

CPHC Tropical Cyclone Operations: Challenges in 2017; What's ahead

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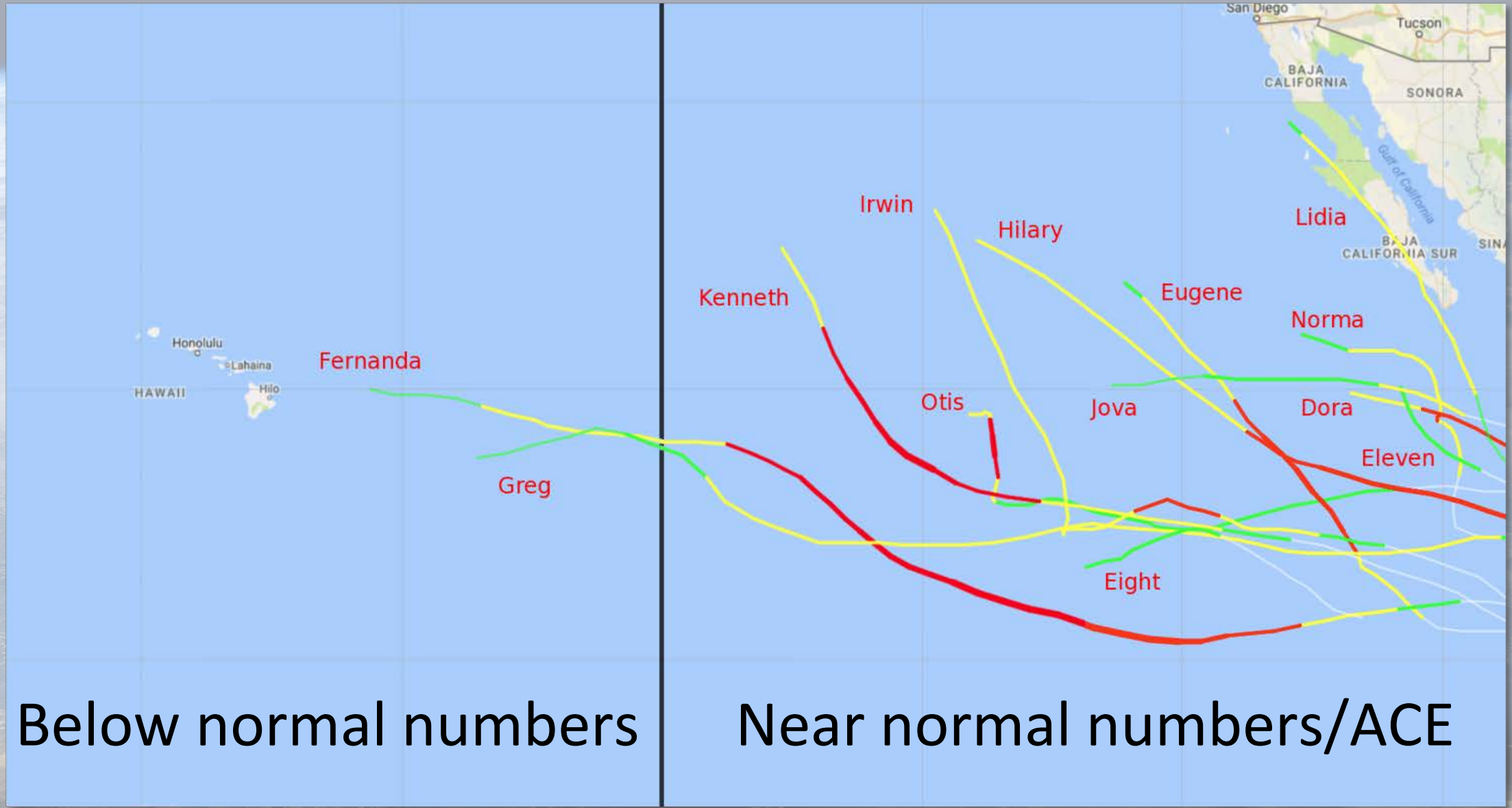
OUTLINE

- Discuss 2017 challenges
- Highlight changes to 2018-9 TC products and services →
Central Pacific Hurricane Center
(CPHC)

