Hurricane Ike 2008

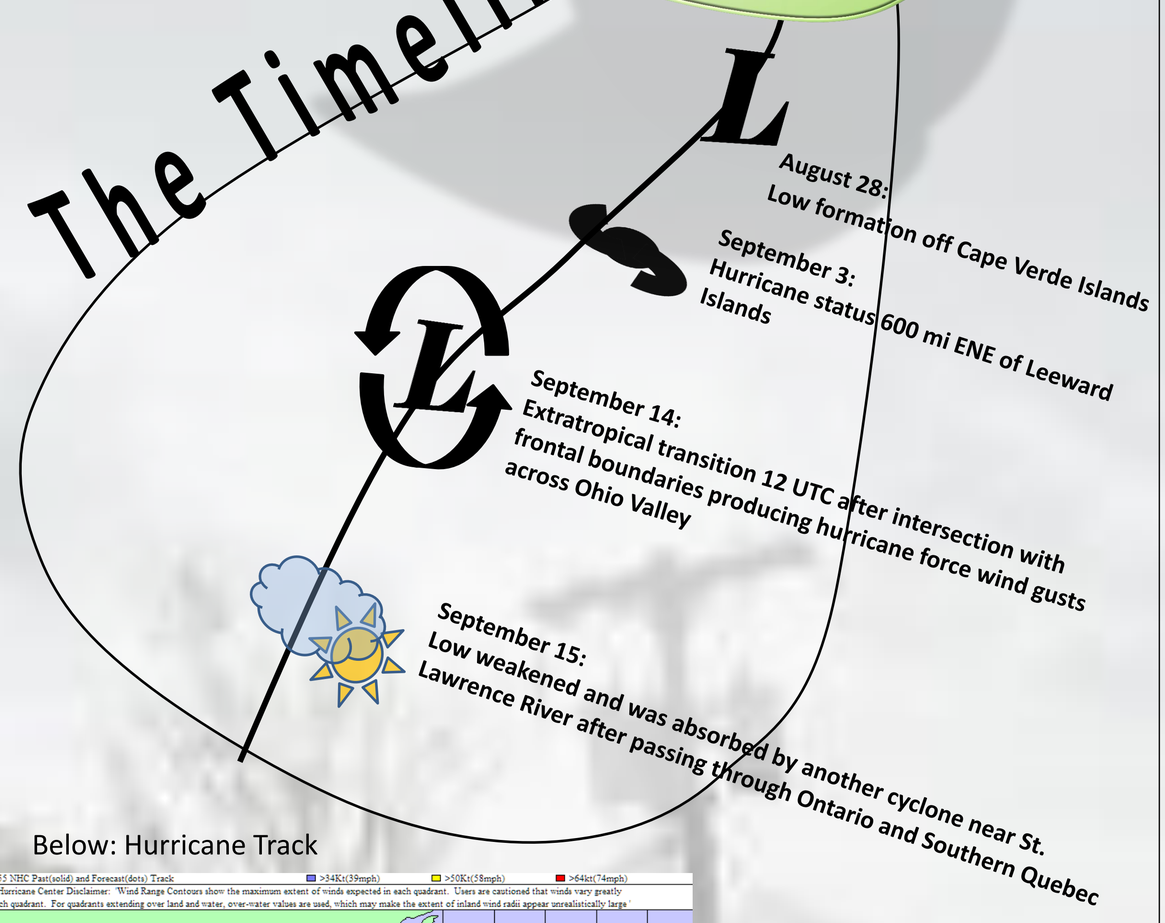
Kentucky Wind Storms

The Facts:

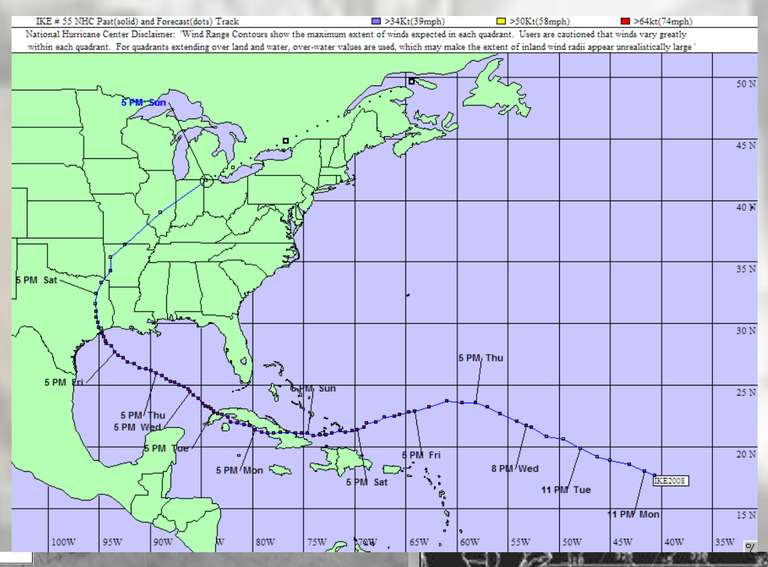
On August 28, 2008 an area of low pressure began to develop off of the Cape Verde Islands in the Atlantic Ocean and propagated northwest. The storm made landfall on September 13, 2008 and became an extratropical cyclone the following day around daybreak. The extratropical cyclone then interacted with frontal boundaries in the Ohio Valley and produced hurricane force wind gusts.

"...the assistance was authorized under a *major* disaster declaration issued for the commonwealth by President Bush."
- FEMA Administrator David Paulison

The Timeline:

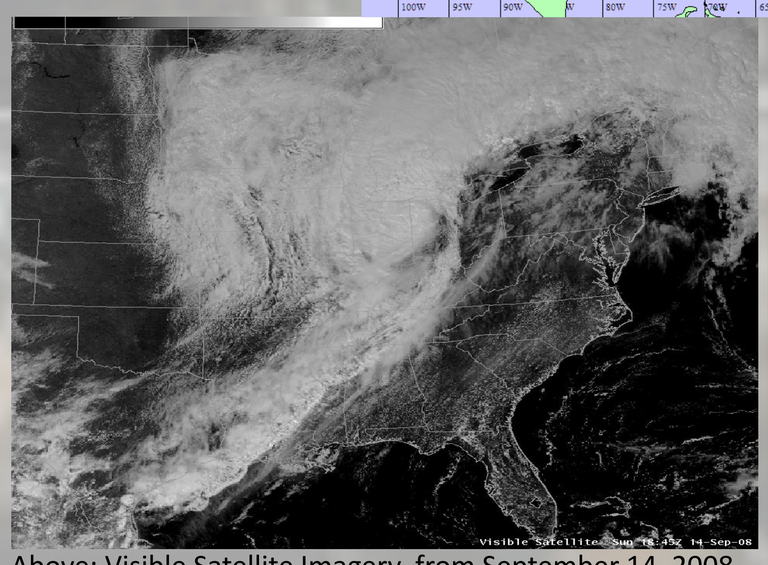


Below: Hurricane Track

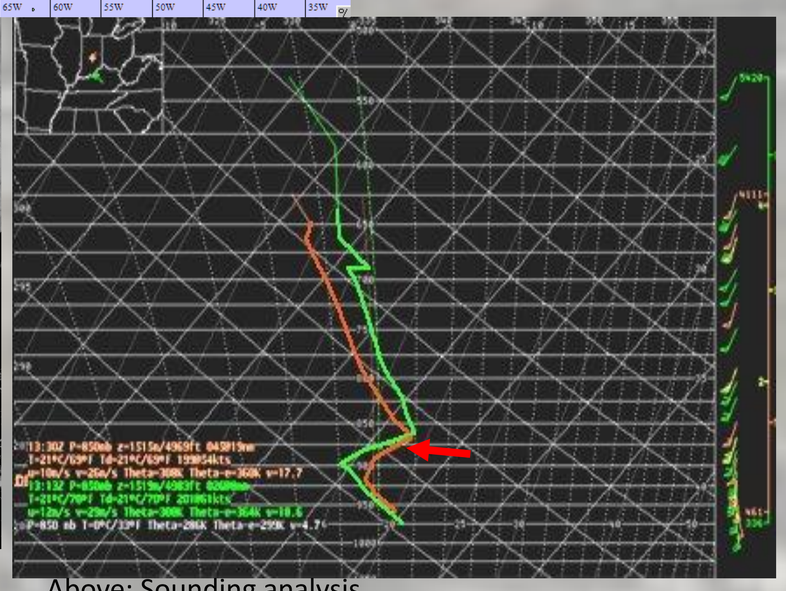


The Wind Science:

The combination of a tight pressure gradient (tightly packed pressure lines) produced high winds aloft and a strong winds at the surface. A strong environmental "cap" in the form of an inversion kept thunderstorms from developing. Diurnal heating at the surface allowed higher winds aloft to mix down to the surface due to steep lapse rates (change in temperature with height). This caused strong damaging winds with no thunderstorm activity present.



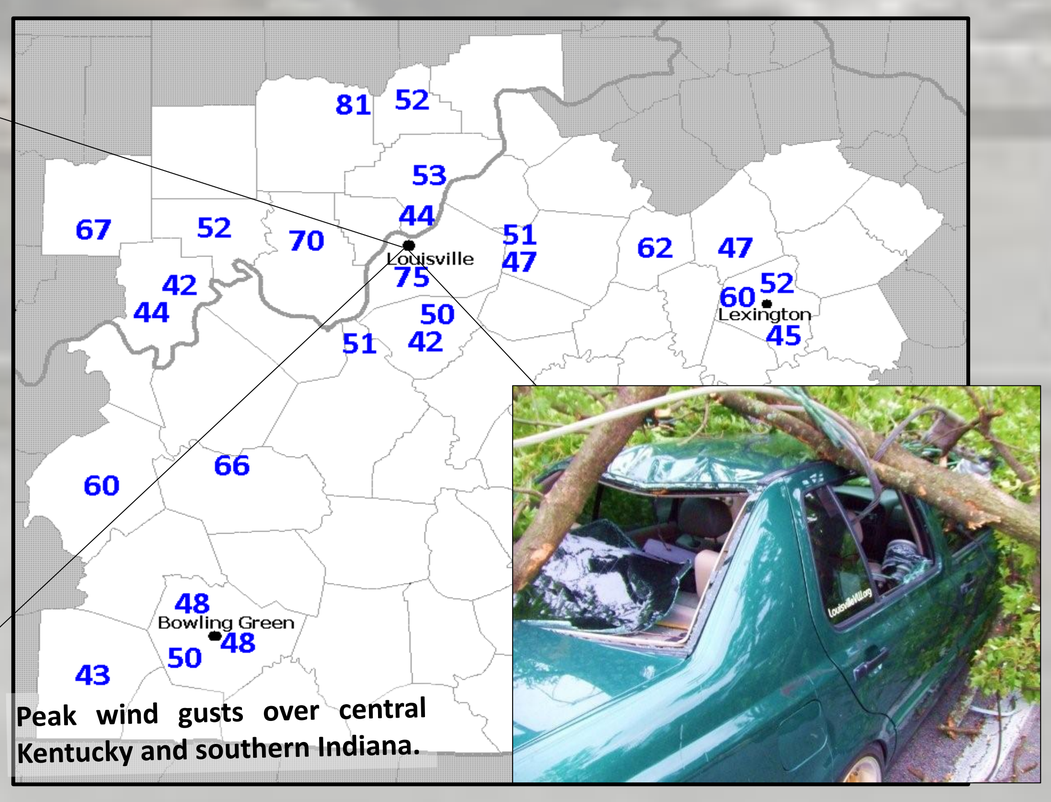
Above: Visible Satellite Imagery from September 14, 2008



Above: Sounding analysis.

The Impacts:

- 5-10 injuries and 4 fatalities
- 300,000+ people without power, some over a week
- 6500 power lines downed
- At least 2 counties declared states of emergency (Floyd and Jefferson, IN)
- I-65 and I-264 shut down for a time and 130 roads in Louisville blocked by debris



Peak wind gusts over central Kentucky and southern Indiana.

Created by NWS Louisville Student Volunteer Emily Thornton