

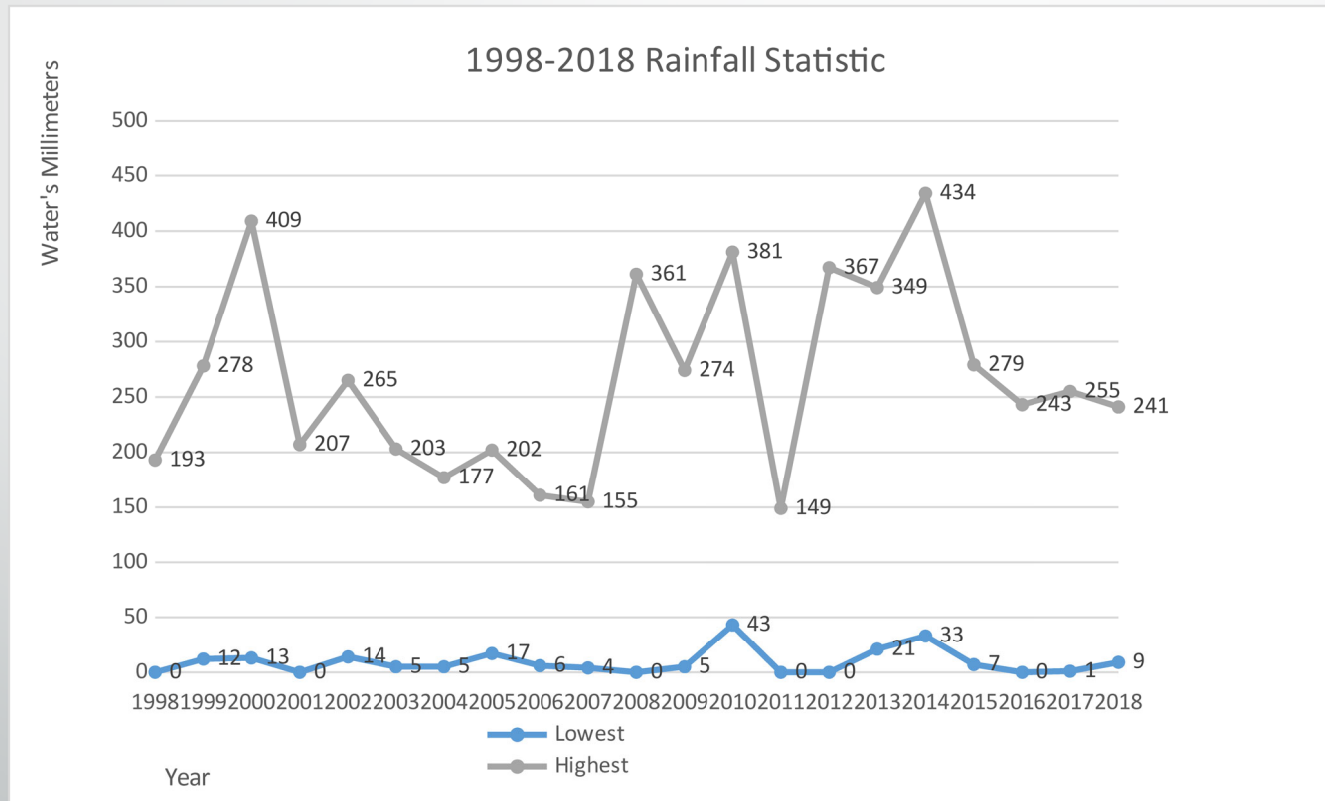
Erasmus Plus Project
Let's Help Our Precious Planet

**RAINFALLS
IN MASSA-CARRARA
OVER THE LAST
TWENTY YEARS**



1998-2019 Rainfall statistic in Massa

The graphic shows the highest and the lowest amount of water millimeters fallen down over the last 20 years in Massa.



Floods

Floods are big issues for places crossed by rivers/streams, or/and facing the seaside or/and crowned by mountains. Heavy rainfalls, which occur more and more frequently due to the climate change, and that hit areas unused to such events, can badly "injure" the landscape. Global warming, deforestation, unclear riverbeds, human negligence in general are the main causes of such huge disasters. In recent years Italy has been struck by many floods from North to South, which caused massive damages and a lot of victims. Massa as well has been hit, several times so far, by bad floods.

The most significant floods in Massa-Carrara

Over last 20
years:

- **23-09-2003**
- **01-11-2010**
- **11-11-2012**
- **28-11-2012**
- **05-11-2014**

