Library Research for Natural Hazard Events: Earthquakes, Hurricanes, Volcanoes, and Wildfires - Transcript

Please stand by for realtime captions.

Good afternoon, everyone. Welcome. We have another terrific webinar for you today. My name is Joe Paskoski . I am with my colleague, Jaime Hays , and the webinar today is Library Research for Natural Hazard Events: Earthquakes, Hurricanes, Volcanoes, and Wildfires . With us today is our presenter, a long time presenter, Emily Wild. Let me read a little bit about Emily. She joined Princeton University's Lewis science library as a Chemistry, Geosciences and Environmental Studies Librarian in September of 2018. She has a bachelors of arts in geology from hardwood College and a Masters of Library information studies from the University of Rhode Island. From 2008 to 2018, Emily was a librarian at the U.S. geological survey, Denver library, where she helped library users find and use science and legislative materials, provide science and government outreach information, bibliographic instruction , as well as develop and present online and in person training sessions on topics such as chemical and physical properties of the atmosphere, rocket, sediment, water, crystal and geochemistry, geophysics, organic and inorganic chemistry, and transcend use and availability of mineral energy and water resources. From January of 1996 to July 2008, she was a U.S. geological survey hydrologist in the New England states, where she enjoyed fieldwork, report writing, and outreach, while also moonlighting as an academic reference librarian. Her scholarly interests include library instruction, reference, citation, and data management, raw and geospatial data sets, and physical and laboratory sampling methods. Before we get started I am going to walk you through a few housekeeping reminders.

If you have any questions you would like to ask, or if you have technical issues, please feel free to use the chat box, which is located in the bottom right-hand corner of your screen. I will keep track of the questions that come in. At the end of the presentation, I will read them back to Emily and she will respond to each of them.

We are also recording today's session and will email a link to the recording and slides to everyone who registered for this webinar. We will also be sending you a certificate of participation , using the email you used to register for today's webinar. If anybody needs additional certificates because multiple people watched the webinar with you, please email us, and include the title of today's webinar, as long as the name and emails for those participants. Desktop and laptop users may zoom in on the size being presented. Click on the fullscreen button on the bottom left-hand side of your screen. To exit, mouse over the blue bar at the top of your screen so that it expands, and click on the blue return button to get back to the default view.

At the end of the session, we will be sharing a webinar satisfaction survey with you. We will let you know when the survey is available, and the URL will appear in the chat box. We very much appreciate your feedback after the session, including comments on the presentation, style, and

value of the webinar. With that, I will hand the virtual microphone over to Emily who will take it from here.

[Silence]

Emily, we cannot hear you. I am not sure if you are trying to speak or not.

[Silence]

That is strange. We cannot hear Emily right now unfortunately.

Emily, can you hear us? We cannot hear you if you are trying to present.

It looks like we are having some technical difficulties here. I see her moving the dot, but we cannot hear Emily. Emily says that she can hear us, so, Emily, if you can try to reconnect your audio, it does not look like it is hooked up your quote you want to do on the top left is go to audio and then speaker, microphone/audio text. You're going to run your audio test again and connect your audio. So, Emily, we cannot see that your audio is connected anymore. I am not sure what happened to your audio. You're going to want to go up to audio and try to reconnect your audio. So, what you are going to want to do is up on the top and the bar you are going to want to go to "audio" and click on "audio conference." Then you want to pick the method you want to connect your audio, either through the phone or through a headset.

[Silence]

If you are just joining us, we are trying to have audio issues and trying to get Emily reconnect did.

[Silence]

Hello? Hello?

We can hear you now.

We hear you now. You are cut off for some unknown reason. We had a nice discussion before. Okay. Great. I am glad you are back.

You know, yeah, I was just thinking that one reason why I like doing this presentation is that when natural hazard events happen, people get disconnected. So, but, yeah, so that was, I guess it is appropriate. So, thank you for your patience. I guess I will get started. So, this is the, or, the earthquake from 1864, and Zeta, which is coming our way, and then I am going to put some things in the chat so you can follow along. These are just some links that may be of interest. Then, one of the wildfires in the national parks. Moving on. This is me. I was, as Joe said, I was a hydrologist and a librarian at the USGS. One of the things, I like to help students

