

Earthquake Stories from Minto and Nenana, Alaska

Version 1: July 13, 2015

Version 2¹: September 12, 2018

Version 3²: September 16, 2018

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Summary of accounts of 1947 earthquake

On Wednesday October 15, 1947 at 4:10pm local time, a magnitude 7.2³ earthquake struck Interior Alaska, near Healy. This is a collection of stories of six life-long Alaskan elders who felt this earthquake and shared their recollections in fall of 2014, sixty-seven years after the earthquake. **Geraldine Charlie** had recently turned 18 years old and worked in the village store in Minto⁴ when the earthquake hit. Geraldine was crouching down to weigh a bag of potatoes at the moment the earthquake hit. She felt dizzy and noticed Coleman lanterns swaying from side to side, and items shook off the shelves. **Sarah Silas** and **Berkman Silas** were also in Minto and had been married for three years. Sarah recalls watching her toddler son, who laughed as he tried to maintain his balance as the floor rolled back and forth under his feet. Berkman and other men were ice fishing near Little Goldstream Creek when the earthquake hit. Rafting ice caused the men to run for the shore. **Paul Esau** was near Tolovana working on the roof of their home. **Caroline Ketzler** was up in their food cache at their home up the Kantishna River. **Henry Ketzler** was in a cabin in Nenana and ran for the exit, only to hit the door frame as it shook with the entire house. These are their stories from 1947.

Also discussed in these stories are the effects from the 1912 Katmai eruption, the 1937 Salcha earthquake, and the 1964 earthquake.

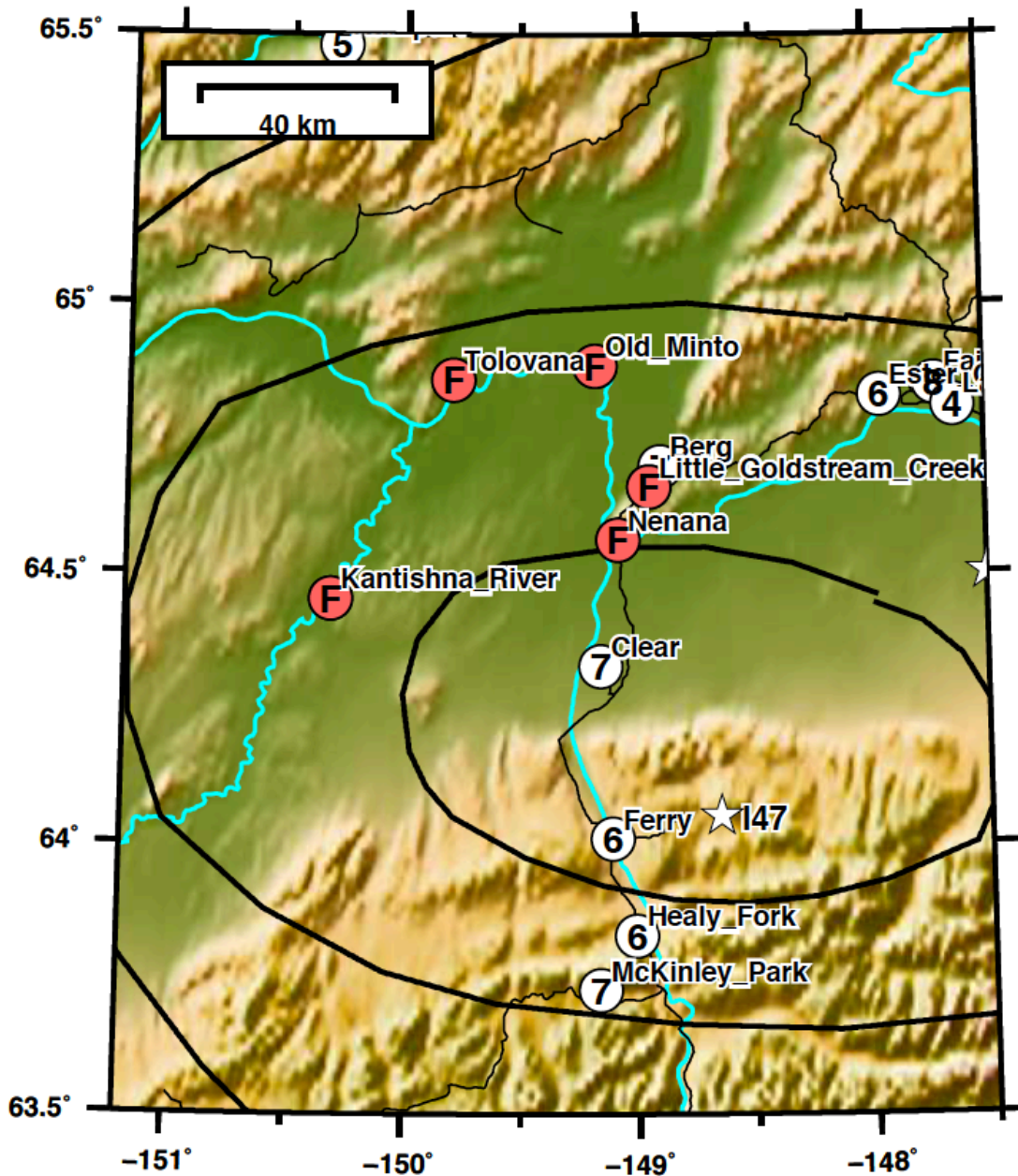
¹ Updates for Version 2: added obituary for Berkman Silas. Minor updates of Overview. Corrected spelling from Bergman to Berkman. Added follow-up section about 1964 earthquake. Added images related to accounts of 1912 Katmai eruption and also ice cracking in 1964. Added Summary section. Moved annotations into footnotes.

² Updates for Version 3: added location map, three photographs, text of Rozell's article.

³ The magnitude value of 7.2 is from Abe (1981), who listed a surface-wave magnitude (M_s).

⁴ In 1947 the village of Minto was on the Tanana River at the site now known as Old Minto. In 1969 Minto was relocated to its present site on the Tolovana River, where it is accessible also by road from the Elliott Highway.

Locations of felt reports from this collection of stories. The numbers are the Modified Mercalli Intensity (MMI) shaking intensity values listed in Brockman et al. (1988); the circles labeled F are the felt reports from the stories in this collection. The contours of shaking intensity are from St. Amand (1948) and are MMI 8 for the inner circle and MMI 7 for the outer circle. The star labeled I47 is the epicenter from the ISC-GEM catalog. Fairbanks is located at the far right.



Overview

This document is stored at the UAF Rasmuson library and also in digital form at ScholarWorks@UA within this collection:

<http://hdl.handle.net/11122/5670>

This document contains notes and transcripts for two recorded interviews in Minto and in Nenana. We also include a summary of an unrecorded interview with Geraldine Charlie in Minto. The recorded interviews are archived at the Alaska Film Archives, Alaska and Polar Regions Collections & Archives, UAF Rasmuson Library. The edited interviews⁵ can be watched at the following links:

Nenana: <https://youtu.be/R1ztA6MRap8>

Minto: <https://youtu.be/8G6q8e6d2P0>

The main topic of the interviews is the 1947 magnitude 7+ earthquake that occurred near Healy, Alaska. The earthquake was felt by six elders in these interviews:

1. Berkman Silas (Old) Minto
2. Sarah Silas (Old) Minto
3. Henry Ketzler Nenana
4. Caroline Ketzler Kantishna River (and Nenana)
5. Paul Esau Tolovana (and Nenana)
6. Geraldine Charlie (Old) Minto

Also discussed within the interviews is the 1937 magnitude 7+ earthquake that occurred near Salcha, Alaska, as well as the 1912 volcanic eruption of Novarupta (Katmai).

These interviews were collected as part of a project funded by the National Science Foundation, grant EAR-1352688, "CAREER: Intraplate tectonics and deep crustal faulting in rural Alaska". Support was also provided from a subaward from IRIS to UAF ("University of Alaska Fairbanks Geophysical Institute in Support of EarthScope's Transportable Array"). This subaward is awarded under Cooperative Agreement No. EAR-1261681 issued by the National Science Foundation under CFDA No. 47.050.

Scientific studies of the 1937 and 1947 earthquakes were presented in Bramhall (1937) and St. Amand (1948). Figure 6 of St. Amand (1948) shows the isoseismal maps for both earthquakes. The local origin time for each earthquake was Thursday, July 22, 1937 at 07:09 and Wednesday, October 15, 1947 at 16:10.

The interview with Berkman and Sarah Silas was featured in a newspaper column by Ned Rozell on September 21, 2014 in the *Fairbanks Daily News-Miner*.

⁵ If you are interested in the full recordings of the interviews, contact Carl Tape (ctape@alaska.edu).

List of files contributed to UAF archives

1. Earthquake_elders_Carl_Tape.pdf [Version 1 of this file: edited and unedited transcripts of two interviews]
2. Minto_elders_1947_earthquake.mp4 [edited video and audio of interview in Minto]
3. Nenana_elders_1947_earthquake.mp4 [edited video and audio interview in Nenana]

References

- Abe, K., 1981, Magnitudes of large shallow earthquake from 1904 to 1980, *Physics of the Earth and Planetary Interiors*, v. 27, p. 72–92.
- Bramhall, E. H., 1938, The central Alaska earthquake of July 22, 1937, *Bulletin of the Seismological Society of America*, v. 28, p. 71–75.
- Brockman, S. R., A. F. Espinosa, and J. A. Michael, 1988, Catalog of Intensities and Magnitudes for Earthquakes in Alaska and the Aleutian Islands—1986–1981, U.S. Geological Survey Bulletin 1840.
- Plafker, G., Kachadoorian, R., Eckel, E.B., and Mayo, L.R., 1969, Effects of the earthquake of March 27, 1964, on various communities: U.S. Geological Survey Professional Paper 542–G, 43 p., 2 sheets, scales 1:2,500,000 and 1:250,000, <https://pubs.usgs.gov/pp/0542g/>
- Rozell, N., 2014, Minto earthquakes then, now and tomorrow, *Fairbanks Daily News-Miner*, September 21, 2014.
- St. Amand, P., 1948, The central Alaska earthquake swarm of October 1947, *Transactions, American Geophysical Union*, v. 29, no. 5, p. 613–623.

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Earthquakes and life in Minto Flats, Alaska

Interview with Berkman Silas and Sarah Silas

September 12, 2014

Minto, Alaska

Interviewers: Carl Tape, Ned Rozell, Azara Mohammadi (University of Alaska Fairbanks)

Recorder: Azara Mohammadi

Transcription: Azara Mohammadi

Edited transcript: Carl Tape

Annotated transcript: Carl Tape

Video editing and production: Azara Mohammadi

Sarah Silas and Berkman Silas, September 12, 2014, Minto, Alaska.

Photographs by Ned Rozell.



Note: The times below are those in the originally movie. In order for them to match those within the file posted by UAF, you need to add 14 seconds (0:14) to all times.

[EDIT A] 0:24

Carl: So, can I ask, when were each of you born? What year? Close enough.

Berkman: We were down in the old village then.

Sarah: 1923 he was born, and I was born 1924.

Carl: Holy cow.

Sarah: We have birthday in December 23. I have birthday on the 26th.

[EDIT B]

Carl: So are you the eldest of the Elders in Minto?

Berkman: That's what they say.

Sarah: Yes. The Elders before us, they lived a long time. Especially my grandmother, but nobody knows how old she was.

[EDIT C-1]

Sarah: I was born in Minto ... day after Christmas I was born.

[EDIT C-2]

Sarah: He's 90 years old and I'm 89.

Carl: That's amazing.

Sarah: We've been married for 70 years on March 24th.

[EDIT D]

Sarah: They ... some people say "How do you do it" I say "Love! What else can do that?"

Ned: That's awesome.

Carl: And how many children did you have?

Sarah: 12.

Carl: 12

Sarah: And we thought they... they were saying "Cheaper by the dozen."

Ned: Wow.

Berkman: You heard that?

Carl: I hear that.

[1947 EARTHQUAKE IN OLD MINTO]

[EDIT E] 1:52

So are you, in 1947 you say that you are actually inside your ...

Sarah: Cabin

Carl: ...your daughter and your son is three and laughing because the ground is rolling

Sarah: Ya.

[EDIT F]

Sarah: Can't even walk. Couldn't reach my little son.

[EDIT G]

Carl [to Berkman]: and you were outside? Is that correct?

Sarah: and he [Berkman] was fishing

[EDIT H]

Sarah: They were fishing and they had to run to shore. The ice was breaking up.

Azara: And that was in October?

Carl [to Berkman]: Were you one of the fisherman?

Berkman: Ya, we were fishing with a fish hook.

Carl: Through the ice? Ya we heard the same mention from Geraldine [Charlie] about the people fishing through the ice and not having much time to get out as the ice is rafting.

Sarah and Berkman: ya

Berkman: The ice is [hand gestures] all broken up.

Carl: So it starts shaking and you're basically standing on what you think is a solid platform and next thing you know it's not.

Sarah: And you try to get to shore, hu?

Berkman: Ya. We all get to shore a la. Because we're not too far from the bank.

Sarah: Narrow creek.

[EDIT I]

Berkman: It's a little creek they call Little Goldstream.

Sarah: Ya, it go all the way down to Chatanika.

