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Natural Resource Stewardship and Science

National Park Service Paleontology Program

Oral History Interview – John Hoganson

Natural Resource Report NPS/PALEONTOLOGY PROGRAM/OHI—2020/010

ON THE COVER
John Hoganson, retired North Dakota State Paleontologist, working on preparation of a fossil specimen.

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Vincent L. Santucci[1] and Justin Tweet[2]

[1]National Park Service
Geologic Resources Division
1849 "C" Street, NW
Washington, D.C. 20240

[2]National Park Service
Geologic Resources Division
12795 West Alameda Parkway
Lakewood, CO 80228

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The National Park Service, Paleontology Program publishes a range of reports, plans, oral histories and other documents that address a range of paleontological resource topics. These reports are of interest and applicability to a broad audience in the National Park Service and others in natural resource management, including scientists, conservation and environmental constituencies, and the public.

The NPS Paleontology Program disseminates comprehensive information and analysis about paleontological resources and related topics concerning lands managed by the National Park Service. Given the sensitive nature of some paleontological resource information, such as the specific location of fossil sites, some publications are intended for specific audiences and are maintained as restricted access. When appropriate, sensitive information is redacted from reports in order to allow greater access to these reports by NPS staff, partners and the public. This work supports the advancement of science, informed decision-making, and the achievement of the National Park Service mission.

This oral history transcript is available in digital format and is maintained within the NPS Paleontology Program Archives and Library through the NPS Geologic Resources Division. If you have any questions regarding this transcript, please email vincent_santucc@nps.gov.

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Background

Interview with John Hoganson: This interview was conducted on Tuesday, June 9, 2020. The primary speakers are interviewee John Hoganson, Vincent L. Santucci as interviewer and Justin Tweet. John is the retired State Paleontologist for North Dakota. During the mid-1990s John helped to coordinate a two-year paleontological resource inventory at Theodore Roosevelt National Park, North Dakota. The interview provides details related to the field work and fossil collecting at Theodore Roosevelt National Park.

This interview was conducted over the telephone from John's home in North Dakota and Vince was at his home in Gettysburg, Pennsylvania. At the time of the interview, Vince was the NPS Senior Paleontologist and Paleontology Program Coordinator. The interview was recorded on a digital audio recorder and a mp3 file was created. A written transcription of the interview was produced from the digital audio recording and this document contains the discussion during the interview. The transcription was completed by Charles Salcido, a paleontology intern helping to coordinate a paleontological resource inventory at Theodore Roosevelt National Park in 2020. John signed a release form for the National Park Service for the preservation and use of the interview in the future. If present, PII has been omitted.

Transcript

[START OF INTERVIEW]

Hoganson: Uh, pretty good. I still have emeritus status over at the state museum in North Dakota you know, and I have a little office space there. So, I can still do a few things. I'm doing some research and not something I had a lot of time for when I was actually employed, you know. So, that's been good. Although I'm not over there very often because I don't live in Bismarck anymore, so – so, I get over there a couple times a year probably.

Santucci: Are you still—

Hoganson: That's good and the rest of my time, you know, I'm fishing and walking around in the desert in the wintertime. So, life is good.

Santucci: Excellent. So, do you still live in North Dakota? Where do you live?

Hoganson: No, I don't anymore. I have a place in North Dakota, but I spend most of my time over in Minnesota just on the – just across the border from North Dakota there's a – I don't know if you know much about Minnesota, but there's a lake region that has a lot of glacial lakes and forested terrain and so, we have a place over here where we spend most of our time in the summer.

Santucci: Fantastic.

Hoganson: Then in the wintertime – in the wintertime we do go down to Tucson. So that's kind of our lifestyle these days, which is good. I'm not doing any, you know, any fieldwork, that's all history for me. But I'm still – have some research projects, writing projects mostly. That I'm working on.

Santucci: Outstanding sounds like it's a good life.

Hoganson: Yeah, it's good! So, you must be mirroring that. Maybe not too close, but—

Santucci: Yeah, I'm not planning on retiring. I have a body bag underneath my desk, so I uh—

Hoganson: Oh, you're having too much fun.

Santucci: Oh, absolutely. Well, let me introduce—Go ahead.

Hoganson: Well your job is a great job and you've done such a wonderful job with it Vince. That, you know, establishing all these programs and so—

Santucci: Thank you so much.

Hoganson: And congratulations for that because it has really helped focus on paleontology as an important resource and something that we should be concerned about. So yeah, you've done a lot in that regard.

Santucci: Thank you so much, John. I'd like to introduce you to a fellow Minnesotan, Justin Tweet is on the line. I don't know if you've ever met Justin.

Hoganson: I don't believe so. Hi, Justin.

Justin: We probably corresponded about 10 years ago.

Hoganson: Oh, ok.

Justin: Over the Great Plains inventory, so I probably would have quoted you at one point—

Hoganson: Oh yeah.

Tweet: —about Theodore Roosevelt

Hoganson: I think so, yeah, ok. And now where are you located?

Tweet: Cottage Grove.

Hoganson: Oh, you're in Cottage Grove? You're in Cottage Grove, right? Ok, my nephew and his family live – well, yeah over in Cottage Grove so – so I know that town a little bit. Yeah. So, is that where you're stationed then? Or do you have an office over there or somewhere?

