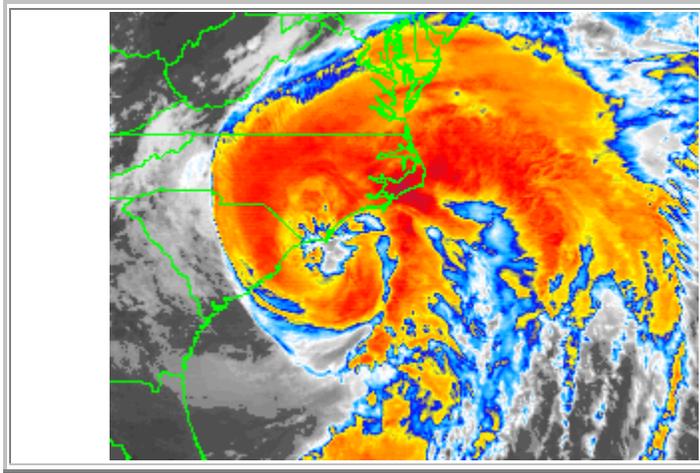


Hurricane Bertha

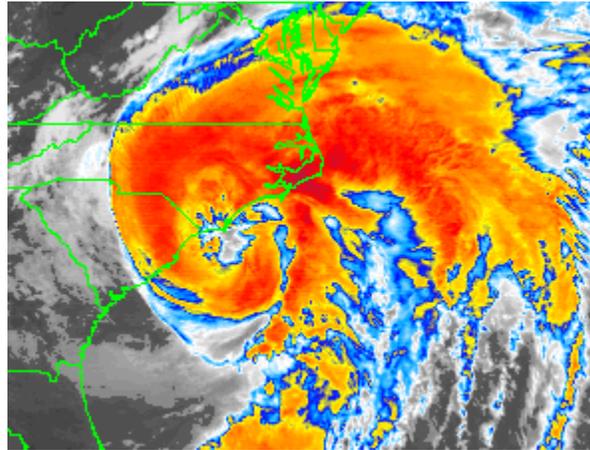
1996



This infrared image of a rapidly-strengthening Hurricane Bertha shows the storm at 1815 UTC July 12, 1996 as it began to pound the North Carolina coastline. Winds had increased from 70 to 90 knots during the day, and they remained at that strength until landfall occurred at 2000 UTC.

Image Information			
Satellite System		Image Specifics	
Satellite Name	GOES 8	Channel Band	No. 4 (Infrared)
Date	July 12, 1996	Resolution	4-km
Julian Date	194	Orbit No./Dir	NA
Time	1815 UTC 1415 EDT	Entity ID	NA
Instrument System	Imager	Area	NC Coast
Data Type	Sector		

Event Discussion



Hurricane Bertha

Conditions at the Time of the Image

As with many landfalling hurricanes on the Southeast coastline of the U.S., Hurricane Bertha increased in strength as it moved over the warm Gulfstream. On the previous day, the storm had become poorly organized and its maximum wind speed had fallen to 70 knots. However, at the time of this image (18:15 UTC), Hurricane Bertha was undergoing reorganization with a broad eye surrounded by heavy convection, as evidenced by the red and orange areas surrounding the center. North and east of the eye, torrential rainfall was pounding the North Carolina coastline as the storm approached. Bertha made landfall a couple of hours later between Wrightsville Beach and Topsail Beach at 2000 UTC (1600 EDT) on July 12 with an estimated maximum sustained 1-minute wind speed of 90 knots.

