

Seven reasons why Patricia, the most intense hurricane ever recorded, did not cause a lot of economic losses nor casualties

1. Low exposure in the zone of maximum winds. Patricia arrived in a very low populated area with little infrastructure. A hurricane of the same type, making landfall on a large port such as Manzanillo or Puerto Vallarta, would have caused much more losses.

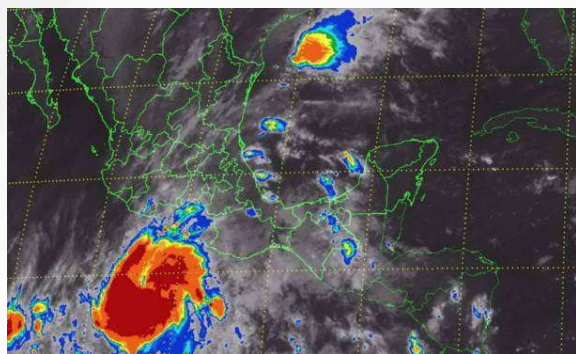


Figure 1. Humidity image of hurricane Patricia just a few days before turning into the strongest hurricane ever recorded.

2. It found a huge obstacle in his path. Patricia decreased its intensity when colliding with the Sierra Madre Occidental. It weakened from category 5 to 1 within minutes losing virtually all its destructive power.



Figure 2. Satellite image of Hurricane Patricia.

3. Little rain. Hurricanes are classified in intensity by the wind speed on the eye wall, but this intensity is not directly correlated with rain that cause landslides and floods. Patricia fortunately caused little rain compared to other hurricanes and therefore it caused little damage related to rainfall. Recent examples of high category hurricanes causing wind damage but no rainfall related damage are Odile (2014) and Wilma (2005), other examples of low category hurricanes which caused a lot of damage due to flooding and landslides are Paulina (1997), Stan (2005), Manuel and Ingrid (2013).

4. It passed quickly. Patricia passed quickly (almost 25 mph, Wilma: 5.56 mph), thus preventing damage due to rain being accumulated in very large amounts as well as sustained winds, which for several hours could have weakened and damaged structures.

5. Outstanding preparation and prevention. As usual from several years ago, the federal government implemented preparation protocols in the event of an emergency, but this time with extraordinary intensity, rigor and effectiveness. This would not have reduced material losses but it did have a direct impact on preventing deaths and casualties. It is likely that this is the first time ever that a hurricane of such strength did not cause fatalities. Again, Mexico showed to be a clear example of how institutions and people should react in order to face these challenges.



Figure 3. Emergency meeting of the cabinet of President Enrique Peña Nieto in the face of the impending Hurricane Patricia.

6. Timely information provided by the media. The media contributed in such a way that local people were alert and willing to cooperate by responding to the emergency calls and following the instructions that were being broadcasted. This allowed, altogether with the mobilization created by the federal government, that individuals and local institutions were prepared in the best possible way to face the imminent impact of the hurricane.

7. Reaction of the people. People heard that the greatest hurricane ever recorded was approaching, but they did not panic at all. Instead, they prepared and organized themselves to save their lives, preventing casualties and following emerging mitigation measures to reduce damage (looking for shelter, protecting their goods, blocking windows and doors, etc.).

Reason (1) was just simply luck, reasons (2) to (4) depend on each hurricane and we do not have any control over it, but reasons (5) to (7) do rely on us, so it is essential to recognize, publish, document and improve them.

Eduardo Reinoso Angulo (direccion@ern.com.mx)