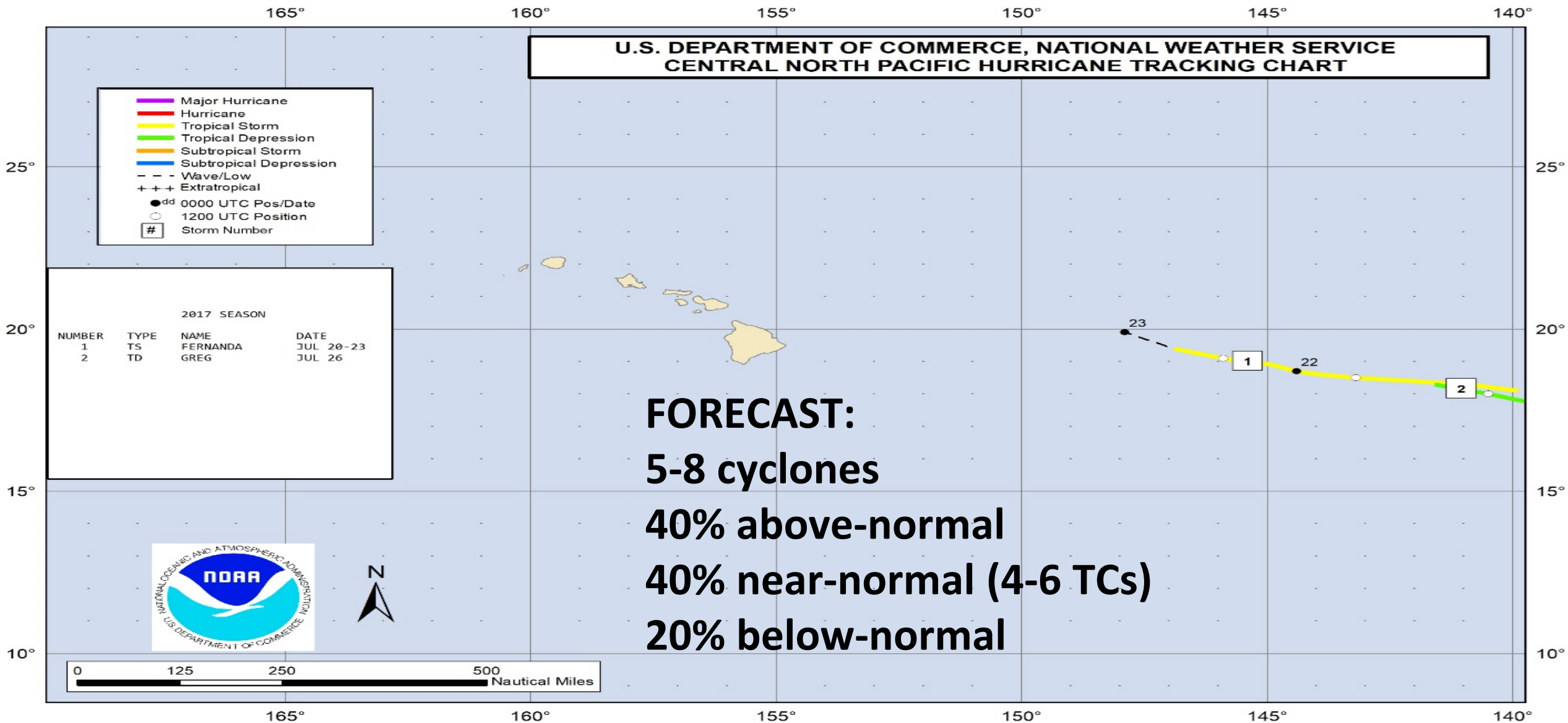
2017 CPHC challenges

- Anticipating seasonal basin activity
- Forecasting genesis
- COOP
- Forecaster tools
- HWRF in AWIPS?

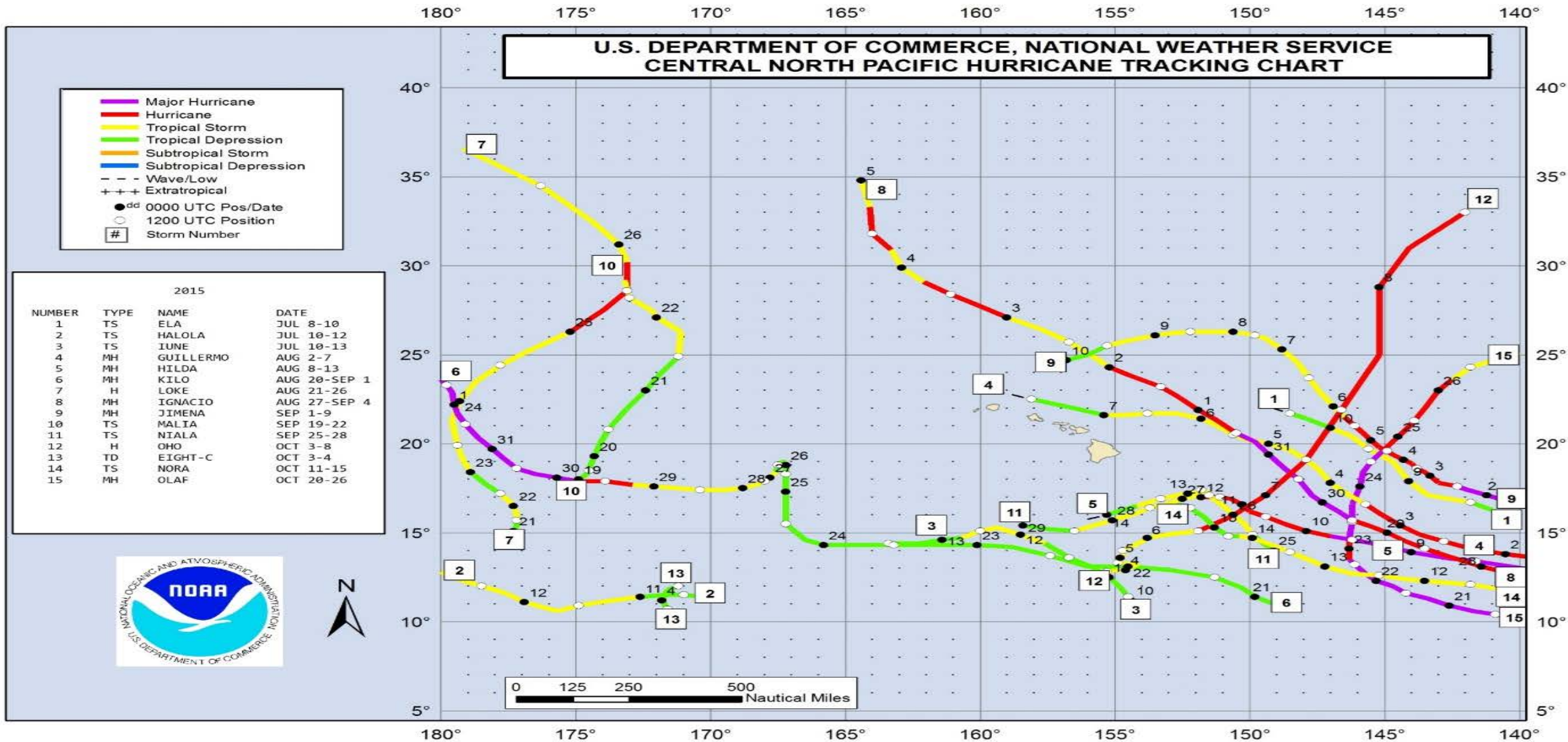
2017 East and Central Pacific Tracks/Intensity



