

# Compound Flood Hazard Assessment Mapper Webinar

Thursday, June 11, 2026 11 AM – 12 PM

## Q&A and References Document

This virtual webinar featured a tutorial on the U.S. Geological Survey's (USGS) new [Compound Flood Hazard Assessment Mapper](#).

Link to Webinar Recording: <https://youtu.be/usNJ8rcAfQ4>

<b>Compound Flood Hazard References</b>
1. Glas, R., Herdman, L., Cook, S., Howlader, A., and Masterson, K.: Hazard Potential of Compound Flooding from Rainfall, Storm Surge, and Groundwater in Coastal New York and Connecticut, EGU sphere [preprint], <a href="https://doi.org/10.5194/egusphere-2025-5683">https://doi.org/10.5194/egusphere-2025-5683</a> , 2025.
2. Glas, R., Herdman, L., Cook, S., Masterson, K., 2025, Supporting Datasets and R Code for Compound Flood Hazard Modeling in the New York - Long Island Sound Region. U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P13ARD2K">https://doi.org/10.5066/P13ARD2K</a>
<b>Coastal Flood Hazard References</b>
1. Cook, S.E. and Herdman, L.M., 2025. Present and future coastal flooding hazard for Long Island, NY and Long Island Sound (NY/CT), USA. EarthArXiv. <a href="https://doi.org/10.31223/X5117Q">https://doi.org/10.31223/X5117Q</a>
2. Cook, S.E. and Herdman, L.M., 2025, Geospatial dataset of coastal-inundation maps for Long Island and Long Island Sound (CT/NY). U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P94P4WXX">https://doi.org/10.5066/P94P4WXX</a>
<b>Precipitation Flood Hazard References</b>
1. Welk, R.J., Jahn, K.L., Herdman, L.M., Glas, R.L., and Masterson, K.K. (2025). Assessing pluvial flood hazard potential using multi-criteria decision making and iterative ensemble smoothing in Long Island, New York and near coastal areas surrounding Long Island Sound in New York, Connecticut, and Rhode Island. EarthArXiv. <a href="https://doi.org/10.31223/X5074B">https://doi.org/10.31223/X5074B</a>
2. Welk, R.J., Fisher, B.N., Glas, R.L., Herdman, L.M., Jahn, K.L., and Masterson, K.K., 2025, Geospatial datasets of factors influencing pluvial flood potential in Long Island, New York and near coastal areas surrounding Long Island Sound in New York, Connecticut, and Rhode Island. U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P9N6J1SN">https://doi.org/10.5066/P9N6J1SN</a>
<b>Groundwater Emergence Flood Hazard References</b>
1. Masterson, K.K., Welk, R.J., Barclay J.R., Jahn, K.L., Herdman, L.M. (2025). A Spatial Analysis of the Groundwater Emergence Flood Hazard in Long Island, New York and near Coastal Areas Surrounding Long Island Sound in New York, Connecticut, and Rhode Island. <a href="https://doi.org/10.31223/X5HB28">https://doi.org/10.31223/X5HB28</a>
2. Welk, R.J., Masterson, K.K., Barclay, J.R., and Jahn, K.L., 2025, Geospatial datasets of factors influencing groundwater emergence flood hazard in Long Island, New York and near Coastal Areas Surrounding Long Island Sound in New York, Connecticut, and Rhode Island: U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P9W4QIV5">https://doi.org/10.5066/P9W4QIV5</a>

## Webinar Questions and Answers:

**Q:** What about diad co-occurrence (i.e., rain-groundwater), have you calculated and mapped those?

**A:** The co-occurrence was calculated by fitting 2-dimensional probability models to the observed data, which has been sampled according to a peaks-over-threshold approach. See the report for full details: <https://doi.org/10.5194/nhess-26-2169-2026>

**Q:** Will non-data folks know the difference between a compound hazard mapper being a reflection of co-occurrence and not a level of risk based on the names and descriptions, have you considered re-naming the layer from Compound Flood Hazard Score to Compound Flood Co-occurrence score and the name of the view from Compound Flood Hazard Assessment to Compound Flood Hazard and Co-occurrence Assessment?

**A:** That is a good suggestion. We were very careful to use the term “hazard” rather than “risk” but maybe getting away from this altogether and using “co-occurrence” might be better!

**Q:** Which sea level rise model was used for Connecticut?

**A:** The Connecticut groundwater model that was used for the basis of this analysis did not have a seal level rise scenario. No data is shown in Connecticut on the mapper for the alternate depth to water with sea level rise.

**Q:** Is today’s webinar eligible for NYS PE or CFHM continuing education credits?

**A:** No, unfortunately this webinar is not eligible for any continuing education credits.

**Q:** Can you share the groundwater wells/locations used in your model? Please clarify how many years this data has been in play and how frequently you get readings.

**A:** The mapping tool has a layer that shows the locations of all the rain, coastal, and groundwater stations. You can also view the well locations in the paper and accompanying data release: <https://doi.org/10.5194/nhess-26-2169-2026> <https://doi.org/10.5066/P13ARD2K>

**Q:** Why are there no monitoring locations or triad centroid multivariate results along the coastline in Southern Westchester?

**A:** We only used stations that had enough daily data to be able to draw inferences. Southern Westchester county did not have stations that met our data completeness criteria.

**Q:** What is the curve analysis definition?

**A:** This is very similar to imperviousness.

**Q:** Will you add a 500 year interval layer?

**A:** That is something we can explore if our input data allows for such an interval to be mapped. It is not something I can answer definitively at this time.

**Q:** Are there plans to show sea level rise with projected FEMA flood layers which will go further inland compared to the current spatial layers?

**A:** If I understand your question correctly, are you referring to projected future FEMA flood hazard layers that account for sea-level rise, rather than the current FEMA flood layers? If so, the mapper currently includes future sea-level rise inundation scenarios but does not include projected future FEMA flood extents. Current FEMA flood layers can be added to the map using the *Add Data* button, allowing them to be viewed alongside the sea-level rise inundation scenarios.

**Q:** Are there plans to expand the tool to upstate NY communities?

**A:** That would be really awesome. But it would require additional funding sources.

**Q:** How were the boundaries of the mapper defined?

**A:** In 2021, the U.S. Geological Survey (USGS), in cooperation with U.S. Environmental Protection Agency (EPA) and Long Island Sound Partnership (LISP), began a spatial analysis (the Compound Flood Hazard Study) to assess the compound flood hazard from the combined effects of 1) stormwater and a rising sea level on coastal storm surge, 2) tidal flooding, and 3) groundwater flooding. In 2022, the USGS received supplemental funding for studies to “lessen or avert the threat of catastrophe” in New York State counties that had been affected by Hurricane Ida. The original study area, which only comprised watersheds in New York State, Connecticut, and Rhode Island that drain to Long Island Sound, was expanded to include New York City (excluding Staten Island) and all of Long Island.