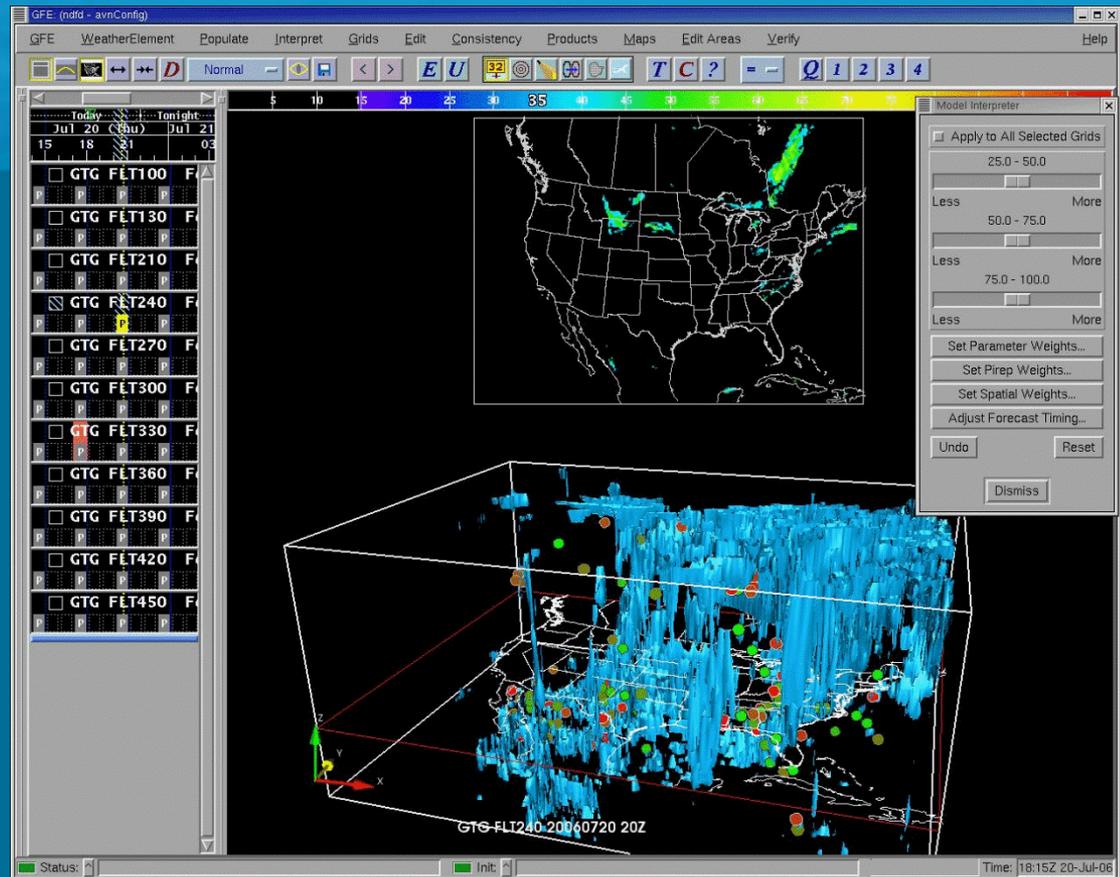


NDFD Convective Hazard Probability Elements

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*Nextgen Collaborative Science Meeting
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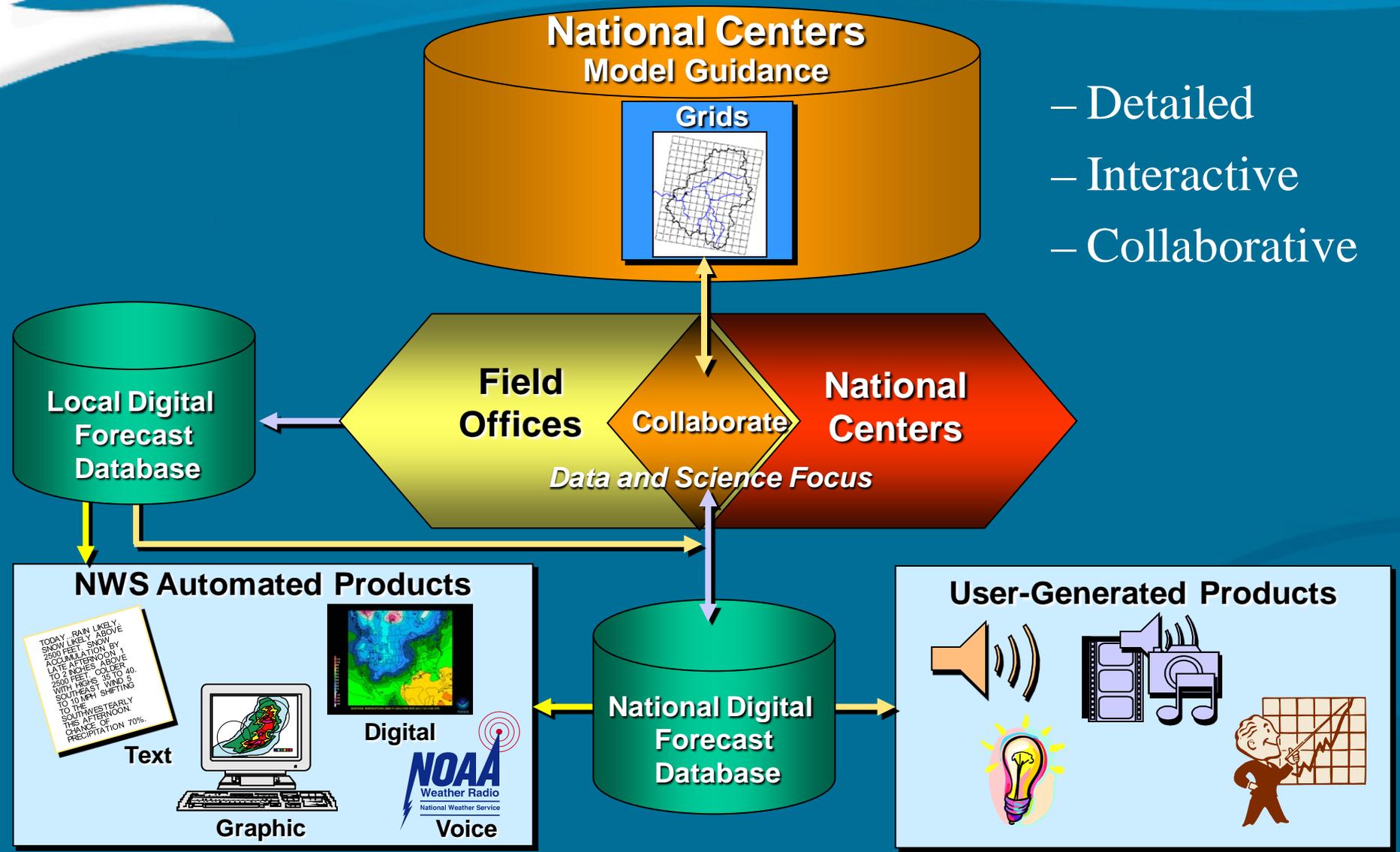
NDFD Convective Outlook Hazard Probability Elements

NDFD contains the following convective outlook hazard probability elements:

- Categorical Convective Outlook for today (Day 1), tomorrow (Day 2), and the day following (Day 3)
- Probability of Tornadoes (Day 1)
- Probability of Hail (Day 1)
- Probability of Damaging Thunderstorm Winds (Day 1)
- Probability of Extreme Tornadoes (Day 1)
- Probability of Extreme Hail (Day 1)
- Probability of Extreme Thunderstorm Winds (Day 1)
- Total Probability of Severe Thunderstorms (Day 2 and Day 3)
- Total Probability of Extreme Severe Thunderstorms (Day 2 and Day 3)