here at Princeton find USGS information, but also linking the outreach information in the education into the publications and data and other types of information. One of the things I wanted to note is that if you are a new geoscience librarian, or if you are interested in geo-science librarianship, there is the session that we just gave on Monday. It is geosciences librarianship 101 and all of the presentations were put online recently. I have in working from, remotely, since March of 2020. One of the things I thought that would be fun to share is that my campus knows that we were working remotely, and campus is quiet because our seismograph, the size in meters in the geosciences department registered no movement. So I thought that would be a fun story to share. I don't know if your university has one as well, or if your institution, but that is something that Princeton has been following his noticing how quiet the campus actually is, or, when the students come back, and other things, so, another research question that came up one time was that, within cities, and rural areas, that have seismometers, they are looking at the data to see how quiet it has been with people. So, that is another interesting topic.

So, I have been doing these presentations for quite some time. I have put them in here more as just an FYI. And I have a guide that has all of them in one place. It was students faculty and my colleagues kept asking for me to just put them in one place, so, they are all there. I am just going to skip ahead a little bit. So, I will be talking about earthquakes, hurricanes, volcanoes, and wildfires. A lot of the educational tools and information tools that are use our online talks, education products in the USGS, and also tricks for data and maps, including real-time data, and a lot of publication sites and where to find the types of publications by these very specific subject areas. A lot of times in commercial databases, they do not always have them indexed or have the records in their. The access points are still available through the geological surveys under state geological survey, federal, or other type of source. So. And this is one of the, um -- Whoops. This is one of the links that I like to show people as well. The natural hazards for USGS, and also all of the different products in real time. So, even though I am no longer at USGS, I still pretty much use USGS information every day throughout the day. On the previous slide, but about 75% of my inquiries here at Princeton are basically how do I find USGS information and data, so, it, I like sharing the tricks to other people with other people, so.

One of the things that comes up a lot is that, here at Princeton, Harry Hess, he wrote the history of ocean basins in 1962, and that is where he outlined the theory of the mid Ocean residues spreading, and he is one of the pioneers of plate tectonics. So. Ends, another aspect is, okay.

Also, the Princeton University, this is a great lecture for new students are for the public interested in learning more about the history of plate tectonics. This is the geosciences lecture, 50 years of plate tectonics. This is Jason Morgan. In 1967 he discovered plate tectonics as a concept or theory. So, this is a video, it is almost an hour. A lot of students, and faculty use it, just to kind of, as an educational tool, but also, it is a great, it documents the 50 years very well. And it is only 50 minutes. So, that might be of interest. And then, within the USGS, there is a lot of educational videos. This is something that a lot of people don't realize and they do not think, within, when I was at the USGS we had a lot of lectures come and staff would go into the

different buildings, but there are also a lot of online presentations. But all of those videos are available to the public, and they are really, there is a lot of information, especially if there are current events. I believe they are still doing the session. So, these are some of the links that might be of interest for earthquakes. But there are many other topics as well, but I pulled these because these are the two that tend to come up the most. So, the different, you know, why, why, what, what are early earthquake warnings? What does that mean? So the scientists were visiting scientists explain different topics in a very, their tone is, and the way that they explain everything, so I like to use these, especially for the undergraduate evidence and when I help the public. Given earthquake happened somewhere and a question comes to Princeton, I kind of put together a series of information sources that can help understand why and how they are happening.

So the other aspect is the education sources. So, the USGS has a lot of basic information about just to understand why and how earthquakes happen. So Emma these are the two specific webpages that work on, well, for, especially somebody who is just learning how and why earthquakes are happening and where they are located, and one is my favorite figures to show people is they did you feel it. This is the figure here on the left. So, these are, these are two different earthquakes that happened. When is the West Coast and what is the East Coast. This is the one that happened in Virginia in 2011. As you can see, a lot of people felt it and reported that they felt it. This is one from 2004, which is about the same size and magnitude. And not that many, it didn't travel that far. So, what we always said when I was working at USGS is that the rocks are old and cold and The East End hot and young in the West. So, when people come from California to New Jersey or the Northeast, and they experience an earthquake, they, they ask, usually they contact me and think why is this different, and this is the one figure that I like to show people. So, this is a good figure of the plates and how they are kind of not necessarily overlapping, but how they are in relation to each other, and so, this is the United States right here. So, this is the East Coast and in the West Coast. So, the West Coast has a plate contact there. So, this is the earthquake glossary, which I pretty much use every day when I am explaining this type of information. There are many many other sources and explanations, and it is a good source, and they keep it updated as well.

