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78-alexandraendling-transcript

00:00:18 **Kirsten**

Welcome to the Women in Archaeology podcast, a podcast by and for women in the field. Today, we have the host of the Endling podcast, Alexandra Kosmides and she's going to talk a bit about her work and we're going to discuss some particulars around that so welcome Alexandra.

00:00:39 **Alexandra**

Hi

00:00:39 **Kirsten**

I'm so excited and have been really amped about the show that we're recording today. For our listeners can you tell us a bit about what you do and what your podcast is about?

00:00:50 **Alexandra**

Yeah, so I graduated with my bachelor's in Earth Environmental Science in 2017 and since then I've worked for state and provincial governments doing different types of field work. My first job was based around desert tortoise and wildlife monitoring in the Mojave Desert and my most recent employment was with the province of Alberta doing a lot of disease research with whirling disease, which is a fish disease that affects salmonids and is spread by this thing that's essentially a jellyfish or in the jellyfish family. So it's a really fascinating thing. And so that's kind of what I've been doing and I started endling because I feel like everybody when you're young is really fascinated with dinosaurs and that's how you learn about extinction, but there's no conversation about what has been happening that's closer to us. And the sixth extinction is currently happening. It is the largest extinction since we lost the dinosaurs and it's kind of happening in the background and it really plays into climate change and not everybody knows the stories of these animals or the plants that we've lost super recently. So I started endling to tell those stories and to start that conversation

00:02:20 **Kirsten**

Fantastic. So professionally you're kind of like the biology counterpart to archaeology's cultural resources. You're like the biological, what's the word I'm looking for, consultant.

00:02:33 **Alexandra**

Yes. Yeah. I've done a lot of consulting work.

00:02:36 **Kirsten**

Awesome. Well, I'm really excited about your podcast. It's really neat. I enjoy the fact that you're doing this work because like you said, it's something most people don't know about, you know,

there's a vague knowledge that started around the 90s that promoted the awareness of endangered species and extinctions and there's been sort of, and maybe it's just obviously everyone's social media and internet experience and exposure to things varies, but I feel like even being in a conservation style employment and interested in these sorts of things, I feel like the discussion of extinction is still like you're saying very much in the background and not heard or not as loud as it was even in the 90s, the mid-90s when I was a kid and all discussion about the pandas and the polar bears and all that. You know, it's very faded from the limelight.

00:03:42 **Alexandra**

Yeah. Absolutely. There's this big idea that like this can't happen or it's not happening and you'll have a few posts about like, like we just lost the smooth hand fish, which is this like honestly kind of ugly fish that there was only one of it ever found. The holotype is all we know it from and it's very hard for people to care about things that aren't cute. Like people care about pandas because they're like, oh it's a panda but like if you see this, you know, it's in the anglerfish family. People are like, why does it matter and that's a lot of what I've heard too is if a butterfly dies on the other side of the planet, what do I care? And I think that there's this larger conversation about biodiversity and what it means to the people that were living in the areas or the people that relied on that species. That isn't happening.

00:04:44 **Kirsten**

Yeah, for sure. I think some people aware of the idea of a food web and the idea that an ecosystem is this larger web of interactions that when one piece falls off or falls out it severely affects not only the structure but the integrity of the entire web and that hole gets filled by something and usually some sort of invasive or you know, who knows. So at least that's something that I have, working when I was younger in parks was a conversation that I remember having a lot with kids and I feel like that is a conversation that more people are kind of aware of or generally, but if you talk about it in abstracts, it's just that- abstract. So that's where I think your podcast is particularly important because it really kind of grounds things in reality and looks at the specificities of what's happening. So today we're going to take a look at three species and I decided to note them as keystone species of native North America in that they are very important and some of the main species that many tribes both pre and post contact have relied on. Two of which are still around though both were near extinction and are in some phase of recovery and then the third, the passenger pigeon is extinct so we can get a little bit of a handle on what you're just saying I think with regard to the impact of these species and how they disappear on the people themselves. I think some of this also touches on the challenge that I think a lot of modern people who live in urban societies, and even if you live in a rural area, you're still in an urban society generally speaking if you go to a grocery store for your food. The divorcing of people from their food and other resources that their things are made out of. For example, the grasses that a basket might be made out of, the wood that's in our beds that might

be made out of, that kind of stuff. Without having a connection of where all that stuff comes from originally, the natural or even geological resource that that is made from and that everything is limited. With that disconnect it's really hard for people to see that these things are affecting us. It's just difficult to see because we're so far removed.

