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Marine Weather Overlays



**Precision Marine Navigation 2020
Visions for the Future**
Presentation by LTJG Hillary Fort &
Joe Sienkiewicz





S-41X

Modernization of Maritime Forecasts

...HURRICANE FORCE WIND WARNING...

.LOW 47N138W 1014 MB MOVING SE 30 KT AND RAPIDLY INTENSIFYING.
FRONT EXTENDS FROM THE LOW TO 46N157W. WITHIN 300 NM S AND 360
NM SW QUADRANTS AND ELSEWHERE WITHIN 180 NM N OF THE FRONT WINDS
25 TO 35 KT. SEAS 8 TO 12 FT.

.18 HOUR FORECAST LOW 43N125W 976 MB. WITHIN 180 NM SW AND W
QUADRANTS WINDS 55 TO 70 KT. SEAS 24 TO 39 FT.

.24 HOUR FORECAST LOW INLAND 43N122W 984 MB. OVER FORECAST
WATERS WITHIN 600 NM SW AND 720 NM NW QUADRANTS WINDS 30 TO 45
KT. SEAS 15 TO 35 FT.

.48 HOUR FORECAST LOW WELL INLAND. FROM 30N TO 52N BETWEEN 126W
AND 137W WINDS 20 TO 30 KT. SEAS 10 TO 19 FT.

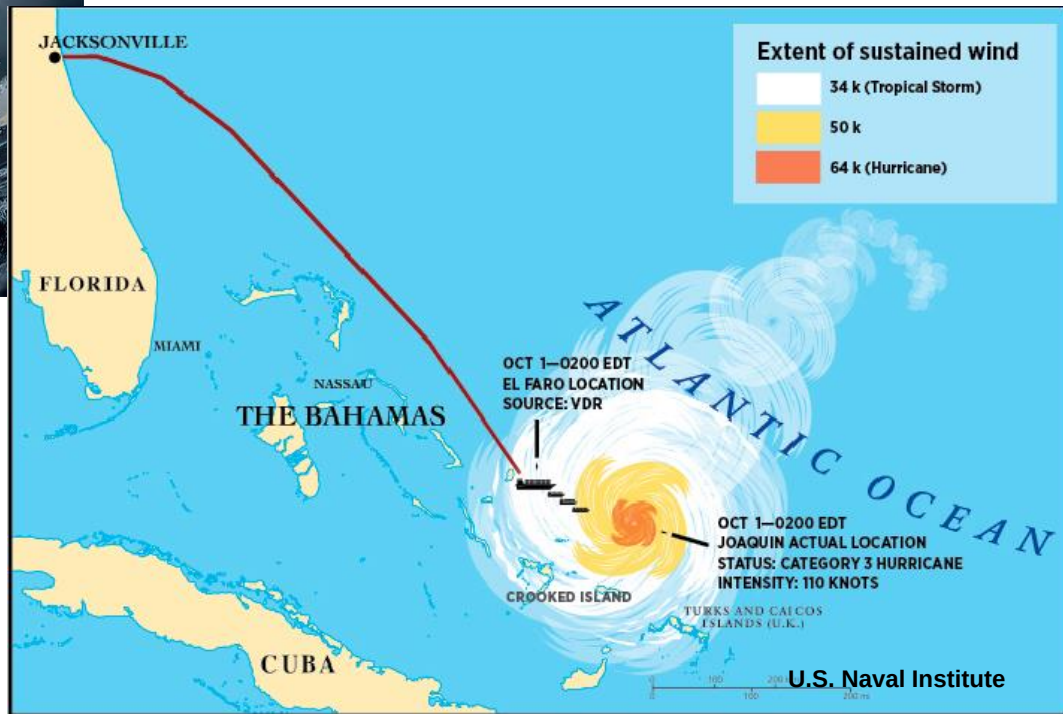




Why does this matter?