History of the Storm

Bertha developed into a tropical storm in the far eastern Atlantic at 39 degrees west on July 5, an unusually early date for the beginning of the "Cape Verde" hurricane season. The storm progressed rapidly westward and reached hurricane status on July 7. The next day, Bertha passed near the northern Leeward Islands. Taking a northwest course, Bertha threatened the Bahamas and became better organized. The storm became a Category 3 hurricane on the [Saffir Simpson Scale](#) as winds peaked at 100 knots and pressure fell to 960 millibars (28.35 inches) on July 9. As Bertha continued northwestward, passing to the north of the Bahamas, the storm entered less favorable atmospheric conditions and weakened gradually while turning to the north northwest. By July 11, Bertha was east of St. Augustine and winds had fallen to 70 knots. As Bertha continued north northwest on July 12, the storm encountered more favorable conditions and became better organized as it moved over the warm Gulfstream waters. (Compare Figure 1 with Figure 2). Winds rose rapidly from 70 to 90 knots during the day as the storm took a more northerly course and its feeder bands began to move onshore in North Carolina.

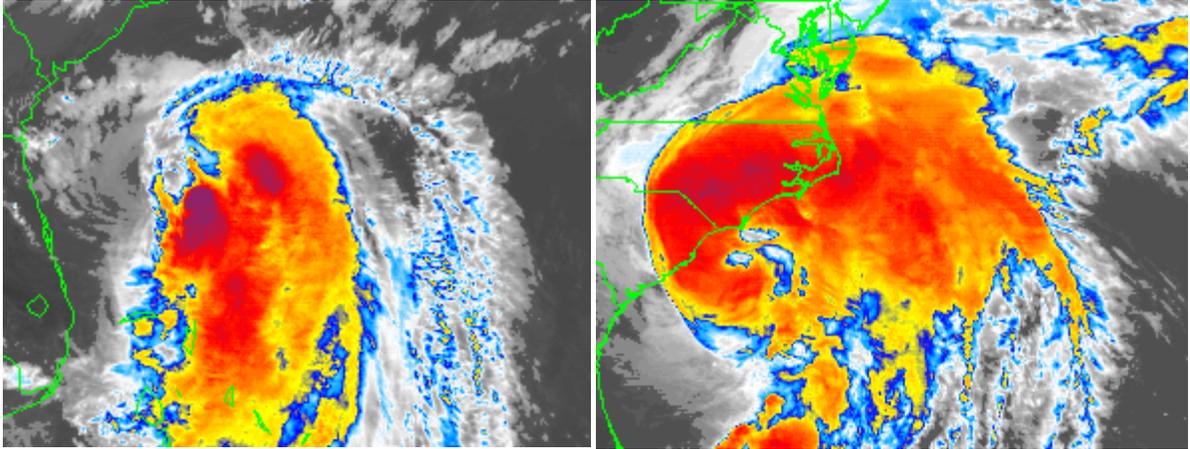


Figure 1
July 11 at 15:15 UTC

Figure 2
July 12 at 16:15 UTC

Bertha continued to move north as torrential rains and damaging winds slashed the North Carolina coast. Bertha made landfall at 2000 UTC (1600 EDT) with the eye moving onshore between Wrightsville Beach and Topsail Beach with peak 1-minute wind speeds estimated at 90 knots. A wind gust of 94 knots (108 mph) was recorded at North Topsail Beach, and also at New River Marine Corps Air Station. Peak storm surge was estimated at 8-10 feet near Swansboro, east of Jacksonville, NC. Water flowed through the streets of Belhaven in Beaufort County where the surge was around 7 feet. Damage in North Carolina included storm surge flooding, beach erosion, loss of piers, roof damage, and fallen trees. Heaviest damage was in Topsail Beach and Onslow County where 199 structures were destroyed (117 of which were mobile homes). Rainfall of up to 14 inches was reported at Hoffman Forest, also just east of where the center made landfall. Further to the northeast, a 5 foot storm surge extended up the Pasquotank River inundating areas near Elizabeth City. Bertha moved northeastward paralleling the Atlantic seaboard with sustained winds of 40 to 50 knots during the next two days. Significant flooding occurred along the entire path with rainfall of three to four inches common, and as much as 10.40 inches falling at Belfast, ME.

Bertha caused insured damage of approximately \$135 million, and an estimated total damage of \$250 million, mostly in North Carolina. A total of 8 deaths are attributed to the storm in the U.S.

Citing the article:

McCown, Sam, "Hurricane Bertha", July 1996, National Climatic Data Center, Asheville, N.C.