Available for CONUS and 16 pre-defined CONUS sectors

NDFD Digital Forecast Process



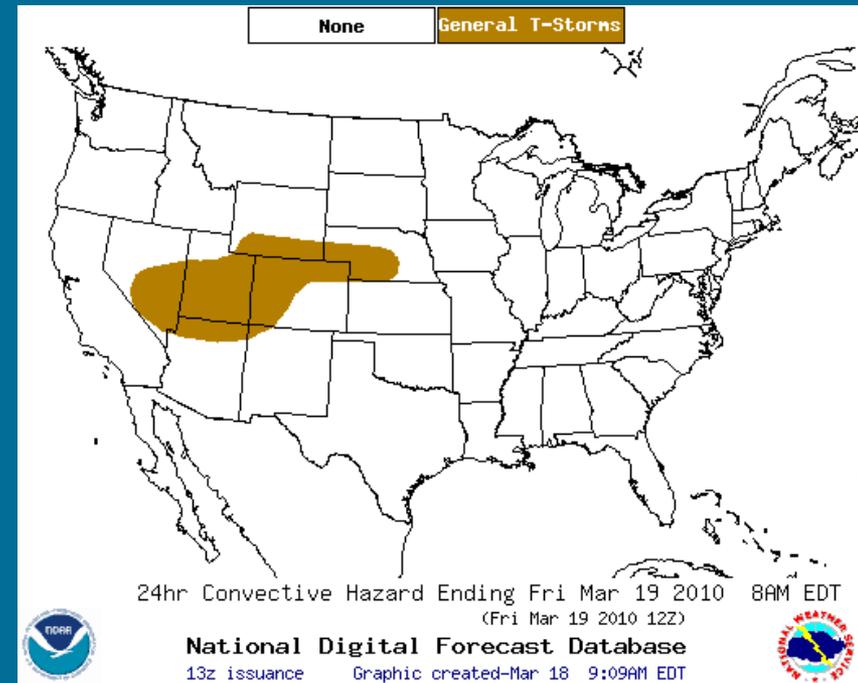
- Detailed
- Interactive
- Collaborative

NDFD and meeting Nextgen performance criteria

Criteria	Global Airspace Req.	NDFD Req.	Meet Req?
Hor. Resolution	10km	5km	Exceeds
Hor. Accuracy	5km	5km	Meets
Update Rate	<= 10min	2x day (day 1) 1x day (days 2-3)	Does not currently meet
Forecast Temporal Res.	1h	24h	Does not meet. But 1h is planned.
Forecast Update Rate and Latency	3h (day 1) 6h (days 2-7)	2x day (day 1) 1x day (days 2-3)	Does not currently meet

NDFD – Categorical Convective Outlook (Day 1)

Categorical Convective Hazard Outlook (Day 1, Day 2, and Day 3) a categorical forecast (slight, moderate, or high risk) that specifies the perceived level of threat of thunderstorms, severe thunderstorms, hail, damaging winds, and tornadoes.



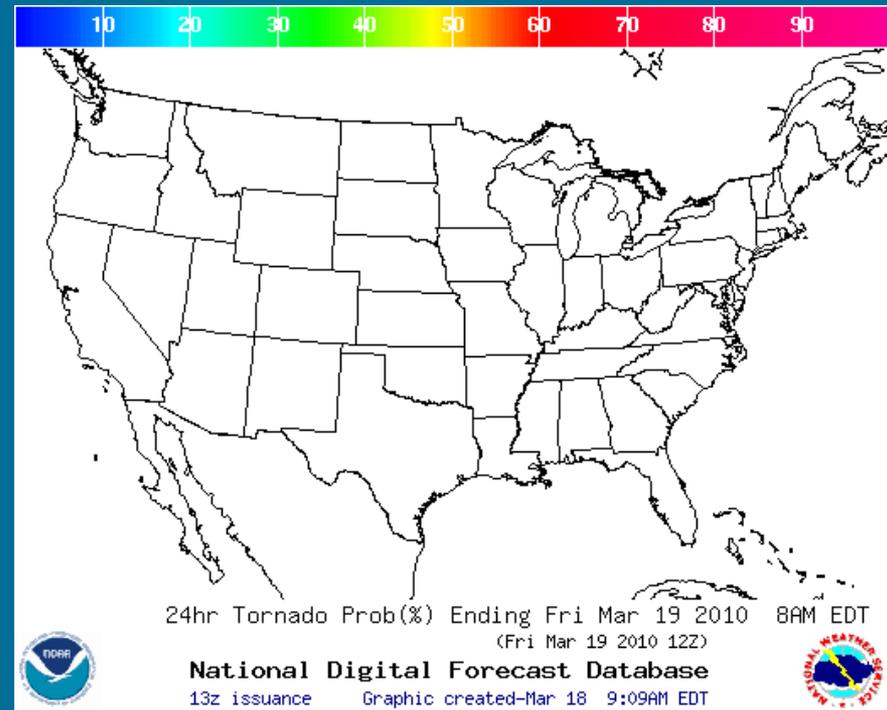
Sample Convective Hazard Outlook (Day 1)