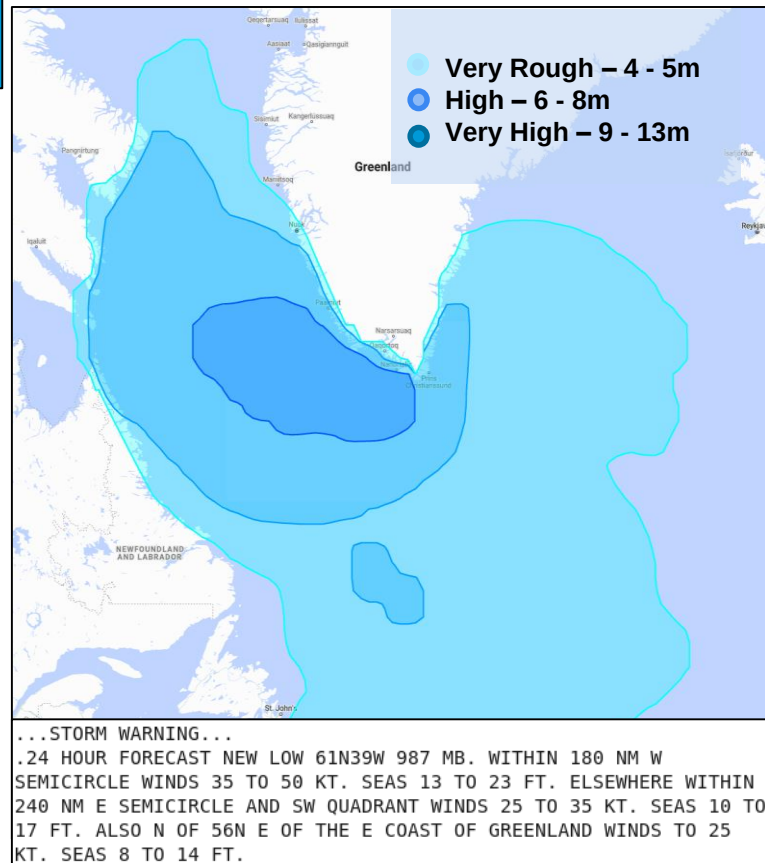
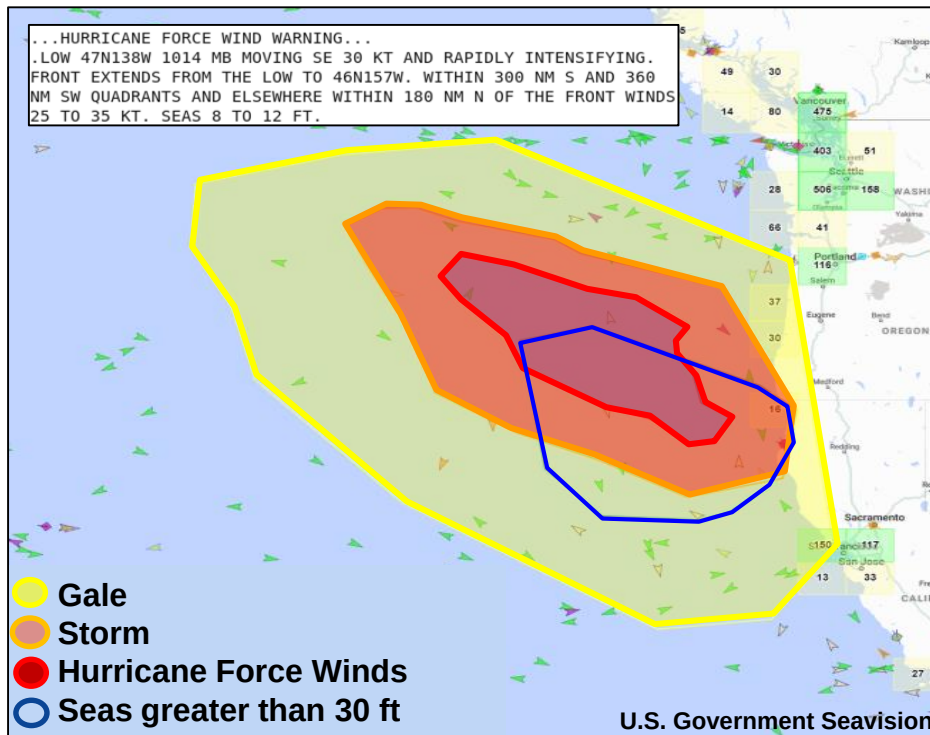
*"She was lost at sea with all hands
on **October 1, 2015**, after steaming into
the center of Hurricane Joaquin"*





