30. September 2024

# Event Report: Hurricane Helene

On September 26, Hurricane Helene made landfall in Florida's Big Bend region as a Category 4 storm. Helene was the fifth hurricane and second major hurricane of the 2024 Atlantic hurricane season.

Based on current information, Hurricane Helene is not expected to cause capital losses to catastrophe bonds or private contracts in the portfolios of the Solidum Funds. Increased volatility in price indications of brokers and corresponding mark-to-market fluctuations in the month-end valuations cannot be ruled out, but should be limited to short-term effects and recovered quickly.

## Meteorological Development

Helene formed from an extensive region of atmospheric instability with shower and thunderstorm activity that was positioned over the southwestern Caribbean since mid-month. The disturbance drifted slowly north, developing the characteristics of a tropical storm system. On September 24th, near the Yucatan Peninsula, it received official tropical storm status. After crossing the Yucatan Channel, the storm moved into an area of low shear winds, humid air, and very warm water temperatures in the Gulf of Mexico, ideal conditions for a very rapid recovery. On September 25, Helene attained hurricane strength. Between an extensive low-pressure trough in the upper atmosphere to its west and a high-pressure area east of the US Atlantic coast, the storm moved very quickly through the Gulf of Mexico. Helene steadily strengthened on its path over the Gulf and made landfall on September 27 at its peak intensity with average wind speed of 220 km/h and a central pressure of 938 mbar.

*Hurricane Helene's track - triangles: tropical depression; circles: tropical storm (light blue) to hurricane category 4 (red) (Wikipedia)*

Helene hit land in Taylor County in the Big Bend region of Florida. However, as the storm was very large, its effects were felt far from the impact site. Therefore the exact location of the landfall is less relevant to the overall damage damage potential of the storm. Due to its high forward speed, the storm maintained its hurricane status far inland before losing its internal structure. Helene was still a Category 2 hurricane when it crossed from Florida to Georgia.

## Estimation of Impact

Several specific features of hurricane Helene make it complex to estimate the damage caused by the storm.

Helene was a huge storm. The area in which winds of tropical storm strength of 63 km/h or greater were expected extended to more than 650 km. This makes Helene one of the largest storms in recent history. The American Hurricane Observatory ranks the storm in the top 10 percent by size. While winds of tropical storm strength do not cause too much damage themselves, the storm drove very large amounts of water on its eastern side towards the coastline, causing significant flood levels over extended portions of Florida's west coast.

Near the Landfall area, the storm surge was extreme. Some small towns in the Big Bend region suffered catastrophic flood damage. However, the Big Bend region as a whole is only sparsely populated, making the total storm surge damage likely to be lower than after Hurricane Ian in 2022. The National Flood Insurance Program's (NFIP) reinsurance program with the ILS market starts with losses of approximately $6.5 billion. This is well well above what has to be expected for storm surge damage from Helene.

The low population density in the Big Bend region reduces the potential also for wind-induced damage from the storm. Tallahassee, the largest city in the vicinity of the landfall location, lies sufficiently far to the west of Helene's track that no hurricane-force winds have been recorded there.

Helene's record-high forward speed led to both positive and negative consequences. On the positive side, the amount of time that structures were exposed to the strongest winds was quite short. This reduces the likelihood of more severe damage. On the other hand, the storm traveled far inland while maintaining hurricane-force winds before decaying, which increased the overall area from which wind damage can be expected.

Finally, inland flooding will also be an important factor in the damage. Particularly on the flanks of the Appalachian Mountains, heavy rainfall caused local flash floods and landslides. Inland flood damage is less broadly insured in the US. As a result, the ratio of insured to total economic damage caused by Hurricane Helene is likely to be lower than the typical 50 percent that are commonly observed.

Due to these complexities, modeling firms are still reluctant to publish loss estimates half a week after the storm made landfall. On the basis of the above considerations, the Solidum Management expects the amount of insured loss to be in the range of USD 10 to 15 billion. Flood related losses borne by the government's flood insurance program NFIP are in addition to that figure and will likely be in the low single-digit billion range.

For the ILS and cat bond markets, this means that direct capital losses are unlikely. As always with events of some magnitude, Helene will have an impact on the retention of aggregating structures, which may lead to mark-to-market variability of the price indications for some securities. Again, we do not currently expect significant reactions of the market for such bonds.

The management team is pleased to remain at your disposal for any further discussion.

With kind regards

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