Berkman: People were sitting on ice... Ice started break up. And everybody run to shore.

[EDIT K]

Berkman: People were sitting on the ice. All the way around the bend, you know?

Carl: So they're scared to fall in the river?

Berkman: There were a lot of peoples there. So they I don't know if anybody gets scared.

Azara: I get scared.

Berkman: Get scared for a little while.

Sarah: We don't know how long it'll last. We don't know how much damage it'll be.

Carl: But those cabins are pretty strong, hu?

Sarah: Ya

**[DISCUSSING THE INSTALLATION OF AN EARTHSCOPE TRANSPORTABLE ARRAY
STATION (I23K.TA) AT MINTO]**

[EDIT L] 04:09

[Niece enters]

Ned: Hi.

Azara: We're talking earthquakes here.

Roxanne: Hi Auntie. Mark and Whitney came down. Mom.

Sarah: Oh really?

Roxanne: Gordie's mom. And grandpa. Hi Uncle.

Sarah: We got scientists talking to us about earthquakes.

[EDIT M]

Roxanne: You guys put up the monitor or...?

Carl: It's going up right now. You can see there's a 10-foot hole in the ground. And the sensor's going in....

Sarah: Where at?

Carl: It's out by the airport.

Ned: Airport.

Sarah: Oh really? Oh

Roxanne: We had a meeting with them in ...

Carl: April.

Roxanne: You know they said they want to put this up and we said, "Ok, you got teach the kids, though."

Carl: Well, we were in the school today so... I feel like we got one hour with the kids today, and I don't think I can get their attention for longer than one hour about earthquakes. And even then, in the middle, someone said, "Can we have a break?" But ya that wa....

Berkman [to Carl]: How about you? Do you get scared?

Carl: I would get scared if I didn't know exactly what an earthquake was. And I do get scared if I'm in a building...

[DISCUSSING PREPARATION FOR A POTLACH ON 9/13/2014]

[EDIT N] 5:20

Sarah: Also we got to hardly anybody in village, all the hunters are out

Roxanne: Well, we're gonna dance with cloth tonight.

Carl: Cloth on the floor, or cloth....

Roxanne: We.... Our family is going to be making Potlatch tomorrow. My... actually it's my auntie... my mom and dad adopted a young man as their grandson, and last year he died in an accident. So we're bringing his ashes here to bury his ashes by my dad. So we're kind of doing what we usually do when we put somebody away.

[DISCUSSING THE RELOCATION FROM OLD MINTO TO MINTO]

[EDIT O]

Sarah: Almost two times. In the spring and in the late summer, August. Twice. The flood Relocate.

Carl: Were you involved with the choosing the new... the village site?

Sarah: Ya. They chose, how many different places? 8? Some people from BIA check each one, and they said this was the best place. Good soil. Good water.

Berkman: Change overnight.

Carl: Is that right?

Sarah: Everything good.

Berkman: We get water, we get stove, we get electric heat.

Sarah: Highways...

Berkman: Overnight we change.

[EDIT P]

Berkman: [Before then] we just live by telling stories

[END] 6:54

=====

UNEDITED FULL MINTO INTERVIEW⁶

GOPR1268.MP4 - Speed 50%

[BERKMAN SILAS ACCOUNT OF ICE FISHING DURING AN EARTHQUAKE, LIKELY THE 1947 EARTHQUAKE, AS GERALDINE RECALLED SOME MEN BEING ICE FISHING AT THAT TIME.]

[SOUND QUALITY IS POOR HERE]

[EDIT H]

Sarah: They were fishing and they had to run to shore. The ice was breaking up.

Carl [to Berkman]: Were you one of the fisherman?

Berkman: Ya, we were fishing with a fish hook.

Carl: Through the ice? Ya we heard the same mention from Geraldine [Charlie] about the people fishing through the ice and not having much time to get out as the ice is rafting.

Sarah and Berkman: ya

00:01:02:00

Berkman: The ice is [hand gestures] all broken up.

Carl: So it starts shaking and your basically standing on what you think is a solid platform and next thing you know it's not.

Sarah: And you try to get to shore hu?

Berkman: Ya. We all get to shore a la. Because we're not too far from the bank.

Sarah: Narrow creek.

00:01:36:00

Carl: So it's a creek coming off the Tanana then?

Sarah: No.

Carl: Or you're on the Tanana?

[EDIT I]

Berkman: It's a little creek they call Little Goldstream.

Sarah: Ya, goes all the way down to Chatanika.

Ned: Little Goldstream. I know where that is. Ya. Little Goldstream Creek, right?

Berkman: Ya.

Sarah: You know when you go to Nenana you see that Little Goldstream

Ned: Right. About halfway there, almost.

⁶ The camera was not running when Sarah Silas told one of the most interesting stories. She described being in a cabin at Minto with her 3-year-old toddler when the 1947 earthquake hit. She described her son laughing as the ground moved beneath his feet, as he staggered back and forth. She was unable to reach him during this time. Her account of this was mentioned in Ned Rozell's article published in the newspaper.

Carl: They used to think, some scientists used to believe the Tanana used to flow up that valley a long long time ago. Because they have big rocks in there and it's a wide valley and now it flows further to the south than it does. I think that's kind of neat.

00:02:56:00

[EDIT E]

So are you, in 1947 you say that you're actually inside your ...

Sarah: Cabin

Carl: ...your daughter and your son is three and laughing because the ground is rolling

Sarah: Ya

[EDIT G]

Carl [to Berkman]: and you were outside? Is that correct?

Sarah: and he [Berkman] was fishing

Berkman: I was _____ store

Sarah: Ice fishing Oh you was in the store?

Berkman: I was in store. Storekeeper.⁷

Carl: Oh. Ok.

Berkman: I see things rolling on the floor, and fall off the shelf. Everything started to roll around. Of course I ran out. I got out of the house.

[EDIT F]

Sarah: Can't even walk. Couldn't reach my little son.

Carl: So all these big earthquakes seem to happen in October. Another one was in April or something. And even the Anchorage earthquake was also in March. They're kind of spring or fall, so there must be stories about hunting and ice.

Sarah: I think there was earthquake in

Berkman: Ice break up.

Sarah: '94, '95

Azara: was it '96?

Carl: '95, that was a pretty big one but nothing like the ones that 1947.... The one in 1995 was also in October but no ice at all as far as I know. So is the ice story... can you remember whether the fisherman with the ice, was that...

Berkman: They say that and there's a, there's something in the air that was...

00:06:24:00

Making noise⁸. My daughters They were going to school... They hear it in Fairbanks.

Ned: Hear a noise?

⁷ There is some confusion here about where Berkman Silas was during the 1947 earthquake. From Geraldine Charlie's recollection, it was Geraldine and her husband Neal who were the storekeepers at that time. And the men were fishing when the earthquake occurred, according to Sarah and Geraldine. Berkman also remembers fishing during an earthquake, so I suspect that he was fishing during the 1947, rather than in the store.

⁸ There are many accounts of people hearing earthquakes (or, specifically, the shaking effects due to earthquakes). But it isn't clear to me what earthquake Berkman is talking about.

00:06:48:00

Ya, it's like a trumpet.

Ned: Like a trumpet? Hu.

Berkman: So they called down right away _____. I tell this.... Be really... be ready for whatever's that coming. We don't know what it is. She's coming [points to Sarah].

Sarah: We're on the fault line hu? Minto?

Berkman: _____ they hear something up. They look but they don't see nothing. They just hear

Sarah: [speaks in her native language]

Azara: So what did it sounds like?

00:08:16:00

Berkman: It was about 2 days ago.

Azara: Oh really?

Sarah: What? What was it?

Berkman: That sound.

Ned: Trumpet sound? 2 days ago?

00:08:48:00

Sarah: I heard on the news that a lot of things in sky or whatever they call it, will make things jumps in the air, and interfere with each other and that affects our radio and tv.

00:09:20:00

Carl: Ok. Well you could, I mean, in some of these earthquakes you can hear something before you feel it.

Sarah: Ya.

00:09:36:00

Carl: The strong shaking comes a little bit later.

Berkman: To me, it just ... both are the same thing, but they're just, just different.

Carl: The shaking and the sound?

Berkman: Ya. And the earthquake. It's like we're getting some kind of warning.

Sarah: I remember it did that at fish camp

Berkman: Even on the earthquake because this one day they were on the radio talking about it. KJNP⁹.

00:10:40:00

Those people that were announcing the.... Got all shooked up about it.

Carl: KJNP and KFAR, those stations have been around for a while, it sounds like. In fact you could receive them out in Minto, is that right?

⁹ From Wikipedia: "The station call letters, KJNP, stand for King Jesus North Pole; its AM frequency, 1170, represents the 11 disciples and the 70 who were called to be witnesses." The station was launched in 1967, so it would not have been broadcasting in 1947 (or 1964). But it was likely a source of information in Minto, as the Silases recalled.

Sarah: What? Oh ya! KFAR¹⁰ was the first radio station.... Everybody would go to one house that had radio.

Azara: Really? Oh that's nice. You all get together then.

Sarah: Something new. And then TV.

[EDIT A]

Carl: So, can I ask, when were each of you born? What year?

00:12:16:00

Close enough.

Berkman: We were down in the old village then.

Sarah: 1923 he was born. And I was born 1924.

Carl: Holy cow.

00:12:32:00

Sarah - We have birthday in December 23. I have birthday on the 26th.

Ned: Of December?

Carl [to Ned]: Did you get those dates?

Azara: The 26th of December or of this month?

Sarah: Ya. Day after Christmas.

Azara: Oh ya, that is the day after Christmas.

[EDIT B]

Carl: So are you the eldest of the Elders in Minto

Berkman: That's what they say.

Sarah: Yes. The Eldest before us lived a long time. Especially my grandmother. But nobody knows how old she was.

00:13:36:00

Carl: What's interesting is that that means that there's, you have one more kind of big earthquake that you might have remembered actually. Because there's a big one in 19, I believe it's 38 or 37.

Berkman: It was in Anchorage.¹¹

Carl: Well...

Sarah: No not that one.

Carl: This one was out in Salcha.

Sarah: I don't remember that.

Carl: Oh ok. I don't know how strong, but there was one in Salcha in 19, I believe it's 37 and that one really shook Fairbanks. All the shelves in stores. And that one would have shaken Old Minto or Minto pretty strong, too, but you would have been, well 13, 14 years old or so.

Berkman: Ya

Sarah: And what month was that?

¹⁰ KFAR was founded in 1939 by Austin E. Lathrop and is one of the oldest in Alaska.

¹¹ Berkman is thinking about the 1964 earthquake. Those effects were widespread, even in the Interior.

Carl: I wish I could tell you. But that would probably be good to know. I didn't expect anyone at all to ever remember that earthquake, so you kind of caught me off guard.

[EDIT J]

00:15:12:00

Berkman: ... they way **People were sitting on ice**

Sarah: I was sick. I got sick in October and I was sick all winter and I don't remember.

Berkman: **Ice started to break up. And everybody run to shore.**¹²

Azara: So you were fishing

Berkman: That's what we're talking about. 1937. I was just... do mischief so I didn't... know what it was all about.

Sarah: He didn't feel the earthquake.....

00:16:16:00

Carl: Were people scared or not really? Was it just, this is just normal...

Sarah: Seemed like nobody... nobody was scared. The '64 one they were shooked up. You could see it on their face when they got off the plane¹³ and walk up to the riverbank and some people standing there, you could see the looks in their face.

00:17:04:00

Carl: Do you think people were not scared cause your parents, your grandparents weren't scared because they'd already felt an earthquake? Ya, why was no one scared? I'd be scared.

00:17:20:00

[EDIT K]

Berkman: **People were sitting on the ice. All the way around the bend you know.**

Carl: **So they're scared to fall in the river?**

Berkman: **There were a lot of peoples there. So they Nobody gets scared.**

Azara: **I get scared.**

Berkman: **Get scared for a little while.**

Sarah: **We don't know how long it will last. We don't know how much damage it will be.**

Carl: **But those cabins are pretty strong. Hu?**

Sarah: **Ya**

Carl: I mean they're still standing today. The roofs are caved in, some of them. But a lot of them...

Sarah: I wonder if they felt it down in Old Minto, that last one.

Carl: Oh ya, they felt it really strong in Fairbanks so...

¹² Berkman is likely mixing up memories. He can't be talking about river ice in the 1937 earthquake, since that earthquake happened in July. But he might be recalling the 1947 earthquake here.

¹³ Sarah Silas happened to be in a small plane when the 1964 earthquake hit. I think she is describing landing in (Old) Minto.

[CONVERSATION ABOUT INSTALLING THE TA STATION I23K]

[EDIT L]

[Niece enters]

Ned: Hi.

00:18:40:00

Azara: We're talking earthquakes here.

Roxanne: Hi Aunti. Mark and Whitney came down. Mom.

Sarah: Oh really?

Roxanne: Gordie's mom. And grandpa. Hi Uncle.

Sarah: We got scientists talking with us about earthquakes.

Roxanne: Oh ya, you're... uh... I forgot your...

Carl: Carl.

Roxanne: Carl!

00:19:12:00

Carl: Where did we... did we

Roxanne: We met at uh... Seth

Carl: Ok. Um I've got those notes here but I don't know your name...

