Common Natural Hazards

These are common natural hazards that may impact your Tribal planning area. This list is intended to be a starting point to build knowledge of natural hazards and is not an exhaustive catalog of hazards or data sources.

In addition to the links below, the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information hosts the Storm Events Database (https://www.ncdc.noaa.gov/stormevents/). This is an excellent resource that includes previous hazard event information for a variety of natural hazards and severe weather events.

HAZARDS	DESCRIPTION	FOR MORE INFORMATION
Avalanche	Avalanche is a mass of snow or ice and other material that may become incorporated therein as such mass moves rapidly down a mountain slope. Avalanches are the rapid downslope movement of snow, ice, and associated debris such as rocks and vegetation. Avalanches occur in mountainous areas generally above 8,000 ft. elevation, and most commonly occur from November through April. Avalanche occurrence is directly related to topography, climate, vegetation of the area. (Colorado Geological Survey, 2019)	National Avalanche Center https://avalanche.org/
Drought	Drought is defined as a deficiency of precipitation experienced over an extended period of time, usually a season or more. Droughts increase the risk of other hazards, like wildfires, flash floods, and landslides or debris flows. This hazard is often a concern when the economy is dependent on farms and other water-dependent industries, water-dependent recreation uses, and residents who depend on wells for drinking water. (National Drought Mitigation Center, 2018; Ready.gov 2018)	National Drought Mitigation Center https://drought.unl.edu/ National Integrated Drought Information System https://www.drought.gov/
Earthquake	An earthquake is the motion or trembling of the ground produced by sudden displacement of rock usually within the upper 10-20 miles of the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of underground caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons, and disrupt the social and economic functioning of the affected area. (Ready.gov, 2018)	US Geological Survey (USGS) Earthquake Hazard Program https://earthquake.usgs.gov/ National Earthquake Hazards Reduction Program (NEHRP) https://www.nehrp.gov/
Extreme Cold	Extremely cold air comes every winter in at least part of the country and affects millions of people across the United States. The arctic air, together with brisk winds, can lead to dangerously cold wind chill values. People exposed to extreme cold are susceptible to frostbite and hypothermia in a matter of minutes. (National Weather Service, 2018)	Ready Program: Winter Weather https://www.ready.gov/winter-weather National Weather Service https://www.weather.gov/safety/cold
Extreme Heat	Extreme heat often results in the highest number of annual deaths of all weather-related hazards. In most of the United States, extreme heat is defined as a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees. (Ready.gov, 2018).	Ready Program: Heat https://www.ready.gov/heat National Weather Service https://www.weather.gov/phi/heat

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Flooding Hazards **May include: Riverine Floods; Coastal Floods; Flash Floods; Ice Jams**	Flooding is the temporary condition of partial or complete inundation of normally dry land. Riverine flooding originates with inland rivers or streams. Coastal flooding originates with the sea. (FEMA, 2018) Flash flooding is usually a result of heavy localized precipitation falling in a short time period over a given location, often along mountain streams and in urban areas where much of the ground is covered by impervious surfaces. (FEMA, 2018) Ice jams are a form of winter flooding which occurs when warm temperatures and heavy rain cause snow to melt rapidly. Snow melt combined with heavy rains can cause frozen rivers to swell, which breaks the ice layer on top of a river. The ice layer often breaks into large chunks, which float downstream, piling up in narrow passages and near other obstructions such as bridges and dams. (Northeast States Emergency Consortium, 2018)	FEMA National Flood Hazard Layer https://www.fema.gov/national-flood-hazard-layer-nfhl FEMA Map Service Center https://msc.fema.gov/portal/home USGS Flood Event Viewer https://stn.wim.usgs.gov/ NOAA Coastal Flood Exposure Mapper https://coast.noaa.gov/floodexposure/ US Army Corps of Engineers Ice Jam Database https://icejam.sec.usace.army.mil
Hail	Hailstorms occur when ice crystals form within a low-pressure front due to the rapid rise of warm air into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until, having developed sufficient weight, they fall as precipitation in the form of balls or irregularly shaped masses of ice greater than 0.75 inches in diameter. Hailstorms can cause significant damage to homes, vehicles, livestock, and people. (FEMA, 2018; NOAA, 2018)	National Weather Service https://www.weather.gov/jetstream/hail National Severe Storms Laboratory: Severe Weather 101 – Hail https://www.nssl.noaa.gov/education/svrwx101/hail/
Hurricane, Tropical Storm, Nor'easter	Hurricanes, tropical storms, and nor'easters are classified as cyclones and are any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise (in the Northern Hemisphere) and whose diameter averages 10-30 miles across. Potential threats from hurricanes include powerful winds, heavy rainfall, storm surges, coastal and inland flooding, rip currents, tornadoes, and landslides. The Atlantic hurricane season runs from June 1 to November 30. (NOAA, 2018; Ready.gov, 2018)	National Hurricane Center https://www.nhc.noaa.gov/ NOAA Historical Hurricane Tracks https://coast.noaa.gov/hurricanes/
Landslide	In a landslide, masses of rock, earth or debris move down a slope. Landslides can be caused by a variety of factors, including earthquakes, storms, fire, and human modification of land. Areas that are prone to landslide hazards include previous landslide areas, areas on or at the base of slopes, areas in or at the base of drainage hollows, developed hillsides with leach field septic systems, and areas recently burned by forest or brush fires. (USGS, 2018)	USGS Landslide Hazards https://www.usgs.gov/natural-hazards/landslide-hazards
Lightning	Lightning is a giant spark of electricity resulting from the build-up of positive and negative charges within a thunderstorm. The flash or "bolt" of light can occur within the thunderstorm cloud or between the cloud and the ground. Lightning is a leading cause of injury and death from weather-related hazards. Although most lightning victims survive, people struck by lightning often report a variety of long-term, debilitating symptoms. (NOAA NWS, 2018 and Ready.gov. 2018)	Ready Program: Thunderstorms and Lightning https://www.ready.gov/thunderstorms-lightning

