mussels that was preserved there for some reason. A couple of us went out there in late October and just to kind of get a sense of it. And the shells were still exposed. Actually, more exposed than they were at the time of the initial report because the water had gone down further. And that was pretty amazing to see, but then pretty quickly we started seeing other artifacts that were exposed like pieces of pottery and stone and animal bone, things like that. And so it was clear very quickly that yeah, this is an archaeological site.

Chantel Rodríguez:

What distinguishes an archaeological site is its connection to people. Once David and his team found the pieces of pottery and bone, evidence of human interaction, it became clear that this was not just a natural deposit of mussel shells. So once it's confirmed as an archaeological site, what happens next? David told me it's about figuring out who all needs to be at the table. For this site, they knew immediately that they needed to reach out to the Native community. In this case the Shakopee Mdewakanton Sioux Community.

David Mather:

We wanted them to be aware for one thing, but also we were asking them for input about what the appropriate treatment for this site was. And so staff from there came out and we're partners in the investigation. And we had a lot of discussions early on about what is the right way to treat this? And they shared our concern that it's exposed, now it's going to get destroyed by ice or rising water, whatever it is. This is a really brief window that we have to look at this. They were very interested in connections, historical connections related to the Dakota history. And we discussed what to do with the objects. So like a lot of archaeology, everything comes back to the lab and is curated and for future study. And there's useful aspects of that. This is a

huge amount of material, but also the shell and some of the other artifacts were really obviously connected to this place.

And so in conversations initially with Leonard Wabasha, he just expressed the desire that if possible maybe we could leave as much of the shell here as possible at the site. And so that's why we arranged with the malacologists to come do the identifications on site. So the archaeologists were mapping and excavate... a little bit of excavation, mostly just collecting and documenting what was exposed on the surface. The malacologists were doing the species identifications. And then most of that material, we just picked a different area of the site to leave it there so it would stay in its pretty much original location. And I think that is also the case, the material that came back to the lab just because we ran out of time, a lot of that is going to go back to the site as well.

Chantel Rodríguez:

So David and his team in collaboration with their partners figure out how to handle the site, but what exactly do they want to learn? How do they go about doing it, especially, when they're racing against the clock? David and the team have to finish their work before the river's water level rises back to normal and covers the site.

David Mather:

The big thing that strikes me right off the bat with these shell sites, and it prompted the discussion I'd had a year or so before with Bernard Sietman and others at the DNR, was that if we have archaeological shells from a known time and place in the past, identifying the species represented, it tells us a lot about the river at that time because river systems everywhere change over time, but in Minnesota and over a lot of the country, they've changed drastically since the mid 19th century, affected by greater pollution, agricultural runoff, sedimentation and dams, all these things have changed the hydrology quite a bit. And so looking at a pre-contact site like this one gives us a frame of reference for the past. It doesn't mean that that's what it always was, but it gives us a good sense of a pre-disturbance river. And some of them are incredibly environmentally specific, they need very precise conditions to survive. And others are more widespread and adaptable. But looking at the species composition here will tell us a lot about what the Minnesota River was once like.

Chantel Rodríguez:

Figuring out what types of mussels were represented in the midden required a malacologist or a mollusk specialist to come to the site. From memory alone, the malacologist David's team worked with identified at least 22 species of mussels. Having that expert on site meant the team did not have to remove more material than was necessary from the midden.

I'm really glad you were able to talk about the importance of bringing the person that studies the mollusks on site to sort of identify species and there's something to go off site to the lab and then they'll be returned. When it gets down to the documenting, so to speak, are you taking photos? How are you documenting it in that way?

David Mather:

Yeah, so all the artifacts are cataloged. And whether they're going to be curated or not, the ones that will return to the site, we have counts and descriptions and maybe weights and we've been discussing for the shells for example, what data should we record? The mussel valves have a right and the left side, the species of course, should we be recording how big they are? They grow, they live for a long time, decades, some of them. And so if we record the size, does that help us say something about the mussel popula... that species at that time, things like that? And we are taking a lot of photographs as a documentation of, yes, it's this species, yes, it's that species. If somebody else 50 or 100 years from now thinks, "Well, that doesn't sound right." They can go look at it. And also, then photographs. And then within all the shells, we've spent a lot of time trying to figure out, okay, of the ones that have modifications what is clearly cultural? What is maybe natural? Because for the most part, they're incredibly well-preserved, but there is some breakage.