Tweet: Well I'm kind of an inside-outside person. I'm sort of a semi-contractor or something. So this, I've stationed myself here.

Hoganson: Ok, yeah, yeah, ok. Well that's nice to be able to live where you want to live too. And, so that's good. So, it sounds like there's some interest in Theodore Roosevelt National Park.

Santucci: Yes, so we've been involved in these park specific paleontological inventories and the first go around for our inventories was largely literature review, looking at museum collections, reviewing field notes, talking to people who had done work in parks, and this is the first time we're going to be looking at a field component and so Theodore Roosevelt is on our list now. We just begun to do some work and Clint Boyd is involved and we have two interns hired. And so, we found that reaching out to people who have done previous work has been extremely valuable in capturing information that may not otherwise be captured. And so, we immediately thought about you and the work that you've done and so we really appreciate the opportunity to interview you.

Hoganson: Well I'm happy to do it and uh, you know the work I did out there was, I don't know, 20 years ago, maybe more I don't know, but I still remember it pretty vividly most of it because

it was a first paleontological inventory done in Theodore Roosevelt National Park as you probably know and um, it was initiated by, I'm not sure, there was a, I think there was a program that was developed to look at paleontological resources and non-traditional paleontological parks. And that's how—I'm not sure where the funding came from really. It was Park Service I'm sure, but um, we got involved in that way, so it was something that I was interested in doing anyway so – so, it's a beautiful place you know, Theodore Roosevelt National Park? So—

Santucci: Absolutely.

Hoganson: —So that's how that kind of came about. I don't know, maybe you know when that was. I don't quite remember what year – we did it in a couple years, I think.

Santucci: Sure. So what I was going to do was I have a little introduction at the beginning of the interview. It's okay to record the interview?

Hoganson: Sure!

Santucci: Ok. So, I'll give a brief introduction and then I have a series of questions. Some are basic background questions to be able to provide context to the overall interview. Particularly if somebody is reviewing this a hundred years from now, they'll be able to understand who you are and your role has been.

Hoganson: Sure.

Santucci: And I tend to proceed chronologically although it's not necessary that we stick to that; we'll go wherever we wind up going but I'll start chronologically and then we'll see where it goes. Finally—

Hoganson: Ok.

Santucci: —don't assume that we know anything, so feel free to be as detailed and as elaborate as you want. Usually, that's when some really good information comes out. Sometimes it's humorous, sometimes it's historically valuable. And so, again, if somebody is listening this tape a hundred years from now, the details that you provide will be very valuable to them.

Hoganson: Well that's uh, that's a premise that I'm not really sure about. Your premise there that anybody's going to be around in a hundred years [laughter]. You know what I mean; the way things are going. I've always said that the human race is a failed experiment.

Santucci: Oh, boy.

Hoganson: So [laughter] yeah. But anyway, go ahead.

Santucci: Ok. So, are you ready? Are you ready John?

Hoganson: Yes, I'm ready.

Santucci: Ok. Alright. Today is Tuesday June 9th, 2020. My name is Vincent Santucci. I'm the senior paleontologist for the National Park Service Paleontology Program. Today we are interviewing John Hoganson who was the retired state paleontologist for North Dakota. John has undertaken paleontological field work at Theodore Roosevelt National Park, and we will be discussing that today. The interview is being conducted by telephone, and we are accompanied today by paleontologist Justin Tweet, who works for the National Parks Service Paleontology Program from his home in Minnesota. So, here's the first question for you John: When and where were you born and can you tell us a little bit about growing up and going to school up until the time you enter college?

Hoganson: Sure. I was born and raised in West Fargo, North Dakota. And I went to West Fargo High School and from there North Dakota State University for my bachelor's degree. And I grew up in a probably lower-middle class situation. I'm often asked, you know, I gave many, many lectures over the years of all sorts of groups, of a lot of kids groups, and I was often asked how did you get interested in paleontology. And as a kid, I probably didn't really know what the word meant, but I did get interested in geology because where I lived, there was a gravel road and whenever they surfaced the gravel road I would take my dad's claw hammer out there and knock open the rocks to see what was inside. So, I wasn't one of these guys that were dreaming about finding *Tyrannosaurus rex* in my closet when I was a kid, you know? So, that's really how I got into it. And ended up getting my degrees in geology with paleontological emphasis over the years.

Santucci: Excellent. And so, then you, when you went to college, where did you go and did you know right away that you wanted to go into geology or did you discover that after you went into college?

Hoganson: Well, here's kind of a sad story; when I was in high school, we had a counselor there, you know. As a senior, I went and visited the counselor to talk about a career and I really told them I was thinking of becoming an archaeologist. And he looked at me and said, "John, you'll never be able to do that. You're not-" basically, he said you're not smart enough to do this. "You're going to have to have a PhD and all that kind of thing." And, you know, that kind of discouraged me at the time, you know? I wasn't a stellar student in high school, but I did have that interest. But he kind of turned me off to that, and then I went in as a freshman at North Dakota State University. I took a course, an introductory course in geology, and I had one of those, you know, great professors, and he um – and that's how I got interested in paleontology – or in geology was through him. And then ultimately, I became really interested in paleontology because I was also doing biology in college and just kind of decided that's the way I wanted to go. I was interested in prehistoric life and what fossils could tell us what the climate and environment was like, you know, in the past. So, that's how that evolved. And then when I went and did my master's degree it was in geology again but a paleontological thesis and then also the same thing for my doctorate.