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Sea Level Rise	Sea level rise is the rise of ocean levels primarily driven by thermal expansion, or water expanding as temperatures rise, and melting land ice adding more water to the ocean. (US Global Change Research Program, 2019)	NOAA Sea Level Rise Viewer https://coast.noaa.gov/digitalcoast/tools/slr.html US Global Change Research Program: Sea Level Rise https://www.globalchange.gov/browse/indicators/global-sea-level-rise
Severe Winter Weather	A winter storm is a storm in which the main types of precipitation are snow, sleet, or freezing rain. A winter storm can range from a moderate snowfall or ice event over a period of a few hours to blizzard conditions with wind-driven snow that lasts for several days. Most deaths from winter storms are not directly related to the storm itself, but result from traffic accidents on icy roads, medical emergencies while shoveling snow, or hypothermia from prolonged exposure to cold. (NOAA, 2018)	NOAA Severe Weather 101 – Winter Weather https://www.nssl.noaa.gov/education/svrwx101/winter/ Ready Program: Winter Weather https://www.ready.gov/winter-weather
Subsidence, Sinkhole	Land subsidence is a gradual settling or sudden sinking of the ground surface due to the movement of subsurface materials. A sinkhole is a subsidence feature resulting from the sinking of surficial material into a pre-existing subsurface void. Subsidence and sinkholes are geologic hazards that can impact roadways and buildings and disrupt utility services. Subsidence and sinkholes are most common in areas underlain by limestone and can be exacerbated by human activities such as water, natural gas, and oil extraction. (USGS, 2018)	USGS Groundwater Information: Land Subsidence https://water.usgs.gov/ogw/subsidence.html
Tornado, Wind Storm	A tornado is a narrow, violently rotating column of air that extends from the base of a thunderstorm to the ground. About 1,250 tornadoes hit the U.S. each year. Damaging winds exceeding 50-60 miles per hour can occur during tornadoes, severe thunderstorms, winter storms, or coastal storms. These winds can have severe impacts on buildings, pulling off the roof covering, roof deck, or wall siding and pushing or pulling off the windows. (FEMA, 2014 and NOAA, 2018)	NOAA Severe Weather 101: Tornado https://www.nssl.noaa.gov/education/svrwx101/tornadoes/ Ready Program: Tornadoes https://www.ready.gov/tornadoes
Tsunami	A tsunami is a series of giant waves that happen after underwater movement due to a variety of natural events such as earthquakes, volcanic eruptions, landslides, and meteorites. The waves travel in all directions from the area of disturbance, much like the ripples that happen after throwing a rock. The waves may travel in the open sea as fast as 450 miles per hour. As the big waves approach shallow waters along the coast they grow to a great height and smash into the shore. They can be as high as 100 feet. (Ready.gov, 2018)	NOAA National Centers for Environmental Information: Tsunami Data and Information https://www.ngdc.noaa.gov/hazard/tsu.shtml Ready Program: Tsunamis https://www.ready.gov/tsunamis

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Volcano	Volcanoes are openings, or vents, where lava, small rocks, and steam erupt on to the Earth's surface. Through a series of cracks within and beneath the volcano the vent connects to one or more linked storage areas of molten or partially molten rock. This connection to fresh magma allows the volcano to erupt over and over again in the same location. (USGS, 2018)	USGS Volcano Hazard Program https://volcanoes.usgs.gov/index.html
Wildfire	A wildfire is an unplanned fire that burns in a natural area. Wildfires can cause injuries or death and can ruin homes in their path. Wildfires can be caused by humans or lightning, and can happen anytime, though the risk increases in period of little rain. (Ready.gov, 2018) By reducing or destroying vegetative cover and altering soil characteristics, fires often result in conditions that can significantly increase runoff and erosion when winter rains begin to fall. These conditions may result in a debris flow or mud flow, which is a slurry of water, sediment, and rock that converges in a stream channel.	National Fire Protection Association https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire National Interagency Fire Center https://www.nifc.gov/ US Forest Service Wildland Fire: https://www.fs.fed.us/wildlandfire/ USGS Wildfire Hazards https://www.usgs.gov/natural-hazards/wildfire-hazards