And then, for earthquake monitoring, so basically, if somebody comes and says his earthquake just happened during looking for information about this earthquake area, can you provide a summary of what I would need to look at? So, sometimes I help other librarians that are in earthquake areas. And if they are new are just looking for more information, I basically make a kind of like a how-to list that walks them through how to find all of the information for their area. In some cases, they like to do their own public talk, so, or, teach a class, or, have a workshop, so, I like to put, or help them put together the information, because I think that the more information that you have and the more you can provide to your population, the better it is for understanding why and how earthquakes are occurring in your area, or if you are traveling, which I realize not that many people are doing right now, but, it is something that still might be of interest.

And so the other aspect -- Whoops. These are the real-time data and maps. I clicked this this morning. All of these earthquakes are what happened just today, and then the other earthquake posters that I like to show people, which is the image on the right, a lot of people do not realize that these are available on the link for the earthquake event. So, they are really helpful to explain what happened and it is a great summary of everything. So, the undergraduate students especially really like these when they are trying to understand the different areas that they are studying in class. So. But, these are the types of publications that are not necessarily in a library catalog, but they are still citable and they are still helpful. So, um -- And another question that I get quite often is somebody will come in and say, or, they will contact me and say, I need to know all of the earthquakes that have ever happened in this part of the country, or in this immunity, et cetera. This is an example of the earthquakes yesterday on the left, and then I clicked the Northeast. So, this is, and when I did this search, I did it from 1972 yesterday. And so, this, the size of this link. But, I wanted to make sure, if this is something that you need, or you want to learn how to find and use these different products better, I know that on the different tricks to searching, because the people that made them showed me how to do that and that was part of my job and I worked at the USGS to help people understand and use these different types of products for their area, or to help others, et cetera. So. I'm -- And then, when it comes to publications, so, there's the data and the publications. These are all of -- Any time an earthquake happens, what I do, I have a method for what I go through immediately. So Emma I search the geological Society of London, geoscience world, open GSI, and I like to see if they have updated anything on the USGS earthquake page. Sometimes they can do , quickly put the information together, and so -- These are all those links. And so, the earthquake publications are specific to the hazards research. So, when I worked at USGS and here at Princeton University, the question, when it comes to earthquakes that are not an event that happened just today or yesterday, a big event, it is usually about induced earthquakes, which are human-caused -- Excuse me, earthquakes caused by human activity. And so, they actually have a webpage and they have all of the research on it. And then I also show how to use the different databases to find the publications on this specific topic. Sometimes the terminology has changed through time, so, and then the other thing I like to show people is the USGS grant program, because not everybody realizes that the USGS hazards program for earthquakes actually gives away a lot of funding to academics and others who do research. So there is that grant program. So. And then, okay. So, this is, if someone has come in and says, I need to start paying attention to different types of earthquake research, so, I would go through, again, the American geophysical, the geological Society of America, and there is the AGI open access journal, and so there is information there as well. The three that are actually physically outside of my office since I was at Princeton was the, the, the, the, the, the bulletin of the seismological side of America is right outside of my door. I read that whenever it comes in print. But that was, let me put those links in. And so, another thing to keep in mind is that, because there is so much, I mean, some of these publications are subscriptions, but if a big earth event happens, the geological Society of London, geoscie nce world, a GU, and the geological Society of America, they actually open up the previously blocked content, so the example that I usually use is Haiti. When the earthquake happened in Haiti, they immediately released and they created a link to any research that they had that was related to Haiti. That was available freely to anybody because anybody researching it, they wanted to make sure that

there were no pay walls because it was a hazard event. So, that is what is different from other types of research is that if it is a hazard event, a lot of times publishers will immediately open up the contents to everybody. So, that is something to keep in mind. Okay. So, when, when I was at the USGS, I worked with two groups -- And there has been a lot of reorganization as well, but one was the group in Denver. Geology, geophysics, and geochemistry. There is another group that is geology, minerals, energy, and geophysics. At Princeton, this is a student that did this great documentary about how seismology can be used for things other than looking at just earthquakes and I thought that might be of interest. I don't want to give it away. But if you have a chance, it is a great video. So. Okay.