Santucci: And so, where did you go for your master's and PhD?

Hoganson: Yeah, I went from North Dakota State University at Fargo and 3 months later at the University of Florida in Gainesville for my master's degree. And there, I worked on Eocene echinoderms. Eocene echinoderms for my master's. And it wasn't really a study of systematics, it was a study of how the echinoids could be used in biostratigraphy. So, that was my master's degree under an old-time paleontologist by the name of David Nichols, and he was kind of an expert on Eocene invertebrates. And from there – you want more?

Santucci: Oh, please yes.

Hoganson: Well from there, I took a job at Union Oil Company of California in Houston. At that time, which would have been 1970 – let's see, yeah about 1971. So, the oil companies were employing a lot of paleontologists, those paleontologists that were interested in working with microfossils. And I was not averse to working with microfossils, so I took that job. I was mostly interested in making money because I was totally broke when I graduated like most people are. And I had that opportunity, so I moved to Houston and I spent maybe about 4 years doing micropaleontology, both foraminifera and calcareous nanoplankton. And then I figured: oh man, this isn't really working out for me because I'm really more field-oriented and that job was sitting at a microscope for 8 hours a day. And so, I left there. And had enough opportunity then to go to the University of North Dakota for a doctorate and that came down because a friend of mine, a paleontologist, was initiating programs to use Quaternary beetles, Coleoptera, to determine climate change at the end of the Ice Age climate changes. So, I got involved in that. Actually, did my doctorate work in southern South America and Chile. So, I was looking at fossil beetles as climate indicators across the – well from the end of the Ice Age to the Holocene. So, that was my doctorate work and so there you go! Pretty diverse background huh?

Santucci: Yeah, that's an interesting doctoral project for sure. Very timely.

Hoganson: As I said earlier, that to me, fossils are primarily – interested in fossils from that standpoint on what we can learn about climate and climate change based on fossils and also biochronology and biostratigraphy, that kind of thing. And it really did make a lot of difference to me what kind of fossils, you know I was working with at the time. And that of course when I ended up with North Dakota Geological Survey as their paleontology – paleontologist, that's when I – the rest of my career was based on working with vertebrate fossils.

Santucci: Fantastic. So, once you finished you're PhD, how did you wind up getting into the North Dakota Survey?

Hoganson: As I said, I was doing my doctoral work at the University of North Dakota and at that time, the North Dakota Geological Survey was part of the university. Well, they were separate, but the state geologist who was the director of the North Dakota Geological Survey was also the chair of the geology department. So, the geology department and the geological survey were intertwined, you might say. So, I was finishing up my doctoral work and an opportunity came up to work with the North Dakota Geological Survey at the University of North Dakota and it looked like an ideal situation for me because I was interested in doing some PhD and advising graduate student and so forth, and there was an opportunity to do that at "Grand forestry" at the university. And it was at that time that I really got interested and involved in doing vertebrate

paleontology because, at the time, there was no vertebrate paleontologist in North Dakota at all. And so, that's how that started. And my first work with the geological survey was working on White River fossils, so that's how my connection really, White River mammals, and well, we were working on mammals and turtles and whatever turned up out of the Brule Formation primarily in North Dakota. So, that's how I got interested in vertebrate paleontology.

Santucci: Very good.

Hoganson: As time went on – you want me to continue?

Santucci: Oh, please. Go right ahead.

Hoganson: As time moved forward, there was a legislative – actually a political movement, to move the North Dakota Geological Survey. To split the geological survey from the department of geology and move the geological survey to Bismarck, where all the other state agencies were, right? So, that happened, but while I am still in Grand Forge, I was asked to, at the Geological Survey, I was asked to develop a paleontological resource management program for the state at that time. So, I was beginning to work on that while still in Grand Forest, but that really expanded when we got to Bismarck, the survey got to Bismarck. So, that program, as you know, was developed into a pretty major program now for the state and that all started you know back when we were still in Grand Forest at the University.

Santucci: Very good. So, your work for the survey, did you have an opportunity to work with any other paleontologists during your career?

Hoganson: Oh yeah. You know, I was the only paleontology- paleontologist for the survey for many, many, many years. I was able to eventually hire in Bismarck, first one paleontologist as an assistant, and then by the time I retired, we had two additional paleontologists. Then when I retired, they filled my position with Clint [Boyd] so there's still three paleontologists that work for the North Dakota Geological Survey. But at the time, before that, I was working with some other people like, there was a paleontologist by the name of George Lammers at the Manitoba Museum of Man and Nature and he was the one who was really doing some work on Brule fossils in North Dakota and I kind of got linked up with him. He was – he was an old-time vertebrate paleontologist and I was pretty much green when it came to that, to vertebrate paleontology, at the time. So, he and I worked on White River fossil for a while, and then I kind of left that old thing and started doing other things in North Dakota, but taking a job with the state of North Dakota at the North Dakota Geological Survey I could not really wander too far out of state, you know, to do research. And I was fine with that because there was plenty to do in North Dakota and that's for sure and still is a lot of things to do there. But ultimately, my job in geological survey was really threefold: one was to – was a regulatory aspect of it and another was public service in the sense of promoting paleontological as an important aspect of what the geological survey would do and the third was research, so I really had a 3 different aspects to my job at the time. And then in – I might get this wrong, but in 1989 I believe, two laws were passed in North Dakota. I'd have to check the date on that but I think it was 1989 two laws were passed in North Dakota and one was called the Paleontological Resource Protection Act and that gave the North Dakota Geological Survey through the Industrial Commission, which is the 3