00:07:39 **Alexandra**

No, I completely agreed. There's a disconnect in the kind of supply chain. I don't really like referring to animals that way, but they are part of the supply chain. So if you don't see anything growing or you aren't actively participating in hunting or fishing or taking that animal in some way then you know, you have less of feeling towards it.

00:08:06 **Kirsten**

Exactly so the three species that we're going to dive into, as I mentioned are the passenger pigeon, the bison, and the salmon which I looked at. These are also most intensely harvested, if you want to say harvested, or utilized in the west, the central plains, and then the East so I think that's kind of a fun bit and of course salmon was and still is used on the Atlantic as well. And I'm not familiar with the the tradition of salmon on the East Coast, but living in the Pacific Northwest it is the land of salmon here. So I'll go ahead and do a quick intro on the salmon and then we can kind of get into a discussion on its effects and interactions in the Northwest. How does that sound?

00:08:57 **Alexandra**

Yeah, that's perfect.

00:08:58 **Kirsten**

So, in the Pacific Northwest, and that includes the area from about San Francisco north into Alaska, the coastal tribes and the those who rely on rivers farther in both today and historically and prehistorically and for time immemorial and I mean that both in the sense that it is used by Indigenous people and also in a scientific sense because we have not found the beginning of the use of salmon. What salmon is, has a really heavy spiritual aspect in that it is the main not only food of the people in this region, but also they carry with it a return, there is a cycle, a cyclical pattern in the way that salmon spawn, leave, you know being an Anadromous fish they go out to the ocean do their thing and then come back and they have a sense to return to where they were born. So this is something that has been known amongst Indigenous peoples in this region for a long time. And the connection with salmon as food is really fantastic and not just as food but also as their part in the ecosystem. My daughter went to a camp a number of years back and had learned from tribal Elders about the return of the salmon. Once you've harvested and you've clean the fish and you dry the fish, the carcass, the parts that you don't eat, usually the head and tail and spine are returned to the water or to the banks and this helps bring life to the surrounding area. And so when this is lost in not

just the lack of fish being harvested and returned but the lack of fish getting to these streambeds it has a really severe and intense effects on on those ecosystems and the surrounding areas. So as far inland as the Snake River which is an Idaho and goes through Southern Idaho, salmon were found originally and into obviously up into a Canada and as far east you'll have to help me with this because I will have to admit my Canadian geography is not at its best.

00:11:49 **Alexandra**

That's ok mine isn't either.

00:11:49 **Kirsten**

So BC, and then Saskatchewan?

00:11:52 **Alexandra**

BC, Alberta, Saskatchewan.

00:11:55 **Kirsten**

Okay. So as far east as Alberta our rivers that originate or that feed into the ocean and salmon can be found there. So these cultures all interact in various ways, many different languages, they're all distinct but a lot of the uses of Salmon go from not just food, but the skins have been cured and used as purses or other types of packaging. There's a lot of like the curing of dried salmon, but there's also like soup with some of the bones as well that you like there's a broth. There's like with any other animal in the Indigenous world, a lot of people are familiar with the idea that it's

00:12:47 **Alexandra**

just trying to use everything.

00:12:48 **Kirsten**

Mouth to tail or something like that. I've seen that

00:12:52 **Alexandra**

I've never heard of that that's really neat.

00:12:55 **Alexandra**

So yeah it uses every part of the animal and what can't be used is returned to the ecosystem which is pretty fantastic. So that's sort of a general introduction to the use of salmon in the Pacific Northwest. One of the oldest fisheries that's ever been found archaeologically is on the Columbia River. And some thousands of fish remains recovered and they date to approximately I want to say about 8,000 years ago or 9,000.

00:13:28 **Alexandra**

That's so cool.

00:13:29 **Kirsten**

Yeah, it's pretty fantastic. So that's when the earliest ones have been found but just being the quantity that was there, that's not the earliest, there is no way.

00:13:41 **Alexandra**

No that's that's super neat and the taphonomic bias along rivers to have that many in one place like that's amazing. There's also this like really beautiful quote by Chief Weninock from Yakama in 1915 that is "my strength is from the fish. My blood is from the fish, from the roots and berries. The fishing game or the essence of my life. I was not brought from a foreign country and I did not come here. I was put here by the Creator" and that's just beautiful because it shows how tied to the land the people were and what it meant for the interruption of that process for them with commercial fishing and harvesting and even at this point overharvesting of salmon along the coast.