2017 Central Pacific Tracks/Intensity



2015 Central Pacific Tracks/Intensity



2015 Central Pacific Tracks/Intensity

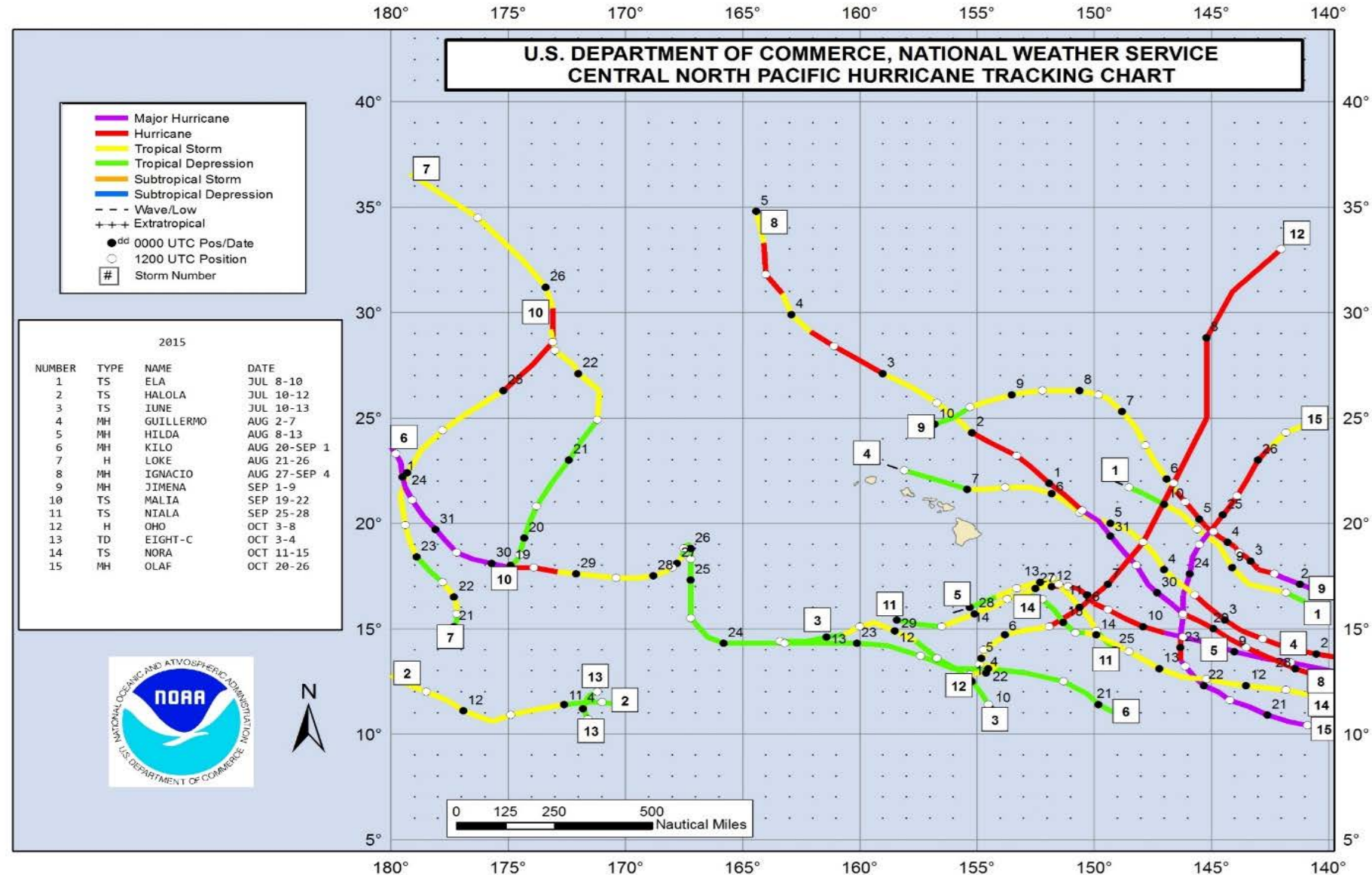
FORECAST:

5-8 cyclones

70% above-normal

25% near-normal

5% below-normal



Anticipating TC genesis

Invest 90C – August 2017

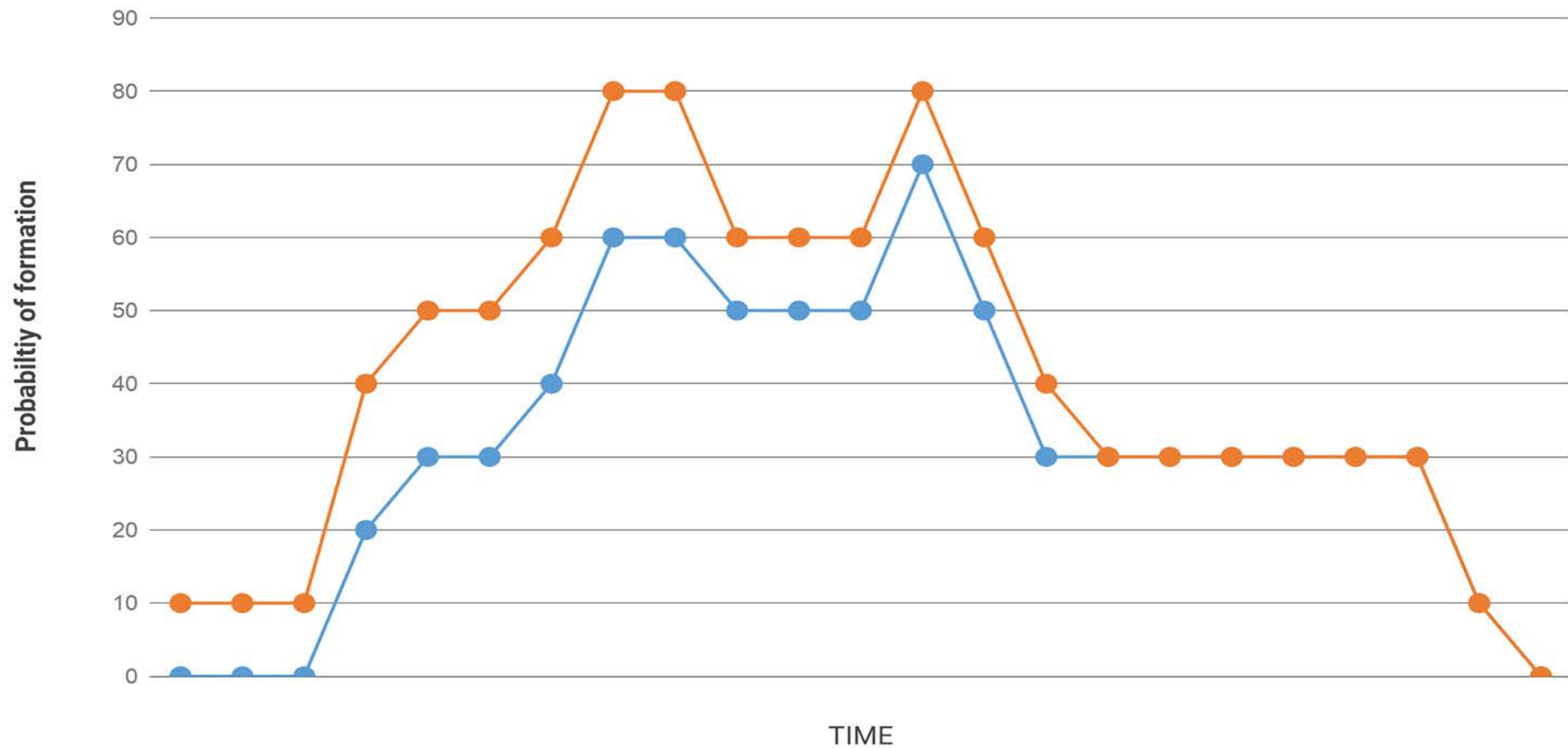
TC Gita - south Pacific - February 2018



Anticipating TC genesis

- Invest 90C – August 2017
- Forecast models indicated potential development - but not a deep long-lived low; did meteorology drive all the TWO probability changes?
- TWO probabilities likely one of the more operationally contentious forecast challenges
- POD vs FAR philosophy

PROBABILITY OF FORMATION INDICATED FOR INVEST 90C



Anticipating TC genesis

TC Gita - “A WIN AND A LOSS”

- well anticipated by global models
- monsoon trough with strong WWB spawned a fast-moving rapid-intensifier that brought damaging winds to Samoa with little lead time