people including the governor that kind of pretty much control everything that happens in North Dakota, but we reported directly to that group and we were able to pass that law, the Paleontological Resource Protection Act which gave the geological survey through the North Dakota Industrial Commission the responsibility to manage paleontological resources in North Dakota. So, that was a big deal. I worked pretty hard to get that done. Also, the same year – the same year – excuse me I need to get something to drink here – choking a little bit here – just about near the water source here. [Proceeds to get a drink of water] Actually, what happened, I was sitting outside and a bug flew into my throat.

Santucci: Oh no.

Hoganson: There's a lot of bugs in Minnesota. Justin, you probably know that for sure [laughter] Anyway, where was I? The second law that was passed at the same time was established the state fossil collection. And prior to that, you know, there was no state fossil collection in North Dakota and that responsibility was also given to the North Dakota geological survey and I was put in charge of that because, you know, I was the only paleontologist around at the time. So, from that point then, we were able to get all sorts of support; not only legislative support, but support by the governor, our legislative people were very supportive of this whole program. So, that really took off and I spent most of my career developing those two things: the fossil collection and the fossil resource management program. So that's a long answer to your question, I guess.

Santucci: Very good. Before we start talking about Theodore Roosevelt National Park, by any chance did you work in any of the other national park areas in North Dakota? There's not many of them, but there's the Fort Union Trading Post and there's also Knife River Indian Village. Any occasion that you visited or worked in those sites?

Hoganson: No. I didn't really have a major interest in the non-paleontology or non-marine Paleocene section. I wasn't real interested in that. So, from a personal standpoint, the only work I did in the Paleocene non-marine section was in Theodore Roosevelt National Park. I did work on the Cannonball Formation which is the marine Paleocene formation in North Dakota.

Santucci: Okay. Do you recall—

Hoganson: I didn't – I was – I knew the people at Fort Union and Knife River and we did a lot of programming particularly in Knife River, but it was mostly had to do with Louis and Clark issues and things like that so, I would go up and give talks about paleontology, not so much at Fort Union, but at the Knife River Indian Village.

Santucci: Great. Did you ever have a chance to work with Bruce Erickson?

Hoganson: Well, um – you know, I know Bruce and knew him all those years pretty well. I [did?] really, really work with him, you might say. I did spend some time with him in the field, you know. I knew a lot about Wannagan Creek and visited that site a couple times. Sorry about this cough. But I never really did any research with him at all, no.

Santucci: Okay. Very good. Do you recall how you first got involved with Theodore Roosevelt National Park? Was it something that you proposed or something the park service proposed?

Hoganson: I believe it was the park service that contacted me and I don't remember who it was, you know that's – basically they've had so much turnover there over the years, I can't remember. I think it was somebody from Theodore Roosevelt National Park, and in fact, I'm sure it was. I don't think the park system had a person like you at the time that coordinated everything. Not that I am aware of anyway. And so, as I said there was this initiative and that- that they wanted to have some better handle on resources in these non-traditional parks. And a certain amount of money came to Theodore Roosevelt and they contacted me about the possibility of doing, well, an inventory out there basically.

Santucci: Very good. And so, I'm not sure if it was a superintendent name Valerie Nailer. Did you work with Valerie at all?

Hoganson: It was before Nailer. It was a – a nice guy out there. Yeah, it was several years before Valerie was out there.

Santucci: Okay.

Hoganson: I can't remember. I wish I could remember his name. I'm sorry I can't. And then there was, I guess he was the cultural resource man out there maybe that I worked with as well?

Santucci: Okay.

Hoganson: All the people are gone. And that would all be in my report and field notes and all that kind of thing, I think.

Santucci: Okay.

Hoganson: Should have all that information in there.

Santucci: Perfect. And then–

Hoganson: You can find that out pretty easily with the time I was out there. But I'm not sure, you know – We ended up – We had enough funding for me—

[Lost signal on phone from 30:47-31:39]

Hoganson: Okay.

Santucci: Hello?

Hoganson: Yep, I'm here.

Santucci: Something happened. I apologize for that. I'm not sure what happened.

Hoganson: No problem. Technology, you know?

Santucci: Justin, are you there?

Tweet: I'm here.

Santucci: Okay. So, I think where I lost you was – I think you were beginning to talk about individuals who had worked with you on this project in the field? Is that—

Hoganson: All I said was that there was enough funding for 50 days of field work for myself and then my assistant.

Santucci: And was that Jonathan Campbell.

Hoganson: It was, yeah.

Santucci: Okay. So, 50 days is actually a lot of time. Do you—Go ahead.

Hoganson: Well, it seems like a lot of time, but you have to realize that Theodore Roosevelt National Park is 150 square miles. So, I had to come up with a plan of attack, you know, to try to do an inventory that would be representative of what one would find in Theodore Roosevelt National Park.

Santucci: And so, when you were mapping out a strategy for field work, there are two separate units. Did you divide time between the North and the South Unit?