Marine Weather Hazards

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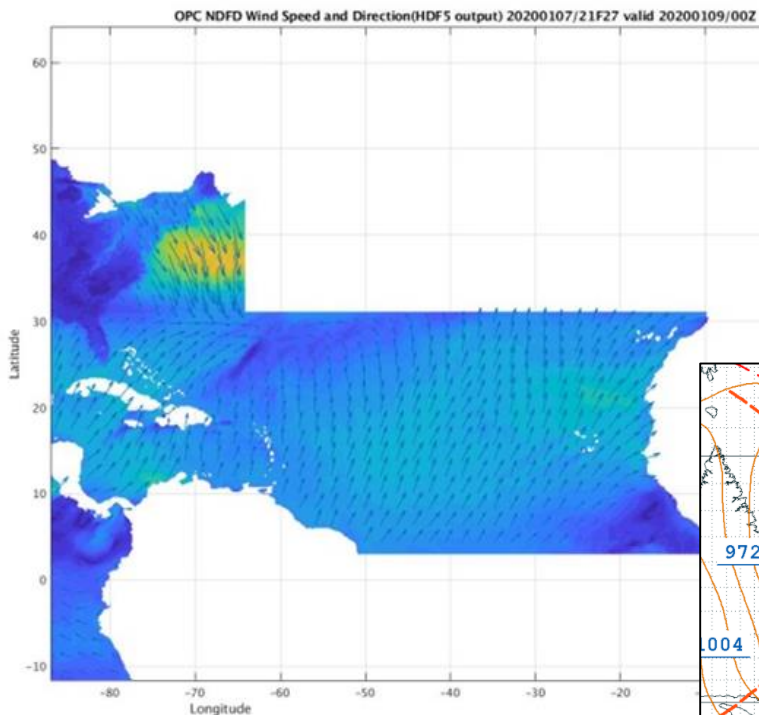




Marine Weather Conditions

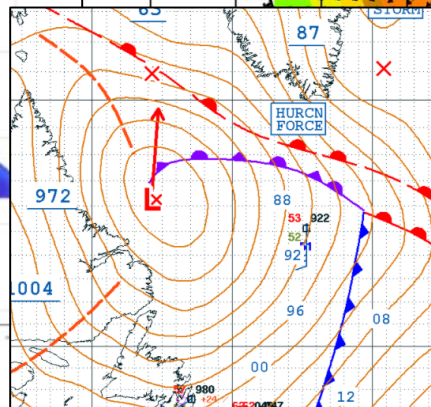
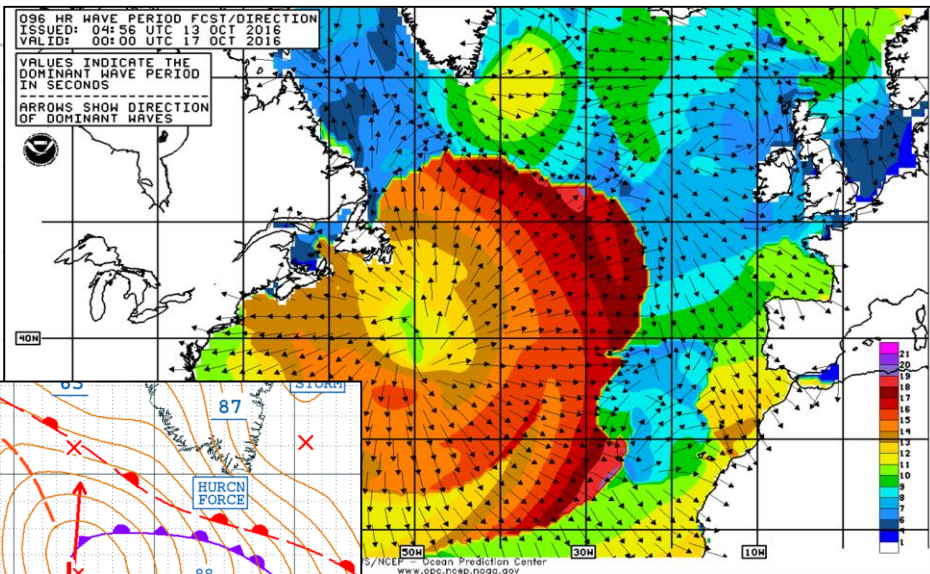


