National Hurricane Center
2011 Forecast Verification

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Hurricane Specialist Unit
National Hurricane Center

2012 Interdepartmental Hurricane Conference
2011 Atlantic Verification

Values in green exceed all-time records.

<table>
<thead>
<tr>
<th>VT (h)</th>
<th>NT (n mi)</th>
<th>TRACK (kt)</th>
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<tr>
<td>000</td>
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48 h error GPRA targets
Track: 87 n mi (met)
Intensity: 13 kt (missed)
So what else is new?
Atlantic Track Errors by Storm

2011 Official Track Errors By Storm - Atlantic

Bret, Don, Irene, Katia, Lee, Rina, Sean
successes

Struggled with Maria, Ophelia

Forecast Error (n mi)

- 24 h
- 48 h
- 72 h
- 96 h
- 120 h

214.8
174.2
133.2
89.2
50.2
Ophelia’s Reformation

120 h forecast

Verifying position
Official forecasts were mostly better than the 5-yr mean, though the season’s storms were “easier” than normal.
Atlantic Track Error Trends

NHC Official Track Error Trend
Atlantic Basin

Error Reduction since 1990

- 72 h: 65%
- 48 h: 62%
- 24 h: 57%
Atlantic Track Skill Trends

NHC Official Track Skill Trend
Atlantic Basin

Skill leveling off?

- 24 h Skill
- 48 h Skill
- 72 h Skill
- 96 h Skill
- 120 h Skill
2011 Track Guidance

Official forecast skill very close to consensus aids (even a little better)

**EMXI and GFSI best models overall.**

GFS ensemble mean not as good as deterministic GFS.

Continued poor performance of GFNI and NGPI. Bad year for EGRI.

**HWRF and GHMI middle of the pack.**

**BAMM beat all regional models at 96 and 120 h.**
48-h Model Trends

EMXI best model for the fourth year in a row.

GFS has been a close second.
Atlantic Intensity Errors vs. 5-Year Mean

NHC Official vs. Decay SHIFOR5 Forecasts
Atlantic Basin

Official forecast errors were better than the 5-yr mean but the season’s storm were much easier to forecast than normal.
Atlantic Intensity Error Trends

NHC Official Intensity Error Trend
Atlantic Basin

Little or no progress with intensity
No operational aid was skillful beyond 72 h.

Dynamical models performed very poorly.

LGEM was best individual model overall.
2011 Intensity Bias

GHMI and GFNI had a substantial high bias.

Slight low bias LGEM.

OFCL very little bias.
### 2011 East Pacific Verification

#### 2011 - Eastern North Pacific Basin

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Values in green exceeded all-time lows.
Official forecasts were better than the 5-yr mean, even though the season’s storms were harder than normal.
EPAC Track Error Trends

Since 1990, track errors have decreased by 35%-60%

NHC Official Track Error Trend
Eastern North Pacific Basin
EPAC Track Skill Trends

NHC Official Track Skill Trend
Eastern North Pacific Basin

Skill is at all-time highs from 72-120 h.
OFCL near the TVCE and FSSE.

EMXI best model in this basin too.

GFS ensemble mean is quite skillful and better than the deterministic GFS.

EGRI, NGPI, CMCI performed well in the EPAC.

GHMI middle of the pack, HWRF trails.

BAMS and BAMM beat the regional models at 96 and 120 h.
Official forecasts were a little worse than the 5-yr mean, but the season’s storms were “harder” than average.
EPAC Intensity Error Trends

Intensity errors have decreased slightly at 48 h and 72 h but have remained about the same otherwise.
2011 Intensity Guidance

Official forecasts performed better than most of the guidance.

Good year for GFNI, much better than GHMI and HWFI.

Statistical and consensus models are pretty close.
## Cone Radii – 2012 vs. 2011

### Atlantic

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2011 Genesis Forecasts

Atlantic

Inability to distinguish the high from the medium likelihood of development

East Pacific

Forecasts very well calibrated (reliable). Much improved this year.

Inability to distinguish the high from the medium likelihood of development