Hoganson: I did and the way that I looked at the problem, number 1, and, you know, Theodore Roosevelt National Park is all – Well, it's all what you'd call Fort Union Formation, we call it the Fort Union Group that included mostly the Sentinel Butte Formation and the Bullion Creek Formation. So, when I looked at the situation, I decided that it would be best to do to split the field work up into square miles. So, the 150 square miles and I had 50 days, so actually what we did, total, was 10 square miles of- and do a comprehensive stratigraphy inventory, thorough inventory, of each of the square miles. And I chose those square miles plots you might say, based on exposure, number one, exposure- rock exposures and number 2, try to get all stratigraphic levels that I could. And number 3 to split it up between the South Unit and the North Unit. So, I think- I think we did- I have to jog my memory on this, but I think we did 4 square miles up in the north and 6 square miles in the south because the South Unit is bigger than the North Unit. And I think that's what I did, but I'd have to refer back to my notes and stuff, but I'm pretty sure that's the way it went down. So that's the approach that I took.—I'm sorry?

Tweet: I was going to say that it appears that the South Unit was 1994 and the North Unit was 1995.

Hoganson: That sounds about right. Holy cow! That long ago huh? Yikes! I couldn't do that now, you know? [laughter]. I mean, there's a lot of section to cover and I don't know what the

relief is, maybe 500 ft or something, I don't know. But anyway, we tried to – in each quarter mile, we did all stratigraphic levels.

Santucci: And as part of this project were you authorized to make collections of fossils?

Hoganson: Well, we were, but the way I viewed it, if we're going to try and get some kind of reasonable concept of what paleontological resources were at Theodore Roosevelt National Park, I figured it would be better for us to cover as much territory as we could in those 50 days. And record sites and collect fossils at each of the sites or the site to characterize what fossils that were found at the site. We didn't do any comprehensive collecting at any of the sites, nor did we do any, you know, screen-washing. We just didn't have time for any of that, I felt. I mean if we would have really done a comprehensive collecting and that, we would have hardly been able to do anything and cover any ground, you know, you might say.

Santucci: Sure. But you did some collecting?

Hoganson: Yes, we did some collecting and as I say at that certain site, not all sites, but at certain sites we did some collecting just to characterize what we were seeing at the site. And those collections were made and they're at the state fossil collection in Bismarck at the North Dakota Heritage Center. Now, there was some issue at the time, that, a kind of a controversy developed because it was our understanding that these fossils would come to the state fossil collection, but they had a collection manager there – well I was – there really wasn't a collection manager there, it was, I think their cultural resource guy and he thought all of the fossils should go to their collection there. And, so there was some controversy about that, and ultimately the decision was to curate those fossils into the state fossil collection in Bismarck. I personally thought they'd be safer there and better taken care of at the time. I don't know. That was just my opinion, you know?

Santucci: Sure.

Hoganson: 25 years ago, whenever it was, you know. I mean it was a – it wasn't a too big of a controversy, but I know at that time that would have hurt – one person at least wanted to see those fossils there, but they ended up in Bismarck state fossil collection and there's not a lot of material. As you know though, we found some significant fossils. I mean vertebrates. We discovered a champsosaur skeleton, at least one but we recorded champsosaur bones at several sites but at one site, there was a fairly complete skeleton of a champsosaur. And we did go back in and collect that later. It was not part of the inventory, but we went and collected that later. With the help of the people at the park service over there. It was one of those sites, you know, where you had to plaster the fossil up and it was quite a ways back in there. So, they had a mule out there, and the mule helped carry in the plaster and the water into this site, which was kind of fun and unique, you know? And then – the mule couldn't take the field package out because it was too big and too heavy, so they brought a helicopter in and we airlifted this helicopter with the fossil cast out of there with a helicopter. So, I had great fun with that when I was giving lectures saying, you know, this is one of the techniques we use, mules and helicopters. So, anyway that was one nice specimen when that was found and that was restored back at our lab in Bismarck and is on exhibit now at the visitor's center over there in Medora. And what else did

we find there that we decided to collect? One was – Oh, I know! There was one of these snapping turtles out of the Paleocene with a nice carapace and so we collected that and prepared that, so it's also on exhibit over at Medora at the visitor's center there. But that was pretty cool because it had been chewed on by a crocodile. You can see the tooth puncture marks in the shell you know? And so, I think those specimens are cataloged in the state fossil collection but are on exhibit in the park. At least they were a few years ago the last time I was there.

Santucci: Do you recall if you found any mammalian remains? In the park?

Hoganson: Well, you know, that was interesting too. I think that we found mammal teeth at maybe two sites and, that I recall, two sites, and these were sites – one of them particularly thought would be a really good site to go back to and do some bulk sampling. That was in the North Unit, and we found – I can't remember the genus name right now – *Plesiadapis*, is that the one? What did you say?

Tweet: [unclear].

Hoganson: I think that's what it was.

Tweet: Basically, what you said.

Hoganson: At any rate, I ear-marked that site for sure to go back into because one of the problems of course out there was trying to pin down the biochronology and I think that was one of the only sites that I felt that could go back there. It was a microsite and could do some screen-washing and get some information about biochronology. There was another mammal I think found too but I think it was also just a single tooth. There definitely weren't any jaws or, you know, post-cranial material that we found.

Santucci: Very good. So, let's see, the 50 days that you had, I assume you weren't out 50 days straight. Were you out for a week or two at a time?