In some case, we could see that someone pierced a hole right in the middle of it. We wondered about, well, could a bird have done that? Birds do things like that. These seem different, but we wondered about that for a long time. Some of them seem to have a jagged edge like they were cut. Others seem to have maybe broken naturally. And then there's a lot of them that are somewhere in the middle and we can't tell for sure. So we're going to record information related to that.

Chantel Rodríguez:

David and his team laid out a careful grid around the site. This helps them keep track of which items came from which specific spot. While conducting the survey, they realized that some of the artifacts appeared to have been burned.

David Mather:

We realized in the middle, approximately in the middle of it, there was an area that was burned, it had charred plant material. It seemed like in there a lot of fire cracked rock. And the shells there were scorched. Some of them were actually burned more, other ones were kind of discolored like orange from being scorched by the heat. And elsewhere at the site nearby and a little farther away, we'd found concentrations of big granite cobbles, softball size, maybe a bit bigger. And they were still in place, they were kind of stacked up. And we could tell that they had been intensely burned in the past. And this is something we... we don't see them intact a lot, but we see fire

cracked rock often at archaeological sites because when you superheat those rocks till they're glowing, you can use them to cook things. You don't even need a pot, you can cook soup in a basket or a birch bark container that you couldn't put on a fire. You can put the hot rock in there and it'll boil.

Anyway, so I think what it seemed had happened was that people were gathering the mussels from the river. And then heating these rocks and then moving them into the spot. And then piling the mussels around them so that the heat would steam the shells open just to make it easy to take the meat of the mussel out.

Chantel Rodríguez:

David was able to infer so much, all from finding this charring on the artifacts. When he finds unexpected things like this, what steps does he take to figure things out? David told me that a huge part of determining the context of an object is determining when it's from.

David Mather:

The shell itself will provide some samples for radiocarbon dates, and those will be the most specific dates to when the shell gathering and processing event occurred. To run a radiocarbon date, you need something that's organic. So shell works, bone works. In this case there was deer bone and bison bone and muskrat bone and other little animals, pocket gopher I think. And also, the pottery, the clay fired pot itself isn't datable but a lot of these sherds had charred black crust inside from cooking in the pot. And so there's a lot of information there. For one thing, a date, you can get a radiocarbon date connected to the pot. But also, people with different types of expertise can analyze some of that crust and figure out what was cooked in the pot? Are there phytoliths from different types of plants? Is there pollen grains? Are there starches or sugars or proteins? And figure out really a lot more than we could see from the large artifacts. So I'm really excited about that possibility. Whether that would happen now or in the future, I don't know.

Chantel Rodríguez:

More testing will be needed to confirm more precise dates, but there are other ways archaeologists can get a broad idea of when items are from. The type and style of the pottery shards David and his team found gave them insight to when they might have been made. By looking closely at the pottery, they could see imprinted patterns from some kind of woven fiber. That gave them insight about how the pottery was made, which helped inform when it might have been made.

David Mather:

There were different kinds of pottery, but it seemed to date to the late Woodland Tradition, which is an archaeological period. And so that ranges from maybe about 600 to 800 in the Common Era up until the fur trade in the 1600s and 1700s. And so that is a very long period of time. It gave us an initial frame of reference. We will have more precise dates as we actually do continue with the lab work.

Chantel Rodríguez:

In my conversation with David, it became clear that archaeologists have to walk a fine line. There are stories to be gleaned from these artifacts, but there are also limitations to just how much they can tell us about the past.

David Mather:

One of the things we think about a lot is, "Well, whose story are we telling?" Right? And so in the past, a lot of it's been kind of a man, the hunter thing, what kind of weapons? What kind of warfare? What kind of hunting? And it was always men's stories. And of course, we're trying to look into the deep past and say something, and so it's very... And archaeologists are very cautious about not going too far. We are very data-driven. Well, what can we really say? We have to speculate to some degree.

But anyway, in this case we could really see a lot. And I kept thinking about, like I said, families, but women, elders gathering the mussels. It's probably those are the people within maybe a village or a larger group that would've been doing that. And kids in the big shell concentration, the midden, occasionally, they were little tiny shells and that wouldn't really have had any food value. But I just kept thinking if I would've been helping my mom do that when I was five years old, I totally would've grabbed that little one. That's absolutely something a kid would do.