00:14:33 **Kirsten**

Yes, and the people still are there is still like locally, in the city even, there's some really cool work being done and we'll post some links to some of these resources as well in the show notes. So the Columbia River inter-tribal Fish Commission and this is a group of tribes who work with different government agencies both state and federal in the restoration of salmon and they work around the dams situations. They work in restoring or not restoring but in upholding fishing rights because the many of the tribes in this region, most of the tribes in this region have retained fishing rights to the salmon. So some of that has been some really incredible work that started I want to say in the 70s after restorations were underway even today the Pacific salmon, the different species is anywhere from like the Alaskan salmon down to you know, those caught in rivers it's strictly regulated. The commercial fisheries on the Columbia do have first, well I don't know if it's first right necessarily, but they have the rights to fish from the mouth of the river for several miles inland, but then there is a boundary on the river where anything up river from that the tribes have first take so it's not as prime as the mouth of the river obviously but for regular fishers that are non-tribal members to catch salmon in Oregon you have to get a special license. It cost a bit extra and it is within the Columbia River Basin. So any drainage is into that is a special specific license, and they only you know, it's a limited fishery so as things dry up or if the fish count is real low, because it's something they track really closely and they do manage it decently well. As much as the salmon has restored it is nowhere near what it was before.

00:17:15 **Kirsten**

Yeah, that seems to be the running theme with any of the animals that have been lucky enough to recover. You're never going to have those historic populations ever again, unfortunately, because those types of populations just can't exist with the way that the world is. It's really interesting to me that they put all of this work in the 1970s because I feel that was like the second wave of conservation efforts in the United States. It was like right around when Rachel Carson's *Silent Spring* had come out and everyone was freaking out about DDT. So the fact that so much effort was put into monitor and restore and make sure that this population was sustainable is fantastic.

00:18:06 **Kirsten**

Yeah I hadn't thought about that. That is definitely not a coincidence I presume. So we're actually about at the end of our first segment so we'll go on and continue on with a couple of other species and probably wrap up a little bit about the salmon here coming up. Hang tight and we'll be back in a minute.

00:18:38 **Kirsten**

Alright, welcome back to the Women in Archaeology podcast with Alexandra Kosmides and our discussion on important keystone species in North America and their near demise and unfortunate demise in the case of the passenger pigeon, which we'll probably get to here shortly. So we wanted to dive in a little bit on a certain note that we talked about briefly in the break. Alexandra did you want to touch base on that?

00:19:13 **Alexandra**

Yeah, there's a lot of input right now and a lot of considerations that are being made where First Nations or native peoples are finally being allowed to have a seat at the table and be a part of the conversation and feeling welcome to use their traditional knowledge to try to either restore or conserve these areas and the fact that that that conversation started so early on for the salmon is just incredibly fascinating. So I am blown away. I didn't know that part of it and that's wonderful that this is so sustainable because you hear a lot of greenwashing and everything to about like sustainable fisheries, and we know what does that mean? And what does that mean? And it sounds like with salmon at least along the coast that it is kind of keeping up to its its standard or you know keeping its word.

00:20:09 **Kirsten**

Yes, and some of the difference too I feel like has to do with the history of Indigenous and governmental interactions in this region, and also the fact that it's been fairly recent. The east coast unfortunately has a much longer history of those negative interactions with the Federal and previous governments. So there's been, because things happening in the Northwest have been so recent as

far as the the start of it and just in the last 200 years instead of the last four or five hundred years as far as direct interactions go...

00:20:58 **Alexandra**

And that's fascinating

00:21:00 **Kirsten**

There's been more chance for people to create these discussions as far as the resistance. There's been of course shared knowledge between tribes to a limited extent as well beforehand. The Columbia was also the center of a very large trade network and meeting place that continued, I don't know if it's actually, I don't think it's still going on right now. It continued up until the historic era when Celilo Falls which was sort of the main meeting place was drowned underneath a dam. So there's hundreds of dams along the Columbia Basin for all of the tributaries and that's where there's been more challenges within preservation to try and get rid of dams or reduce the number of dams depending on what they're actually doing if they're you know, the ones on the Columbia however, I think, even though it has always been since those dams were put in between the 30s and the 60s there have been movements to take them back down in order to bring the salmon back full-fledged if possible. The challenge with that is it provides, the dams up here provide almost all of the power to the Western United States.