Backup Slides

NDFD - Probability of tornadoes (Day 1)

Probability of tornadoes (Day 1) is the probability (in percent) of a tornado occurring within 25 miles of any point during the outlook period. The higher the probability, the higher the threat of tornadoes occurring.

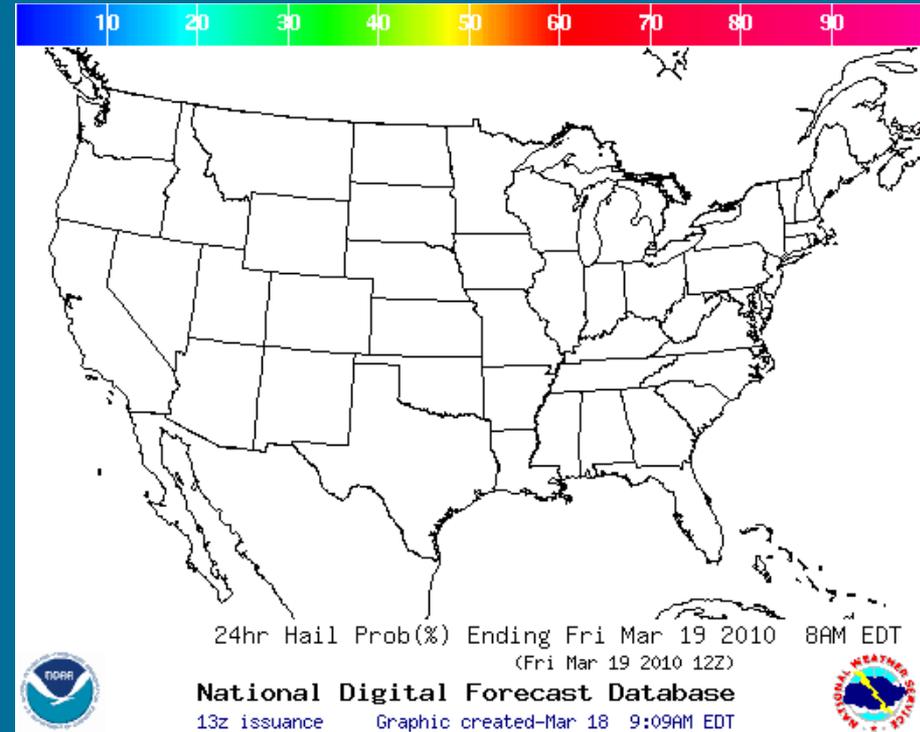
- **NDFD Grid Availability:** These grids are produced by SPC at 0600 UTC, 1300 UTC, 1630 UTC, 2000 UTC, and 0100 UTC. The grid is composed of one projection.



NDFD - Probability of hail (Day 1)

Probability of hail (Day 1) is the probability (in percent) of hail greater than three-quarters of an inch in diameter (size of a penny) occurring within 25 miles of any point during the outlook period. The higher the probability, the higher the threat of severe hail occurring.