I think I am about caught up. I apologize. Okay. Oh, um -- Austin, people asking, what is the best way to find the research other than these different databases if you want to try to get everything. One of the things we have here at Princeton is anywhere access. I just wanted to show this in case anybody was interested in a. When I show the students how to do the research, I use a commercial databases but I also use Google scholar. It has some download of the anywhere access app or plug-in and you can just search. This search is an example since 2016. When you do the search it pops up. You have to click on the icon for Princeton if you are at Princeton. And it says it's a PDF. This is a one click PDF viewing for us. So, that is something that, it is quick, especially if it is an earthquake event or any other type of hazard event. The scientists are able to immediately access the content. So. And it is all linked to their catalog as well. Which I have some other examples later.

Hurricanes. So, with hurricanes, it is, there is a lot of them happening. I think that is why my call was dropped earlier, because it is pouring rain right now. And hurricanes ETA is on its way. So, I apologize, but, so, hurricanes are happening. This is one of the biggest years, so, one of the reasons why they are happening is because of other things happening on earth. So, I am not going to go too much into detail, but I have a lot of these stories, and there is a lot of research that Princeton is doing here. So, the group that does a lot with storms, and so, this is just, if you have some time, you can, um, check this out. And this is an example of how my job. Princeton is similar to my job when I was at USGS, because if there is a story in the news -- Here, um. Whoops. So, here is the link to the Hughes is caused warming will cause more slow-moving hurricanes, one climatologists. When that story came out I received a lot of questions because it was a Princeton story. They asked me in the library to find more information. So, the public can contact me as well. It is not just Princeton University people, because they just wanted to know how to find more information, more data, and other type of products about storms. So, I'm.

Speaking of storms. This is, from, whenever hurricanes happen, I use two different sources. I always use the NOAA information, and here at Princeton, a lot of the people that are in the geoscience department are affiliated with NOAA. So, here in Princeton, and , excuse me. So, this has been quite the, the year for tropical storms. So, these are all of the named storms for 2020. And then, so, the difference is that when the storm is coming, the NOAA is looking at it and doing predictions and they are preparing. They have tons and tons of data and models. Then, so, this is the one that is coming through right now. It, I'm. This is all from Noah. But

NOAA and USGS works together and when you are looking at coastal erosion and flooding and other aspects, that is where the data and information is for that, from USGS, so that is why this is the USGS hurricanes and this is the NOAA hurricane information. They actually work together. It is just that the data is similar, but it is looking at it differently. So, if you, if you are looking at this type of information, you want to make sure that you look at both and not just one or the other. It isn't one versus the other or anything. It is just two different aspects of the same storm.

So, this is an example. This comes up a lot whenever I show people real-time data. They want to know if, and they ask quite often, is this going to be available a year from now. The answer is yes. So, this is an example of the real-time data for the 2019 hurricane Dorian. You can still see the information, and the different rapid deployment gauges that are available. The data is still here, even though this storm is over. It is still within this application, even though it is considered not real-time anymore. It is over. So, this is something that, especially if you are dealing with any type of emergency, wildfires, hurricanes, et cetera, but there is the emergency operations., The hazard data distribution systems , and the other products that are from the USGS, it is incredibly helpful, especially if you received an inquiry from a student. These, this imagery, the image of the week type of information, that is incredibly helpful to a student that is learning more about that natural hazard, like a hurricane. And so, there are many more resources available as well. So, again, in Google scholar. I always do a search and within different years of hurricanes, and this example. So, I ran this example and found the first one is about Puerto Rico. After hurricane Rahab. So, this is something that, it is easier to find the information quickly within Google scholar and if we happen to have the anywhere access link, but if there are articles that are open access they will be available as well. So that is a good trick so then the real-time data maps. For volcanoes. Living on to the third topic.

This is the real-time data for this morning. So there were three volcanoes that are yellow.

This is something that, again with the online videos, there is a lot of information, and even now, people are still, especially students, are still interested in learning about Mount St. Helens. So, so these videos, especially if, there was someone that was at a smaller school, and they were asking me how they could purchase videos that were not that expensive, but, you know, they needed them for some of their classes. I started showing them all of these different videos and they were like, oh my goodness, I did not realize how many videos were in here. If you are looking to cut costs or you have budget problems, I highly recommend checking out some of these video collections, because they are talking about the information and it is all available for free. A lot of these sources go back decades because, even though they were the old way of doing videos, everything at the USGS was actually moved to digital. It was part of a project. So Emma for historical archiving reasons, so, I definitely recommend that.

