

Flood Climatology for Southern South Carolina and Southeast Georgia

Flooding within the coastal reaches of SC and GA can be significant despite the relative lack of terrain. The proximity to the ocean presents several unique challenges to providing timely and accurate advisories and warnings. The inland soil is mostly sandy loam; capable of absorbing a considerable amount of water before reaching saturation. saturating. Thus, these areas experience mainly urban flooding due to rapid runoff on impermeable surfaces.

Within about ten miles of the coast, the addition of several oceanic factors creates a challenging and complex flooding setup. Astronomical factors such as new/full moon, perigees, and apogeas, naturally produce higher than normal tide levels at various times of year. When a persistent onshore wind flow and/or long period swells from distant tropical/extratropical cyclones coincides with such these factors, saltwater inundation occurs in many low-lying areas of coastal SC and GA. If intense rainfall also occurs, a combination of freshwater and saltwater flooding can develop. Providing timely and accurate flood advisories and warnings in these situations is difficult due to the overlap between “coastal flooding” and “flash flooding”. A local effort was recently undertaken to clarify when *coastal flood* vs. *flash flood* products should be issued. These changes were intended to simplify the warning decision process and ensure adequate lead time during significant flooding episodes.

To discover areas for improvement to the flash flood program at WFO Charleston, SC, a comprehensive flash flood climatology is underway. Factors being examined include: determining the success rate for Flash Flood Watches during various synoptic patterns, tracking Flash Flood Warning (FFW) accuracy and lead time across different regions of the CWA, correlating coastal FFW lead time to tide levels, and identifying rural towns at greatest risk for flash flooding. The results of this study will be brought to the ER Flash Flood Workshop presented.

Preferred presentation method: Poster

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