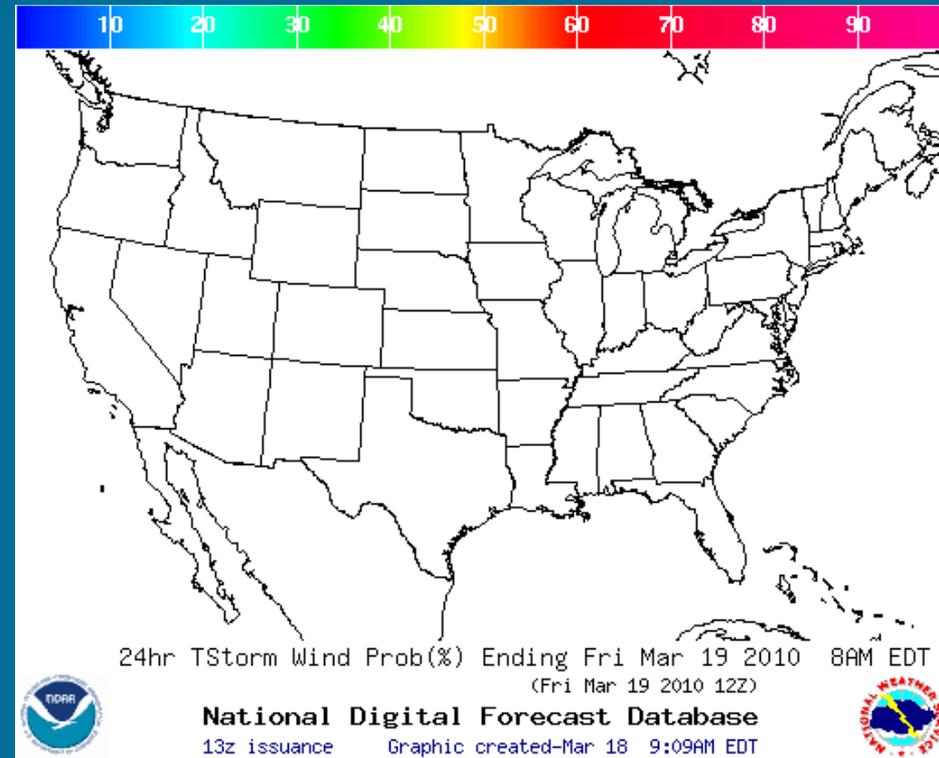
- **NDFD Grid Availability:** These grids are produced by SPC at 0600 UTC, 1300 UTC, 1630 UTC, 2000 UTC, and 0100 UTC. The grid is composed of one projection.



NDFD - Probability of damaging Thunderstorm Winds (Day 1)

Probability of damaging Thunderstorm Winds (Day 1) is the probability (in percent) of winds greater than 58 miles per hour occurring within 25 miles of any point during the outlook period. The higher the probability, the higher the threat of severe thunderstorm winds occurring.

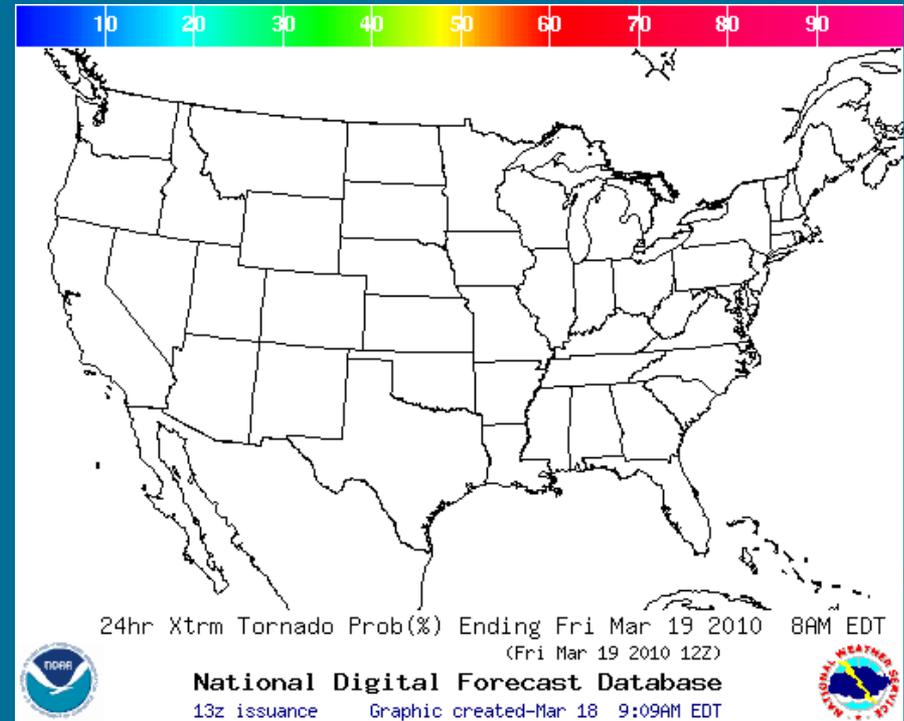
- **NDFD Grid Availability:** These grids are produced by SPC at 0600 UTC, 1300 UTC, 1630 UTC, 2000 UTC, and 0100 UTC. The grid is composed of one projection.