Roxanne: Roxanne. I'm sorry.

Carl: Roxanne. Frank?

00:19:28:00

[EDIT M]

Roxanne: Ya Roxanne... You guys put up the monitor or...?

Carl: It's going up right now. You can see there's a 10-foot hole in the ground. And the sensor's going in....

Sarah: Where at?

Carl: It's out by the airport

Ned: Airport

Sarah: Oh really? Oh

Roxanne: We had a meeting with them in ...

Carl: April

Roxanne: You know they said they want to put this up and we said ok. You got to teach the kids though.

Carl: Well we were in the school today so... I feel like we got one hour with the kids today and I don't think I can get their attention for longer than one hour about earthquakes. And even then in the middle someone said, "Can we have a break?" But ya that wa....

Berkman: How about you? Do you get scared?

00:20:48:00

Carl: I would get scared if I didn't know exactly what an earthquake was. And I do get scared if I'm in a building. I was in the.... In the 1995 earthquake I was in Fairbanks and I was scared. I

went running out of the house. I dove off my porch and I did a roll like I was in a James Bond movie. But that was a magnitude 6 and the ones that you're talking about that rafted the sea ice, those were really really big. 1947 was the biggest earthquake people have felt in this whole region. So you guys have felt something that most people have just not experienced, and you've also done it in a pretty interesting place.

Ned: What was the magnitude of that one?

Carl: They think the one in 47 was about 7.2

Sarah: What's going on now?

Roxanne: Irene and them is cooking.

Sarah: Oh really?

Roxanne: For the naming ceremony tonight. Should be done pretty soon.

Sarah: Because they asked me and.... I don't know I told them.... Fish.... I tell her six o'clock

Roxanne: Well, they're making soup and everything.

[EDIT N]

Sarah: Also we got to hardly anybody in village, all the hunters are out

Roxanne: Well we're going to dance with cloths tonight

Carl: Cloth on the floor, or cloth....

Roxanne: We.... Our family is going to be making Potlatch tomorrow. My... actually it's my aunti... my mom and dad adopted a young man as their grandson, and last year he died in an accident. So we're bringing his ashes here to bury his ashes by my dad. So we're kind of doing what we usually do when we put someone away.

Carl: I see. That's tomorrow. But tonight is a naming ceremony for a

Sarah: Kids. native words

Berkman: Dance. Indian dance for us.

Carl: You'd have to teach me. I.... I....

Berkman: I don't have to teach you.... Learn about

Sarah: call us...

Roxanne: Ya they'll call. They'll call. So I just came by to say hi. I didn't know you guys were in a....

Carl: Well it is good to see you again. This is the first people I met regarding the whole thing was in a Fairbanks meeting for Seth, Seth-de-ya-ah

Roxanne: He met with the board

Carl: Pearl....

Roxanne: Land committee so... permission to put the.... It's an earthquake.... Just to...

[2 boys]

Boy 1: Did you see that Godzilla movie?

Ned: No was it good?

Boys 1: No.

Boy: It's bad.

Ned: It's bad? Even you guys didn't like it?

Azara: I like your suits.

Roxanne: Keep the door open. Who are you?

Boy 1: Ummm...

Roxanne: What's your name? De-von-tee (sp?) oh. And what's your name? What? You want to drink some water?

Sarah: They see the ... they see the water there. Hi. Hi. Hi.

Boy 2 – [growls]

Roxanne: ... you see if aunti have paper cups, ok?

Ned: Sarah, what that picture up right there?

Sarah: That was done in Old Minto.

Ned: Who's in it? It's not Berkman, is it?

Sarah: ... nephews.

Ned: Your nephews?

Sarah: ... he died long time ago....

Ned: He lives here?

Sarah: No he.... lives in Fairbanks.

Ned: Fairbanks? Nice picture.

Sarah:they don't need a windsock at the airport... they watch the clothes on the clothes line ... the wind would start blowing....

Carl: Last I saw... I saw the windsock back in July¹⁴, and it had seen better days. I think that probably the clothes would be better.

Boys: Bye.

Everyone: Bye

Carl: So were you both... where were you born? Were you born in

Sarah: Minto

Carl: Minto, ok

[EDIT C-1]

Sarah: I was born in Minto ... day after Christmas I was born. Him ...

Ned: Two days before Christmas.

Sarah: Uh hu.

Ned: For you. Right Berkman?

[NEED TO CUT THE SHOT OF ROXANNE WALKING OUT IF THIS SEGMENT IS GOING TO APPEAR EARLIER]

[EDIT C-2]

Sarah: He's 90 years old and I'm 89.

Ned: That's amazing.

Sarah: We've been married for 70 years on March 24th.

Carl: 70!

¹⁴ I'm referring to the tattered windsock near the Old Minto airport, which we checked out in July 2014. We were searching for prospective sites for a temporary seismic station.

Azara: Congratulations

Berkman [to Ned]: ... be married that long.

Ned: I don't know. Probably going to live that long.

Carl: I have never met anyone who was married for 70 years. That is amazing...

GP011268.MP4 – Speed 50%

00:00:03:03

Carl: My grandparents were married 60 years but, I mean, first of all, you have to both live to your about 90 so, and you know... still love each other... so that's a good thing.

[EDIT D]

Sarah: They ... some people say "How do you do it" I say "Love! What else can do that?"

Carl: And how many children did you have?

Sarah: 12.

Carl: 12

Sarah: And we thought they... they were saying "Cheaper by the dozen."

Ned: Wow.

Berkman: You heard that?

Carl: I hear that. I heard both... I don't know whether you're referring to cheaper by the dozen... I have 2 kids and I think that's it.

Sarah: They feel like a dozen?

Carl: They feel like a dozen.

Berkman: _____ part

Sarah: Have you tried this [moose jerky] already?

Azara: No.

Carl: I started by trying to eat it just by breaking across the grain but I think you really need to tear. You need to tear it the right way.

00:02:08:00

Get it off.

Sarah: What's that?

Carl: The... what do you call...

Berkman: You get high water all summer

Carl: Candy

Ned: Ya? Still high?

Sarah: This one?

Carl: Ya.

Sarah: Moose jerky.

Azara: [mouth very full of moose jerky] It's good.

Berkman: It's still high. It's hard to get moose.

Carl: Oh with the high water.

Ned: Because everything flooded?

00:02:40:00

Berkman: Everything is flooded back in the... move back...

Sarah: Water all around the island and on the land

Ned: The animals move back?

Berkman: Ya. Way back in the brush.

Carl: Pretty hard to get to then.

Sarah: Ya.

Berkman: Before we used to just shoot them from the boat but can't do it now.

Sarah: _____... to pick blueberries

Berkman: Oh ya? It falls in the water then?

Sarah: You have to sit in the boat and pick blueberries

[A CHUNK OF THE INTERVIEW IS MISSING FROM HERE – MAINLY ABOUT MOOSE HUNTING. AND ALSO THE HIGH WATER LEVEL FROM THAT SUMMER.]

GOPR1269.MP4 – Speed 50%

Carl: ... Ice is rafted and water's going up. Big spruce trees with ... that are high up off the river, but there was clearly flood in those really big, big trees.

[DISCUSSION ABOUT THE RESETTLING FROM OLD MINTO TO MINTO IN ~1967. NEED TO CHECK THE DATE WITH BETSIE TITUS.]

[EDIT O]

Sarah: 1937 was a really, really big flood. 1960.... 1967?

Carl: Ya, Bessie¹⁵ was say thing that...

Sarah: _____ August

Carl: So was that what prompted the move? Was that the final flood that said, we're out of here. ... move Minto

Sarah: Almost two times. In the spring and in the late summer, August. Twice. The flood Relocate.

Carl: Were you involved with the, choosing the new... the village site?

Sarah: Ya. They chose, how many different places? Eight? Some people from BIA¹⁶ check each one, and they said this was the best place. Good soil. Good water.

Berkman: Change overnight.

Carl: Is that right?

Sarah: Everything good.

Berkman: We get water, we get stove, we get electric heat.

Sarah: Highways... that's good...

Berkman: Overnight we change.

Carl: That's pretty dramatic change. I mean...

¹⁵ Bessie Titus

¹⁶ Bureau of Indian Affairs.

00:03:12:00

Sarah: TV and everything. Telephone _____ telephone.

Carl: They still don't really have telephones [in Old Minto]...

Berkman: No TV..

Sarah: We carry water from the well

[EDIT P]

Berkman: [Before then] we just live by telling stories

Azara: That, I don't know if I could do.

Sarah: We use gas lamps.

Azara: Oh ya.

Sarah: _____ wash on washboard like this

Azara: No thank you.

Sarah: Really old times. Back in the '20s, huh?

Ned: Did you like that better?

[SARAH AND BERKMAN TALKING AT THE SAME TIME HERE]

Berkman: [Life became] too easy. They make me lazy. Lots of exercise. You're looking for something there. Use for yourself. For living. That's what you call live off the land.

Sarah: When we lived in Old Minto, hardly anybody go sees doctor. We don't eat a lot of food like we eat now.

Berkman: Lots of exercise.

Azara: Ya

Ned: Ya

Berkman: You're looking for something there.

Sarah: Nobody sick. The only one that that's sick is old people and babies. There was no medicine for babies.

Berkman: Use for yourself. For living. That's what you call, live off the land.

Azara: Ya, you didn't go to a hospital to have your babies?

Sarah: Some womans have babies in the hospital. I had all my children at home. Just the last one I had in the hospital. I had a good midwife.

00:05:52:00

Azara: Oh, you had a good midwife?

Sarah: They named the clinic down there in her name.

Azara: Really?

Sarah: Evelyn.

Azara: Oh nice.

Carl: So she was trained to deliver babies or that's just... she...

Sarah: Her mom was a midwife, and she learned from her mom.

00:06:24:00

Carl: From her mom, ok.

Sarah: She didn't go no place.... We didn't go no place to train for anything.

Carl: But it was known that she had expertise that could help the community. So you're... So you and Geraldine [Charlie] produced a lot of folks in Old Minto.

Sarah: All the womans. Each family had about 9 or 10 kids.

Azara: That was the average? Wow. I'm behind schedule.

[DISCUSSION WITH SARAH SILAS ABOUT HOW THE KIDS IN OLD MINTO WERE SENT TO BOARDING SCHOOLS, ESPECIALLY AFTER 8TH GRADE]

Sarah: They had to send them to all over those 48... Chemewa¹⁷ and Chilocco¹⁸ and Oregon, and....

Azara: All the kids?

Sarah: No room in the classroom.

Azara: Oh.

Sarah: 10 years old they had to leave for school

Azara: They left for the states at 10 years old?

Ned: Wow.

Azara: Did your children do that?

00:08:32:00

Carl: Sarah, did you say your.... So your children left for schooling from Minto?

Sarah: Ya, ya.

Carl: Was that... I didn't know about that... was that just by

Sarah: Ya. It was really...

Carl: by... choice?

Sarah: Sad. Someone to Mt. Edgcombe¹⁹ and someone to Wrangell²⁰ in Alaska.

00:09:04:00

Ned: Right

Carl: I see

Sarah: They have baaad memories of Wrangell Institute.

Ned: Ya

Sarah: My boy was there.

Carl: So they thought that the.... Someone in the state believed this....

Sarah: Ya, someone....

Azara: I'm so sorry, so your children...

Sarah: They want come home in the spring time when school start, fall time when school start they leave.

Carl: Did you have a choice though? Or was this strongly recommended or just...?

Sarah: It was strongly recommended because we don't had no room in the school.

¹⁷ Chemawa Indian School, Salem, Oregon.

¹⁸ Chilocco Indian Agricultural School, Chilocco, Oklahoma, open 1884–1980.

¹⁹ Mount Edgcumbe High School, Sitka, Alaska.

²⁰ Wrangell Institute Boarding School.

Text supplement for recorded interviews with elders in Minto and Nenana about 21 earthquakes in Alaska (archived at University of Alaska Fairbanks)

Carl: But you had survived for thousands of years without ... you know... school... but you know... very interesting... I didn't know anything about that.

Azara: So what was the school like here? How many.... in Old... in Old Minto? How many kids?

Sarah: We didn't have high school in Old Minto. We didn't have no basketball court, no basketball, no games.

Carl: I think... do you go through 8th grade?

Sarah: They go to 8th grade ya. And that's what they go. But then like my son he was 10 years old. He was just in grade school when he leave.

Berkman: All them kids came, they just laugh because they fall around. They got nothing to tie down to...

Azara: In the earthquake?

Sarah: Gooda (sp?) pretty soon it's 6 o'clock.

Carl: Oh ya. You have.... You're going to the naming ceremony.

Sarah: Ya I'm going back on the _____ I'm named them and I'm going to be the one that.

Ned: Well you should be there. We should go.

Carl: We're very grateful

Sarah: Sorry

Ned: No you've been very...

Azara: No thank you for having us.

Ned: ... generous with your time. Can I get a picture of you two together?