00:22:47 **Alexandra**

Yeah. I've heard a lot about taking dams out and and what it's going to mean for the people that are living in the area and you don't think that the electricity travels that far but when you look at where it goes from the generating stations, it is quite surprising how much that area actually feeds.

00:23:08 **Kirsten**

Yeah. It's pretty insane. There's a percentage of it, I forget how much goes to British Columbia and Canada and a very large proportion of it powers Vegas and LA, much of California as well as the local area here. So it's it's pretty intense. Most of the archaeological projects are around power whether it be from pipelines or transmission lines or other improvements or maintenance going on with those power structures that were put in so long ago and there's a lot of knowledge being created for what had been destroyed and also is under some challenges right now. Some of the discussion are also with power going into like windmills instead of the hydropower. Then you get into the bird challenges and that was something you had mentioned before

00:24:14 **Alexandra**

Yeah, I am very stoked about green energy options. I think that it's something that we should explore coming from the southwest US and seeing the giant spread of solar fields across the Mojave

Desert is kind of a sore spot for me. I've been around a lot of those projects and while I'm very excited that we're moving towards solar power, you know, impacting the Mojave Desert and the species that are out there is, you know a topic for another conversation but there are a lot of impacts that people are just kind of getting wise to including the windmills kind of being these bird blenders as they've been referred to to me many times where there's a lot of strikes and certain areas can only have a take of say, you know, six golden eagles or they'll have you can take two Bald Eagles and six golden eagles and all these other migratory birds and once you hit that limit their fined but, and we talked about this before with the problem with people being able to traditionally get eagle feathers for ceremonial use or otherwise. We're if these birds are dying on these sites, they actually have to be bagged and tagged and submitted to the US. fish and wildlife service to where they are then requested by Native peoples to be able to be used which seems like a long waiting period, kind of long-term process, especially when people are requesting these for traditional use or traditional dress and you know, that access is now extremely limited

00:26:14 **Kirsten**

Well and it also gets back to what we mentioned in the last segment of that like disconnect, that process disconnects Indigenous peoples from that harvest as with any traditional harvest of animals or plants, like there's generally a spiritual aspect.

00:26:35 **Alexandra**

There's like a ceremony around having to like, you know thank that animal and that happened with the bison and the passenger pigeon and everything to like thanking them for what they gave up essentially to be a part of that culture or you know be used by that culture and you know having to send a postage-paid stamped envelope to get some feathers in the mail it's kind of strange when you think about it.

00:27:04 **Kirsten**

Yeah, I mean granted it was a problem for randomly hunting and shooting these birds and they're still like you mentioned, not only by a green energy sources such as wind mills but highways kill an unknown number of predator birds and birds of other kinds of as well, which I see regularly along I-5 here. So that's also an unfortunate business. But let's go ahead and dive into a little bit of the bison. Let's move eastward. I'll start just by saying that some of the tribes that are the fish people such as the Nez Perce in Idaho, Oregon and Washington also historically went with them and some of the other Northwest Plateau Tribes east on hunting missions for bison as well, which is kind of a fun thing I learned recently. So there's definitely overlap. But yeah, tell us a little bit about the bisons.

00:28:12 **Alexandra**

Yeah. That's that's actually super neat. I didn't know that either. So it's either bison or buffalo. I use it interchangeably. There's some people that are not okay with that. Anyway, they were the principal food source for so many people across the plains. They're generally just grouped as the peoples of the plains including the Arapaho, Assiniboine, Blackfoot, Cheyenne, Comanche, Crow, Gros Ventre, Kiowa, Lakota, Lipan, Plains Apache (or Kiowa Apache), Plains Cree, Plains Ojibwe, Sarsi, Nakoda (Stoney), and Tonkawa just it's so so many people lost this resource essentially. They were traditionally used for hundreds of thousands of years there. I mean, you know, there were people that were hunting bison that came across the Bering Strait and they were hunting the ancestors of these bisons. So the transition from hunting, you know, the *Bison latifrons* (now extinct type of bison) to you know, *Bison bison* (current species of bison) happened thousands of years ago, but this is a resource that's been used for just so long across North America. They were hunted differently before horses showed up so it's pre-contact. They were incredibly dangerous to approach, horses made that a lot easier and there's a whole conversation to be had about you know, what horses meant for Native peoples and the the trade-off with you know, being able to hunt these bison versus like, you know, and even what traditionally meant for them at that point and moving away from what would have been traditional hunting to the traditional horseback hunting. Essentially as people pushed westward and this this happened to the passenger pigeon too but essentially

00:30:07 [Alexandra](#)

as people began to push Westward, there was more demand for food. These people started using guns where they were traditionally either driven off of cliffs or hunted using bows, arrows, spears and the massive taking of these bison was just completely unsustainable and started to be a huge problem in the mid eighteenth hundreds. I know I'm sure that you've seen that picture where there's like two guys standing and there's like an entire pile of bison skulls. Do you know the picture that I'm talking about?