Hoganson: Yes, yes. Yeah, we were and of course we – I had other responsibilities to you know, so that's pretty much the way we dealt with it. We'd go out for a week or two, stay in park housing out there, and then so I think it took us two years to complete the project; parts of two years.

Santucci: And it was a largely you and Jonathan out in the field or did you have volunteers or anybody else join you?

Hoganson: Nope. It was just Jonathan and I.

Santucci: Okay. Did park staff ever join you?

Hoganson: Yeah, yeah. In those days, you know, we didn't really have a lot of volunteers. I think that there wasn't as much interest now in people volunteering to do stuff like that that there is now, you know? I know that there was some interest in people coming out and helping dig out

at some of our dinosaur sites and whatever, but to go out there and hike the buttes wasn't something that a lot people wanted to do I think. It was solely basically Jonathan and I. There were no park people came out there, other than to help us collect the champsosaur. So, no one actually came out and did surveying with us. I was in contact with Rachel Benton every once in a while because she- I think she was- I think Theodore Roosevelt National Park was maybe part of her other responsibility although I don't know that for a fact, but I think that- I would be in contact with her every once in a while about what was going on. Not very often though.

Santucci: So, here's an important question, may not easy to answer though. If you would characterize similarities and differences regarding the North Unit versus the South Unit, and that could be anything, it could be geologically, paleontologically, access to localities, how would you compare the two?

Hoganson: Well by far, it was more difficult to do work up in the North Unit because its more rugged terrain, steeper cliffs, you know, that kind of thing. But as far as the standpoint of fossils finds, I don't think that there was much difference, that I noted anyway, between the two. There's greater section up north there, although there's less territory, less geography to work in. So, the main thing to me would have been its more rugged up there, plus in the North Unit you have a bentonite layer up there that is prominent and I always thought, you know, maybe there's some way to getting some radiometric information out of that bentonite bed. The bentonite bed has been written about many times in the geologic literature, particularly the state geologic literature, but I'm not sure if anybody got in there and really tried to do any dating of the material. But that is another big difference that I felt between the North and the South Unit, you saw that bentonite was a prominent stratigraphic marker pretty much throughout the North Unit.

Santucci: And would you say—

Hoganson: You know, it's all Fort Union. There was, in the North Unit, there was veneer of some glacial drift, you know, but – So, I mean, there's a great section there I mean. I thought – in fact, I've actually considered going back myself into the one side of the North Unit where I thought there'd be, you know, that good microsite that I thought would come up with some of that kind of data.

Santucci: You know as I was listening to you, I was thinking that would be a really good site to revisit with the current team and the two interns. Sounds like it might be worth doing some screen-washing of that material.

Hoganson: Absolutely, absolutely. That site was really, let's put it this way, it was the really only really good site, that I felt, that could be good for screen-washing to recover mammal material. And there, you know, it's pretty rugged terrain so it's not really easy to work in there but I remember that site was at the bottom of the section. So, once you got in there, I always thought, okay, how am I going to- how would we get- there's now water, you know, so how would we get in there and actually do some serious sampling? And you'd have to carry all of, you know, the matrix out, up 500 ft, so that's maybe why I never went back there. But hey, if you got some strong interns and, you know, as we say, a couple of weak-minded masters students? But I also know that from the standpoint of research, doing some systematic drill-

systematic research and long-ranging research where you could in the park would be a great research project. You know, to me, that would be a doctoral-level project for sure, just doing that in the park.

Santucci: Good. Let's see, and then would you say that both North and the South Unit were equivalent in terms of being fossiliferous?

Hoganson: I think so. I have that in my report and stuff that was sent. I think it was pretty similar. You know the park was considered to be a non-paleontological park at the time and of course that's probably one of the reasons they wanted us out there to look at it, but if I recall that, I think we recorded on the average I think about 40 fossil sites per square mile.

Santucci: Wow.

Hoganson: I think that's what it came down to. Yeah so, I mean, I was surprised. Now most of that, granted, was you know freshwater mollusks, but as they say, you know, there's plenty of these freshwater mollusk sites that, you know, they could be screened, you know, for mammals. But I think that's what it came down to is like a little over 40 per square mile. I'd have to go back and look at the report. I wrote, you know, I wrote it before that was published in the North Dakota Geological Survey Newsletter and that's where I summarized everything. And I can't remember the date on it, but I'm sure – if you don't have that report it's – you just need to go to their North Dakota Geological Survey website and then there's a publication section, and I'm pretty sure they have that published in there. Anyway, I wrote an article, or wrote this report for the Geological Survey publication there.

Santucci: I think Justin shared that with us the other day.

Hoganson: And that was sent out to you know the park out there with all the raw data. I understand- understood later on that all the site locality was put on a GIS system? I may be wrong, but I thought that they had done that.

Santucci: Yes.

Hoganson: From all the raw data. Yeah.

Santucci: Yeah, we have that.

Hoganson: And the – and you should have my field notes too. Because they had the field notes.

Santucci: Great. Justin did we get the field notes?

Tweet: I don't have the field notes myself. I have copies of information about the sites and I have a spreadsheet of sites, 202 listed on there. And I also have a copy of the '97, 1997 report.

Hoganson: Yeah, so I think – if you don't have the field notes, you know, all my field notes are at the heritage center and I probably would not have turned over the original field notes, but I know that I sent photocopies of everything over there.