===END===

Text supplement for recorded interviews with elders in Minto and Nenana about 22 earthquakes in Alaska (archived at University of Alaska Fairbanks)

Earthquakes and life in the Nenana region of Alaska

Interview with Henry (Hank) Ketzler, Caroline Ketzler, Paul Esau, and Danny Ketzler

October 15, 2014

Nenana, Alaska

Interviewer: Carl Tape, University of Alaska Fairbanks

Recorder: Lea Gardine

Transcription: Zahra Joseph

Edited transcript: Carl Tape

Annotated transcript: Carl Tape

Video editing and production: Azara Mohammadi

Paul Esau, Caroline Ketzler, and Henry Ketzler, October 15, 2014, Nenana, Alaska.

Photograph by Carl Tape



Text supplement for recorded interviews with elders in Minto and Nenana about 23 earthquakes in Alaska (archived at University of Alaska Fairbanks)

Note: The times below are those in the originally movie. In order for them to match those within the file posted by UAF, you need to add 14 seconds (0:14) to all times.

[HENRY KETZLER: LIFE IN NENANA]

[EDIT A] 0:22

Henry: I worked on the dock there where they loaded barges and they'd bring boxcar groceries and we'd have little handcarts with iron wheels, hauling them to the very big warehouses and sort 'em to each place they're going to. And then as time pass, we got the better handcarts that had rubber wheels and then they went with the little forklifts with iron wheels and then they got rubber-wheeled ones. And I went, I started there and learned how to run the forklift and then they, I got on a crane [to] load the...they're called the pallet loads and put them on the barges.

Carl: So everything is getting bigger and bigger as time goes on. The machinery—

Henry: And there was a, well I got a picture, I know there's a road, right the side of the regular bridge down there, they had five steamboats, that they pulled up in the fall time for the winter, and they were all five steamboats sitting together there and some barges.

[EDIT B]

Henry: I went and there was hardly no work on the dock until the boss down there transferred me to one of them steamboats. As a fireman and just sit there with two [whelms?] they had. When I got on there, they had switched it from wood boilers to oil.

Carl: Oil?

Henry: And you just had two valves there to regulate this pressure, to run the paddle wheel.

[EDIT C]

Henry: I know they'd ship coal down the river.

Carl: Okay.

Henry: With the... go to work, sign the contracts and they'd just give you great big bundles of burlap bags and you had to get into that railroad car and fill the sacks, pile 'em up. Then they'd load 'em on the barges and uh—

Carl: And take them down.

Henry: That was before the, I think after the wood and then the coal, and then they switched to oil.

[1947 EARTHQUAKE: HENRY KETZLER AT NENANA]

[EDIT D] 3:31

Carl: So we're here at 4pm on this day, October 15th, 1947. At 4pm do you remember about this event?

Henry: I remember. I was living with a guy, he had an old cabin the next street and uh, it was uh—

Caroline: Jimmy Lu's.

Henry: I was the only one in the house there and I remember the house there shakin' and I, there was a back door that came out the back of the house and then a kind of a shed. And a couple steps you had to go down into the shed in the back house. I remember it shaked so bad I tried to run.

Carl: Tried to get out of the house, or?

Henry: Yeah, get out of the house. And I got to the shed and my shoulder hit the edge of the door, of the doorway. And I just fell down there and just rolled away from the house. And that's all I remember.

Carl: So you remember, but you remember, you know you've felt a lot of earthquakes, but these ones were really big. So the fact that you couldn't get yourself through the door, you remember basically, trying to walk through and the door basically moved into—

Henry: Oh, I was trying to run, trying to get out as fast as I could.

[1947 EARTHQUAKE: CAROLINE KETZLER AT KANTISHNA RIVER CABIN]

[EDIT E] 05:10

Carl: **Danny** [Ketzler] said you guys have a cabin up on the Kantishna, is that right?

Caroline: I was at the cabin.

Carl: Oh, you were on the Kantishna?

Caroline: Yeah and Mom tell me to get something out of the high cache. Climbed the ladder and went in there and then it started shaking. And then she went to the door and hollered to “get out!”, but how can I go down the stairway? It's rocking.

Carl: You were in the cache at an unfortunate time.

Henry: She was on stilts.

Caroline: When it was over, even the ice was cracked.

[EDIT F]

Carl: So you're up in the cache, there must be snow, right? The permanent snow is here for the winter.

Caroline: I was in the cache. Yeah, I can't get out that little door.

Carl: So what else, after you come down, is there any other evidence that this earthquake had happened?

Caroline: No, I went right in the house.

Carl: Okay. Do you remember—

Caroline: My mom, she was so excited, you know, ... was screaming and everything, trying to get me out of there.

[CAROLINE KETZLER: LIFE ON THE KANTISHNA RIVER]

[EDIT G] 06:22

Caroline: It freeze up and then we come in in the wintertime with dogs.

Carl: Okay, so you have dogs. So are you cutting east or, you cut across the flats, you're not using the river? Or would you take, would the dog teams take?

Henry: Straight across the flats.

Carl: Straight across.

Henry: She'd walk all the way.

Caroline: Mhm.

Carl: Why would you walk?

Caroline: Snowshoe!

Henry: She was oldest child of the family and she snowshoed ahead of the dog team after they left her.

[EDIT H]

Text supplement for recorded interviews with elders in Minto and Nenana about 25 earthquakes in Alaska (archived at University of Alaska Fairbanks)

Carl: So you were living out there?

Caroline: We'd come in for holidays, and things like that.

Carl: I see. So you were actually living out on the Kantishna.

Caroline: Mhm. I was raised out there.

Carl: So Nenana would sort of be the big city in that way.

Henry: Yeah, I don't know...there must have been between 3- to 5000 people when the railroad was being built.

[1937 EARTHQUAKE: CAROLINE KETZLER]

[EDIT I] 07:19

Carl: Okay, and your birthday?

Caroline: Mine is, uh, July 16th, 1929.

Carl: Okay. '29. So in fact, you felt the 1937 earthquake, too.

Caroline: Yeah.

Carl: So that might've been –

Caroline: I was standing by the creek there and hanging on to the willow. 'Course I was rocking.

[1947 EARTHQUAKE: PAUL ESAU AT TOLOVANA]

[EDIT J] 07:45

Carl: So it turns out you were born, now this is going to be an interesting connection. On the day of your 21st birthday, which would be 1947, October 15th.

Paul: Right. I was thinking about that.

Carl: You hit a magnitude 7.2 earthquake, the biggest earthquake. So you must have some memory, if you can remember your 21st birthday, you must know what you were up to when that hit.

Paul: I was up on top the roof, working on the house.

Carl: This is the Tolovana?

Paul: Tolovana. We just got through building the house there.

[EDIT K]

Paul: And then what, what a surprise I got. Earthquake.

Carl: So, you're at this point –

Paul: I was standing out, fixing a roof up on top, insulated with moss. My mother was down there, had a little bucket, filled that bucket up and I pulled it up with rope, laid the moss on top. Insulation.

[EDIT L]

Carl: So what happened? Did you hang out up there, or?

Paul: When that earthquake hit, I was down on the edge of the building there and had to move up, flat on my back, watched all the trees flopping around there, thinking that any one of them would break down.

Carl: Wow, yeah.

Paul: And my mother was out in the front there and she stand there. I don know where my sister was, inside or outside.

[1912 (JUNE 6) KATMAI VOLCANIC ERUPTION, SECOND-HAND FROM PAUL ESAU]

[EDIT M] 09:25

Paul: My mom felt it before, way back in 1918 when she was about 13 years old. She said that was the biggest earthquake they'd ever seen.

Carl: Really?

Paul: Wherever that earthquake was, they were at Manley Hot Springs, she says you could see the ashes coming down.

Carl: Oh! Could that be a volcanic eruption?

Paul: Yeah.

Carl: Okay, I wonder if that's, yeah that would've been Katmai, I think. Katmai was the biggest, one of the biggest eruptions in the world for the last hundred years.

Paul: Yeah.

Carl: That's really neat. So she, okay, that would've been scary. They would've seen the ash coming, but no earthquake probably.

Paul: Yeah, they seen the ash. But they knew it was earthquake.

Carl: Okay. I don't know much about that event, but I can imagine you could hear, you probably could hear it, I don't know, I mean it was major, blew the volcano out.

Paul: She told me all about it, yeah.

Carl: So what did she describe that as?

Paul: She was down in Manley Hot Springs, yeah. That's where they had the campsite. My mom's dad and them, where she was raised.

Carl: So what did she describe as seeing or hearing or smelling, what?

Paul: She could hear it, I guess, coming. She said just ashes all over, coming down.

Carl: Falling down, okay. Wow.

Paul: You know, they've got their tents up, the tent's white and you know, it's just black. From the ashes.

Carl: Mhm. That's interesting. See that would be scary, see, I wonder just because if you don't know anything about earthquakes, and your parents or grandparents have never felt an earthquake, it might seem scary. But if you, if it's just part of life, if every 10 years there's an earthquake, maybe nobody's surprised or alarmed.

Paul: Yeah, this happened in the summertime.

[EDIT N] 11:52

How would you describe the relationship between Nenana and Minto back in this sort of 30's, 40's, 50's up until when they [Minto] relocated?

Paul: They were just like one whole village, family.

Carl: So they're concentrated in Minto, concentrated in Nenana.

Paul: Nenana, yeah. Feels like they were all one family.

Carl: There's no—

Paul: They'd come back and forth to visit, yeah. And some of them that lived here, was born here, moved to Minto, get married down there. Same thing here.

Carl: So it's more of two different places where people have congregated or settled, but there's no real difference other than that.

Paul: No.

[END] 12:45

=====

UNEDITED FULL NENANA INTERVIEW

Carl: Were there any roads coming in to Nenana at that time, for example?

Caroline: What?

Danny: Any roads?

Carl: Roads.

Caroline: Oh, no roads. There was a snow-go trail.

Carl: Okay. So, how, for example, how would you characterize Nenana, you know, now versus 1947? It must've been a lot different because of, you're not like on a highway or, um, was it more of a... You know, how would you characterize the differences in Nenana between then and now?

Henry: Well, in '47 there was... When I was growing up, I remember this town was just full of old buildings down on Main Street. There was just...

Caroline: It was out in the woods.

Henry: Old buildings.

Carl: And was there more of a, I mean, were there... What was the main, for example, day-to-day life? Was it subsistence at that time? Or were they tied more into – I know there were steamships, steamer traffic, and railroad industry, but was there also more subsistence going on at that time?

Henry: '47, yeah, we were running a fish-[camp?] when my father passed away in 1940 and in 1947 I would just uh, still uh, or was that in '47?

Carl: What are your birthdates, approximately?

Henry: Well mine is July 29th, 1927.

Caroline: July 27.

Henry: I mean 29.

Caroline: 27.

Carl: July... July 29th, 1927?

Caroline: Yeah.

[EDIT I]

Carl: Okay, and your birthday?

Caroline: Mine is, uh, July 16th, 1929.

Carl: Okay. '29. So in fact, you felt the 1937 earthquake, too.

Caroline: Yeah.

Carl: So that might've been –

Caroline: I was standing by the creek there and hanging off the willow. 'Course I was rocking.

Carl: So you remember... So you would've been... I didn't realize – this is a compliment – I didn't realize you were that old. But I mean that in a positive way.

Caroline: That's why I said maybe we can't think.

Text supplement for recorded interviews with elders in Minto and Nenana about 28 earthquakes in Alaska (archived at University of Alaska Fairbanks)

Carl: Well, so next, so. Maybe if we start back...so, where were you born? Were you both born here?

Henry: Well, I was born five miles down the river on a fish camp.

Carl: Okay, so—

Caroline: And I was born seven miles down the river.

Carl: Down the river, toward Minto Flats?

Caroline: Right down the hill.

Henry: Yeah.

Carl: Okay, okay. So—

Caroline: Two miles away [from Henry].

[1947 EARTHQUAKE: HENRY KETZLER AT NENANA]

03:35

[EDIT D]

Carl: So we're here at 4pm on this day, October 15th, 1947. I believe that's the right time here, um. This big earthquake happened in 1947 at 4pm, and we had some stories about, from the Silases? Are these events distinct? I'm trying to connect the times, so 1947, you'd be...20 years old, you'd be...I guess, 18 years old. **At 4pm do you remember about this event?** You'd mentioned Paul Esau was on the top of Tolovana Roadhouse.

Henry: I remember. I was living with a guy, he had an old cabin the next street and uh, it was uh—

Caroline: Jimmy Lu's.

Henry: I was the only one in the house there and I remember the house there shakin' and I, there was a back door that came out the back of the house and then a kind of shed. And a couple steps you had to go down into the shed in the back house. I remember it shaked so bad I tried to run.

Carl: Tried to get out of the house, or?

Henry: Yeah, get out of the house. And I got to the shed and my shoulder hit the edge of the door, of the doorway. And I just fell down there and just rolled away from the house. And that's all I remember.

Carl: So you remember, but you remember, you know you've felt a lot of earthquakes, but these ones were really big. So the fact that you couldn't get yourself through the door, you remember basically, trying to walk through and the door basically moved into—

Henry: Oh, I was trying to run, trying to get out as fast as I could.

Carl: So after the event, one of the things, let me grab—oh, it's in this one—there's some report from Nenana about how strong the shaking was. Do you remember? There's some photos, for example, about cracked ice. Do you remember the damage or any kind of effects in Nenana during that earthquake?

Henry: ...No.

