

off the fence.

Disruptive Nature

10 x 60'

EPISODIC BREAKDOWN

1. 2000 - 2001

2000 Mozambique Flood - Heavy rain through February and March 2000 led to massive flooding in Mozambique. 463,000 people were left

displaced or homeless and around 800 people died.

2001 Gujarat Earthquake - This deadly quake occurred on 26 January 2001 and killed huge swathes of people — between 13,805 and 20,023 people died, 167,000 were injured and 340,000 buildings were destroyed. The property damage was also gargantuan, estimated at \$7.5 billion.

2000 Western Europe floods - The Autumn of 2000 was the wettest ever recorded in the United Kingdom and 2 storms, Nicole and Oratia, caused extensive flooding — 10,000 homes were flooded in 700 locations. The death toll was luckily small with only 8 people dying but the flooding cost Britain £3.5 billion.

2002 Tropical Storm Allison - This tropical storm devastated southeast Texas and created major flood disasters which resulted in approximately \$8.5 billion in damage, making it the costliest tropical cyclone that was never a major hurricane on record in the Atlantic basin.

2. 2002 - 2003

2003 European Heatwave - The hottest summer in Europe since 1540, this extreme heat caused devastation across Europe. Reaching 45 degrees C in some places, The inferno temperatures along with drought and crop failure led to a death toll of more than 70,000.

2002 Molise Earthquake - The Molise earthquake hit the Italian regions of Molise and Apulia on 31 October. Horifically most of the fatalities were children in the town of San Giuliano di Puglia, 26 of the 51 school children died when the earthquake caused their school to collapse. The total # fatalities was 28.

2003 Hurricane Isabel - With winds of 105 mph hurricane Isabel wreaked havoc as it caused devastation across North Carolina, Virginia, West Virginia and Pennsylvania. Luckily there were only 16 fatalities but the hurricane caused \$5.5 billion worth of damage.

2002 European Floods - A year before Europe was ravaged by a heatwave it was battered by unimaginable floods. Continuous heavy rains beat down on Europe — damage estimates exceeded 15 billion Euros, of which only 15% was insured.

3. 2004 - 2005

2005 Kashmir Earthquake - Considered the deadliest earthquake to hit South Asia since 1935, with a moment magnitude of 7.6 the earthquake was most devastating in Pakistan and Pakistan administered Kashmir. There was complete destruction in the areas effected, with buildings completely collapsing the death toll has been estimated at a devastating 87,350.

4. 2006 - 2007

2007 Peru Earthquake - This quake hit the central coast of Peru and measured 8.0 on the moment magnitude scale, it lasted only 2 minutes and in that very short time killed 519 people and injured 1,366.

2006 Southern Leyte Landslide - In a province in the Philippines this deadly landslide was triggered after 10 days of heavy rain and a minor earthquake, the mud and rocks turned the town below into a mass grave killing 1,126 people.

2006-2007 South East Asia Floods -From December 2006 to January 2007 Malaysia, Indonesia and Singapore were lashed by rain, caused by Typhoon Utor, sweeping the nations with floods and resulting in \$395 million worth of damage.

2006 Yogyakarta Earthquake - Yogyakarta in the Central Java region of Indonesia was left devastated by this earthquake resulting in massive loss of life and huge financial damage. The areas affected were densely populated and people were living in poorly constructed buildings, the combination of this and the huge quake left 5,700 people dead and caused \$3.1 billion worth of damage.

5. 2008 - 2009

2009 Victorian Bushfires Australia - Extreme heat created the perfect conditions for bushfires, this along with high windspeed, lightening, fallen power lines and arson caused the worst bushfires Australia had ever seen and resulted in Australia's highest-ever loss of human life from a bushfire, with 173 fatalities.

2008 Sichuan Earthquake - This disastrous natural event absolutely devastated this province of China. The magnitude 7.9 quake destroyed whole towns in this mountain province killing 87,587 people, and it also has the unwanted title of being one of the costliest natural disasters of all time at \$150 billion.

2009 Sumatra Earthquake - This Indonesian island was rocked by an earthquake, luckily on a smaller scale than the Sichuan earthquake but still devastating. Sumatra is situated within a zone of high seismic activity known as the Ring of Fire and this 7.6 magnitude earthquake killed 1,115 and caused \$2.3 billion worth of damage.

2008 Hurricane Ike - This tropical cyclone ripped through the Caribbean and North America. Ike lasted for 14 days and caused \$38 billion of damage.

6. 2010 - 2011

2011 Tohoku Earthquake Japan - The most powerful earthquake ever recorded in Japan, and the fourth most powerful earthquake in the world. Residents of the Sendai area had only eight to ten minutes of warning, and then more than a hundred evacuation sites were washed away. The quake caused 15,899 deaths and \$360 billion worth of damage.

2010 Haiti Earthquake - Unbelievably the earthquake in Haiti the year before the Tohoku Earthquake caused even more fatalities. The Haitian earthquake measured 7 on the magnitude scale and there were 52 aftershocks. 160,000 died in this catastrophic natural disaster.