And normally, we look at things like a span of centuries or millennia and just look at maybe changes through time and ceramic technology or fishing, which are useful things to look at. But getting into a story, this site lets us do that and we're just kind of beginning. We'll be able, as we learn more-

Chantel Rodríguez:

Would we call that sort of information knowledge that's coming from the historical discipline or historical archaeology or traditional knowledge from Native communities that you've spoken to?

David Mather:

Yeah, to some degree. One of the things that I think is really important about this site too is the involvement of the Shakopee Mdewakanton Sioux Community because I think I'm trained to look at things like an archaeologist, but Dakota people looking at a site like this that is connected to their own history with traditional knowledge is going to say a lot more than we can say through archaeology. I think ideally, there's a cross-pollinization there. We're observing to some degree different things and thinking about them in different ways.

Chantel Rodríguez:

Hearing about this part of David's work, this collaboration made me wonder when Native communities look at this site, what are they seeing? And more than that, what kinds of questions can rivers answer for Native communities? Of course, there are many Native histories and just as many ways of looking at the past. To get a sense of just one of those, I talked with Indigenous archaeologist, Selena Bernier.

Selena Bernier:

My name is Selena Bernier. I am glad to be here today. I am a member of the Bad River Band of Lake Superior Ojibwe. I'm an archaeologist with the Science Museum of Minnesota and a Ph.D. student at the University of Minnesota. I am studying North American Archaeology from an Indigenous perspective. I am working on my own Indigenous archaeology framework in examining the Old Copper Complex.

Chantel Rodríguez:

The Old Copper Complex or OCC is a term Western archaeologists use to describe the early copper mining culture, Native peoples living in the Great Lakes region, who mined and traded in copper. We'll dig into this term a little later in the conversation. Selena is working on two different projects, one with the Science Museum, and another as part of her Ph.D. research. Both projects are related to copper and understanding this period of history and the people who brought it into being in a new way.

Do we have a sense for what Native nations they may have come from or if they had shared language or anything like that from some of that maybe oral tradition or stories that you've heard?

Selena Bernier:

Yeah. So there were many Indigenous cultures that have considered this area home and have a strong tie to copper. So the Dakota, Ho-Chunk and Ojibwe are only a few,

but that's what we know the most of so far. And interestingly, there really isn't a shared language about copper around this, but some archaeologists today studying the OCC tend to use Anishinaabemowin or Ojibwe. As an Anishinaabekwe, obviously, I'm flattered, but that's not entirely appropriate. There are different Indigenous histories here that we need to be taking into consideration.

Chantel Rodríguez:

If you could talk to me just a little bit more about maybe what... You've mentioned rivers a little bit and waterways, what role these rivers and waterways in this area played in these early communities?

Selena Bernier:

Yeah. So I think to start with that, we need to kind of go back billions of years ago. There was a lot of volcanic and fault activity happening in this area, from where we know, Lake Superior now to Oklahoma. Lava flowed and hardened over time, but copper ended up in the bedrock. And then over 10,000 years ago, the glaciers that covered this area were receding and melting kind of northward. And this movement carved our landscape and carved into the bedrock and carried debris that included copper chunks. And then the melt waters formed new waterways with glacial melt waters. So copper was found in these melt waters and it was a gift to Native people to find on this newly carved land. And that connection of copper and water is still apparent in Indigenous contexts. Copper is still seen as a gift from the water.

The waterways, as we know them right now, created kind of boundaries. So things were happening on one side of the river versus the other side of the river, but the rivers were also highways for trading and connecting different groups of people. And there is another written history of interviews in kind of the Delta of the Mississippi of where they got their copper. And they said way up the Great River. So these rivers were being used to move materials and connect different communities.

Chantel Rodríguez:

In talking with David, I had gotten a sense of how Western archaeologists find sites and how the context of a site can inform where they look to find it. It made me wonder where is copper found in this region? And is it typically found by itself or among other artifacts?

So when you find these archaeological pieces in riverways along river banks, are they found as single pieces or you find a whole mass of things in a space?

Selena Bernier:

So usually copper is found with a lot of other things and it's usually a lot of other stone tools. So there's obviously, this tool kit that copper is included with.

Chantel Rodríguez:

As a part of Selena's work with the Science Museum, she's locating and finding new sites of interest for the OCC, but she's also reviewing materials from old sites.