[1947 EARTHQUAKE: CAROLINE KETZLER AT KANTISHNA RIVER CABIN]

06:15

[EDIT E]

Carl: This, this, uh, apparently between...at this time of year there was a lot of cracking along the river going down, um, at this time of year, you know, there was enough ice – a lot of it was cracked. One of the people also wrote that... You know, **Danny [Ketzler] said you guys have a cabin up on the Kantishna, is that right?**

Caroline: I was at the cabin.

Carl: Oh, you were on the Kantishna?

Caroline: Yeah and Mom tell me 'get something out of the cache'. Climbed the ladder and went in there and then it started shaking. And then she went to the door and hollered 'get out!', but how can I go down the stairway? It's rocking.

Carl: You were in the cache at an unfortunate time.

Henry: She was on stilts.

Caroline: When it was over, even the ice was cracked.

Carl: Yeah, they said, this report actually, this scientist said someone flew over the area. And it says according to this person named R. C. Ragle [from UAF], um, the most severe cracking took place on the Kantishna River and that Nenana cracks appeared in various parts of town. But, so you were, what would you then, uh, would this be like a late fall time? To be up at your cabin on the Kantishna. Were you?

[CAROLINE KETZLER LIFE ON THE KANTISHNA RIVER]

07:50

Caroline: We fall out.

Carl: Fall out? Which is—?

[EDIT G]

Caroline: We stay out there. It freeze up and then we come in in the wintertime with dogs.

Carl: Okay, so you have dogs. So are you cutting east or, you cut across the flats, you're not using the river? Or would you take, would the dog teams take?

Henry: Straight across the flats.

Carl: Straight across.

Henry: She'd walk all the way.

Caroline: Mhm.

Carl: Why would you walk?

Caroline: Snowshoe!

Henry: She was oldest child of the family and she snowshoed ahead of the dog team after they left her.

Carl: So that would be, you would spend through late fall out there and then would you be hunting?

Henry: They'd be coming for Christmas. Or New Year's.

Carl: Okay.

Henry: At New Year's. And then they'd go back out.

Carl: So you were living out there?

[EDIT H]

Caroline: We'd come in for holidays, and things like that.

Text supplement for recorded interviews with elders in Minto and Nenana about 30 earthquakes in Alaska (archived at University of Alaska Fairbanks)

Carl: I see. So you were actually living out on the Kantishna.

Caroline: Mhm. I was raised out there.

Carl: So Nenana would sort of be the big city in that way. I mean if you're...I see, I didn't...wow.

Henry: Yeah, I don't know...there must have been between 3- to 5000 people when the railroad was being built.

Carl: I see. So I don't know the Nenana history well. I know the railroad was built in 1923, so it must've been a big time. Did the railroad get built into Nenana at the same time the bridge was built? Or did the--

Henry: No.

Carl: Okay, so the railroad came to Nenana and then later, uh, the bridge was built to-

Henry: Yeah, they had a small, uh, small rail set up and I remember [one day?] they lay rail, half the river frozen and they lay rail to get the freight cars across the river. There was a small, you know, small freight cars, like engines, they had a rail between Fairbanks and here.

Carl: So there was a rail between Fairbanks to here and a rail into Nenana for a time period with no connection at some point. Okay. So before that they could get some things across when the ice was thick enough. Wow. Yeah. So I understand you're. Well when did you meet?

Henry: Pardon?

Carl: When did you meet?

Danny: Pull up a chair, Paul.

Henry: Probably uh...'48 or '49.

Carl: Okay. So you would have known everyone in the community but you were living remotely, I mean, you were raised in Kantishna.

Caroline: I was raised out there, yeah.

Carl: Okay.

Caroline: But I was born here.

Carl: Looks like we have another participant!

Caroline: Oh, this is Paul Esau!

Carl: Hey, I'm Carl. Thank you for coming. Do you mind sitting over here?

Paul: I wasn't going to come.

Carl: Well you're here now.

Paul: I was going to catch a ride right now, pretty soon.

Carl: Oh, you have to go?

Paul: No.

Carl: Oh, okay, okay. Now that I know you're joking. Can you sit over here? We've got a camera going.

Paul: You gotta turn that camera away.

Carl: Wait, wait wait. Let me give a request first, which is, we filmed two people in Minto, Burgman and Sarah Silas.

Paul: I heard about it.

Carl: So now we're looking to get a Nenana's perspective.

Paul: I heard all about it.

Carl: Okay, well--

Paul: I seen it on the paper.

Carl: Yeah, good!

Paul: Yeah.

Carl: Well, if you could sit over here.

Caroline: Do you want tea or coffee?

Henry: You want that? I put a spoon of sugar in it.

Paul: Oh. You just know what I take, huh?

Carl: Well thanks for coming.

Paul: Oh yeah, well.

Carl: Just so I get some connection, um, [when] is your birthday?

Paul: Yeah, today.

Carl: Today? That is incorrect.

Paul: 10.

Carl: 10.

Paul: 15.

Carl: Yeah.

Paul: 26.

Carl: 26. Is it really today?

Paul: Right.

Carl: Your birthday is really today?

Paul: The 15th.

Carl: Wow. So you were born on the...

Caroline: His birthday [is] today?

Lea: That's what he said, yes.

Caroline: Happy birthday!

Paul: Yeah, we're going to town for my birthday.

[1947 EARTHQUAKE: PAUL ESAU AT TOLOVANA]

[EDIT J]

Carl: So it turns out you were born, now this is going to be an interesting connection. On the day of your 21st birthday, which would be 1947, October 15th.

Paul: Right. I was thinking about that.

Carl: You hit a magnitude 7.2 earthquake, the biggest earthquake. So you must have some memory, if you can remember your 21st birthday, you must know what you were up to when that hit.

Paul: I was up on top the roof, working on the house.

Carl: This is the Tolovana?

Paul: Tolovana. We just got through building the house there.

Carl: Is that the current structure now, or has there since been another one?

Danny: It's his own, their own house. It's by the Tolovana Roadhouse.

Carl: Oh, I see, so one of the structures near the roadhouse.

Paul: No, no, no. It was two miles up.

Carl: Two miles – okay, okay. Two miles closer to Nenana. Okay, so you're on the roof, and then what?

[EDIT K]

Paul: And then what, what a surprise I got. Earthquake.

Carl: So, you're at this point –

Paul: I was standing out, fixing a roof up on top, insulated with moss. My mother was down there, had a little bucket, filled that bucket up and I pulled it up with rope, laid the moss on top. Insulation.

Carl: And the earthquake hit. So at this moment in time, um, we have, sorry I forgot your first name, I apologize.

Henry: Caroline.

Carl: Caroline. Caroline is in a cache on the upper Kantishna, above the ground, you just happen to be up on a roof, above ground. There's something odd about this.

Paul: Right.

Carl: But you're up in the air, which is not, probably doesn't feel like the safest place to be.

Paul: It wasn't safe.

Caroline: The cache had legs and they just rocked.

[EDIT L]

Carl: So what happened? Did you hang out up there, or?

Paul: When the earthquake hit, I was down on the edge of the building there and had to move up, flat on my back, watched all the trees flopping around there, thinking that any one of them would break down.

Carl: Wow, yeah.

Paul: And my mother was out in the front there and she stand there. I didn't know if my sister was inside or outside.

Carl: So you're 21 years old, is this, this is late fall, so are you–

Paul: It was in October.

Carl: Are you, are you living out there, or are you gonna come, or were you coming back into Nenana?

Paul: No, we lived down there.

Carl: You lived down there. So you got your, okay.

Paul: We lived down there for...since, uh–

Caroline: Just like us. We stayed year-round.

Paul: My dad drowned in '33, '34. We came up here and stayed one year up here – two years up here. In '38 we went back down to Tolovana.

Carl: Okay.

Paul: And we stayed there since.

Carl: So you're living, living off the land. And the river.

Paul: As much as – right. Right.

[1937 EARTHQUAKE]

16:46

Carl: Wow. So, since you have all seemed, you all have enough memories for also the 1930s. The '37 earthquake as well, I didn't expect to talk about the '37 earthquake, but do you remember, do you remember, let's see, you'd be 11 years old, uh, or, sorry. Yeah, 11 years old in 1937. And that earthquake happened at 7:00 in the morning, the one, this was in Salcha, but it still would've been a pretty good shake. Do you remember that, as kids?

Paul: Maybe I was asleep then.

Carl: 7am? Likely, yeah.

Paul: Yeah, I was here in Nenana then.

Carl: Okay. Do any of you have a memory of that from that age, or?

Paul: Not me.

Carl: Okay.

Henry: I remember – I don't know what it was – but I remember being in bed and then it was shakin' the –

Carl: Okay, I would guess the stories are very different depending on what time of day these things happen. The one in '47 was at 4pm and people are out and about. But I guess, I guess uh, I was just curious whether anyone remembered anything about, you know, about the –

Caroline: We get up early as 5 o'clock.

Carl: So you would've been in 1937, then you would've been in the same, out on the Kantishna as well.

Caroline: That's when I was hanging on to the willow

[1947 EARTHQUAKE]

18:20

Carl: That one was during the summer time, that was in July, so the, um, I guess different, it would be, no ice or anything like that to remember, but, um. Well let's see. So 1947, I think we've got you're in Nenana, uh, Hank was running, hitting a doorway, trying to get on the ground, so we have sort of, uh, your experiences span a pretty large region from Nenana to the west in Kantishna to the north in Tolovana, so in fact when we look at these articles, like this one that was written in 1948, just one year later by a scientist. These stories [your stories] don't necessarily get into their information. Um, they send out a survey to anyone they can find, but you may know, for example, the story here, the report from Nenana—his is in this article written in 1948—it describes well water in Nenana and some account from someone named R. H. Sunnyboy. Is that anyone you might know?

Henry: Yeah, I remember him.

Danny: Robert?

Carl: So he writes that he reported in this letter that the quake was preceded by a rumbling noise so severe four miles south of Nenana that it was difficult to stand, the ice and the water holes fractured and he observed one crack along the railroad and he returned to Nenana and found cracks. The pump at his house had been discharging water freely and this was a surprise because the well had never produced much water. So I guess the earthquake, there was at least three wells equipped with pitcher pumps gave water spontaneously after the earthquake. These are kind of details that some people report but you know, there's no information from, for example, Minto where, uh, we talked to Berkman and Sarah Silas. There was a lot of people out there, but you know, none of that information gets into these sort of, even these old recollections of the time, so that's kind of way, you know, it's good to speak with you and --

Henry: Yeah, I remember, uh, a pitcher pump, we had a garden. Our garden had a pitcher pump in the middle. But then I remember, I don't remember when was the last time water was coming out of it.(?)

Carl: Related to the earthquake, or?

Henry: Yeah.

Carl: Okay.

Henry: It was just after the earthquake.

Carl: Okay, so that kinda checks out with, uh–

Henry: I don't remember when it was, what year.

Carl: Yeah. Well that was something where I thought, you know, of these, of these earthquakes from 1937 and '47, there's been a few other big ones. There, um, you know, there was, I don't know how you could remember which ones, but I have dates and times of when they happened, so I thought I'd mention some and just see if you remember. There's one in Huslia, also this was at 5:30 in the morning, but this is in 1958, so about ten years later. And then the others, I mean there was the 1964 earthquake that was felt, that was in March, March 27th. So I don't know if uh, like **Caroline**, during this time period, had you, when did you guys, for example, come to Nenana? Were you in Nenana during these other times?

Caroline: I moved in in '51.

Carl: '51? Okay. So you'd be in Nenana, you would felt this Huslia earthquake probably and then there's a couple decent sized ones apart in Tanana. And then the '64 quake. Do you remember the '64, I mean you remember the magnitude of the event, but do you remember personally feeling the ground, or?

Paul: Which one? The '64?

Carl: In '64, yeah.

Paul: Oh yeah, that was the big earthquake.

Carl: But it would've been kind of rolling.

Paul: Yeah.

Carl: Not as uh violent maybe, but it also, I think it cracked a lot of ice. So I'm just wondering if you have any recollection of that quake?

Paul: No, we were living over there in the cabin at that time. I remember that earthquake, yeah. I don't know where I was. Running around there, looking, what's going on.

Carl: Yeah. Let's see. Do you have, I mean, I'm asking about some specific things, are there any earthquake stories that aren't pinpointed to a certain earthquake that you wanna, that you remember? Um, I guess the '47 was, the bigger they are the bigger impression they might've left on your memories too, but, you know, I don't know whether you have other stories you wanna share.

23:53

Paul: Well yeah, in October '47. The rivers were running ice, but the lakes were frozen. The lakes broke up, yeah.

Carl: Was the river partially frozen? Because–

Caroline: Yeah, mhm.

Paul: No, no, it was running ice yet.

Carl: It was not. There's some, this person, I don't know where these photos are from, but some along the Tanana, it kind of looks like there was ice along the edges of the river.

Paul: Oh there was ice around the edge, yeah.

Carl: Yeah, these photos here sort of cracking river bars, pressure ridges. Does that mean some parts of the Tanana were frozen, but you're saying it's not frozen through?