So, this is another thing that I talk about quite often, because I get this question a lot from students, and also the public. What is the difference between the different types of volcanoes? So, this is basically the Mount St. Helens, they are chemically different. So, this is an example, using the major chemical elements forming igneous rocks. So, this is a basaltic flow and this is

more riot lytic. It is more explosive. It is kind of a rule of thumb. But there is tons more details. And much more aspects. The other aspects that can affected is the amount of water that is interacting with the magma, and there are videos about that as well that explain the science of that.

Okay, so, the other topic that comes up quite a lot, especially when I mention geology to people, and, you know, the proximity of Yellowstone, and this is a good map of, showing the different types of eruptions in the United states, and how long, or how far, the ash has gone. And, this is the Yellowstone -- Sometimes people are very concerned about if Yellowstone would erupt, and this is, this is all of the instrumentation that is being monitored right now. So, you can go live and check out all of that, those pages. And C. That information. So. It. Okay. This is another, the new Yellowstone hotspots. This is another image of the week, which is good if people are interested in, this is from May of 2019. So, if you are interested in this type of information, definitely keep checking the website, because they have the image of the week, or, I think we used to have, when I was there, I think they have combined the two information sources. And then again, Google scholar. And in this one, you can see the difference between what we had access to and what we do not. So, there is the view, or one of them, I think, so you can see the difference there, but, yeah, so, when you search volcano, most of the volcano information comes up about the active volcanoes, but there is tons, there is so much information in here, and I help people, by region, look at the different types of volcano. And, and I give the -- I help give them tricks about how to search for the specific other aspects of the volcanoes as well. But, if you don't, if you want to learn more about it, then you can use the volcano glossaries as well.

Okay, so, wildfires. So, this has been an interesting year or interesting summer for a lot of different natural hazards. I do not think, every week there has been a natural hazard inquiry that is intense, because there is just so much that has been happening. So, I clicked this real-time map from this morning, and one of the things I wanted to note, because I do so receive this question because some of my old presentations have Geo Mac in it and it is kind of retired, so the new map is this one. So, this is, these are the links. Here. So, they, they have the information up there for, you know, still that, that Geo Mac, it is the website, but it is not updated. So, the one that has been on the news the last couple of days is in Colorado. So, these are all of the fires burning in Colorado right now. I zoomed in just because a few people have asked about this, Rocky Mountain national Park. So, basically, there are fires burning on both sides of it. This is Estes Park and Grand Lake, and this is the Continental divide. So.

There is also that and that has more information as well, and context information if you live in the area.

And then, when I help people as well, is to understand that, even though it is the geological survey, they do a lot of fire research. One of the reasons why they do fire researches because after the fire is done, there is also in the fire is happening there is an overlap within the landscape of the mining. So, sometimes there is mining activities that might be harmful to the firefighters. That is something that they tend to look at. They include that in their maps and

they are putting all of that information together. There is also the post-fire debris flow that can be very dangerous. These are just some other aspects of fire science, again, from those public lecture videos that may be of interest.

And then some of these are more images from arrows, the earth resources observations in science center. So, the reason why I included these is because, it is not just fires in the United States. They actually take images of fires all over the world. So, this, these links actually, within this imagery gallery, they have more than just, they have the earthquakes, they have the volcanoes, they have wildfires, they have floods, and it is not just, it is everywhere. So, if something big is happening, I always recommend to check out that image gallery to look at the image of the week, or the other, their newsfeed, because, and to keep up with that, because they will probably post something about it.

Okay, there is also other information, sources from state and local governments. I think somebody -- I had several questions about this actually when it happened in Arizona over the summer. So, this is different hazards. In Colorado, when I was living out there, there was some landside areas that had cameras on them, and the rivers or just the side of the mountain. They were to make sure that they could visually see any change or slump in the landscape.

And then, I showed the Google scholar search, just to, um -- This is just a quick example of , and resilience and wildfire, that comes up quite a lot. So, but, it is easy to search. And if you don't have, you don't necessarily -- Google scholar does pick up a lot of it because they still are having, they have the analytics, the Google analytics in there to pick up the literature. And so --

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Okay. I, I think I dated on time. So, thank you. I apologize, again, for my technical difficulty. I do want to point out that if you want to stay in touch with other librarians doing geoscience information, there is the geoscience information society. I invite you to subscribe to the GEONET listserv. I am the moderator of the listserv so if you want to be added you can contact me directly at ewild@princeton.edu . If you are also interested in learning more and getting updates about disasters and the United States and in the world, I am part of, I have been subscribing to the disaster librarians and information professionals group. It is through the NLM and IH but it is the disaster outreach group. So, anytime there is a disaster anytime in the world, they actually do post. So, my next webinar is in November. I was going to talk about different fun art sources for chemistry, geosciences, and environmental studies. To give you a preview, this is an old picture of the geological survey art room. And then this is the Princeton University, one of the Princeton University Art exhibits that is online. If that isn't of interest.