00:30:44 [Kirsten](#)

I do you know the picture you're talking about and I'll have to find that and link that in here, but that's crazy. And that was that was one of the events there were like specific events in large kills. Not just for "fun" from trains and people going west in that sense. But also in order to cull the food source of the Plains Tribes because they were giving the US Army a whole hell of a time. And that was one of the government solutions was to eradicate their food source.

00:31:30 [Alexandra](#)

Which is terribly dark

00:31:32 [Kirsten](#)

and if I remember correctly, that's what that photo is referencing and I can't remember the source that I found that in but I'll try see if I can find it. And if not if anyone knows better, please correct me and let me know what that specifically references but I think it was from like doing a cull and then stacking them because the the western stage coaches also found value in Buffalo hides for the springs in the stagecoaches.

00:32:13 **Alexandra**

Yeah. So there was, like they were useful to the settlers as well and they were just like these giant, you know walking, I don't even know what to call them. It's just like this all you could need, you know was walking out there and it was like we will just you know kill the whole thing and then you know, it displaces these people that are in our way and also here's all these resources that we need to continue to like, you know expand essentially and the bison bones were used for like glue, fertilizer, dyes were made from them, which is wild and then bone char which was actually important for sugar refining, and feeds into the whole issue of sugarcane in other islands that were populated by people that took over the area. Anyway, you know, a lot of it they, at one point they were being hunted in such a massive volume that they would cut out the tongues and take the hides off and just leave everything else to rot. Yeah, and then the bones would be collected for that use that I just mentioned. So they would let everything just kind of naturally rot off and not give people access to it and then take everything else ship it back east and use it at these processing plants, which I can only imagine how terrible that smell was.

00:33:47 **Kirsten**

Oh, yeah.

00:33:49 **Alexandra**

yeah, I don't even, like that just sounds like a horrible job. Yeah, but there was an essay that somebody wrote at the time, in 1899 when this was kind of in full force. So if you think about it, there was like people say between 30 and 60 million bison in North America when people arrived and at this point, it was like thousands and the quote from the journal says "30 years ago millions of the great unwieldy animals existed on this continent innumerable droves roamed comparatively undisturbed and unmolested. Many thousands have been ruthlessly and shamefully slain every season for the past 20 years or more by white hunters and tourists merely for their robes and in sheer wanton sport and their huge carcasses left to fester and rot and their bleached skeletons to strew on the deserts and lonely plains." So kind of a good look into how people thought of these creatures and just the kind of unbridled slaughter and the displacement that the people that traditionally used these animals experienced.

00:35:12 **Kirsten**

Yeah.

00:35:13 **Alexandra**

Yeah. So that the US Army was actually, what you were talking about. The US Army was actually involved in all of this and there's a pretty, a pretty terrible quote by, one of the big advocates for this was General William Tecumseh Sherman. There was an article that reported quote "General Sherman remarked in conversation the other day that the quickest way to compel the Indians to settle down to civilized life was to send 10 regiments of soldiers to the plains with orders to shoot buffaloes until they became too scarce to support the Redskins" so pretty horrible and that interruption led to, I think it was around only a hundred maybe 200 bison left at the turn of the century. And at that point they were taken into captivity and the only way that the bison was really saved was this last-ditch effort to bring them into pens and try to start breeding them and a lot of the genetics now are mixed with cattle. So you have these like impure lines of bison which has a lot of genetic implications and things like that for the species, but they currently with everything that we know now are trying to repopulate the bison in these large areas. There's I actually just talked about this in my end of the month episode. There's a national park that's very close to me in Edmonton, Alberta called Elk Island National Park that has two of the purest strains, if not, the purest strain of plains and woods bison in North America and this is the place that everybody kind of gets their bison from and recently back in 2017 some of those bison were actually taken to Banff National Park, which is in the southwest corner, or kind of in the corner of the province and released into that area and they just had this huge baby boom. The population is kind of exploding because they're in the backcountry and they don't have any predators at this point, but what's really fascinating for a lot of the biologists that work in the park is that these animals are kind of wearing down these trackways and people have hiked these like to go pick up the trail cameras or you know kind of track the animals and they're finding bison bones and bison haven't existed in the park for a hundred and forty years on their own. So these animals are traveling these traditional paths that they used long, long ago and that has like implications for finding other archaeological sites that might be in the park that nobody knew about.