Paul: Frozen over good, yeah.²¹

Carl: Okay. I think it was, uh, Berkman Silas was describing, I think he was saying they were ice-fishing on a slough. So there were some parts that were frozen when the earthquake hit and that was fracturing a lot of the ice. And, **Caroline, Danny** had described that somewhere up the Kantishna the ice had rafted the river, there had been huge rafting of the ice along the river that caused problems for the, would that be the 1947 earthquake?²² Do you remember anything about ice kind of rafting on top of each other from the earthquake?

Caroline: I don't know.

[EDIT F]

Carl: So you're up in the cache, there must be snow, right? The permanent snow is here for the winter.

Caroline: I was in the cache. Yeah, I can't get out that little door.

Carl: So what else, after you come down, is there any other evidence that this earthquake had happened?

Caroline: No, I went right in the house.

Carl: Okay. Do you remember—

Caroline: My mom, she was so excited was screaming and everything, trying to get me out of there.

Carl: I wonder, because ten years earlier there'd been another big earthquake, were people scared or not? Was this sort of part of you know, everyone's grandparents had felt an earthquake. Does this mean they're not really scared, this is part of life? How do they react?

Paul: Just normal.

Carl: Just normal, okay. And it's normal because you think your parents felt it before.

[1912 KATMAI VOLCANIC ERUPTION, PAUL ESAU RECALLING STORIES FROM HIS MOTHER]

26:45

[EDIT M]

Paul: My mom felt it before, way back in 1918 when she was about 13 years old. She said that was the biggest earthquake they'd ever seen.

Carl: Really?

Paul: Wherever that earthquake was—we were at Manley Hot Springs—she said you could see the ashes coming down.

Carl: Oh! That was the volcanic eruption?

Paul: Yeah.

Carl: Okay, I wonder if that's, yeah that would've been Katmai, I think. Katmai was the biggest, one of the biggest eruptions in the world for the last hundred years.

Paul: Yeah.

Carl: That's really neat. So she, okay, that would've been scary. They would've seen the ash coming, but no earthquake probably.

Paul: Yeah, they seen the ash. But they knew it was earthquake.

²¹ Paul's recollections seem to be inconsistent. The Tanana River was frozen in parts and open in other parts.

²² We later established that the rafted ice, west of Nenana, was from the 1964 earthquake.

Carl: Okay. I don't know much about that event, but I can imagine you could hear, you probably could hear it, I don't know, I mean it was major, blew the volcano. Wow.

Paul: She told me all about it, yeah.

Carl: So what did she describe that as?

Paul: She was down in the hot spring, yeah. That's where they had the campsite. My mom's dad and then, where she was raised.

Carl: So what did she describe as seeing or hearing or smelling, what?

Paul: She could hear it I guess, coming. She said just ashes all over, coming down.

Carl: Falling down, okay. Wow.

Paul: You know, they've got their tents up, the tent's white and you know, it's just black. From the ashes.

Carl: Mhm. That's interesting. See that would be scary, see, I wonder just because if you don't know anything about earthquakes, and your parents or grandparents have never felt an earthquake, it might seem scary. But if you, if it's just part of life, if every 10 years there's an earthquake, maybe nobody's surprised or alarmed.

Paul: Yeah, this happened in the summer time.

Carl: Okay. But the ash is pretty unusual.

Paul: Yeah.

[BACK TO 1947; MAINLY ABOUT LIFE IN THE REGION]

29:16

Carl: Up here. Let's see, so 1947, I'll see if I can put you, so 1937 you're all children. You're sort of 9, 10, 11. 7 in the morning, sounds like there's no distinct memory necessarily, or maybe you were sleeping. Do you remember anything about any effects though, of that earthquake? Like people talking about it or just, um, too long ago?

Henry: I remember, this is probably the '47 quake they said that. And stores – grocery stores – they had the big long counter and the owners stayed behind it and they had the shelves all the way up to the roof. All around the store. You just go there and tell them what you want and they set it out for you there and they said that two or three of those stores, all behind the counter was full of groceries that fell out of the shelves.

Carl: Yeah, that's what this newspaper article from the day after – all the damage was in liquor stores in Fairbanks, some thousands of dollars of damage from bottles falling off the shelf. But I don't know, did Nenana for example have, do you remember, was there a store in Nenana at that time?

Henry: Well when I was growing up there was five little stores here. And there was about five or six bars and liquor stores too. And there was a couple hotels.

Carl: So it was a bigger town than it was.

Henry: Bigger than the whole block down there where the, uh, main street was just solid – big old buildings and I don't know, I forgot how it was it caught on fire and the whole block burnt down.

Carl: Sometime when you were younger? Like before '47 or?

Henry: Yeah, it was before.

Paul: Around '36 yeah.

Carl: Okay, so –

Paul: The fire that burnt the whole block down got the store right there.

Carl: Wow.

Henry: Yeah there were a lot of old cabins and stuff and most of them were falling apart, I remember.

Carl: So at the time, at this time, I'm trying to understand the setting – 1923 this railroad bridge is built, but from that time until the highway goes through, this is a very different place. Is that right? I mean the highway must have changed a lot about the life around here. Or-

Paul: Fewer train slots, even for the big boats now, see.

Carl: But the barge is, even before the railroad bridge or during that time, the train could bring goods to the barges and then those steam ships could go downriver.

Paul: Down the river, up the river.

Carl: Okay, so Nenana was kind of the main place for-

Paul: Main port for that. Boats, groceries they'd go all the way down the Yukon.

Carl: Would those ever stop for places, for example, Minto or?

Paul: All the way.

Carl: Would you, for example, in Tolovana, where you were, would they stop for you?

Paul: Oh yeah. They stopped in every port, going around, they got groceries, you know.

Carl: Would you trade or pay for stuff? Or how would you get –

Paul: They got stores in Minto, Tolovana, Manley, they got groceries stores.

Carl: At Tolovana at the roadhouse then?

Paul: Yeah.

Carl: Okay, I see.

Paul: That was the store there.

Carl: I see. So for you, you could just go to the roadhouse if you needed anything.

Paul: Buy groceries and everything. They come from Kantishna and everything.

[EDIT A]

Henry: I worked on the dock there where they loaded barges and they'd bring boxcar groceries and we'd have little handcarts with iron wheels, hauling them to the very big warehouses and sort 'em to each place they're going to. And then as time pass, we got the better handcarts that had rubber wheels and then, they went with the little forklifts with iron wheels and then they got rubber wheeled ones. And I went, I started there and learned how to run the forklift and then they, I got on a crane [to] load the...they're called the pallet loads and put them on the barges.

Carl: So everything is getting bigger and bigger as time goes on. The machinery–

Henry: And there was a, well I got a picture, I know there's a road, right the side of the regular bridge down there, they had five steamboats, that they pulled up in the fall time for the winter, and they were all five steamboats sitting together there and some barges.

Carl: So that traffic, so during the winter they'd pull the barges up and they'd just sit here until breakup and?

Henry: Yeah.

Carl: Wow. So what you just described, it sounds like almost the whole river was a little more active in terms of traffic and–

Henry: It was! Yeah.

Carl: Huh.

[EDIT B]

Henry: I went and there was hardly no work on the dock until the boss down there transferred me to one of them steamboats. As a fireman and just sit there with two whelms²³ they had. When I got on there, they had switched it from wood boilers to oil.

Carl: Oil?

Henry: And you just had two valves there to regulate this pressure, to run the paddle wheel.

Carl: When did Usibelli, when did the coalmines start? Was that later?

Caroline: No, there was...

Carl: Or maybe just coal wasn't being burned on the ships? Hm.

[EDIT C]

Henry: I know they'd ship coal down the river.

Carl: Okay.

Henry: With the... go to work, sign the contracts and they'd just give you great big bundles of burlap bags and you had to get into that railroad car and fill the sacks, pile 'em up. Then they'd load 'em on the barges and uh-

Carl: And take them down.

Henry: That was before the, I think after the wood and then the coal, and then they switched to oil.

[MEANDERING DISCUSSION WHERE CARL IS TRYING TO HEAR ABOUT TRANSPORTATION ON THE RIVER PRIOR TO STEAMSHIPS, WHICH PREDATES THE LIVES OF THE INTERVIEWEES]

37:40

Carl: How was the steamships, I mean, this is kind of, I'm wondering, before the steamships, the river has been a pathway for communities in Alaska. How were people using the rivers before they had powered ships? Do you know? You know, how are people getting from up and down – and downriver's one thing – but how would you be getting upriver before ships were out there? I mean, I'm talking before your time, obviously, but there...it's still a pathway, but how are you getting upriver, how was it useful?

Henry: I know there was, on the Kantishna, they used donkeys.

Carl: Really?

Paul and Henry: Pulling the barge.

Henry: Then they'd go so far they could go on one side then if it'd get too bad on that side they'd put the animals on the barge.

Carl: That means you'd have to first clear out the trees on the side of the river, right?

Paul: They'd look for a good spot and then they'd cross back and forth.

Carl: Okay. But even before that time there must've been, yeah.

Henry: See, I know they used horses to pull the barges too. I don't know if it was on the Tanana.

Carl: It was just a curiosity for, you know, you have these Native communities all stationed on the river and I can see, yeah, getting down river no problem, but you described, Caroline, dog teams using the land to get from, say, Kantishna to Nenana, you take the shortest path to get

²³ I am not sure what the spoken word was.

here. So, I mean, does that mean the rivers were mainly used for transportation in one direction only?

Paul: On the boat on the Kantishna, you paddle down there, pulling them, you got no motor, they used poles.

Carl: So it's, you can be strong –

Paul: Hand power. All hand power.

Carl: But you couldn't do that on the Tanana, right?

Paul: Well, you could paddle.

Carl: Yeah, okay.

Paul: You got oars, yeah.

Carl: I could imagine if you knew the right part of the Tanana River, you could get up, that's a good point. I'm assuming, I'm a novice on the river, but I know if you could find the right flow and the right team of people, you could get up. But whether that would be easier on land is another question. But wow, yeah. So some of these old boats of that era, I mean the one you come into Nenana, there's a steamship there. Those must've been active during the time that you describe, or. I was wondering one thing too about, so between Nenana and Minto, were these historically, are these kind of considered large families or separate and sharing the same land?

41:10

[EDIT N]

How would you describe the relationship between Nenana and Minto back in this sort of 30's, 40's, 50's up until when they relocated?

Paul: They were just like one whole village, family.

Carl: So they're concentrated in Minto, concentrated in Nenana.

Paul: Nenana, yeah. Feels like they were all one family.

Carl: There's no–

Paul: They'd come back and forth to visit, yeah. And some of them that lived here, was born here, moved to Minto, get married down there. Same thing here.

Carl: So it's more of two different places where people have congregated or settled, but there's no real difference other than that.

Paul: No.

Carl: Okay. 'Cause I'm curious. Our project spans, we have Minto – New Minto, I guess.

Paul: Oh yeah.

Carl: We have a station here in Nenana, we'll have one in Old Minto, we have one in Minto, so I'm trying to piece together historically where everyone is from. Well, you have great stories about the '47 earthquake, each of you. And that's today, that's your birthday. So that's another piece, so you're on your 21st birthday, you're at work, insulating your house, or cabin, and would that also be, you'd fish on that point on the river?

Paul: Oh yeah. We lived there for...when we moved out of there it was '57.

Carl: '57?

Paul: We moved up, 'course my nephew had to go to school. And that was the biggest mistake, we should've stayed out there.

Carl: You know, I've heard similar, heard some bittersweet stories about kids going to school out of Minto, she was describing to me sort of boarding schools. Like Mt. Edgecumbe.

Paul: Oh yeah.

Carl: Just not great experiences, it sounded like, for Mrs. Sarah Silas's children. So where did your kids – did they go to Nenana then?

Paul: Well my nephew went to school here.

Carl: Okay. Some of the kids in Minto, it sounded like they were recommended, sent to boarding schools.

Paul: Boarding schools, yeah.

Carl: Which seems, I guess, you learned enough in your life where you were to get by, but...

Paul: Oh yeah. My mother taught me all of those things. She was the one that raised us up all alone.

Carl: Oh, 'cause you said your dad died in the Tanana, or?

Paul: Yeah.

Carl: That's really sad. So you said 1933?

Paul: From there she brought us up.

Carl: Wow. And that is amazing. And how many siblings did you have? One? Okay. So how many siblings did each of you have?

Henry: Ten.²⁴

Carl: Ten?

Caroline: Six boys and four girls.

Henry: Oh, you mean in my family?

Carl: Your siblings.

Henry: We had ten kids.

Carl: You had ten kids, I remember. But how many siblings did you yourself have? Like brothers and sisters.

Caroline: They're all seniors.

Carl: How many brothers and sisters did you have?

Henry: Oh, I had, there was...five, five brothers. We had a sister but she died from pneumonia [when she was] one year old.

Carl: Okay. And Caroline, how many—?

Caroline: I had two brothers and one sister.

Carl: Two brothers.

Caroline: But we adopted one. My mom adopted one. So I had three brothers.

Carl: Okay. And you had, and where were your, uh – Hi. I recognize, that's Martha. Great. **And where were your children born then? You said you had ten children.**

Henry: They were all born here except one.

Caroline: Yeah.

Henry: The last one was – they sent her to the hospital for the last one.

Carl: Okay. I met two of them. Danny and Martha. Yeah, that seemed to be, I talked to, I think, both Geraldine Charlie and Sarah Silas. One of them had ten children and the other had 12, all in Minto. And it sounded like they were singly responsible for a pretty large number of people in Minto.

