

## Archivist 1:

From 1870 to 2016, the average global sea level has risen by eight inches. In the fourteen years following (2016-2030), the exponential rate of global sea level raised this again an entire five feet. There were a variety of factors that lead to this, but the two most significant contributions were warming ocean water (accounts for 39%) and freshwater input from melting ice (49%).

Florida has been the most vulnerable state to sea level rise in the United States. As of 2016, 10% of the county of Miami-Dade was less than one foot above sea level; now all of that is underwater. Even this small change destroyed \$8 billion in property value, submerged 8,512 homes and 20 waste sites, and displaced 9,077 people. The limestone barriers that were in place did little to stop the seawater from coming in. It became a common occurrence for king tides to cause water to erupt from storm drains across the city, splashing pedestrians walking to work. The coastal flood and salinity control stations across Florida all lost function when their drainage capacity dropped 70% by 2018, causing the county of Miami to spend over \$400 million dollars on three new high-efficiency pumps. These pumps were in commission for a little over one year before Hurricane Drumpf hit.

When Hurricane Drumpf hit the Southeast in 2018 (the SLR was at .5 foot by then) a 15-foot-high storm surge hit Miami which was disastrous to the entire state. In 2022, half of the state of Florida was submerged under water, displacing millions of people to inland locations all across the country. The Everglade National Park remained largely under water well after the storm surges receded. Much of the tourism income of the state following the event was stated to come from scuba-diving and various boat tours of underwater Florida.

Larsen C, covering about 55,000 square kilometers, is the largest ice shelf along the Antarctic Peninsula, and the most recent to have fallen into the ocean. As of 2016, the shelf extended 621 miles beyond the “grounding line,” but in June, 2018, the crack that had been developing over the previous twenty years finally gave way. This in turn (with the help of various other ice shelf collapses), expedited the rate of SLR worldwide. This collapse was an indication that the West Antarctic Ice Sheet had begun to give way, and would likely be entirely submerged in the future, regardless of any action taken to remedy it. If this is the case, SLR will see a staggering 16’ global increase, submerging vast portions of the globe. We are seeing the beginnings of this effect now in 2030 with 5 feet SLR already having already occurred.

In an effort to control the oncoming effects of climate change, the President of the United States in 2021 decreed in the State of the Union the following plan:

Introduce a car tax which penalizes fossil fuel usage for non-emergency services

Remove regulatory barriers to new nuclear power plants

Incentivize bio-technology that develop trees that efficiently absorb carbon

Repeal the National Flood Insurance Program that allows coastal development to occur, disallowing construction below 10 feet

Remove regulatory barriers to environmental innovation

Although this action was deemed highly necessary across political lines, the plan enacted was met with roadblocks as it was introduced to Congress, and took more than 9 months to get signed into law (after Hurricane Drumpf made it readily apparent that it was necessary).

China had continued to dramatically industrialize, increasing their carbon emissions, and thus increasing the greenhouse effect that drives SLR. Then in 2023, Typhoon No. 13457 caused a massive storm surge in Xiamen City, China. In 2013, Xiamen City (a bustling industrial city)

had a population of 3,730,000 people and a land area of 1573 square kilometers. A 74 kilometer seawall covers only a third of the 256 kilometer coastline. By the time the typhoon hit, this wall only covered roughly half of the coastline. Unlike Miami, the ground is hard enough not to cause ground subsidence. The typhoon triggered a flood that affected the 50-year floodplain, causing a sudden local 15 foot SLR. This covered 9% of the cities area which was primarily wetland and residential areas. The storm put \$4 million worth of building structures underwater. Unfortunately for Xiamen City, regulation services (such as gas regulation and water regulation and treatment) make up 75% of the portion of land affected by the typhoon. 17.35% of the population was affected, and 235 lives were lost. This death toll would have been far greater had the city not had an effective evacuation program they instituted after hearing news of Hurricane Drumpf's effects.

In response to Typhoon No. 13457, the People's Republic of China took a targeted and intensive approach to stopping climate change. All gasoline engines were to be considered illegal by 2025, and all forms of transportation were required to be run electrically. The government instituted a significant tax on all non-reusable energy consumption. All industrial companies were required to neutralize their effective carbon footprint by funding public parks, environmental restoration and education plans, and planting CO2-scrubbing forests across industrial waste sites. The government also began relocating citizens from at-risk cities more inland as the threats of SLR become steadily more apparent.

In 2019, Key deer went extinct because 86% of the inhabited islands were under water. By 2026, the loggerhead sea turtle was considered critically endangered as well, with 42% of their beaches having disappeared. Other species such as the Delmarva Peninsula fox squirrel, Western snowy plover, and Hawaiian monk seal all are presumed extinct due to habitat loss. SLR caused 11 out of the 17% of endangered species as of 2016 to go extinct by 2030. Many parts of the American coastline have seen dramatic changes in plant communities due to saltwater intrusion and groundwater contamination.

## **Archivist 2:**

Even back in 2011, mankind has looked towards Mars as the next logical step in human progress. However the plans back then were mostly crafted by private companies. Their original plans set out to assemble a crew of one hundred people willing to begin the colonization of mars and make advancements in rockets to get them there. The plan predicted this year as the year that the second crew was to land on Mars, which we now know could not have happened without the assistance of many other nations. This is especially true because, only five years after the founding of these Mars companies, the public backlash became enough to bring the companies to a stand-still in 2017.

However, after the 2018 Hurricane Drumpf and other similar storms around the world, America's NASA and the space programs in countries including South Korea, Japan, Israel, Italy, and the UK began to realize that the colonization of Mars could be the answer we needed for the growing problem of the rising sea level. Most of these countries had already begun to feel the effects of beach erosion and more powerful storms that global warming and rising sea level caused. Thus, they revitalized the private space program to Mars with professional astronauts and years of combined experience between the allied nations. Through their combined efforts, the EMM (Earth Mission to Mars team) successfully sent the first manned mission to Mars. In 2019, Elon Musk became the first man to walk on the red planet. For the

next three years, the EMM made astounding progress in planning the colonization of Mars and they were able to launch the first of the rovers to begin construction of the habitation technology on Mars.

With one of the largest recorded typhoons striking China in 2023, the modern space race took another unexpected turn. Japan was nearly completely submerged in the aftermath of the storm so the Japanese scientists in EMM were forced to relocate, along with many other the launch sites around the world that had become too close to the shore for comfort. Yet, in contrast to these setbacks, more countries began to realize the severity of the situation on earth and joined the EMM. These countries included India, China, Germany, France, and the General European Union.

In 2026, Mars was deemed ready for habitation and the first crew of astronauts were launched in the Hermes III. Although rocky at first, the crew eventually settled into life on the red planet. By early last year, the second crew of colonists had successfully landed in the Martian settlement Ares and the plans for mass relocation to Mars had been drawn up. In a number of months, the first of the larger space ships, Arc I, will launch to Mars. Tickets for the trip are on sale in every government office.

Yet, not everyone is as on board with the Mars relocation as the progress would make it seem. There are a number of protests by groups that believe we are responsible for fixing the problems we created on Earth. They are especially aggravated at the amount of fuel that is burnt in each EMM launch.