Selena Bernier:

So we're looking back at projects that have already been done in this region and some important waterways to consider are the Saint Croix River, the Mississippi River, and the Snake River, which is pretty significant to one of MNHS sites, which is the Fur Post. And in the fur trade, there were also copper pieces being traded. So again, we see kind of this continuation of copper being really important and moving along these waterways for a really long time. And copper appears as tools and ornamentation in some of these areas. And there are some morphological or the shapes of the tools themselves, there are some differences on different sides of different waterways. And so we can kind of see that artistry is a little bit different. But in Minnesota particularly, there seems to be a lot more fishing hooks, there seems to be more smaller tools. So we can kind of see what was important to people in this area. And because there's a lot of water, there's a lot of fishing.

Chantel Rodríguez:

As she's finding these new sites and reviewing these old materials, what types of questions is Selena asking as an Indigenous archaeologist?

Selena Bernier:

Yeah. So if I were doing fieldwork and I came across this beautiful giant copper tool, the first thing I would be thinking is, who left this here? Who left this here to be found? And how did it get here? But then I'd also wonder if it was unintentionally moved from where it was supposed to be. I think about plowed private lands, just kind of mixing everything up, kind of moving things from where their resting place was. But then from an archaeological perspective, I would be looking to see if there were any organics attached to it that could be used for dating, so we can get maybe a little bit more of a specific timeline and how we can see where these tools are being used.

Chantel Rodríguez:

Yeah. And I'm curious, I'm wondering if you have any information about how these tools were actually made, how they were made, how they were worked in this time period?

Selena Bernier:

Sure. Yeah. So mining happened in the Lake Superior area. So the more popularly, Isle Royale and the Keweenaw Peninsula in Michigan are known for having these mining pits where there is a chisel and a hammer stone to kind of get these chunks of copper out. But there was also chunks of float copper that were moved with glacial debris. And with those, they were most likely cold hammered. Copper is kind of a softer metal that can be a little more easily manipulated and doesn't necessarily have to be melted and cast. So they were cold hammered into their desired shapes.

Chantel Rodríguez:

How do archaeologists figure that out? How do they figure out that that's how they did it?

Selena Bernier:

There are sometimes different characteristics within stone tools that can kind of point to that, but archaeologists have also experimented with making copper tools. So they use cold hammering techniques, they have used the melting and casting and they noticed that cold hammering was probably the way that things were made. It just takes a lot less energy to do that.

Chantel Rodríguez:

Hmm. Okay, yeah. No, that makes a lot of sense. Can you using, again, our archaeology methodologies identify places that might've been the sites where things were cold worked or cold hammered or they were mined? Is there things that you look for or clues that you can tell, "Okay, that's how we know it was probably mined here. That's how we know that's where it was worked here."?

Selena Bernier:

Yeah. So in some of the mines on the North Shore, there were hammer stones and chisels left behind in these little pits where people were mining from. So that's how we know that they were being mined. But also, manufacturing areas also have tiny pieces of scrap copper that are close to them. And so then we can maybe say, "This is where these tools were made." But again, these are mostly guesses just kind of

based on what we can see. We can't say for sure all the time, but we can make really good guesses.

Chantel Rodríguez:

Selena's work is about understanding how these objects are made, but also when they were made. Like David, some of Selena's dating techniques rely on organic materials. Copper happens to be antimicrobial, which helps the process.

Selena Bernier:

It prevents the decay of organic materials. So if we find organic materials with it, chances are we can date it to thousands of years ago when this copper tool was either made, used or just kind of brought with somewhere.

Chantel Rodríguez:

For Selena, the challenges of dating these materials goes beyond pinpointing their age. Because Selena is an Indigenous archaeologist, she approaches studying the past differently than a Western archaeologist like David.

Curious if you could share as you got into this particular topic, what kind of research questions that you have right off the bat coming to the table as an Indigenous archaeologist or what you're hoping to learn?

Selena Bernier:

Well, I think that kind of starts with kind of differentiating what Indigenous archaeology is. So it doesn't always mean disassembling in an archaeological idea like I am. There are many different ways to practice Indigenous archaeology, which is the beauty of it. There can be many definitions. Indigenous archaeology is an approach to practicing archaeology that intersects with Indigenous identities, values, knowledges, ethics and sensibilities. It's a multi-vocal approach and assertion, I guess, to Western archaeology, which tends to homogenize many cultures into one. Indigenous archaeology aims to make archaeology more representative of, relevant for and responsible to Indigenous communities. It addresses real and perceived inequalities and provides new and different perspectives.

