



**Threat: Drought**

A period of persistent dry weather that occurs long enough to cause environmental and public health challenges. Climate stressors that worsen droughts include increased global temperatures, increased evapotranspiration, and changing rainfall patterns. Non-climate stressors such as increases in freshwater consumption can also worsen the impact of droughts on a population.



**Threat: Extreme Heat**

A primary sign of a changing climate is a continual increase in temperature. Extreme heat is a pressing public health risk, particularly for socio-economically disadvantaged and elderly communities living in developed areas with low tree canopy cover. In many heavily developed areas in South Florida, man-made structures such as buildings and roadways trap heat and contribute to what is known as the Heat Island Effect. Extreme heat is a serious threat in South Florida where it can worsen air quality, exacerbate public health issues, negatively impact crop production, and therefore increase stress on the local economy.



**Threat: Harmful Algal Blooms**

Known as eutrophication, runoff from different outlets on land can cause excess nutrients to flow into larger bodies of water and induce higher concentrations of nutrients in the water. This, paired with warmer waters, can cause specific colonies of algae to grow out of control and produce toxins that can harm people, fish, shellfish, marine mammals, and birds. Non-climate stressors that can worsen harmful algal blooms include both human-induced and natural hydrologic alterations, and well as additional pollutants in runoff.



**Threat: High Winds**

Here in South Florida, high winds from tropical systems or hurricanes are prevalent threats that can lead to numerous issues including power outages, disruptions to roadways and transportation, and damage to infrastructure, including critical infrastructure. Hurricanes can be catastrophic events significantly impacting communities. Non-climate stressors that magnify the threat of high winds include changes to building conditions and less resilient landscaping.



**Threat: Groundwater Inundation**

This type of flooding occurs when there is a rise in groundwater, which is generally associated with a rise in sea level. In addition to sea level rise, other climate stressors include changes in precipitation patterns that result in an increase in the amount of water present at any given time. Non-climate stressors that worsen groundwater inundation include both the land subsidence, or the settling of land, and the potential need to fix or repair large-scale stormwater management systems.



**Threat: Pest & Disease Outbreaks**

A pest outbreak is when a destructive insect or other animal population dramatically increases and heightens the potential threat of illnesses. Pest outbreaks also affect crops and the ability to produce healthy and sellable food commodities. Whereas pest outbreaks are a rapid increase in an insect's population, disease outbreaks are sudden increases in a particular illness that is carried or spread. Climate stressors that exacerbate this problem include extreme heat and changes in rainfall patterns. Additionally, non-climate stressors include rapid population growth, urbanization, and densification.



**Threat: Rainfall-Induced Flooding**

Changes in rainfall patterns can cause flooding on normally dry land which can be exacerbated by sea level rise. Non-climate stressors that further increase challenges related to rainfall-induced flooding include aging infrastructure, floodplain alterations, increases in impervious structures, and maintenance issues concerning stormwater infrastructure.



**Threat: Saltwater Intrusion**

Southeast Florida sits on top of limestone. Our aquifer sits under our region and supplies most of South Florida's potable freshwater. As sea level rises, seawater pushes underground through the holes in the limestone causing saltwater to seep into the freshwater since they are hydraulically connected to the sea. Saltwater intrusion is a serious threat and the associated non-climate stressors include changes to large scale stormwater management systems and changes in the amount of water taken from the aquifer.



**Threat: Shoreline Recession**

This threat occurs when waves and currents remove sand from the beach system by carrying it permanently offshore. This movement and removal of sand leads to a narrower beach and lower elevation ultimately leaving coastal properties and infrastructure vulnerable to future storms. Sea level rise will exacerbate shoreline recession. Similar to other threats, with eroded beaches and a lack of shoreline, there will be an influx of problems, including further impacts to infrastructure, changes to design and development in high risk coastal areas, and changes to Level of Service (LOS) requirements.



**Threat: Storm Surge**

As sea level rises, there will be an excess of water coming onto land. Coastal flooding caused by an abnormal rise in the tide from a storm or hurricane will push water further inland and increase the water level well above the natural tide. A climate stressor that further fuels problematic storm surge is the presence of more frequent and stronger storms. Non-climate stressors that exacerbate the hazards associated include increased development in high risk coastal areas and aging infrastructure.



**Threat: Tidal Flooding**

Tidal flooding is defined by exceptionally high tidal events that result in the temporary inundation of low-lying areas. This occurs when an increase in water levels cause water to overtop seawalls and flow onto coastal lands. Sea level rise will increase the frequency and intensity of tidal flooding. Non-climate stressors that exacerbate tidal flooding hazards include aging infrastructure and poor drainage systems.



**Threat: Wildfire**

Although much of the region is urbanized, wildfires can still impact Southeast Palm Beach County. This threat is examined through the potential for wildfire in the wildland urban interface and its impact on communities, including homes and the critical services people rely on. Wildfires have the ability to significantly damage critical and delicate ecosystems as well as urbanized communities. With wildfires present, air quality greatly diminishes, and infrastructure becomes vulnerable. Climate-related stressors that worsen wildfire conditions include temperature increase, which can increase drought, precipitation variability, and lightning frequency.