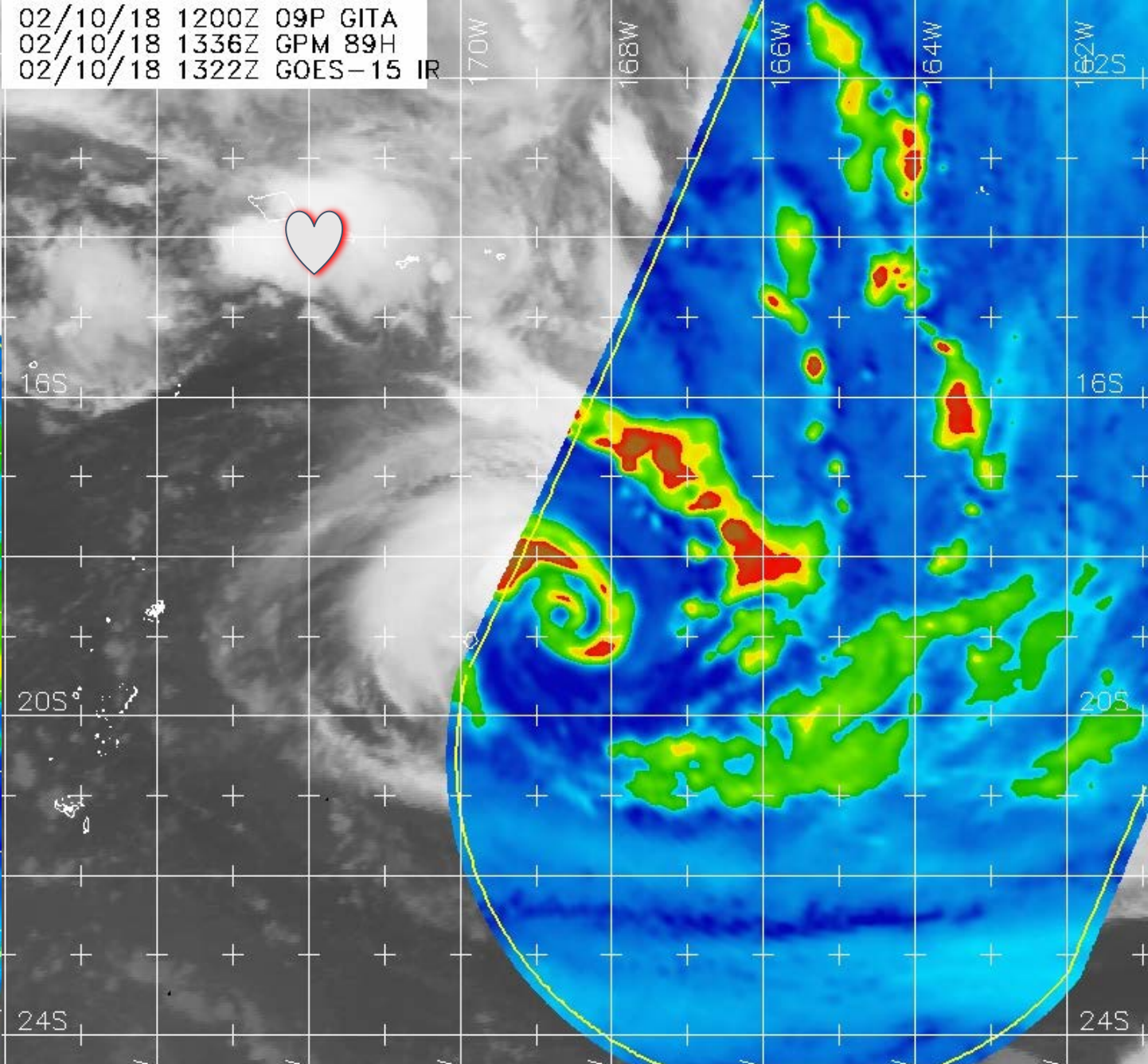
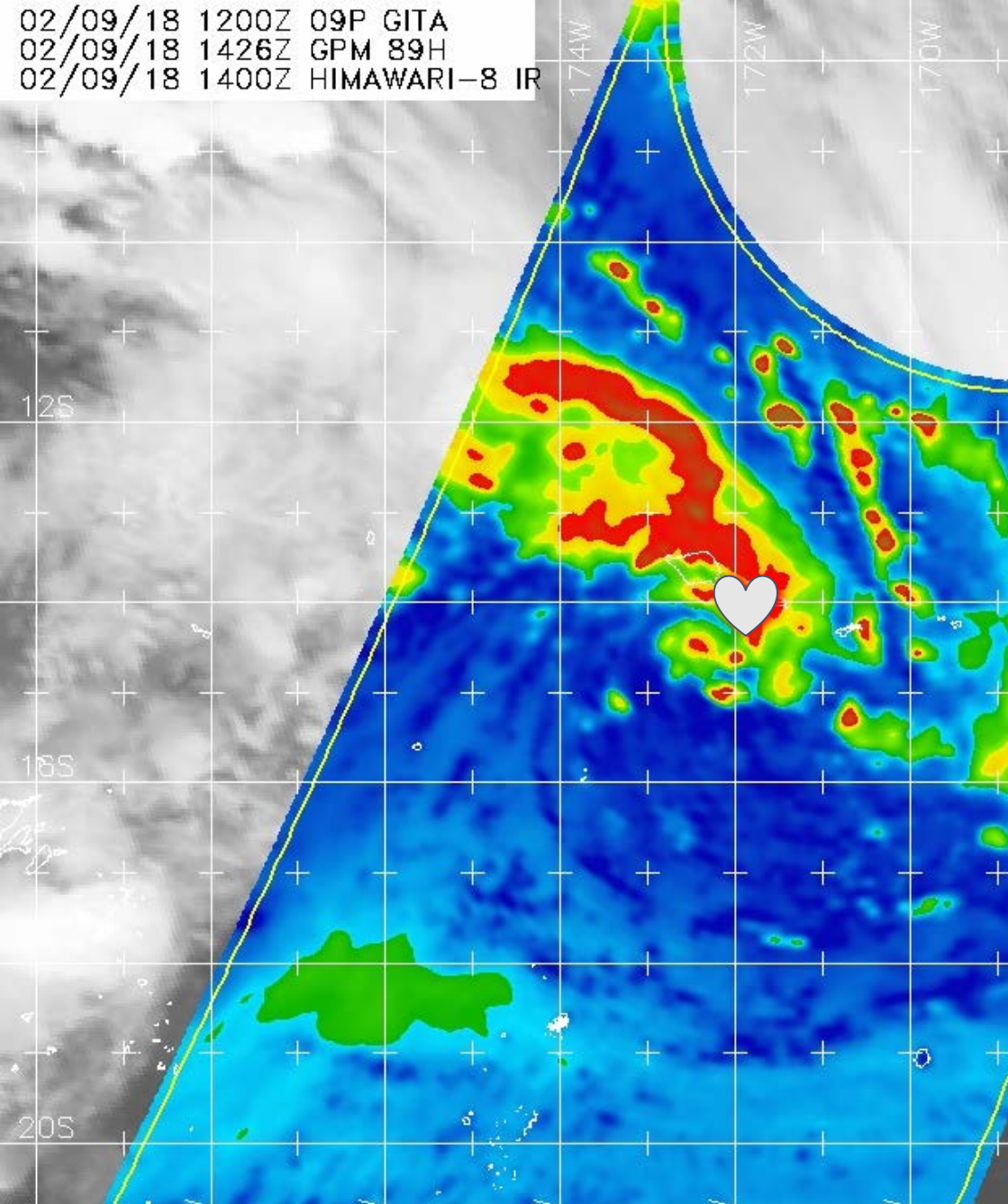
Anticipating TC genesis