Chantel Rodríguez:

As an Indigenous archaeologist, Selena has to contend with the names Western archaeologists have given to various time periods.

Selena Bernier:

Western archaeology tends to inappropriately create cultural designations to a wide range of people, their things, activities, relationships with one another and their belongings. And it's also created temporal markers to signify periods on a linear timeline. So Old Copper, the height of it based on some dating techniques shows up in the Archaic Period. I don't like these names at all that they use in archaeology, but that period is roughly maybe 9,000 to 3,000. But there is a lot of arguments on where the Archaic starts, where it stops and it changes kind of regionally. So these terminologies kind of shove a bunch of cultures into this neat little Bankers Box. It takes up space on the shelf of archaeological knowledge and it gets taken for absolute truth and it's perpetuated even unintentionally.

In the case of the OCC, the studies disassociate Indigenous cultures with copper materials. The waterways of Minnesota, Wisconsin, Michigan and into Canada had thousands upon thousands of burial mountains. Copper tools and ornamentation were taken from these buried ancestors and interpreted from a Western lens. And things that weren't found in a burial context such as surface finds on plowed private stolen lands were interpreted in much of the same way. So there's obviously a disconnect and there's discrepancies in this study. And these ideas are still being used today.

Chantel Rodríguez:

You mentioned the term cultural designation, so I wanted you to sort of explain what that means.

Selena Bernier:

Yeah. So in order to explain the past, archaeologists need to create terminology to define a culture. So the way that they define culture isn't necessarily the way that Indigenous people would define culture. Their culture is only from an archaeological perspective. And so that would include putting a bunch of different types of people into one little category and designate that as a culture. So those terms don't necessarily fit with the way that Indigenous people view the world.

Chantel Rodríguez:

This brought up another question for me. What about the broader terminology of her own area of study, the Old Copper Complex or OCC?

Is that a general term that you yourself are hoping to move away from and calling it something different?

Selena Bernier:

It is. It is something that I'm hoping to kind of get away from. And I also want to get away from the kind of chronological timeline a little bit, just because the Archaic Period is so ambiguous. And copper doesn't necessarily fit into that neat little box because copper has been mined and used in this area for I would say close to 10,000 years. And so it doesn't really fit in that timeline so much. And it's been noted in historical documents of Europeans coming over here and noticing that we have copper. So there's a long timeline there. So the Old Copper Complex wording doesn't necessarily fit for me. And I personally like to use Copper Carrying Communities because it kind of takes away the concern of people's things and focuses a little bit more on the people themselves.

Chantel Rodríguez:

There was one more challenge to our work that Selena brought up. For Indigenous archaeologists, the question of how to share information and how much to share can get complicated.

Selena Bernier:

Right. And that just kind of goes with Indigenous Data Sovereignty. There are things that aren't meant to be shared, but there are things that could definitely be shared. And I don't want my work to be extractive in any way. I feel like I'm kind of teetering on this line of what's too much information? What is supposed to stay within Native communities? And that's what's really great about the work that I do is that there's continuing conversations about this and trying to find the right way to do this. And it's really hard to grapple with doing this kind of research in an academic arena because I'm kind of playing two different parts. I don't want to give away too much information, but I also want to broadcast that there is a really special connection here that we need to be considering as archaeologists.

Chantel Rodríguez:

At this point, I was starting to understand some of the differences between Western and Indigenous archaeology. Facing those differences head-on, pushing back against Western archaeology's framings of Native communities is a key part of Selena's work.

And so for you, what are you hoping that this Native knowledge of land and water can help you and everyone else to better understand these early copper communities?

Selena Bernier:

I'm really trying to make connections between the past and the present and really asserting that Indigenous communities have always been connected to copper in ways that archaeologists typically haven't been able to express. And I want to make those stories a lot louder, a lot brighter because they were kind of hidden away for a while. And the OCC is this huge archaeological phenomenon that really gets the attention of archaeologists. They love learning about copper, but they also don't have the same excitement when learning about Indigenous people that have been using copper. So I want to make that very clear and very known.

Chantel Rodríguez:

The varied approaches between these two schools of archaeology can mean there are sometimes tensions between the two. It's something David thinks about as well.

