

## Introduction

**Kirsten:** You're listening to the NCDPS Safety Scoop, a podcast that dives into the stories of the people, programs and resources within the North Carolina Department of Public Safety. Each episode will give you the scoop from department personnel on how NCDPS enhances the safety of the people of North Carolina.

[Music]

[Pause]

## Season 2 Episode 13

**Kirsten:** North Carolina experiences a wide array of natural hazards, from wildfires to tornadoes, hurricanes to flash flooding. Depending on the region you live in or visit, It is important to keep these hazards in mind. Several of these hazards allow for lead time for those who may be impacted to prepare or evacuate, if needed. However, there is a hazard that provides zero lead time, and many people may not even think to prepare for. That hazard is an earthquake. An earthquake is a sudden, rapid shaking of the earth caused by breaking and shifting of underground rock. Earthquakes can cause buildings to collapse and heavy items to fall, resulting in injuries and property damage. Earthquakes can instigate fires or road damage. Other natural hazards like landslides, avalanches and tsunamis can result from earthquakes, as well. While earthquake hazard varies from region to region, most of the southeast can and have experienced earthquakes. The earliest earthquake on record in North Carolina took place on March 8th, 1735, and there have been several other earthquakes of note since. On today's podcast, we have two familiar voices returning to discuss earthquake preparedness for North Carolinians.

I am here with Kevin and Laura with North Carolina Emergency Management, and the topic of the day is earthquakes, so before we get started on our conversations, I just would like to give you guys the opportunity to introduce yourself to our listeners, even though both of you have been on previous podcasts. But just in case, wanted to give you guys a chance to introduce yourselves and give a little bit of insight of what you guys do with Emergency Management. Kevin, we'll start with you.

**Kevin Kalbaugh:** Hey! Hello, everyone. I am Kevin Kalbaugh, the natural hazards branch manager at North Carolina Emergency Management. I've been with the agency since 2016. My background is in meteorology, so while earthquakes aren't really a weather hazard, they are one of our natural hazards. They do threaten the state, so we have become mini earthquake experts in regards to earthquake preparedness and safety in North Carolina.

**Laura Youngman:** And I'm Laura Youngman. I work with Kevin. I am also a meteorologist and planner with North Carolina Emergency Management. Also, background in meteorology.

**Kirsten:** Alright, thank you. So, Laura, the first question for you—and it's just a very general one, just to kick off our topic—does North Carolina experience earthquakes at all?

**Laura:** Yes. So, North Carolina does typically see a few earthquakes every year. They typically do occur in the mountains, and oftentimes they're so small that they aren't felt widespread. Strong earthquakes in North Carolina aren't as common, but we have seen 23 damaging earthquakes to N.C. since 1735 with the last one being the Sparta earthquake in 2020 that occurred in Allegheny County.

**Kirsten:** Thank you. And so, Kevin, as Laura stated, we have seen around 23 recorded earthquakes for some time in North Carolina. So, what kind of damage or hazards do earthquakes pose in our state, and what kind of damage have we seen in the past with these 23 previous earthquakes?

**Kevin:** Right. Unfortunately, in the—in the East Coast of the United States, it doesn't take much shaking to cause significant damage. So, speaking of the 2020 Sparta earthquake, we saw over 500 reports of damage to homes and businesses. Some of those were actually, like, major, major damage resulting in millions of dollars of loss and repairs. We also saw millions of dollars worth of damage to public infrastructure. So, with the Sparta earthquake, we saw lots of damage to chimneys and bricks falling off homes or even falling through homes. We saw several reports of cracked foundations and then also damage to roadways with buckled roads and water main breaks.

When we think about earthquakes in the eastern United States, a lot of people think about the Charleston 1886 earthquake. And even though that was centered in South Carolina, that actually produced stronger shaking over North Carolina than the—than the Sparta earthquake, especially along the North Carolina-South Carolina border.

**Kirsten:** Alright, and with a lot of natural hazards within N.C. Emergency Management, we like to talk a lot about preparedness; however, with earthquakes they can happen at any time with essentially no warning. So, Laura, what should people know about reacting to earthquakes and where they are?

**Laura:** So, we typically see most injuries occur—that occur from earthquakes are from objects falling on people, so this is why it's recommended to drop, cover and hold on. So, you want to get down on the floor when that shaking starts and take cover either under a sturdy desk or some type of furniture, and if you can't, you don't have any furniture near you, you just want to crouch against an inside wall, keeping your head and neck safe by using your arms, and then you want to hold on to that sturdy furniture and be ready to move with it during an earthquake

**Kirsten:** As Laura mentioned, if an earthquake happens, protect yourself right away. Drop, cover and hold on or lock, cover and hold on. Earthquake response may

look different for individuals dependent on mobility, but this is the best method to protect yourself when the ground shakes.

**Drop:** Drop where you are onto your hands and knees. If using a wheelchair or walker with a seat, you will start your response with “lock.” Make sure your wheels are locked and remain seated until the shaking stops.

**Cover:** Cover your head and neck with your arms. If a sturdy table or desk is nearby, crawl underneath it for shelter. If no shelter is nearby, crawl next to an interior wall away from windows.

**Hold On:** If you are under a table or desk, hold on to it with one hand and be ready to move if it moves. If you can't find a table or desk, hold on to your head and neck with both arms and hands. If seated and unable to drop to the floor, bend forward, cover your head with your arms and hold on to your neck with both hands.

[To Guests] Does that response differ if someone's on the roadway?

**Laura:** Yes. So, if you are driving in a car when an earthquake does start, you want to pull over whenever that's safe, and then you want to put on the emergency brake as soon as you can.