Hi, Emily. You still there?

Yes.

Hi. Are you ready for questions? Did you have some more that you wanted to cover?

No, that is it.

Thank you very much. Another terrific webinar. Emily has presented many. If you look in our webinar archive, you can search and easily pull them up on the sides and everything else. They are fantastic. Let's see. Please chat any questions into the chat box, please. We have a little bit of time before 3:00, when we have to and. Jennifer makes the comment, question, I should say. Do the hazard articles remain away forever after the event?

[Indiscernible - overlapping speakers]

When they unlock subscription content a bit open for a very long time. For the Haiti content I think it was 7 years, and it was very, they still, what they do is they, they, you can always contact them and ask when the situation, if you do not have access. They, they want to make sure that it is a safety issue, is the way that a lot of the geoscience publishers see it. So, you will see most of them, the authors, want to publish is open access, but if, if they don't, the publisher themselves will open it up for emergency reasons. So, there is an emergency window. But it is not just, like, the week at the hazard is happening. It is longer than that.

Great.

Edward makes the comments, the U.S. Census on the map for emergency management resources may also be of interest for ephemeral emergency/hazard events. That is a good comment. Please keep those questions coming. If you want to put the satisfaction survey in and the links to the archives, that might be good, in the chat box. Please fill out the satisfaction survey, and check out the links for our archives for our past webinars and other events.

We just had a recent conference last week, so all of the events, recordings, per our virtual conference, are up. Check that out. Let's see if we have any other questions. We have some shout outs. Excellent, thank you. I, I tried to pronounce your first name last time and cut into it and I apologize. Rodriguez, I will say, says, are there some links for this information in Spanish?

Yes, please email me, because we, the, yes, there is, there are. Anything, depending on what part of the world it is, there is that, that event will be in multiple languages. So, for example, everything that we did for Puerto Rico is in English and Spanish when I was at USGS. Likewise, if something happens in Italy, or another country, it is in the, it is in multiple languages. A lot of outreach information is available in multiple languages. So, yes.

Great. Let me see if we have any other questions. A bunch of shout outs flowing in. Thank you. Thank you. Very interesting. Great resources. Great resources. Thank you. There it is. There. The satisfaction survey. There is some information about our archives. Very easy to search. Emily's webinar and past ones 15, 16, 17, but there are a lot and they are all great. And, like I say, our virtual conference last week, all of those presentations are there. So. That a look. Let's see. Oh, when the moderator mentions the website, what is the URL to that? I think Jamie just put in, Mike, I think she just put the links for that, if you could give that a look, that should be what you want, I believe. It is a little search box, and all of Emily's webinar should pull up in

that. Any other questions for Emily? I had I had a question myself. You may have covered it. I apologize if you did. You mentioned all of those earthquakes, and quite a few, I guess every day. But, what, what power do they have to be for the average person to be able to feel the earthquake?

Oh. I left that slide out.

Okay.

So, actually, it, I know this from just working at the USGS for so long. It is around the 2. You can actually feel around a 1.5 and a 2. We used to have a chart, and, it, it depends on how, if you are on hard rock or soft rock. So, in Rhode Island, people that were on bedrock felt things more quickly, or intends, then if you are on soft rock.

So, most of these webinars, I mean, most of these earthquakes would be, like, less than that, I guess.

So, that is why, yes, so the default in the databases 2.5.

Okay. But you can, yes, so, there is a chart that we have. I don't know if I can find it. I guess, my previous employer has. It is basically every magnitude and what it feels like.

Oh, I see. Okay, that's great.

It is really helpful. I apologize that I left that out. It is really helpful --

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If you, if you come across it, email me and I can send it out to the registrants.

Okay, yeah Emma I will do that. I realize after, yes, I apologize.