²⁴ Henry thinks I am asking how many children he has, not how many siblings.

Henry: When we first, they had a mission here, taking in people from down the river. And they had a nurse there, a permanent nurse. A nurse that helped her.

Carl: A nurse, or midwife?

Henry: And then after the mission closed, there was a, one of their former nurses stayed and raised a family. She came and helped us.

Carl: Deliver babies. I think in Minto the midwife who lived there, the person who acted as midwife anyhow, the health center there is named after her now. I don't remember the name, but she helped deliver all the kids out there. So it sounds like you don't have a doctor permanently here probably, or a nurse. But this woman played that role. Well let's see, you had... Coming up to the new generation, since **Danny** is quietly – he's as quiet as I've ever seen him here. Danny, you're 49, or 50?

[1964 EARTHQUAKE; DANNY KETZLER RECALLING STORIES FROM HIS UNCLE]

47:45

Danny: Yeah, 49.

Carl: So what does that put your birthdate as?

Danny: June 25th, '65.

Carl: June 25th.

Henry: He's next to the youngest.

Carl: ...'65. Okay.

Henry: The ninth one.

Carl: So Danny, you were the one talking about the rafted ice on the Kantishna, or you were saying your parents were describing some sort of ice, ice rafting.

Danny: Oh.

Carl: Can you jog their memory? Or which one was that about?

Danny: I don't know, it was one of the earthquakes when Uncle –

Caroline: You weren't born yet!

Carl: No, he's saying he remembered stories.

Danny: I remember stories and Uncle Haver²⁵ said they had to make rafts and stuff to go over the ice cracks and stuff.

Caroline: Yeah.

Carl: Was that for dog teams or just for...

Danny: Snow-goes.

Carl: Okay, got it. So they're using the river as a snow machine path?

Danny: No, they were just crossing it.

Carl: Okay.

Danny: The Toklat River.

Carl: Okay.

Danny: And the ice was all jumbled up and busted up.

Carl: Given the years, what year could that have been? '47? '58?

Danny: What year was that? '58?

Caroline: I'm just trying to remember.

²⁵ Haver Reginald Justin, 1931–1993.

Carl: Okay.

Danny: Must've been...

Carl: There's not that many possibilities. If it was from an earthquake that day, it's basically '37, '47, or maybe, you know, '64 or '58, but that would've...

Danny: It was when they were trapping on that one roadhouse on the Toklat there, I thought. Yeah. Edmund²⁶, Haver.

Caroline: I don't remember that.

Henry: There were no snow-goes around in '47.

Carl: That's what I was going to say. The snow machine should –

Danny: So it must've been in like –

Caroline: Dog teams.

Danny: 64' probably.

Carl: Okay, then this could've been '64. '64 cracked ice all over Alaska.

Danny: That's probably when it happened then.

[WRAPPING UP]

49:55

Carl: Locally it could've, yeah. Sounds like '64. Okay. Well, let's see. What else?

Henry: What else can you figure out?

Carl: Yeah! I've got a lot of information here. You know, we, you know you think, well, you're the, let's see. You're the fourth, fifth, and sixth people²⁷ who I've talked to who were alive here during these earthquakes. So there's not too many people to get a direct connection. Our hope is to get some stories so that when we share when we talk to the students here [in Nenana] in the high school, you know a lot of these students in the high school are from all over Alaska, they're not – most of them, in fact, are. Especially the Student Living Center. But it's very nice to be able to connect these stories with people who are here. They don't realize that these earthquakes are part of life. I mean, not a major part, but every ten years there's a big earthquake. And for scientists it's a big deal and a certain earthquake of the size in 1947 could cause some damage. You know, what looks like \$5,000 in liquor stores, that would be something different now, maybe not liquor stores. But I think I'm happy. I'm grateful that you've taken the time here. The only piece of paper that I have is really, uh, I'm leaving these maps with Danny. We'll figure out getting the better ones. In order for your story to go into the university archives in any form, um, I–

===END===

²⁶ Edmund Gilbert Lord, d. 2000.

²⁷ The first three were Geraldine Charlie, Sarah Silas, and Berkman Silas.

Earthquakes and life in Minto Flats, Alaska

Interview with Geraldine Charlie (b. 9/25/1929, d. 1/31/2015)

Interview #1: 5/14/2014, Carl Tape

With: Patrick Smith (nephew of Geraldine), Lea Gardine, Helena Buurman
no video; no photos

Interview #2: 9/12/2014, Carl Tape

With: Azara Mohammadi, Ned Rozell
no video; photo by Ned Rozell

Geraldine Charlie (and Carl Tape), Minto, Alaska, September 12, 2014.

Photo by Ned Rozell.



[Synthesis by Carl Tape on 4/13/2015]

The earthquake epicenter was south of Nenana on October 15, 1947, at 4:10pm (local time). Geraldine Charlie had recently turned 18 years old. She and her husband Neal were caretakers of the village store in Minto [now referred to as Old Minto] when the earthquake hit. She recalled crouching down to weigh a bag of potatoes at the moment the earthquake hit. She felt dizzy and noticed Coleman lanterns swaying from side to side and heard a roaring noise. Lots of things shook off the shelves, and everybody got scared. She said that some of the men had been ice fishing at the time of the earthquake. She recalled seeing cracked ice on the river.

Geraldine described how they were taught to sit down if they felt shaking when they were out in the woods so that they wouldn't get disoriented and lose their sense of direction. And they were taught to look for landmarks such as hills so that they weren't lost right away afterwards.

Geraldine described raising 11 children, all of whom were born in Old Minto. Her face lit up when we she talked about her family. As she listed the names of her many grandchildren, she pointed to their portraits on her kitchen wall.

I asked Geraldine if the earthquake—and earthquakes, in general—had any spiritual significance in their culture. Not really, she replied. They happened and were nothing exceptional.

Geraldine Charlie recollections of the October 15, 1947 (4:10pm) earthquake

[Recounted by Carl Tape on 4/1/2015]

Geraldine and her husband, Neal, were caretakers of the village store in Minto [now, Old Minto] when the 1947 earthquake hit. (She had recently turned 18 years old.) She recalled crouching down to weigh a bag of potatoes at the moment the earthquake hit. As the waves rolled in, she described the bag of potatoes moving up and down on the scale. She said that some of the men, including her husband, had been ice fishing at the time of the earthquake.

Geraldine described raising 11 children, all of whom (I think) were born in Old Minto.

I asked Geraldine if the earthquake—and earthquakes, in general—had any spiritual significance in their culture. Not really, she replied. They happened and were nothing exceptional.

[Recounted by Lea Gardine on 4/2/2015]

What I remember mostly was her telling of working in the store in Old Minto and bending over to weigh potatoes and everything shifting around. Then realizing it was an earthquake when things started falling off the shelves and seeing ice breaking on the river.

[Recounted by Azara Mohammadi on 4/2/2015]

We visited Geraldine on a sunny fall day in Minto and woke her up from a nap. Even though she was not feeling well, she invited us in. I felt bad asking her to speak on camera about earthquakes. She was not in the mood to talk about earthquakes with scientists, but her face lit up when we she talked about her family. As she listed the names of her many grandchildren she pointed to their portraits on her kitchen wall.

[Recounted by Helena Buurman on 4/3/2015]

We stopped in to see Auntie while we were looking for a good site near the river. She told us about the earthquake happening while people were out on the ice (I may be misremembering here). I also remember her saying that they knew to sit down if they felt shaking when they were out in the woods so that they wouldn't get disoriented and lose their sense of direction. And that they knew to look for landmarks such as hills so that they weren't lost right away afterwards.

[Recounted by Ned Rozell (from his notes) on 4/13/2015]

In 1947, at the village in Old Minto, Geraldine was helping her husband in the store. She was weighing potatoes when she noticed feeling dizzy. Then she noticed Coleman lanterns swaying from side to side and hearing a roaring noise. Lots of things on shelves shook off, and everybody got scared, she said. She didn't remember feeling any other large earthquake, and was in Tanacross for the earthquake that preceded our visit.

Geraldine Charlie obituary in the *Fairbanks Daily News-Miner*

<http://www.legacy.com/obituaries/newsminer/obituary.aspx?n=trenulan-geraldine-charlie&pid=174042585>

Tr'enul'an' Geraldine Charlie went to be with her beloved Saviour on Jan. 31, 2015. She was born Sept. 25, 1929, to Teddy and Annie Charlie. Geraldine is the granddaughter of Chief Charlie. The day she was born, her father told her uncle, "Let's look at her," and that is what her native name, Tr'enul'an,' means. Her mother died when she was a baby, and her grandmother, Sara John, took her in and raised her in a subsistence and traditional lifestyle.

Geraldine's fondest childhood memories were of grandma Sara taking her to Nenana to visit her cousins, the Ketzlers. Her grandmother passed away when she was young, and her uncles, Jim Alexander and Walter Titus, took her in. At 16, she met and married her only love, Neal Charlie Sr. Together, they had 11 children, whom they raised on the Minto Flats in a subsistence and traditional lifestyle. She worked throughout her life in the church, school and always for her family.

In her later years, Grandma Geraldine continued the work she and her late husband, Neal, were so dedicated to. She served as a "Wisdom Keeper" at the University of Alaska, preserving the Native language and sharing her knowledge and wisdom of Native culture, and was instrumental in establishing the Ch'eghutsen program, a children's mental health wrap-around service.

She was predeceased by her husband, Neal Sr.; her brother, Clarence Sr.; daughters Janet, Vivian, Susan and son Sam, and grandchildren Lee and Gordon. She leaves behind her children, Melvin (Linda), Carol, Rebecca (Tom), Glenn, Ernie, Neal Jr. (Peg), Kathy; and her sister, Pearl Chanar (David), and many grandchildren, nieces, nephews and friends.

Memorial service will be held at noon, today, Feb. 3 at the Chief David Salmon Tribal Hall in Fairbanks. Potluck/cover dish will follow at 5 p.m. The family will take "Grandma" Geraldine home on Wednesday. Visitation, final service and burial will be held at 1 p.m. Friday, Feb. 6, in Minto, followed by a traditional potlatch.

Please visit www.legacy.com/obituaries/newsminer to sign an online guest book.

Published in Daily News-Miner on Feb. 3, 2015

Berkman Silas obituary in the *Fairbanks Daily News-Miner*

<https://www.legacy.com/obituaries/newsminer/obituary.aspx?n=berkman-silas&pid=176059568>

The Northern Lights were especially bright and beautiful. The stars were sparkling and bright also, on the morning of Oct. 6, 2015. God was welcoming his faithful servant, the Rev. Berkman Silas, into heaven.

Berkman "Baa Yu Ghu Daa" Silas was born Dec. 23, 1923, to Louie and Susie Silas. He was born during a memorial potlatch in Minto, so his Indian name meant good luck would follow him. More like blessings were following him all the days of his life. He married Sarah Frank on March 24, 1944, in Nenana. They celebrated their 71st anniversary March 24, 2015.

Berkman was a subsistence hunter/gatherer all his life with seasonal work in the summer time. He worked on the Steamer Nenana, Steamer Alice, MV Tanana, the Alaska Railroad and for the Bureau of Land Management as a surveyor and wild land firefighter. He also worked for the Alaska Village Electric Co-op for 20 years. Berkman was involved in the community affairs of the village as a Chief and also as a council member. He was also the projectionist for the reel-to-reel movie nights in Old Minto. He won numerous dog races in Minto, Nenana and Tanana. He had also participated in the North American Dog race in Fairbanks.

He loved playing his fiddle for the Athabaskan Fiddle Festival in November. He especially loved playing the guitar for church services in Minto. All while raising ten children with no running water or electricity and passing on his knowledge to his children and grandchildren.

In 1971, Berkman had a life changing spiritual experience and accepted Jesus into his heart. The then Bishop of Alaska William Gordon, Episcopal Diocese, asked Berkman to be ordained as a Sacramentalist. With only a third grade education and obedience to a calling, he said yes. He was ordained a deacon in May 1972 at Alaskaland with the Presiding Bishop of the U.S.A. John E. Hines in attendance, and into the priesthood Jan. 19, 1974, in Minto.

Berkman was preceded in death by his mother and father, his brother, Bennet; son Stanley, daughters Susan and Zelma, grandson Jeremiah Silas, and granddaughter Jessica Silas. He is survived by his wife, Sarah; sons Ronnie, Knowland, Franklyn and Mickey, all of Minto; daughters Vera (E. Joshua) Weiser, of Fairbanks; Burma (Gerald) Pilot, of Fairbanks; Elaine Silas, also of Fairbanks; and 16 grandchildren and 20 great-grandchildren.

Vewing and services will begin at noon Saturday, Oct. 10, in Minto at the community hall. Burial will follow at the Minto Cemetary. There will be a potlatch in the evening.

Please visit www.legacy.com/obituaries/newsminer to sign an online guest book.