23-09-2003

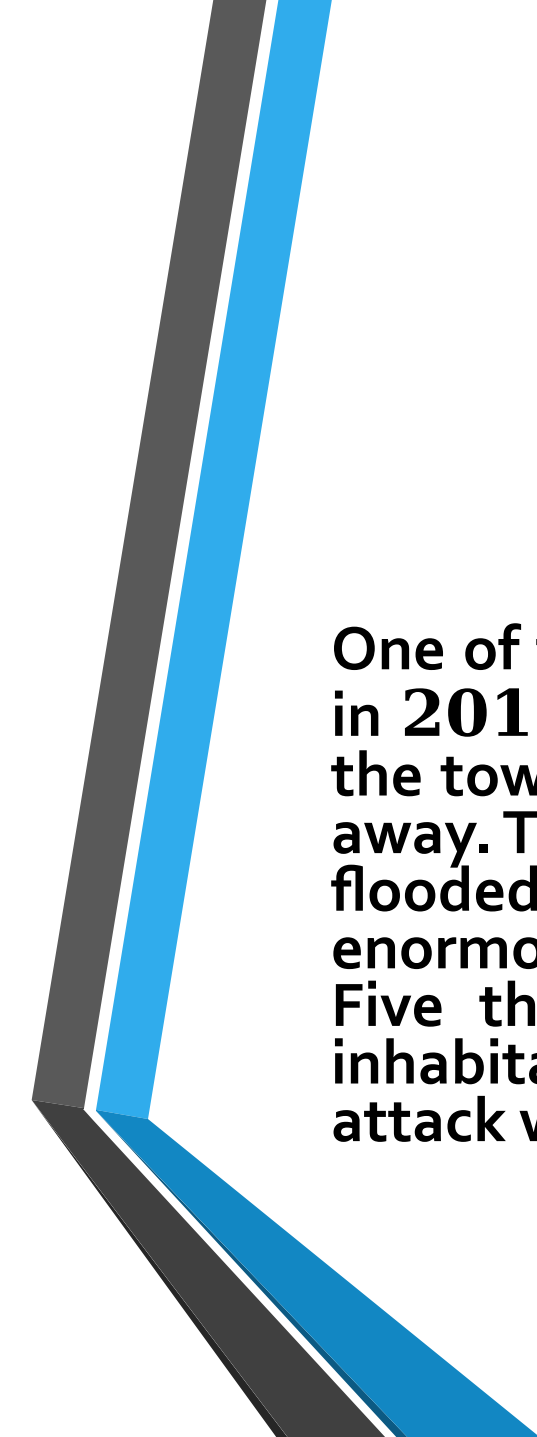
During the night of 23rd September 2003 a very violent rainstorm hit the Apuan Alps, including Massa-Carrara. In the time span of 2 hours and a half, a great amount of water (more than 200 millimeters) fell down. Carrione stream overflowed and invaded the old town center of Carrara, dragging away dozens of cars and causing a woman's death. Eventually the flood moved towards the seaside not creating any more damages.



01-11-2010

On 1st November 2010, due to heavy rainfalls, Carrione stream flooded and destroyed a block of flats leaning on the pebbly riverbed. Luckily this fact didn't hurt anyone.





11-11-2012

One of the biggest floods that ever happened in Massa-Carrara dates back in 2012 when, after a couple of hours of heavy rainstorm, many parts of the town were submerged by one metre of water, which swept everything away. The worst harmed parts of the town were those near streams as they flooded and invaded roads, fields, gardens, houses, shops, etc...causing enormous damages to the town itself and to its surrounding landscape. Five thousand houses were devastated and more than three-hundred inhabitants evacuated. Unluckily a man lost his life as he had an heart attack when he saw a wave getting into his house.



The effect of the flood against Massa's streets



28-11-2012

Just two weeks after the above-mentioned flood, another one occurred between Carrara and Ortonovo. Carrione and Parmignola streams overflowed, thus creating further complication and damages. The provincial road between Massa and Sarzana closed, blocking the traffic.



05-11-2014

On the very first hours of 5th November 2014, because of heavy rain, the right side of Carrione bank crashed allowing the stream to invade the whole surrounding area, reaching the centre of Marina di Carrara. The water level overcame 1 metre and a half and caused a city-wide blackout, forcing at least three-hundred people evacuating their houses.



Gli Angeli del Fango (The Angels of the mud)

The *Angels of the mud* are people who helped clearing up streets, gardens, houses from the mud coming from floods. After **11th November 2012's** flood, a group of more than **150** students from every high school in Massa, together with other citizens, wearing water-proof boots and with shovels worked hard for days in order to help and remove the mud. These volunteers' gesture was awarded with a certificate given from the municipality to each one, since the inhabitants of the areas hit by the flood were very impressed by such generosity.



The Angels of the Mud at work

Fires

Fires hurt the environment very sharply as they burn our fundamental resource, oxygen. Global warming is one of the principal causes of fires together with absence or scarce rain, also due to unusual high temperatures. In fact, it's more likely for dry vegetation to catch fire.

Regretfully most fires are lit by humans, sometimes by accident, but most of the time on purpose. Taking advantage of great heat, the woods easily catch fire.



Fires in Massa-Carrara

The worst year was **2012** with **88** fires and nearly **130** hectares of woods burnt, owing to unusual high temperatures and a great decrease on precipitations over the last decade. Every of these fires is arson.

26-30/08/2017 fire

Flames involved 45 hectares of fields and requested the intervention of several firefighter helicopters and Canadair. After five long days the fire was finally extinguished and the survived flora and fauna could breath again. According to the local police report the fire was supposed to be arson, which was, anyway "helped" by tremendous heat.





Erasmus Plus Project 2019-2021: "Let's help our precious planet"

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