NDFD - Probability of Extreme Tornadoes (Day 1)

Probability of extreme tornadoes (Day 1) is the probability (in percent) of Enhanced Fujita scale 2 (EF2) tornadoes occurring within 25 miles of any point during the outlook period. The higher the probability, the higher the threat of extreme tornadoes occurring.

- **NDFD Grid Availability:** These grids are produced by SPC at 0600 UTC, 1300 UTC, 1630 UTC, 2000 UTC, and 0100 UTC. The grid is composed of one projection.

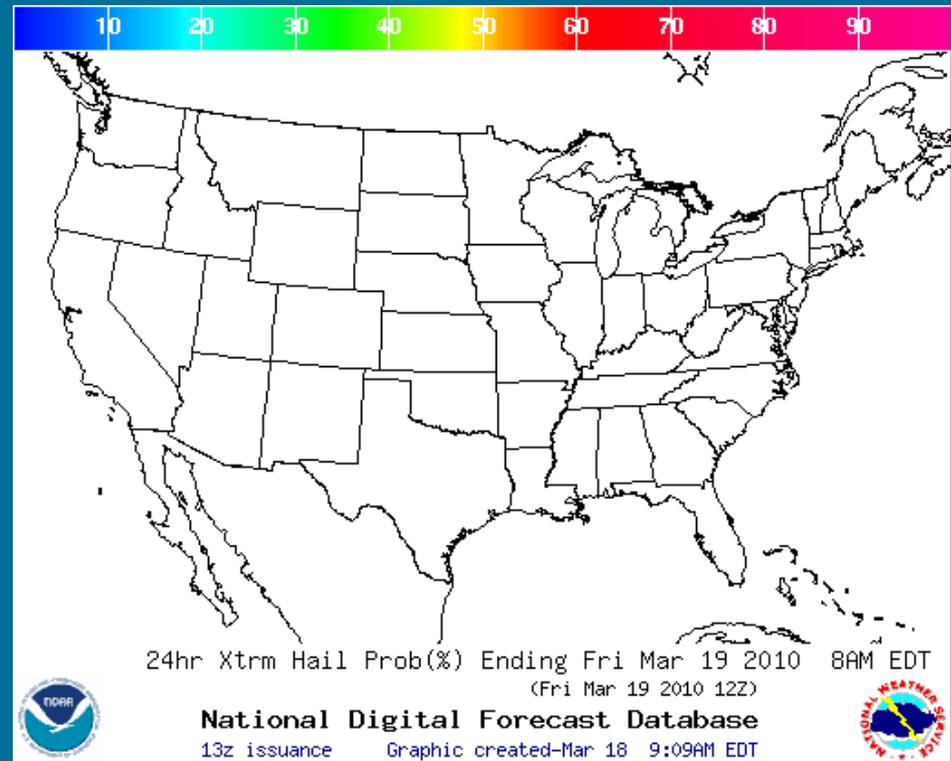


NDFD - Probability of Extreme Hail (Day 1)

Probability of Extreme Hail (Day 1)

is the probability (in percent) of hail greater than 2 inches in diameter within 25 miles of any point during the outlook period. The higher the probability, the higher the threat of extreme hail occurring.