No worries. Everything is great. Luis says thanks. I wanted to get an image of the week is an automatic thing. Is that possible? Some kind of automatic mailing on that? Is that, is that, is that what you were talking about, Louise? Some kind of subscription there?

Yes, it, it, E.R. O's.USGS.gov. And then, on the bright side you click on the gallery, the image gallery, and then it is the image of the week. That pops up.

Great.

Yeah. So.

Keep those questions coming. We have a little bit of time. Let me mention upcoming webinars. This is the last one for October. We have four more scheduled so far for November. The next one is on Tuesday, November 10th, entitled de-clutter, curate, and refresh. Make a big impact

with small changes at your federal repository library. So, , please give that a look. You can also volunteer, to present a webinar like what Emily has. So, on any topic related to government information. So. Please think about that. There is a web form. Oh, here we go. Here's a question. Here. Steve says, does the USGS do any research with tornadoes?

Yes, they do. They, they work, they, NOAA, NOAA is actually the primary federal agency for that, but they do do work on tornadoes. As far as the landscape part. So, the imagery, a lot of the image, if a tornado comes through, make sure to check out arrows. They will capture the image and they have that information in that. So, but they look at it from a landscape aspect. So. But they do have the journey to research.

Great. Super. Any other questions for Emily. Go ahead Emily.

I was going to say, I found it and I put it in a chat. It is "what does an earthquake feel like.". I put that webpage in their peer get has the summary of everything.

Fantastic. I will definitely give that a look. I know we experienced one, like you said before the webinar, and 2011 in Washington. Who would've thought Washington gets an earthquake.

Yeah. Yeah. When I used to do ask USGS, so there is a phone ask USGS were people call in, and then there is also the website and I used to do both. And the most common question I received was Emma it felt like a truck went by, but can you check to see if there was an earthquake.

That I will look it up and I will say yes, actually, that was an earthquake, so I do that for people, even still, because sometimes people do not know if it was an earthquake, and recently we might yeah, we had one here in New Jersey recently, and that is exactly what happened. I started receiving text messages for my colleagues, and they were like, was that an earthquake. And I was like, yes, here is the link. So, yeah.

A couple more minutes, audience. It's a great, I wish we had another hour or so. But we don't. Unfortunately we have just until 3:00. So, more shadows coming in. Anybody has any more questions for Emily, please, in the next minute or two, please get those in.

I wanted to mention that last link that I put in is an FAQ database. So, that is something where the database itself, you can just type in a question, and it is based on all of the questions that the USGS receives, and they come up with the answers.

Oh. Great. I will have to check that out.

It is almost like a graduate seminar, when I am in your webinars. There is so much information. They are incredible.

It is interesting, because that is what the graduate students say.

I think it is amazing.

Yeah, when I meet with them, they are like, whoa.

I mean if you put the slide decks together, you get a terrific textbook.

Actually, yes. That is why Princeton asked me to make sure that I put everything together, and then starting to compile more of it. But, yeah, I am teaching, I am teaching them internally, but I might, I mean, if anyone is interested, I could teach them publicly, but, I am teaching a virtual geology field trip through Princeton, to the Princeton students. But, I would be happy to, if anybody was interested in having it through this. It is using the federal documents traveling through the world.

That would be terrific.

But, yeah, keep in touch.

Great. Great. We do have a -- A -- A question here. Let me see. Does USGS have materials geared towards children?

Yes. There is a lot. So, go to education.USGS.gov, and it is broken up by subject. So, I did put a lot of the links in here for education by those topics, so, earthquakes has one of the best education tools for kids, but volcanoes has one . There is one for flooding. It is the water, the water one.

Great.

Oh, gosh. Yes. They do, a lot of them are based out of the education.USGS.gov webpage and that is actually what I use when I teach the undergrads, and the graduate students, he is a lot of those pages, because it is broken up as K through three, four through six, seven through 12, and then undergraduates and graduates. That is how that education page is organized. And I was part of that at one point, so, I can find stuff quickly.

Great. Great. Mike agrees with me that the depth of your information, I think we are getting close to closing out. A lot of a lot of a lot of , it is 2:59. Yeah, I should probably closeout reluctantly, very reluctantly. Thank you, Emily, again, for another fantastic webinar. She is coming back in November. These look at your calendar for that, and thank you, Jaime Hays, for being a good tech support person, and thank you audience. Come on back on November 10th. Have a great rest of the day. Thank you.

Thank you.

[Event Concluded]