Santucci: We'll try to get those scanned.

Hoganson: If you can't locate them, let me know and I'll get them to you somehow. The other thing is, you know, that plotting these, you know this is all pre-GPS you know? At least pre-standard use of GPS so everything was done- I mapped everything on topographic maps, spotted everything on topographic maps and I believe I gave site numbers, I must have given site numbers for each of the sites that would have been on the topographic maps. Now, I don't know if- I'm sure that they either have the original maps or copies of the maps out there at the park.

Santucci: Very good. Let's see, one other question: what do you think the potential is for Quaternary paleontological resources at Theodore Roosevelt?

Hoganson: Yeah, I don't think that high. You know, almost retired, I'm looking at, you know, outcrops and non-Quaternary outcrops and you know, you might find some stuff, I mean alluvium at the base of some buttes like that but we really didn't see anything. I know that we walked across some of it and as I say, in South Unit if there's the veneer of glacial deposits, it has to be very thin there and not much thicker up in the North Unit. You know, and it's drift and I didn't see any organics, any pond deposits or anything like that.

Santucci: Justin do you have any questions?

Tweet: Sure. Are you familiar with any earlier work that may have been done in the park? There's a couple of add reports that we found: one from '69 that named a species of fern, a palynomorph, and there has been one in the 70s by David Bickel from Minot State that named a freshwater bivalve from the North Unit. I was just wondering was there something that was going on at that time? Were there limited exploration?

Hoganson: Well, I know – gosh I can't remember his name up in Dickinson – at Minot State – ah geez, that's terrible when you can't – but there was a paleontologist up there, but I don't think- he was doing some Paleocene stuff, but I don't think he was in the park. At least, I never knew that he was in the park and nobody ever informed me of that. In fact, as far as I know, you know, there might have been some really early work done in the park, like individual – I just can't remember. I certainly would have written that up in the report if I knew of anything and—

Santucci: Are you thinking of Alan Kihm?

Hoganson: Alan Kihm, right. Kihm. I know he had some students that were working on Paleocene but I don't know if they went into the park or not. I know they were on Forest Service lands out there in western North Dakota and I know some of that was going on. I frankly don't think, and I probably shouldn't even repeat but I will say it in confidence that I'm not sure they had permits to work in Forest Service. So, I really don't know if they were in national park. I

never heard that. And who was the other – who were the other two authors you were talking about Justin?

Tweet: Fern named in 1969 by Jain and Hall.

Hoganson: What was that name again?

Tweet: One last name was Jain, J-A-I-N, and the other was Hall and it was – the fern was called *Azolla stanleyi* and was at the University of Minnesota for a while and then they divested their paleobotany to Florida.

Hoganson: Huh. Well, okay. So, they did some botany collecting out there too? I mean, some plant fossils?

Tweet: It was just palynomorph so—

Hoganson: Oh.

Tweet: —it was just in sediment.

Hoganson: Oh. Yeah, I was unaware of that. I'm pretty sure. And what was the second one in the 70s?

Tweet: Name of David Bickel and he—

Hoganson: David Bickel, okay. Yeah. I know David Bickel actually. I was, again unaware that he collected in the park, but he was – he did some work on Paleocene mollusks out of the University of North Dakota and I know him a little bit but he never mentioned the fact that – was this a publication? That he had written?

Tweet: Yeah.

Hoganson: Okay. Well, I might have missed it.

Tweet: It was in *The Nautilus.*

Hoganson: *The Nautilus*, okay. Well, there's a pretty high likelihood that I did not know about that when we did the work out there.

Tweet: Yeah, it was a bivalve – go ahead.

Hoganson: Yeah, he was doing freshwater mollusks. He's retired now. He worked for the state for many years. But I guess I was unaware of that, either that or I forgot about it. I don't know if I wrote that; if I cited him in the report that I wrote or not. I don't remember that, so – there were a couple of sites that I remember that did contain leaves, you know? But here again, to collect leaves you have spent time digging into the outcrops and we did not do a lot of that. But

I'm pretty sure I collected one leaf because it was a pretty one yeah, a pretty leaf. That's another thing too – Justin, I'm having a little bit of trouble hearing you, you're kind of scratchy.

Tweet: Sorry. I wasn't saying anything important.

Hoganson: Yeah? [laughs] Yeah, right. Everything is important, you know that. But especially if it has something to do with paleontology it's important.

Santucci: Any other questions from you Justin?

Tweet: What?

Santucci: Any other questions from you Justin?

Tweet: No.

Hoganson: So, tell me about this year. Are you launching a pretty big study out there?

Santucci: Go ahead Justin, you can jump in.

Tweet: Well, we had originally intended this to be a two-year project with the fieldwork beginning this year and some more fieldwork next year but of course we haven't quite been able to do the way we originally set up. So, our two interns are working on some of the literature work and some background writing instead. They can do that and then maybe something can develop, and they can come this year.

