

Sea level Rise

What is Sea level Rise?

One of the most worrying environmental issues affecting the world today is the rise of the sea level. Currently, the rise of sea level is threatening at least 20% of the world`s cultural sites.

Sea level rise is caused by the rapid climate change which in return is accelerating the melting of the glaciers and ice caps, thus resulting in more water in the ocean. Not only is global warming endangering costal economies but it is also putting island nations like Malta, at the risk of becoming non-existent to the human eye. Other countries facing this kind problem is the United Kingdom, which is still an island in its own right.

This rapid climate change is happening due to dangerous greenhouse gases being emitted in the atmosphere.



Image above: Islands at risk of becoming non-existent.

But what does all this translate to?

This means that if the temperatures were to touch alarming degrees, important landmarks like The Statue of Liberty, The Sydney Opera House, Venice and even the archaeological site of Pompeii would be completely covered with water.



Image above: Sinking Venice

One of the most vulnerable cities is Venice. This Italian gem has been struggling for survival since its infant days, but in the last decade, problems have escalated to dangerous new heights. One cannot forget to mention the year 2008 when whole islands faced the risk of disappearing from the earth`s surface once and for all. Amongst the precautions Venice is taking include floodgates that prevent more

ase floodgates to be relied on?

Greenland and West Antarctica have faced many similar problems with the accelerated melting of ice caps and glaciers. Scientists believe that high temperatures are causing the ice sheets that extend from Antarctica to melt from under, weaken their cells until they break off.

Ice caps around the world

One of the largest ice caps in the world is Quelccaya located in Peru. It is melting at a very quick pace and at this rate it will be completely dissolved by the year 2100.

The Chacaltaya ski area in Bolivia is no longer available for skiing because skiing in this area all depended on a small glacier. The glacier had begun to shrink when the area opened in 1939. All that remain are three patches of realistic ice.

People insist that skiing will continue and that maybe they can tow in slabs of ice to mend the glacier, but everyone knows that the mountain is history and that global warming will continue to destroy many similar landmarks.

Over the past 100 years, the sea level has risen by approximately 13 cm.

Effects of the Sea level Rise:

Some effects of the rise of sea level are more droughts, harsher weather temperatures, changing of rain and snow patterns, melting glaciers, increased ocean activity and warmer oceans.

All these effects will occur over different time periods at different rates.

Between the years 1870 and 2004 the global average of sea levels rose by 195mm. From 1950 to 2009 the rise of sea level was 0.7 approximately 0.3mm per year.

Predictions show that global warming will continue and will probably accelerate. The oceans will probably continue to rise. A study shows that by the year 2100 the rise of the ocean will be enough to drown many cities along the U.S East Coast.

Economical problems caused by sea level rise:

If these floods continue, the world will face many economical problems such as damages in buildings, the death of thousands of people and other costs will have to be spent on the damages of the land. An example is the Californian coast on which a study has been done on many beaches ex. The Venice beach and it resulted that:

- \$51.6 million will be spent on damages caused by a 100-year coastal flood damaged homes, commercial buildings and contents.
- \$439.6 million spent in tourism and local and state tax revenue losses caused by an eroded beach attracting fewer visitors.



Image above: Flooded homes in California, Venice Beach.



Image above: Venice Beach, California USA faces the risk of being washed away in the near future.

Projects aimed at slowing down sea level rise:

- ***The near-term sea level rise on costal infrastructure project:***

The goal of this project is to calculate the possible impact from sea-level rise and the possible increase in hurricane activity. The project is including newly developed geological and historic periods and storm information to predict the effects of climate change on the costal infrastructure over the upcoming 100 years.

- ***The Risk Quantification for Sustaining Military Installation Assets and Mission Capabilities:***

The objective of this project is to develop and demonstrate a combined multi-hazard, multi-criteria risk assessment framework that will be able to evaluate the changes in risks to the costal military.

- ***Shoreline Evolution and Coastal Resiliency at Two Military Installations: Investigating the Potential for and Impacts of Loss of Protecting Barriers –***

This project focuses on the impacts of the potential loss of costal barrier islands. The results of this project will be able to inform modelling of storm impacts under these studied conditions.

- ***A Methodology for Assessing the Impact of Sea Level Rise on Representative Military Installations in the Southwestern United States –***

The project is focused on the Naval Base Coronado and Marine Corps Base Camp Pendleton which is located in the Southwest of the United States. The aim of the project is to measure the impacts of local mean sea level rise.

- **Project Mosses:**

The project is focused on Venice. The aim of this project is to prevent any more floods from entering and damaging the city. It basically consists of 78 flood gates laid on the seafloor and when the sea starts to act violently air is pumped into the gates and they rise to form a wall to protect the city from floods.

These projects will provide a detailed explanation and will help the scientist to predict better the current situation of the sea level rise. The sea levels will keep on rising rapidly and global warming will continue to cause economical problems unless we act now!!

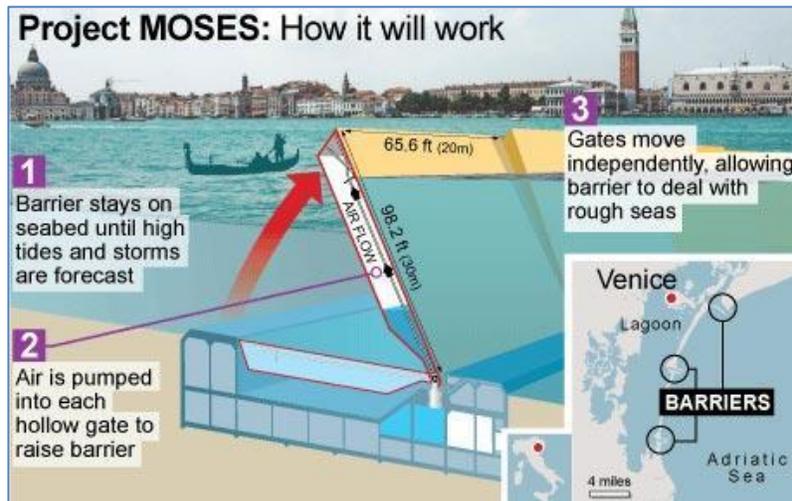


Image above: The project Moses which is taking place in Venice aimed to be finished in 2016.

References:

The guardian:

<http://www.theguardian.com/environment/2010/feb/21/sea-level-geoscience-retract-siddall>

The daily mail:

<http://www.dailymail.co.uk/sciencetech/article-2239766/Global-warming-study-warns-sea-levels-rising-far-faster-thought.html>

The National Geographic:

<http://ocean.nationalgeographic.com/ocean/critical-issues-sea-level-rise/>

Wikipedia:

http://en.wikipedia.org/wiki/Current_sea_level_rise

The Union of Concerned Scientists:

http://www.ucsusa.org/global_warming/science_and_impacts/impacts/causes-of-sea-level-rise.html