00:38:33 **Kirsten**

Well, that's fascinating. That's really really neat. Like they have this sense of where things go or at least the best trails or the best routes that's really fascinating and I'm interested also to see how the development of that conservation effort goes in relation to the First Nations in that region, if as things improve or how much access is granted to those bison for traditional harvest or when that might happen, there's some work in that area, some of the Northwest Plateau Tribes have been trying to fight for the ability to do bison hunts. There's a lot of complications when it gets into land use and resource harvest but depending on how treaties were written, some people have good argument to have access to certain resources where maybe others don't. So it's a challenging

discussion around resource rights when it comes to animals as well as plants and other other resources. So let's hit over onto the third segment and continue this conversation because I feel like we still have a little bit to wrap up on the Bison. So we will then move on to quickly the passenger pigeon and I know that you have a whole lot to say about the passenger pigeon and we'll definitely link your episode on the passenger pigeon on here as well. So we will be back in a flash, stay tuned.

00:40:41 **Kirsten**

And we're back. Thank you for holding on in this really fun conversation. We're going to wrap up our discussion on bison here with Alexandra from ending and then dive writing (pun intended) to the passenger pigeon

00:41:01 **Alexandra**

Good one. So yeah, I just wanted to finish everything up there is still traditional keeping of bison by heard managers. There are people especially in Southern Alberta, there's a lot of private herds of bison that are used to make gloves and hats I've seen like lots of different things. It's more prominent in the southern part of the province, but it's still not the traditional way that these animals should be kept and things like that. There's a lot of like wild game farms here too, where there's elk and bison and things like that. But like we talked about in the break it's nowhere close to what it was or like, you know, what it should be.

00:41:59 **Kirsten**

Yeah, but it's nice to see that people are taking ownership and at least are trying to hold off these populations from extinction and I'm sure there is a lot of hope in returning to some of those more traditional activities but like with every Indigenous people in the world life just isn't and probably may never be what it was before thanks to globalization and colonialization. But it is good to see that they're still around, they're being managed, and hopefully will increase in recovery over the next century or so, so we'll see, cross your fingers, how that goes.

00:42:51 **Alexandra**

And that's a really fascinating segue into the passenger pigeon too, because in the traditions of the tribes that used these species, they weren't supposed to disturb the adult birds, especially when they were on their nests because if the birds left they would either leave the babies to starve or the eggs would rot and things like that. So even post colonialism the peoples that were traditionally using these species like the passenger pigeon just would not bother the adults. There were some people of course that you know would be hired to go into the large roosting sites and take the squab's and those were the baby pigeons which were actually more targeted than the adults because they were like these fat goey blobs of bird that were easily like pickled. All of the descriptions are terrible. It's not a good time. They're just like these like, you know, ugly baby

muppet birds. And so, you know, there were people that were going in and that were hired to go in and take passenger pigeons, whether they were squabs or adults but a lot of the legends around the hunts or the historical stories or creation stories even that dealt with the passenger pigeon, with the people that lived in those areas, just completely forbade bothering the adults and traditionally they were hunted using anything from nets to long poles to knock the babies out of the trees, to fire which is a whole other thing and these birds were so prolific. If there was one other species that helped really push people west and helped to really, you know, move people across the United States besides the bison it was the passenger pigeon. There were approximately 4 billion of them at the height of their population and they were known as great bread to the Seneca because they would be the species that in the spring would return and would be used to kind of bring people out of the winter. So when these birds started to be utilized in different ways, especially with the trap shooting events or you know, there's a story about somebody using like a cannon to hunt them in Canada at one point and it's just like, I don't remember the quote exactly but the statement is essentially like there was a great take that day. So they fired a cannon into this, you know giant flock of birds and took you know, who knows how many of them but, you know, the the conversation about these birds too, is that they would black out the sun, you know, there was so many of them that you couldn't see the sun when the when the flocks were flying over you and to go from 4 billion birds to no birds in you know, a little over 200 years is incredible.