2011 Joplin Tornado USA - This multiple-vortex tornado hit Joplin Missouri in May 2011, it grew in size at a furious rate and was the deadliest tornado to strike the United States since 1947. The Joplin tornado ranks as the costliest single tornado in U.S. history, the insurance payout was \$2.8 billion.

2010 Pakistan Floods - This tragic event had a massive economic impact on Pakistan although it wasn't as costly as the Haitian earthquake disaster. Heavy monsoon rains in Pakistan affected the Indus River basin and around one-fifth of Pakistan's total land area was affected by floods which caused \$43 billion of damage.

7. 2012 - 2013

2012 Typhoon Bopha Philippines - The strongest tropical cyclone on record to ever affect the southern Filipino island of Mindanao. Typhoon Bopha destroyed homes, cut power and triggered landslides killing 1,901 people.

2013 North India Floods - Unusually heavy rainfall, blocked up rivers in Northern India causing major overflow and mudslides, bridges and roads were destroyed trapping people in flood ravaged areas and a colossal 5,748 people were left dead from this devastating natural disaster.

2013 Cyclone Phalin India - The most intense tropical cyclone to make landfall in India since 1999. This massive cyclone left destruction in its wake as it hit Thailand, Myanmar, India and Nepal and caused \$4.26 billion of damage.

2012 Hurricane Sandy - Sandy was both deadly and destructive. The hurricane began as a tropical wave in the western Caribbean Sea on October 22, quickly strengthened, and was upgraded to Tropical Storm Sandy six hours later which lashed at the Caribbean and America and racked up \$70 billion in damages and killed 233 people.

8. 2014 - 2015

2014 Oso Mudslide Washington - In Oso Washington USA, A portion of an unstable hill collapsed, engulfing a rural neighbourhood and drowning a 1 square mile area. 43 people were killed and the county was criticised for saying the disaster was 'completely unforeseen' as before the terrible event many residents and scientists had warned of smaller landslides that had already occurred, logging was blamed as a factor.

2015 South Indian Floods - Unusually heavy rainfall brought disaster to South India causing extreme flooding. The Government have also been blamed for the intensity of the flooding citing that urban development has led to many wetlands and natural sinks being built over, exacerbating the flooding. 500 people lost their lives and 1.8 million were displaced in this terrible event.

2015 Cyclone Pam - This intense storm lasted for 14 days and lashed the islands on the South Pacific including New Zealand, Vanuatu and

the Solomon Islands. Damaging storm surges and extreme rainfall left \$692 million worth of damage in Cyclone Pam's wake.

2014 Hurricane Odile - Sweeping across Southwestern United States and Mexico, Hurricane Odile inflicted terrifying damage. Extreme wind and high intensity rain cut electricity and tore down buildings resulting in \$1.25 billion of damage.

9. 2016 - 2017

2016 Central Italy Earthquake - This annihilating earthquake hit Central Italy in August 2016 and the initial earthquake was followed by at least 2,500 aftershocks killing 299 people.

2017 South Asia Floods - Heavy monsoon rains caused the worst floods in South Asia's history. India, Bangladesh and Nepal were all battered by these terrible floods that left 1,200 people dead and 40 million affected by the devastation.

2016 Louisiana Floods - Prolonged rainfall resulted in catastrophic flooding in the state of Louisiana, submerging businesses and homes. Named the worst US natural disaster since Hurricane Sandy, the floods caused between \$10-15 billion worth of damage.

2017 Hurricane Maria -Unimaginably destructive, hurricane Maria ripped through several countries including Puerto Rico, Dominican Republic, Haiti, USA and the Bahamas. Lasting for 16 days the storm seemed to get stronger and stronger killing 3,059 people and inflicting \$91.61 billion of damage, mostly in Puerto Rico.

10. 2018 - 2019

2018 Japan Floods and Landslide - Heavy downpours in southwestern Japan resulted in widespread, devastating floods and mudflows. The floods knocked out electricity and raised concerns of unsafe drinking water, homes were washed away and people were trapped in mudslides, 225 people were killed.

2019 Cyclone Idai Mozambique - Cyclone Idai was one of the worst tropical cyclones on record to affect Africa and the Southern Hemisphere, it was ferocious and lasted 17 days causing extreme flooding and killing a massive 1,303 people. The cyclone triggered a huge humanitarian crisis with not enough food to save all those in need.

2018 Californian Wildfires - 2018 was the deadliest and most destructive wildfire season ever recorded in California, with a total of 8,527 fires burning. The extremely hot weather, coupled with very dry trees, creating dead tree fuel, as well as strong winds caused these destructive fires that left \$3.5 billion of damage in their wake.

2019 Hurricane Dorian - Hurricane Dorian is the most intense tropical cyclone on record to strike the Bahamas, and is regarded as the worst natural disaster in the country's history. Intense storm conditions and 185 mph winds, caused \$4.68 billion of damage.