Published in Daily News-Miner on Oct. 9, 2015

Follow-up questions with Danny Ketzler about the 1964 earthquake (August 2018)

In pursuing content for an exhibit on earthquakes in Interior Alaska, I (Carl Tape) wanted to ask Danny Ketzler some details regarding his comments about the 1964 earthquake (above). I asked Danny if his uncle, Justin Haver, was still alive. Danny texted back to me on his phone (July 5, 2018 and August 16, 2018):

“Uncle Haver no he passed in like 93. He said he went beaver trapping in the spring that’s when Edmund Lord went with him they tried to come back and all the ice was broken up on the Toklat river and they had to make ramps and chop ice to make it over some creeks to”

“I remember my uncle Haver saying they were beaver trapping and he was looking for a moose to shoot and he climbed a big spruce tree and looked out at Edmund out in the lake on his snogo and drove up on a big beaver house right when it started he said the ice just busted up all around and he was swinging back and forth in the tree and when they were trying to go home they had to make bridges and chopping ice to smooth out to drive over. Edmund and Haver had alpine snogos and they had Albert Fox following behind on a sled Albert Fox was their cook on the trip”

These details are consistent with evidence of widespread cracked ice all over mainland Alaska (Plafker, 1969).

My summary of the 1964 account:

In March 1964 Haver Justin, Edmund Lord, and Albert Fox, all from Nenana, Alaska, had snowmachines west of Nenana to trap beavers. While they were out there, the magnitude 9.2 earthquake shook most of Alaska. Trying to cross the Toklat river and other creeks, they encountered broken and rafted river ice, which forced them to chop the ice and build ramps for their snowmachines and gear.

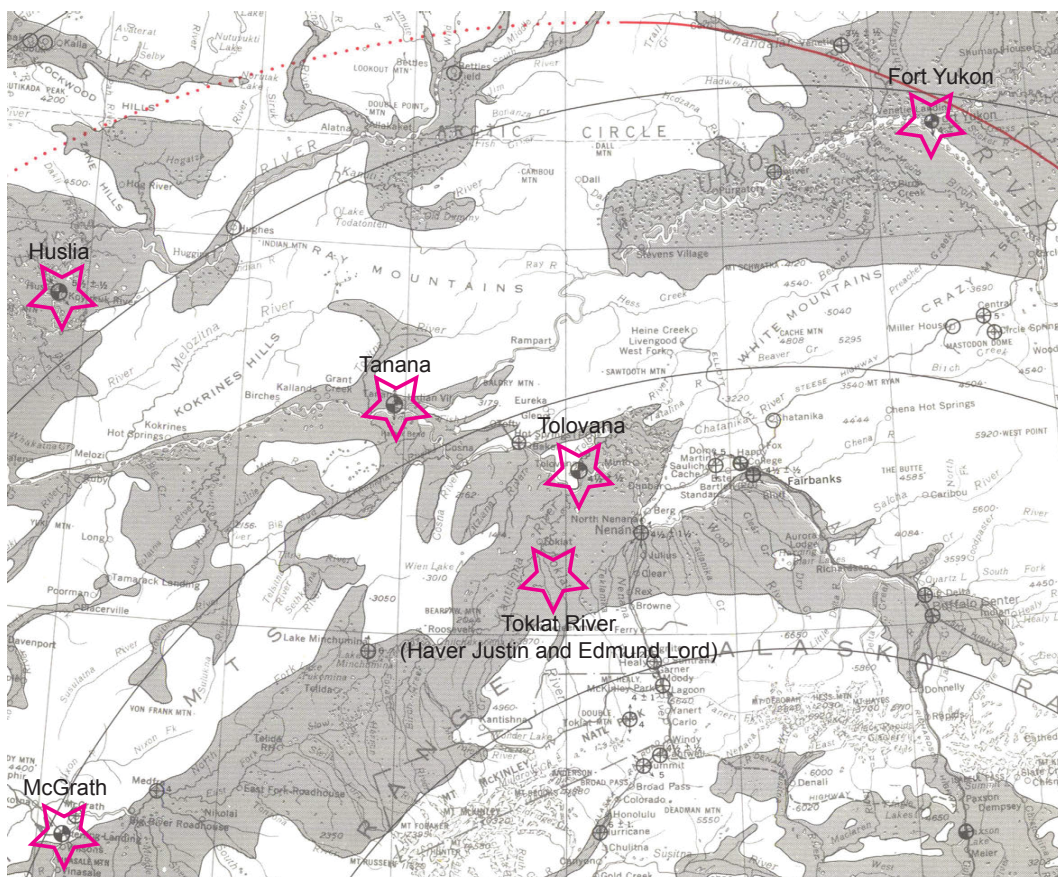
Excerpts from Plafker et al. (1969)

From p. G7:

CRACKED ICE

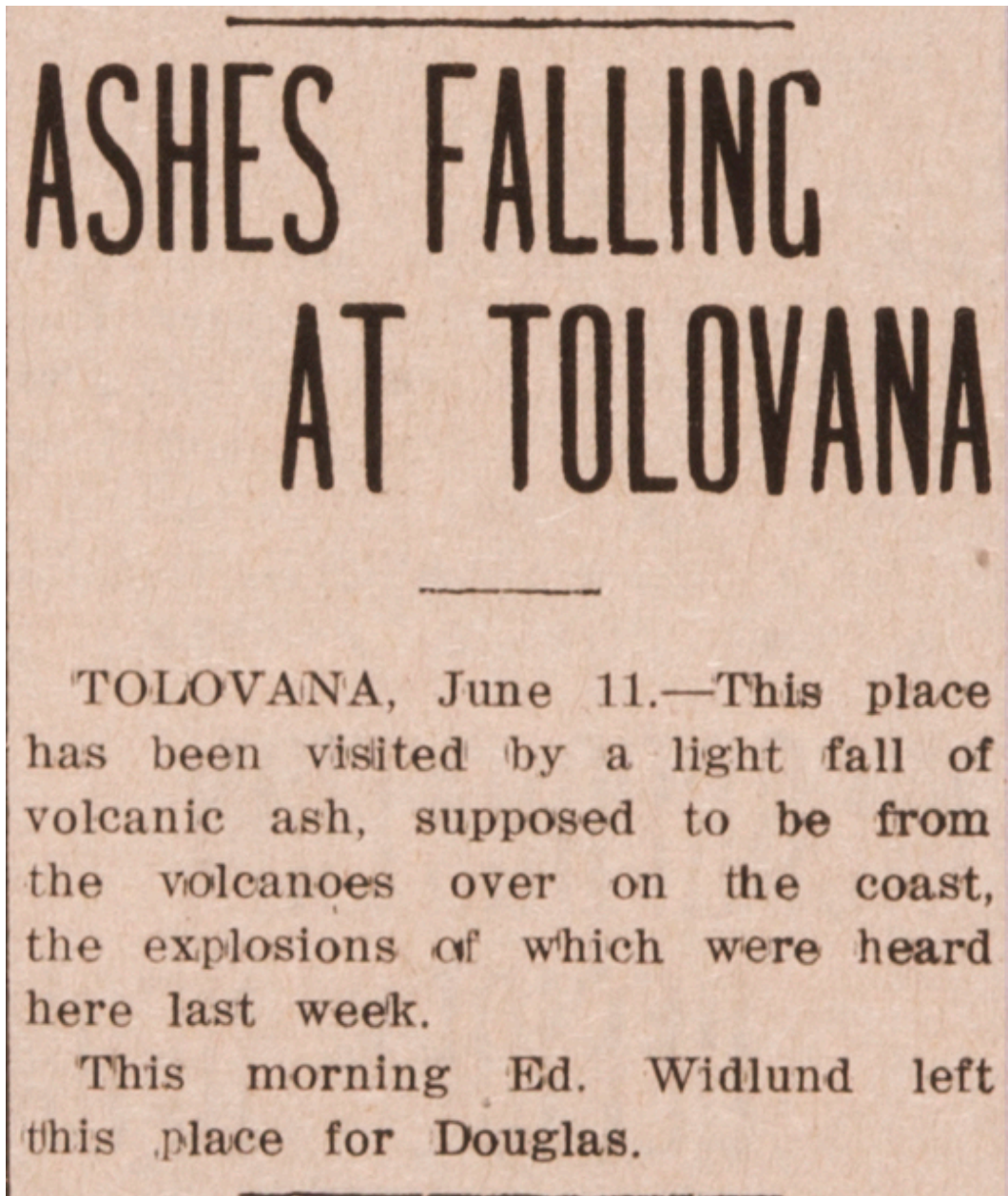
All, or nearly all, of the lakes and rivers in Alaska were ice-covered at the time of the earthquake; parts of the sea's surface, particularly in the north and along the shores of relatively calm inlets and bays, were also frozen. Within an area of 500,000 square miles, inland ice and also much sea ice was extensively cracked by the seismic vibrations (pl. 1). From the epicentral region, cracked ice was observed as far north as Wainwright on the Arctic coast, at Point Hope (775 miles distant), 400 miles east to Crillon Lake near Lituya Bay, and 430 miles west to the vicinity of Ugashik on the Alaska Peninsula. Ice on larger lakes and rivers tended to be more readily broken than that on smaller ponds and streams. Locally, pressure ridges were formed and blocks of ice piled one on another as a result of seiche waves in waters beneath the ice. Neither ice cracking nor ice shove caused any noteworthy damage to the communities of south-central Alaska.

Cracked ice in Interior Alaska due to the 1964 Mw 9.2 earthquake
annotations on an excerpt from Plate 1 of Plafker et al. (1969)



Fairbanks Daily News-Miner, June 11, 1912, p. 3

Paul Esau grew up near Tolovana, on the Tanana river, and he recalled his mother telling him about ash falling at Manlet Hot Springs. Very likely this story was about the ash fallout from the Katmai eruption in June 1912.



Fairbanks Daily News-Miner, September 21, 2014, p. E-1

Minto earthquakes then, now and tomorrow
by Ned Rozell

Sarah Silas, 89, smiled as she remembered an earthquake that shook her village more than 60 years ago. The floor of her cabin swayed so that her young son staggered away from her.

"My three-year old boy was laughing," she said inside her log cabin, its front door open to warm air on a golden day. "The ground was moving so much I couldn't even reach my little son."

Silas, with her husband Bergman a gracious host to a visiting seismologist, was one of a few people in this village of about 200 who remembered an earthquake in October 1947. The earthquake scientist, Carl Tape, was in Minto to interview elders and check on the installation of a super-sensitive instrument that detects ground motion.

A few blocks away at the Minto airport, two contractors were drilling a nine-foot hole that would soon be the home to a seismometer. That sophisticated earthquake detector is part of a plan to carpet Alaska with like instruments about every 50 miles, from the Alaska Peninsula to Barrow.

The EarthScope Project is a traveling band of seismometers that has blanketed the continental states in past years. This summer, technicians and scientists have installed 20 stations in Alaska, including the one in Minto. Next year, workers with the National Science Foundation-funded project will try to install 40 more seismometers in some of the loneliest spots in Alaska and the Yukon. If that goes well, 80 more installations will follow in 2016.

With Alaska peppered with the stations, which will record earthquakes for a few years before most are removed and used elsewhere, seismologists hope to find out more about weak spots in Earth's crust that slip to cause earthquakes. One of the more intriguing areas is the chain-of-lakes country outside the window of the Silases' cabin.

Tape, a researcher at the University of Alaska Fairbanks's Geophysical Institute, describes the Minto Flats seismic zone as a bowl of jellied soil the size of Mt. Everest. He is quite happy for the new seismometer at the Minto airport. It will help him and other scientists understand more about faults beneath the swampy, self-healing surface. When the ground slips there, it produces earthquakes like the magnitude 5.0 that happened 10 miles east of Minto on Aug. 30, 2014.

"In the past, you've had earthquakes in this region 1,000 times larger than two weeks ago," Tape told 25 students in the Minto school before he walked over to knock on the door of Bergman and Sarah Silas. Almost every kid in the class had a story about the recent earthquake. One girl said her parents thought a tree had fallen on their one-story cabin.

At the Silas home, Tape was recording Bergman and Sarah's stories of the 1947 earthquake, a magnitude 7.2. The Silases, married 70 years, both remembered intense shaking where they

Text supplement for recorded interviews with elders in Minto and Nenana about 52 earthquakes in Alaska (archived at University of Alaska Fairbanks)

lived then on the Tanana River, at a site about 25 miles away known as Old Minto. Villagers moved from Old Minto to here above the Tolovana River flats in 1969. With the relocation, Bergman Silas said, they entered a world with electricity, TVs and telephones.

"Before, we just lived by telling stories," Bergman said.

Now, the village of Minto has a scientific device that hears the Earth from beneath airport gravel. The instrument will record the passage of four wheelers, the tire bumps of the mail plane from Fairbanks and tremors in the ground from the restless lake country to the east. Seconds after earthquakes happen, scientists in Fairbanks and around the world will be able to see them for the first time with such exquisite detail.

Since the late 1970s, the director of the Geophysical Institute at the University of Alaska Fairbanks has supported the writing and free distribution of this column to news media outlets. 2014 is Ned Rozell's 20th year as a science writer for the Geophysical Institute.

Section E SEPTEMBER 21, 2014 features@newsminer.com or 459-7504

SUNDAYS

ALASKA SCIENCE FORUM



The view of Minto Flats from the town of Minto. PHOTOS BY NED ROZELL.

Minto earthquakes then, now and tomorrow

By Ned Rozell

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At her kitchen table in Minto, 89-year-old Sarah Silas remembers a 1947 earthquake.