TC Gita - “A WIN AND A LOSS”

- JTWC responsive with warning issuance when consolidation occurred, but WSO Samoa somewhat reliant on RSMC Nadi due to international collaboration.
- In hindsight, good candidate for “potential” TC forecast?

02/09/18 1200Z 09P GITA
02/09/18 1426Z GPM 89H
02/09/18 1400Z HIMAWARI-8 IR

02/10/18 1200Z 09P GITA
02/10/18 1336Z GPM 89H
02/10/18 1322Z GOES-15 IR



Naval Research Lab www.nrlmry.navy.mil/sat_products.htm
<-- 89H Brightness Temp (Kelvin) -->

Naval Research Lab www.nrlmry.navy.mil/sat_products.htm
<-- 89H Brightness Temp (Kelvin) -->

190 200 210 220 230 240 250 190 200 210 220 230 240 250 260 270

COOP: Backup of NHC during Irma

- Continuity of Operations Plan – NOAA Hurricane Conference item
- “Rapid response” team assembled at WPC - forecasters, IT specialists, MICs, branch chiefs, public affairs and many more
- Worked well - but room for improvement



Search



explosion56 • Following
NOAA NWS Weather Prediction Center

explosion56 #latergram What a crazy, awesome week of hurricane forecasting in the Atlantic basin! That is the head of the NWS standing behind me---my boss' boss' boss' boss! He snuck up behind me to check on the progress of #HurricaneIrma and #HurricaneJose! Been a good week with a lot of challenges and learning. Glad to be going on a short vaca soon.

onerose I'm sure you're killing it bob!
#gochiefs

thefreshprince1994 that's a good picture of yall

nimafierce Saw him on the national news over the weekend #bobbballardgoals

acweather Yo, Brownie in the background 👍

aulanif Aloha shirt!! Good choice.



102 likes

SEPTEMBER 12, 2017

Add a comment...



Forecaster tools

- 1) Challenge to stay abreast of latest web-based tools/analyses/guidance
- 2) Additional challenge to incorporate into operational workflow