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096 HR WAVE PERIOD FCST/DIRECTION
ISSUED: 04:56 UTC 13 OCT 2016
VALID: 00:00 UTC 17 OCT 2016

VALUES INDICATE THE
DOMINANT WAVE PERIOD
IN SECONDS
ARROWS SHOW DIRECTION
OF DOMINANT WAVES



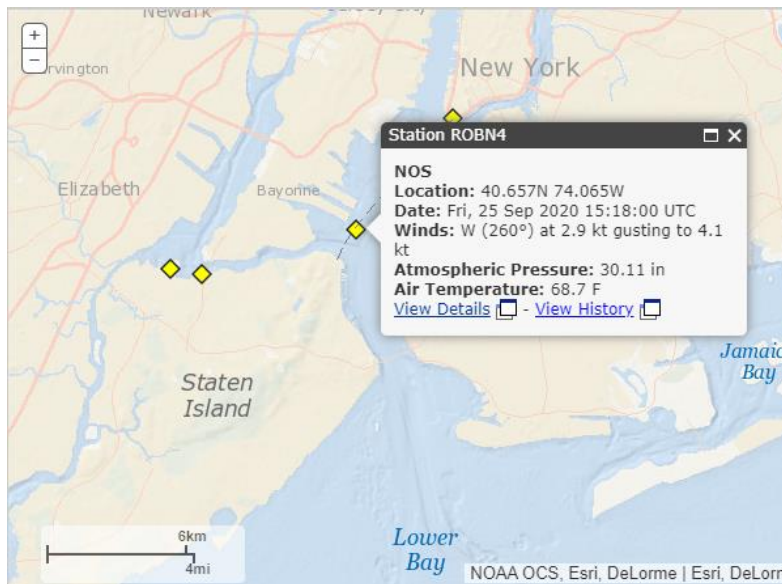
Weather Objects
and Gridded
Forecasts





Marine Weather Observations

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Ex: Onboard ship
observations and
buoy data



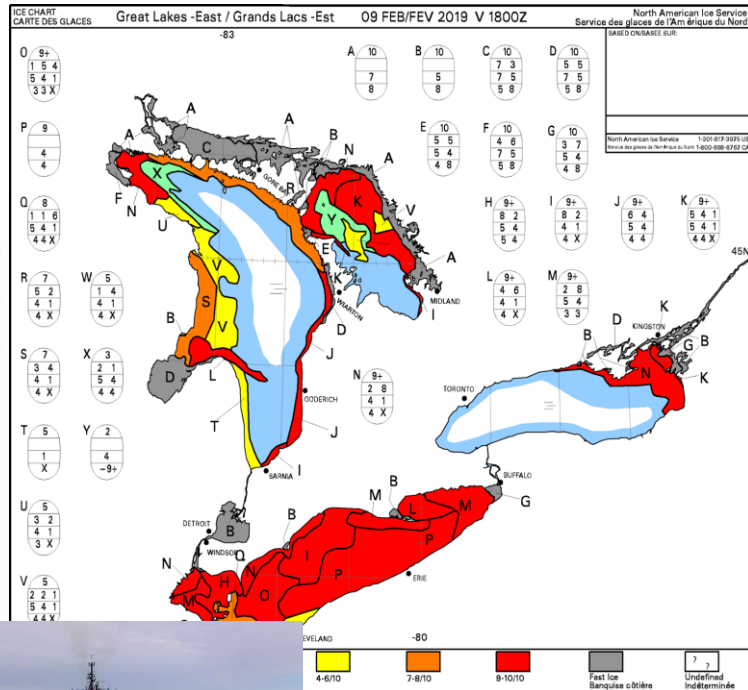
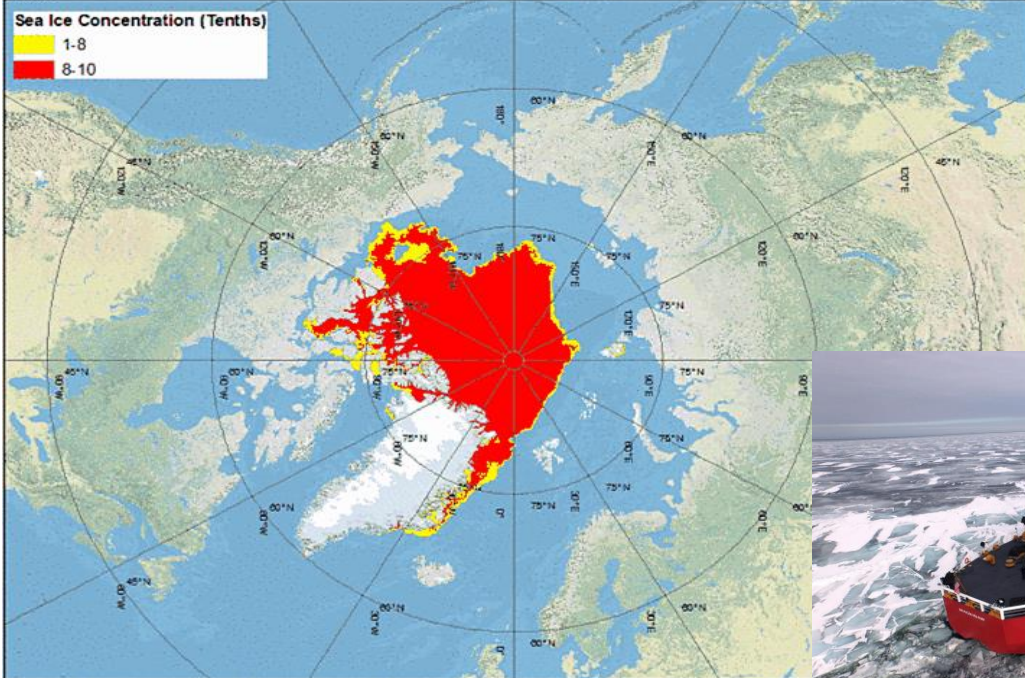
Marine Ice Analysis