00:46:31 **Kirsten**

Yeah, that's absolutely insane. I mean the passenger pigeon is I think sometimes used like the dodo in its silliness, you know, it went

00:46:46 **Alexandra**

absolutely

00:46:47 **Kirsten**

like what's wrong with this bird, but that's not that's not the whole story obviously.

00:46:53 **Alexandra**

No and if any of your listeners are interested, I have a very long story about them and there's a fantastic book too and I have an interview with the author at the end of that episode. But yeah, they were thought to be just like bird that didn't know to move. But a lot of the conversation around that just isn't true. I mean everybody I think has like walked past a group of pigeons on the street where they look at you like do you have food, do you not have food like what are you doing? And they'll kind of like, you know scuttle out of the way and things like that and that's just kind of how pigeons and doves are right? Like they're just looking for for food and hanging out and if you aren't a direct threat to them like a cat or something they're like I guess you can be here, you know, and it's an

interesting conversation to think about would- this animal has been a big subject along potentially with the dodo of the extinction and the idea of bringing this bird back, especially when it was so hated by farmers is kind of another it's like a whole other conversation to have but is, just like the Bison, is there a place for this animal if we were to bring it back? You know, how would that be received? And even though there's all of these places named pigeon something which is from the passenger pigeon. So if you have like a Pigeon Lake or Pigeon Creek or Pigeon something by your house, it's most likely because of the passenger pigeon, especially if you live in like the eastern half of North America. Is there a place for these birds? Is there any way for people to still utilize them without them being a total nightmare to deal with and where do we put them because there are stories of the way that they would feed was just it looked like a wave coming towards you and people would throw grain down to seed their fields and the pigeons would see it and just kind of move in this five foot wave and pull everything up so that I feel wouldn't fit well with monoculture crops at this point. So it's a fascinating conversation and the Seneca still have the pigeon dance. They still perform it to this day. It's a really beautiful. There's some videos of it online which I can send you that I looked at for when I was writing my episode and there's recipes and there's been replacements with chicken and things like that and those recipes for Native peoples now, but you know, there's still this like missing piece of their culture because this thing is just gone and right now we just don't have a way to replace it.

00:49:48 **Kirsten**

Well, and it's interesting that you brought up monoculture and it's incompatibility with a bird that eats seeds because it does make me think of the traditional farming of that region and I mean just throughout much of the US nothing was mono cropped really except maybe corn but corn or maize was not generally mono cropped it was raised alongside beans and squash so as much as people like to think well, you know, this is a problem but mono cropping is a problem and there are other ways that are more productive. If you look at the large scale of history, most of the usable species of plants that we use come from the Americas which was not a mono cropping number of societies like none of these were domesticated as mono crops. That's just not the way it works. So those are the best ways to raise those plants and it did not exclude the ability for the passenger pigeon specifically to still exist in cohabitate and be an important keystone species for the Northeast Tribes or otherwise on the Eastern seaboard because corn was there as well

00:51:23 **Alexandra**

exactly. Yeah.

00:51:25 **Kirsten**

so it's not a complete incompatibility it's incompatible with the way that we're doing things which are unsustainable anyway. So it would take, I think, maybe looking at farming a different way which

we're going to have to do eventually anyhow, theoretically, if we continue to do so to make that a reality.

00:51:48 **Alexandra**

Yeah, absolutely. And there's also like the passenger pigeon survived on mast so that's like acorns traditionally the way that we think of them. They were very dependent on oak species and like the cultures that they were interacting with also we're dependent on the oaks trees to get through the winter because they would also collect acorns but at this point, you know old-growth oak forests are not really a thing. There would be you know, it's thinking about the wild spaces for these birds let alone the interactions with you know, people that have these monoculture farms and I'm sure the passenger pigeons were like a pest species, but if you have you know, the three sisters method or other ways of growing these crops together like it wouldn't have been such a such a problem and you know, they're in one area for such a short period of time and then they leave so yes, there was probably a lot of impacts to whatever people were growing but the lure of having a massive field of just, you know, people throwing corn or grain or whatever they're trying to grow on it day after day after day is just going to keep them in the areas and that was where the conflict with farmers came in. So I agree with you that if somehow if we bring back this bird and we say we want traditional use and we want to put it back where it was there's a lot of connotations with that and there's a lot of connotations to the way that monocultures exist in the world today. That would have to change to even start that conversation.

00:53:30 **Kirsten**

Very true, very true. So what else? So you talked a little bit about the food and the culture around the passenger pigeon, but what other important or interesting highlights, would you like to make on either just the passenger pigeon or the way that these three different species have been treated differently?