David Mather:

There can tension because the archaeology and oral history and written archival history are very different ways of looking at the past. And so I think speaking on the archaeological end of it, I think a lot of my colleagues get very entrenched in our research methods and our research questions and what we feel we can say. And I think in our training we're just... I'm reaching a little bit, but in our training, I think we are kind of told to leave the other things to other people and not go there. I think scientifically, there's a reason for that, but I also think it's not helpful. And so sometimes I'm aware that archaeologists will get into and historians will get into things like, "Well, okay, oral history says this." We don't see any... They look at it as a sort of conflict. I never do. Even if there's not an obvious way to reconcile two different records, it doesn't mean that one is right and one is wrong. And I think that's the wrong way to go about that.

Selena Bernier:

In Indigenous archaeology, there is room for different stories, different ways to interpret things and being okay with that. With Western archaeology, there is a need to resolve those things, there is a need to know what's happening there. And in Indigenous archaeology we're just like, "There's another story that we're missing. There's something else that we're missing. And that's okay." I guess I am more interested in coming from an oral history aspect and kind of pointing out the discrepancies between those stories and what we know in the archaeological literature. For now, I just want to know the stories. I just want to insert Indigenous presence in these stories.

Chantel Rodríguez:

There are any number of ways to approach the past. Speaking with these three guests helped me to understand how a researcher's field of training can inform the question itself. But whether historian, Western archaeologist or Indigenous archaeologist, all their questions and approaches can offer new insights to the history of the Upper Mississippi. Each of my guests reflected on the lessons they've taken away from studying the stories rivers carry.

David Mather:

Before 19th century, landscape changes and impacts, the Minnesota River was a lot more like the Saint Croix River is today, and that seems wild to me. And that's based on what species of mussels lived there then. And some of them still do, a lot of them don't. And so to some degree, some of the species that we're finding at this site are not mussels that live in the Minnesota River anymore. And so I like to imagine a future where the river is restored more to its natural system or to a healthier way. Mussels are great environmental indicators, and so, one of the things that disrupted them is pollution, but also dams. Freshwater mussels are connected to fish species.

Selena Bernier:

There are important protections that we can give water once we understand the history of water themselves. Not just copper, not things that we can get from the water, but that there are certain things happening on the earth that made these waterways happen. And they have sustained life for a really long time, they have sustained movement and communication and sharing of knowledges and sharing of material things. And that's still happening today, not just between Native people. So the more we can understand the history of waterways and copper being just this tiny part of it really, we can move forward and appreciate the water that we have more better.

John Anfinson:

I am an environmental historian, that is who I am. I work in the public arena, which makes me a public historian, but I'm a public environmental historian. And I really want to use history to inform action today, inform how we think about the environment. One example is the closing of the Upper Lock at Saint Anthony. Everybody thinks of it because invasive carp were coming up the Mississippi. That was the trigger. The cause was the failure of navigation through that section of the Mississippi. It just failed. And so carp were the excuse, not the cause. And I worked with people on that closure argument idea.

So when you think about text, maps are really important, photographs are really important. You can see change over time looking at maps and photographs. And I

think it's a powerful story because what I tell people, every single major thing that's happened to this river, from the navigation projects, to the refuge, to the levees, have all happened because a dedicated group of people pushed their movement into Congress and got what they wanted. And if they could do it and you want something different, why can't you push for what you want?

Chantel Rodríguez:

From the headwaters of the mighty Mississippi, to the smaller waterways that crisscross the state, rivers have always played a role in the everyday lives of the people who call Minnesota home. That was clear from hearing about the Copper-Carrying Communities of the past. And just as clear from my stroll through the park alongside Lock and Dam 1. The rivers across Minnesota contain countless stories, countless answers to countless questions. As a historian, I had a few of my own, but speaking with these three guests opened my eyes to entirely new ways to view and learn about the past.

You've been listening to Minnesota Unraveled: Pulling on the Threads of Minnesota History. I'm your host, Dr. Chantel Rodríguez. You can find more information on this episode, including transcripts, bibliographic resources, and MNopedia Articles at our website, mnhs.org/unraveled. Minnesota Unraveled is produced by the Minnesota Historical Society in partnership with Pod People. Special thanks to our production team, Rebecca Chaisson, Angela Yih and Brett Baldwin, and sound design and editing by Erica Huang, lead research by me, Dr. Chantel Rodríguez. Our theme music is Careless Wanderer by Arthur Benson. Funding for Minnesota Unraveled is provided by the State of Minnesota, the Legacy Amendment through the vote of Minnesotans on November 4th, 2008, and our generous donors and members. Thank you for listening. Until next time, stay curious, and remember, the tapestries of history are all around you just waiting to be unraveled.