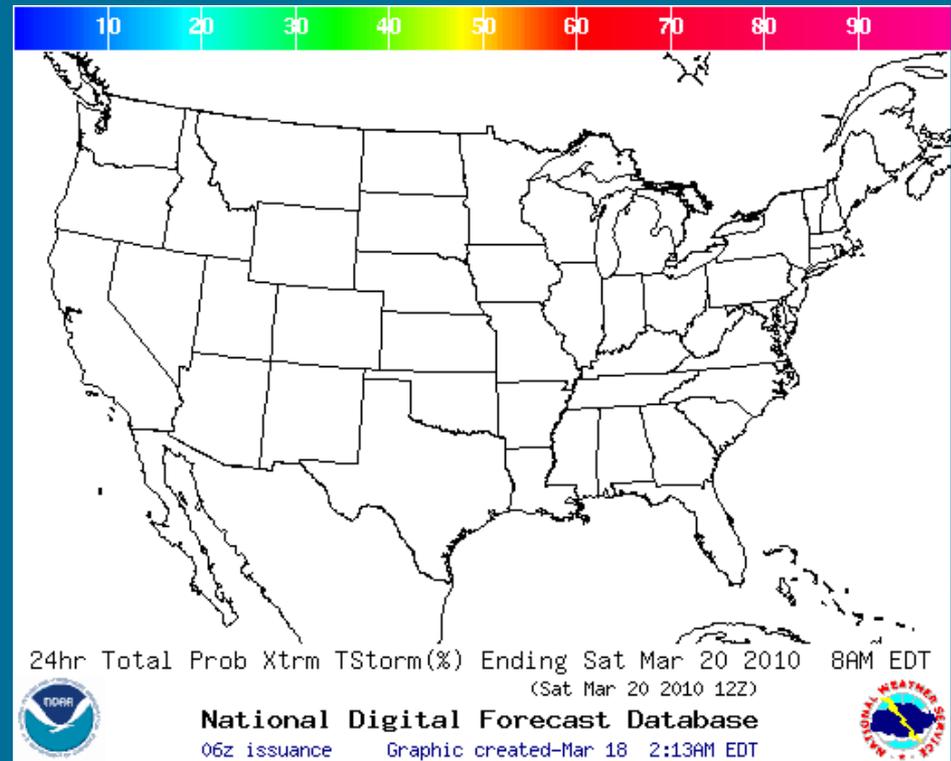
- **NDFD Grid Availability:** These grids are produced by SPC at 0600 UTC, 1300 UTC, 1630 UTC, 2000 UTC, and 0100 UTC. The grid is composed of one projection.



NDFD - Probability of Extreme thunderstorm Winds (Day 1)

Probability of Extreme Thunderstorm Winds (Day 1) is the probability (in percent) of winds greater than 75 miles per hour occurring within 25 miles of any point during the outlook period. The higher the probability, the higher the threat of extreme thunderstorm winds occurring.

- **NDFD Grid Availability:** These grids are produced by SPC at 0600 UTC, 1300 UTC, 1630 UTC, 2000 UTC, and 0100 UTC. The grid is composed of one projection.



NDFD – Total Probability of Severe thunderstorms (Days 2&3)

Probability of Severe Thunderstorm Winds (Days 2&3) is the probability (in percent) tornadoes, damaging winds with speeds greater than 58 miles per hour, or large hail three quarters of an inch in diameter (penny-size) occurring within 25 miles of any point during the outlook period

- ***NDFD Grid Availability:*** Day 2 grids are produced by SPC at 0700 UTC (0600 UTC during Daylight Savings Time) and 1730 UTC. Day 3 grids are produced by SPC at 0830 UTC (0730 UTC during Daylight Savings Time). The grid is composed of one projection.

NDFD – Total Probability of Extreme Severe thunderstorms (Days 2&3)

Probability of Extreme

Thunderstorm Winds (Days 2&3)

is the probability (in percent) of EF2 (Enhanced Fujita scale 2) tornadoes, damaging winds with speeds greater than 75 miles per hour, or large hail two inches or greater in diameter occurring within 25 miles of any point during the outlook period.

- ***NDFD Grid Availability:*** Day 2 grids are produced by SPC at 0700 UTC (0600 UTC during Daylight Savings Time) and 1730 UTC. Day 3 grids are produced by SPC at 0830 UTC (0730 UTC during Daylight Savings Time). The grid is composed of one projection.