

MET103 Climate Change Rumor Research Paper:

Hurricanes Aren't Linked to Global Warming

Mike Santalucia

Suffolk County Community College

As humans continue to pump greenhouse gases into the atmosphere and the climate continues to warm, conventional ideas of what normal is on this planet are going to be challenged daily. The rise in temperatures has already wreaked havoc on our weather systems, causing extensive droughts and flooding in parts of our country. With the tragedy that surrounded Hurricane Katrina in 2005 and then again more recently with Hurricane Sandy in October of 2012, many found themselves asking, is this our fault? Have we caused the intensity of these storms to increase? The answer is yes. Hurricanes are tropical storms that feed on warm waters for power. With more warm water and higher temperatures in the last decade, we have seen a noticeable increase in the size and frequency of these storms. Along with temperatures, sea level has risen too which only makes everything worse for a coastal community attempting to brave the storm. A skeptic however, would tell you that hurricanes are not linked to global warming, and they could not be more wrong.

Hurricanes are powerful storms, also known as cyclones and typhoons in other parts of the world. Strong winds and heavy rain create a recipe for disaster. People living on the coast are the most affected by hurricanes and related storms due to the storm surges caused as the storms near land. These people on the coast are the ones who feel the force of these storms and know how often they hit. They would laugh at the skeptic belief that “According to the National Hurricane Center, storms are no more intense or frequent worldwide than they have been since 1850. [...] Constant 24-7 media coverage of every significant storm worldwide just makes it seem that way.” (Bedard, 2009). In fact, a survey of hurricanes in the North Atlantic over the past century conducted in July of 2007 noted an increase in the number of hurricanes, actually coming to the conclusion that “increasing cyclone numbers has lead to a distinct trend in the number of major hurricanes and one that is clearly associated with greenhouse warming”

(Holland, 2007). This finding has been challenged however by the assertion that an increase in our ability to find, identify, and track storms has resulted in the perceived increase in number of storms as opposed to there actually being more storms. Regardless, an increased frequency in major hurricanes spells disaster for coastal communities that sometimes take years to rebuild after a major storm event like Hurricanes Katrina and Sandy. Increasing the number of storms severely hampers the ability of these coastal areas to recover and return to normalcy between major storm events. This is bad not only for the people who live in these areas, but for the economy of these areas and those areas that are close enough to feel the effects. Without sufficient time to rebuild between events, a community is at risk of never recovering as the repairs roll over into the next storm each time and work never gets done or in a worst case scenario, makes no headway at all over the years.

In a warming world, frequency is not the only issue many coastal areas have to deal with. As waters warm, the intensity and size of these storms is increased considerably. This is mentioned in the Skeptical Science article when John Cook states, “Hurricane intensity is also highly correlated with sea surface temperature. This suggests that future warming will lead to an increase in the destructive potential of tropical hurricanes.” (Cook, 2010). In 2008, James B. Elsner published an article in *Nature* which revealed something disturbing that he discovered in measuring wind speed trends. “Elsner found weaker hurricanes showed little to no trend while stronger hurricanes showed a greater upward trend. In other words, stronger hurricanes are getting stronger. This means that as sea temperatures continue to rise, the number of Category 4 and 5 hurricanes hitting land will inevitably increase.” (Cook, 2010). Warmer sea surface temperatures also add to the already severe issue of sea level rise as warmer water takes up more space. The issue of melting glaciers and ice sheets compounded with the rising temperatures are

raising sea levels every day. With more intense storms pushing to the coast, the increased risk of storm surge damage becomes an issue. Hurricane Sandy showed record sea levels due to a “perfect storm” of high tide, rising sea levels, and storm surge. If storms of this strength or higher become a common occurrence in a world where sea levels are rising, it may soon become impossible to live by the coast at all. Increased moisture levels in the atmosphere also brought about by the warmer climate of today helps to increase the rainfall during tropical storms, which only adds to the flooding already caused by the storm surge. Soaked ground and weakened root systems also become a danger to inland residents as well at this point. Many large trees reside in suburban and rural areas likely to be hit by tropical storms and this danger to life and property is just another downfall of increased power in these storms.

The danger of more frequent and stronger hurricanes is not only a threat to coastal communities, but in many cases the country as a whole. Federal recovery funds come from taxes that the country as a whole has to pay. So this is definitely not a localized issue. The link between stronger more frequent storms and climate change is completely conclusive and scientifically sound. Tropical storms will continue to feed off the warmer waters that climate change create, and push the raised sea up onto land, devastating the coast repeatedly. In a time of such economic stress and upheaval, the last thing our country needs is more storms like Hurricane Sandy putting stress on the pockets of people already suffering. So are hurricanes linked to global warming? Very much so, and more so than other weather phenomena since the ingredients needed for a hurricane all happen to be factors immediately effected by climate change. If things continue how they are going, not only will this be proven dramatically in observation, but unfortunately it will be proven in damage, storm costs, and casualties.

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