**Kirsten:** There are different ways to respond when an earthquake happens, depending on where you are. If you're in a vehicle, as Laura said, pull over and stop. Set your parking brake to be safe. If you are in bed, turn face down and protect your head and neck with a pillow. If you are outdoors, stay outdoors away from buildings. Never get into a doorway, and do not immediately run outside.

Just to kind of continue on this train of thought, does someone's response differ or can the hazards differ depending on where someone is in the state?

**Laura:** Yes. So, depending on where you are in the state will change the potential hazards you could see after an earthquake occurs. So, if you are in the mountains, we can see earthquakes trigger landslides, whereas if you were closer to the coast, if one were to occur, this could trigger liquefaction of the ground. Our overall threat for tsunamis in North Carolina is fairly low; however, if an earthquake were to occur somewhere else, this could increase that threat.

**Kirsten:** Kevin, is there any way North Carolinians can prepare for an earthquake?

**Kevin:** So, the easiest way to prepare is to practice the drop, cover and hold on. So, here in October we do have our annual ShakeOut Drill. So, that is the easiest way to prepare for—for an earthquake because that allows you to know what to do when shaking begins. Other ways to prepare for an earthquake would be securing large and heavy furniture and appliances to the walls and moving kind of those heavier and breakable items to lower shelves within your homes.

Because, again, those items falling are typically the most common hazards when we have earthquakes here in North Carolina.

Another way to prepare would be buying straps for water heaters in your home. That's a cheap way to potentially reduce an expensive damage. I also recommend checking with your insurance company about earthquake insurance. And then, again, just register for ShakeOut at [shakeout.org](http://shakeout.org). Once you register, they will email you some other preparedness tips when it comes to earthquake safety. And when it comes to other, any hazard, having an emergency plan and an emergency supply kit for you and your family.

**Kirsten:** So—so you mentioned the Great ShakeOut that's happening on October 19th. So, why should people sign up to participate?

**Kevin:** ShakeOut is the world's largest earthquake drill, and again, that occurs annually every October. And it's where people practice what they should do when they feel shaking, again 'cause you only have seconds to protect yourself before strong shaking either could knock you over or something falls on you. As you mentioned, this year ShakeOut is on October 19th at 10:19 a.m. but individuals or organizations can practice any date and time that works best for them, though what ShakeOut does, it allows you to practice so you know what to do immediately when you feel shaking begin. And while earthquakes aren't as common in North Carolina, it does allow you to know what to do if you are traveling to an area where there's a greater threat for strong earthquakes. Like I mentioned earlier, after you register, you will be emailed tips for earthquake safety and preparedness. And then after you register, it does promote preparedness, and again, we are trying to promote a prepared community within North Carolina and elsewhere.

**Kirsten:** And that's a really good point. I—I like how you mentioned that just being prepared for situations that may occur while you're either traveling for work or on vacation, and that is a personal responsibility for someone to be prepared for all situations. But we definitely want North Carolinians to be safe no matter where they are. So, Laura, what do our listeners need to know about aftershocks?

**Laura:** So, while the original earthquake is always the strongest, we can see significant aftershocks or smaller earthquakes occur for days and weeks afterwards, and these are capable of causing additional damage. So, the main thing to know is just to remain prepared, and don't let your guard down after that initial earthquake is over.

**Kirsten:** What resources can either of you share for our listeners to learn more about earthquakes and how to prepare for them?

**Laura:** So, there's a few websites our listeners can visit. So, one of those is the [deq.nc.gov](http://deq.nc.gov) website, and on there they can go to the Geological Survey where they can learn more about the history and information on North Carolina

earthquakes. They can also visit the [readync.gov](http://readync.gov) website, and on there, there's a "stay informed" tab where they can then go to North Carolina hazards. There's an earthquake section that can help you learn more about being prepared before, during and even after an earthquake. And then as talked about earlier, the [shakeout.org](http://shakeout.org) website is also a great resource for all things earthquakes.

**Kirsten:**

If you are in an area impacted by an earthquake, keep yourself safe from potential hazards. Exit or stay away from damaged buildings. Use caution around downed power lines. Once you're in a safe place, listen to local news reports via battery operated radio, TV, social media or sign up to receive cell phone text alerts for emergency information and instructions. Be very careful during post-disaster cleanup of buildings and around debris. To practice your earthquake response, sign up for the Great ShakeOut Drill on October 19th. There are more than 400,000 people registered to participate this year for North Carolina, including over 100 schools or school districts. 1.8 million people are currently registered to participate in this year's drill throughout the southeast, and more than 50 million people will be participating worldwide. Get more information and register at [shakeout.org](http://shakeout.org). That's s-h-a-k-e-o-u-t dot o-r-g.

As always, we remind you to be sure you have an established communication plan and emergency kit for all individuals in your household. A family communication plan is a surefire way to connect with members of your household if a natural disaster happens when you are in different locations. Including out-of-town or out-of-state contact in this plan. Texting can be a great way to communicate during a disaster, as phone lines can get congested. In addition to all the resources listed in this podcast, you can also go to [readync.gov](http://readync.gov) to learn more about North Carolina hazards and how to prepare for them.

**Conclusion**

[Music]

**Kirsten:**

This is the Safety Scoop, a podcast written, produced and edited by the NCDPS communications team. The mission of the North Carolina Department of Public Safety is to safeguard and preserve the lives and property of the people of North Carolina through preparation, prevention and protection. Follow the department on social media for a closer look at ongoing initiatives and resources. We're on Facebook, X (formerly known as Twitter) and Instagram at NC Public Safety. Special congratulations to Laura on her recent nuptials. In previous podcasts, she was introduced as Laura Silver. If you enjoyed today's episode, be sure to subscribe to the Safety Scoop on your favorite podcast app. I'm your host, Kirstin Barber. Thanks for listening.

[Music]