00:54:05 **Alexandra**

Yeah. It's fascinating, you know the fact that we still have two out of three of these species speaks to people really realizing that you know humans were having an impact and it took the death of a bunch of like the famous species at the turn of the century. So the passenger pigeon, the thylacine, you know, a few sea lions, things like that for people to realize that they were impacting the world around them and these species weren't infinite and unlimited and we were just here to take and take and take and with that first kind of blossoming ideology of conservation came the Migratory Bird Treaty Act and and things like that that protected a lot of these species and our understanding of conservation and a need to protect these wild spaces came in with, you know, national parks and and things like that, but the conversation is still continuing. As I said at the beginning of the episode too, like there's just starting to be a place at the table for the consulting of First Nations or you know,

Native peoples to have a say and I think that you know, starting that conversation here and realizing that you know, this is important, these species are important, these people's stories of their traditional use of these species is important is a huge, huge deal and moving forward and perpetuating that conversation and being able to conserve these species for future generations, whether that's for traditional use or just because it's a panda and it's really cute like you know, that's so important and it's great that that aspect is finally being looked at and that that conversation really is starting.

00:56:10 **Kirsten**

Yeah, one of the things also I wanted to point out is that changing conversation around conservation conversation around concert? I can't do both those words the same day.

00:56:23 **Alexandra**

That's totally understandably. I had to pace myself too because I was like, hold on.

00:56:28 **Kirsten**

So one of the interesting things that I've seen come up recently is in conservation circles the beginning of the acknowledgement that traditional uses were not incompatible with the existence of these species and in many cases actually improved the vitality and this goes also to, I'm more of a plant person but plants as well as animals in their upkeep, the way that the salmon were returned to the river and still are, the way that the management, the Indigenous management of the landscapes attributed to the improvement of the space for these species instead of hunting them to extinction. I know there's in some circles still and for a long time and it was still a thing. I believe in some circles that you know the idea of pristine unadulterated nature outside of Indigenous involvement and human environment generally is you know that's, in reality not really a thing. I mean humans are animals and are part of the ecosystem. It's just the way that we interact with it which impacts the other species negatively

00:58:11 **Alexandra**

Absolutely

00:58:12 **Kirsten**

There is a possibility and a way to have positive impacts, but for every region in the world and every small bit, you know looking to the people who have been there for millennia, ages since time immemorial is such an important part of the ability to conserve these species because efforts in conservation have been piecemeal successful, depending on how it's done and that's where I think these conversations are finally happening and also seeing positive results around not just the salmon but other species that have been positively impacted by the work of Indigenous peoples around the

world in preserving these species and their traditional ways of life. Cause I think that has had a positive impact.

00:59:11 **Alexandra**

No, that's I hundred percent agree. And I you know, I did a lot of work in consulting along like major roadways and oil and gas projects and things like that and you know humanity is always going to march forward. There's always going to be this forward push and you know, I think that while we're marching we should be looking underneath our feet to see what we're stepping on.

00:59:34 **Kirsten**

Agree. Or maybe you see about mapping things differently.

00:59:39 **Alexandra**

Yeah, just just a little bit

00:59:42 **Kirsten**

just slightly. Awesome. Well, I believe that brings us to the close of our episode and those were some pretty fantastic final words. Were there any additional things that you wanted to add maybe a little bit about your podcast and where they can find you.

01:00:01 **Alexandra**

Yeah. So Endling is available on all major podcast hosts. So Spotify, Apple, I use PodBean or Podcast Addict. If anyone is interested, these are the full stories of these animals going from their evolutionary history all the way up to what happened. I'm trying to work through species that are kind of lesser known up to very well-known extinctions. So if you're interested in hearing more about modern extinction and stuff that happened, you know after we lost the woolly mammoth that's still going on today. Just check it out.

01:00:43 **Kirsten**

Fantastic. Well, thanks for coming on the show. It's been a hoot and we'll definitely have to have you back at some point to continue this conversation because as you know, you mentioned before there are so many

01:00:57 **Alexandra**

it's never-ending. Yeah, and there's so many so many other sides, little braided streams to go down.

01:01:04 **Kirsten**

Exactly, awesome. Well again, thanks for joining us or rather me today on the Women in Archaeology Podcast it's been a blast.

01:01:16 **Alexandra**

Thanks so much. I really appreciate it. It's been great.