Hoganson: Well so much going on with COVID too. I mean, there's a lot that's kind on hold, but let me make a suggestion to you. You know, I still have emeritus status at the heritage center. I'm still marginally involved with some of things that are going on in the lab and whatever, but here's one thing you might consider is that we have a very active public fossil dig program there in the state, which Clint is in charge of now and he – they might be interested in working with you as one of their public fossil digs because the public fossil digs get all sorts of people that sign up you know? Volunteers that sign up and they may be interested in expanding their horizons a little bit and do a couple weeks out there with a crew, you know, a fairly large crew of people. So, that's just a thought that I had and maybe you've already talked to Clint about this, I don't know but there's a possibility, I would say, that something like that might be able to happen. Right now, when I retired, we were doing five, I think, public fossil digs each year, each summer in different parts of the section. Everything from, you know, the Oligocene through the Pierre, the Late Cretaceous Pierre, you know? And plus, the Hell Creek as well so – but they haven't done any, I don't think, anything in the non-marine Paleocene section. So, they might be interested in doing something like that. Okay, Clint as you probably know is a mammalian paleontologist, that's his main bag. As well as Jeff Person. Jeff Person is another paleontologist there that I hired many, many years ago and he's also into mammals. So, I mean you know, if they get down to it, that might be a possibility to work with them on doing some of the field work because, you know, to cover that, the park there, management is going to take some – a lot of manpower to really accomplish much. And you're going to have to do a lot of I

believe, microsampling to really do a meaningful thing out there and there's, as I said, very little water around. That will be a challenge. And I don't know if the park would let you take ATVs down there or not, I don't know. We did everything on foot, except for when we got the helicopter involved and the mule, so.

Santucci: So, other than the potential microsite that may have some mammalian remains in the North Unit, do have any other recommendation of work that you would suggest this team would undertake as part of their field work?

Hoganson: Well I think – you know I always thought that with the months – with time and some real exploration out there that more mam- or more vertebrate fossils would be recovered including crocodiles, champsosaurs, and turtles primarily. And you know as far as, you know, lizards and stuff like that, I'm sure that, you know, with some sampling, some microsampling that stuff would pop up too. But as far as the big vertebrates, I've got a feeling there's going to be discoveries, with some work, some discoveries of that kind of thing out there and of course that then entails spending time to excavate and do that kind of thing so. But I really think that there would be some potential of some very good vertebrate fossils coming out of park rocks there. From the scientific standpoint, more from the scientific standpoint, really the idea of establishing some biochronology in there would be, in my mind, probably the most important thing to do.

Santucci: Very good. Is there anything that we forgot to ask you? Anything you would like to share with us?

Hoganson: No, most of that I try not to share with anybody. Particularly the IRS, so [laughter] yeah. But no, I can't think of anything right now. And as I say, if the maps – they got to have the maps out there, or at least copies of the maps, and that's where I plotted everything on topographic maps, you know, so, I think I was pretty good at doing that but it's not quite the same as GPS, you know? So, anyways, if you're missing some data, give me a buzz and I'll see what I can turn up. And if there's any other questions be sure to call if you need any more- other than asking me to come out there and going up and down those buttes again, I'd rather not do that. I can stand on top of the buttes with a megaphone and direct things that way, but that probably wouldn't work for you.

Santucci: You can fly the drone for us.

Hoganson: Yeah, yeah, that's right drones. Oh yeah. That would have been nice having a drone back then. Holy cow.

Santucci: Yeah. Justin, do you have any final thoughts or comments?

Tweet: No, I don't really have anything to add. It's been very informative. Thank you for your time.

Hoganson: Yeah, well it's been fun. It's been fun, you know, you'd say reminiscing. I hope you find all the information. And I hope you really get that thing off the ground because that's one

part of the section in North Dakota that really needs work and that is the Paleocene, you know, it's not as glamorous as the Hell Creek or – you know I was pretty deeply into marine fossils most of my career and Pierre and Hell Creek Formations, Cannonball Formation, but the non-marine Paleocene is something that really needs some really additional studies there. And I'm glad that you're linked up with Clint, you know, because being linked up with the North Dakota Geological Survey actually opens up more doors for you and certainly lab work can be done in Bismarck, you know, and things like that. So good luck with it. I'm anxious to hear how it goes, you know?

Santucci: Absolutely. So, we're going to have one of our interns type out a transcript of the interview and we'll be sure to send you a copy of it so you can have that. And I just wanted to thank you both for your time today for the interview because, I agree with Justin, very interesting valuable information we captured from you. Thank you for that. And also, thanks for the work that you've done for the Park Service in the past during the 90s. That really was a pioneering effort that opened our eyes to the scope, significance, and distribution of fossils at Theodore Roosevelt, so you'll always be on our minds in terms of this project.

Hoganson: Well thanks for that and it was a good time back then and if I could get around better it would be a good time to go back out there! But yeah, if you need any more questions, I'd be happy to do that any time.

Santucci: Really appreciate that. And we'll keep in touch with you as the project proceeds and we'll let you know how things turn out.

Hoganson: Okay and Vince thanks again! I mean, it was – it's been fun talking to you. We had a few discussions I know in the day so—

Santucci: Absolutely.

Hoganson: —talking about, you know, Fossil Day and all that kind of stuff. We got that off the ground in North Dakota there as well. So, it was fun talking to you. I hope I can talk again some time.
Santucci: Yeah, look forward to it. Thanks so much.

Hoganson: Ok. Yep. Have a good day!

Santucci: You too. Buh-bye.

Hoganson: Bye. Bye, Justin.

[END OF INTERVIEW]


Paleo
NPS PALEONTOLOGY

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National Park Service
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Natural Resource Stewardship and Science
1201 Oakridge Drive, Suite 150
Fort Collins, CO 80525