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U. S. NATIONAL ICE CENTER
ARCTIC MARGINAL ICE ZONE
PRODUCED: 24 SEP 2020

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301-817-3975
NIC_ANALYST@NOAA.GOV



U.S. National Ice
Center





Precision Navigation on a Global Scale



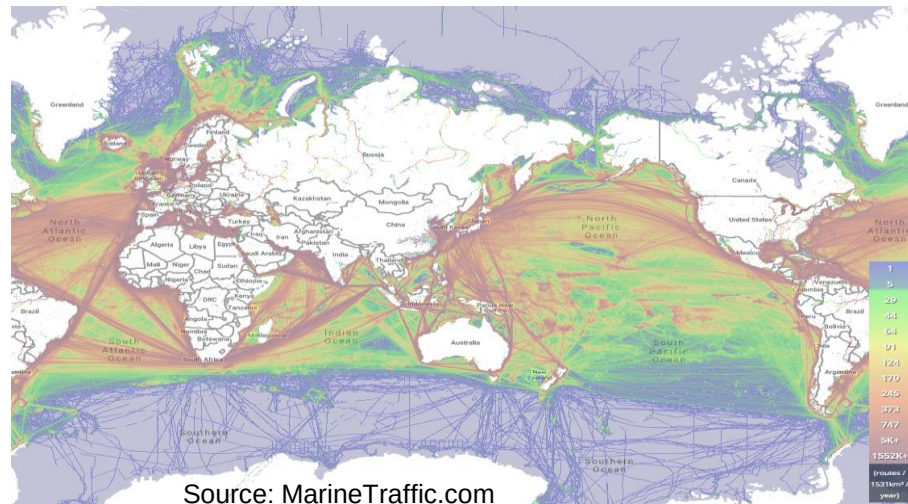
Future Opportunities:

- Evolution of Met-Ocean information – E-Navigation
- Streamline and standardize outputs internationally
- Integrate information into ECS & other applications



Challenges:

- Technology
 - METAREA providers
 - Collaboration
- NOAA-wide dissemination
- Implementation
 - Training



Source: MarineTraffic.com





S-41X Development Team

Ocean Prediction Center - Ocean Application Branch



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