Typhoon Maemi and Hurricane Katrina: Impacts and Aftermath

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Typhoon Maemi Landfall

- Lasted just 6 hours in South Korea
- Caused localized windstorms and torrential rainfall
- Extensive damage from wind and flooding
- Over 400 mm of rainfall with flashy hydrographs

Comparison with Other Typhoons								
	Sarah 1959 (9/15/1929)	Thelma 1987 (7/15/1987)	Rusa 2002 (8/30/2002)	Maemi 2003 (9/12/2003)				
Maximum Sustained Winds	117.9 mph (52.7 m/s)	90.1 mph (40.3 m/s)	88.8 mph (39.7 m/s)	134.2 mph (60 m/s)				
Lowest Pressure	952 hPa	972 hPa	970 hPa	954 hPa				

Korean Meteorological Administration, KMA



Saffir-Simpson Scale									
Category	Central Pressure	Winds	Surge	Damage]				
1	>28.94" (980 mb)	74-95 mph (119-153 km/hr)	4-5 ft (1.2-1.7 m)	Minimal					
2	28.91-28.50" (979-965 mb)	96-110 mph (154- 177 km/hr)	6-8 ft (1.8-2.6 m)	Moderate					
3	28.47-27.91" (964-945 mb)	111-130 mph (178-209 km/hr)	9-12 ft (2.7-3.9 m)	Extensive	Sara				
4	27.88-27.17" (944-920 mb)	131-155 mph (210-249 km/hr)	13-18 ft (4-5.5 m)	Extreme					
Super Typhoon		>150 mph (241 km/hr)		Catastrophic					
5	<27.17" (920 mb)	>155 mph (249 km/hr)	>18 ft (5.5 m)	Catastrophic	Katri 200				















Flood Damages

- 18,000 buildings damaged or destroyed by the strong winds
- Gupo Bridge failure
- More than 110 people killed
- Power outages for 1.5 million households
- Heavy-duty shipping cranes were damaged







Gupo Bridge Failure

- 1.06 km-long Gupo bridge partially collapsed with the loss of 19th pier on 9/14/2003
- Bridge pier scour due to high velocities
- Nakdong River peak discharge: ~13,000 m³/s





Hurricane Katrina: August 29, 2005 • Damages: \$10B - \$120B • Deaths (09/07/2005): • 1,014 direct • 577 indirect • 577 indirect • Estimates up to 10,000 • Affected 233,000 km² (90 ,000 mi²) of US: United K ingdom • Five million people with out power









Hurricane Katrina Characteristics

- Maximum sustained winds peaking at 175 mph (280 km/h)
- 918 mb of lowest minimum pressure at landfall: third strongest hurricane on record to make landfall on the United States
- 4.5 to 9 m (15 to 30 foot) storm surge

Comparison with Other Hurricanes

North Atlantic			Landfall U.S.				
Ran	Hurrican	Year	Pressur	Ran	Hurrican	Year	Pressur
1	Gilbert	<u>1988</u>	888 mbar	1	Labor Day	<u>1935</u>	892 mbar
2	Labor Day	<u>1935</u>	892 mbar	2	Camille	<u>1969</u>	909 mbar
3	Allen	<u>1980</u>	899 mbar	3	Katrina	<u>2005</u>	918 mbar
4	Katrina	<u>2005</u>	902 mbar	4	Andrew	<u>1992</u>	922 mbar

NOAA Technical Memorandum NWS TPC-1







































Typhoon Maemi September 13, 2003

- Max. sustained wind speed: 134 mph
- Lowest pressure: 954 hPa
- Category 4
- 18,000 buildings damaged or destroyed by the strong winds
- Gupo Bridge failure
- More than 110 people killedPower outages for 1.5 million
- households • Heavy-duty shipping cranes
- were damaged

Hurricane Katrina August 29, 2005

- Max. sustained wind speed: 175 mph
- Lowest pressure: 902 hPa
- Category 5
- Damages: \$10B \$120B
 Affected 233,000 km² (90,000
- mi²) of US: United Kingdom
- Deaths (09/07/2005): 1,014 direct 577 indirect
- Estimates up to 10,000
 Five million people without po
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THANK YOU f or your Attentio n!