Forecaster tools

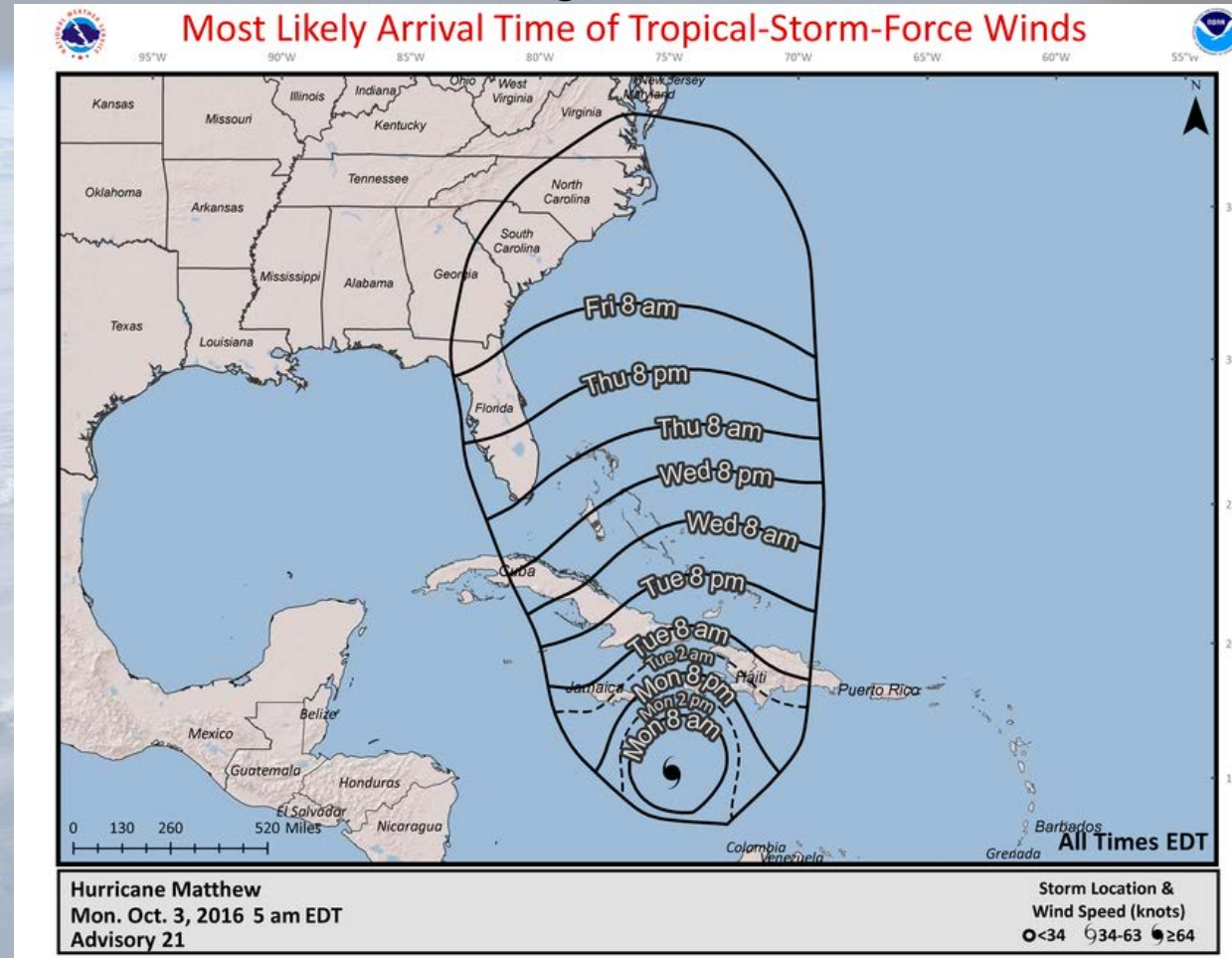
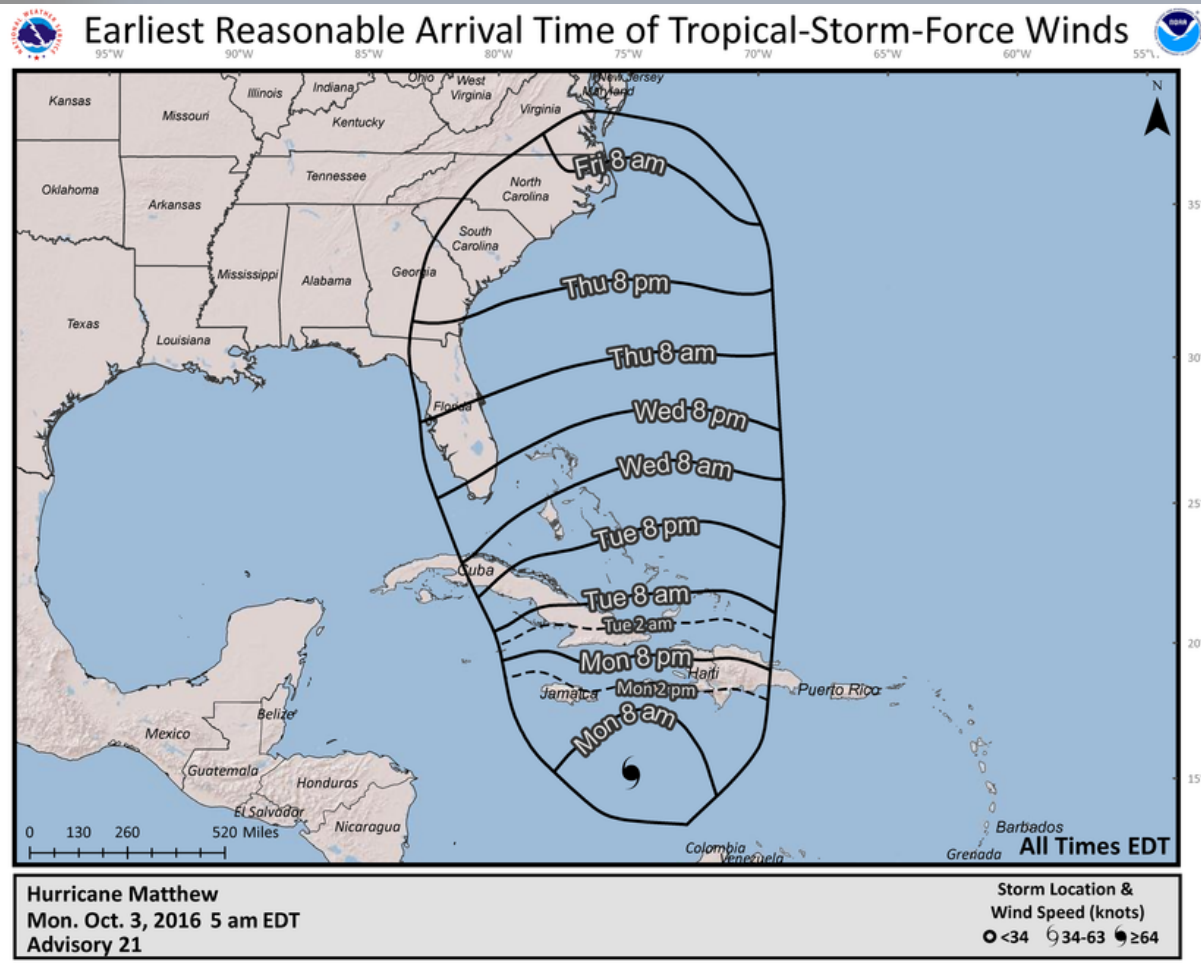
HWRF in AWIPS:

- what fields to send over the SBN?
- limited NWS audience? WFOs?
- N-Map usage still prevalent?

Summary of new items for 2018-9

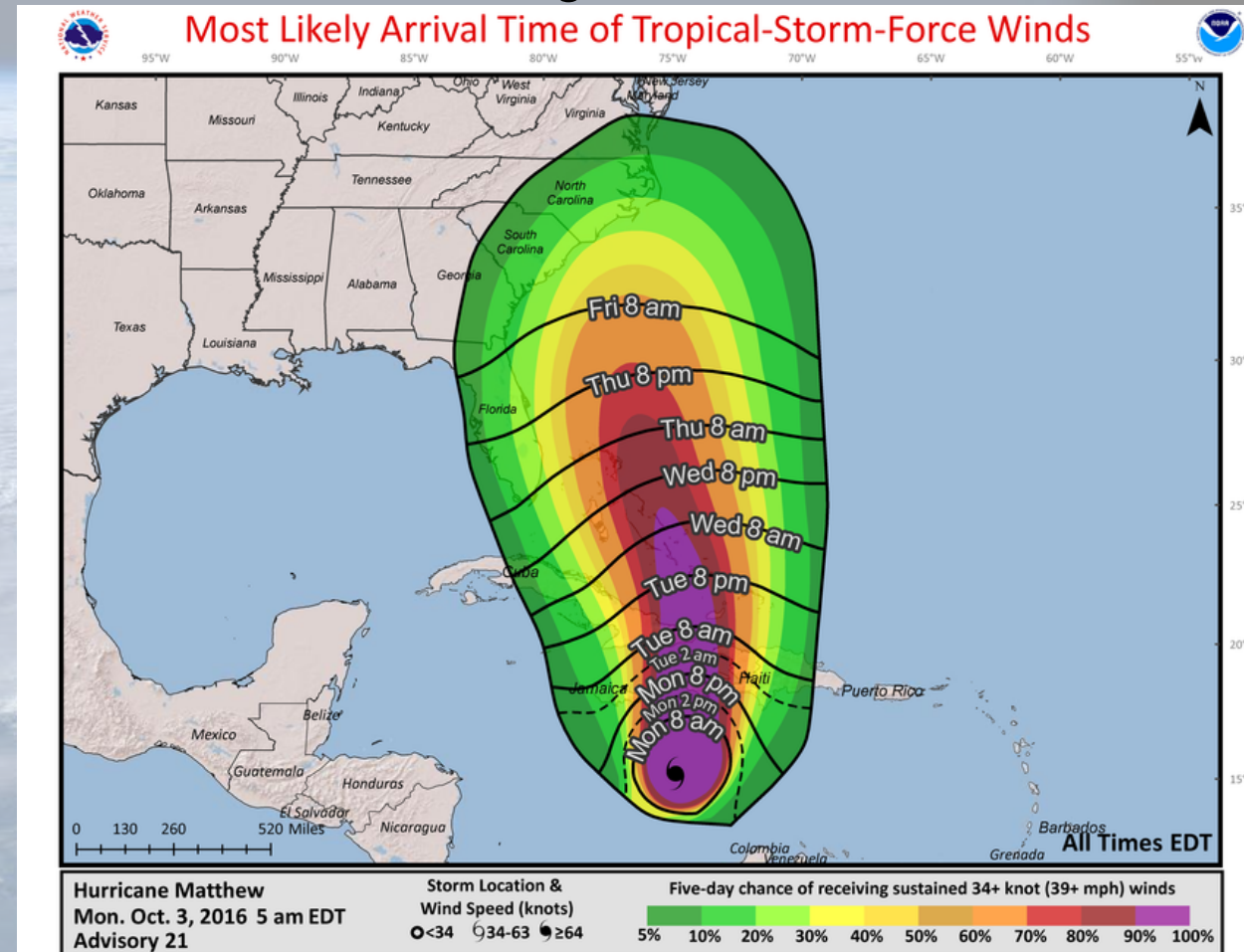
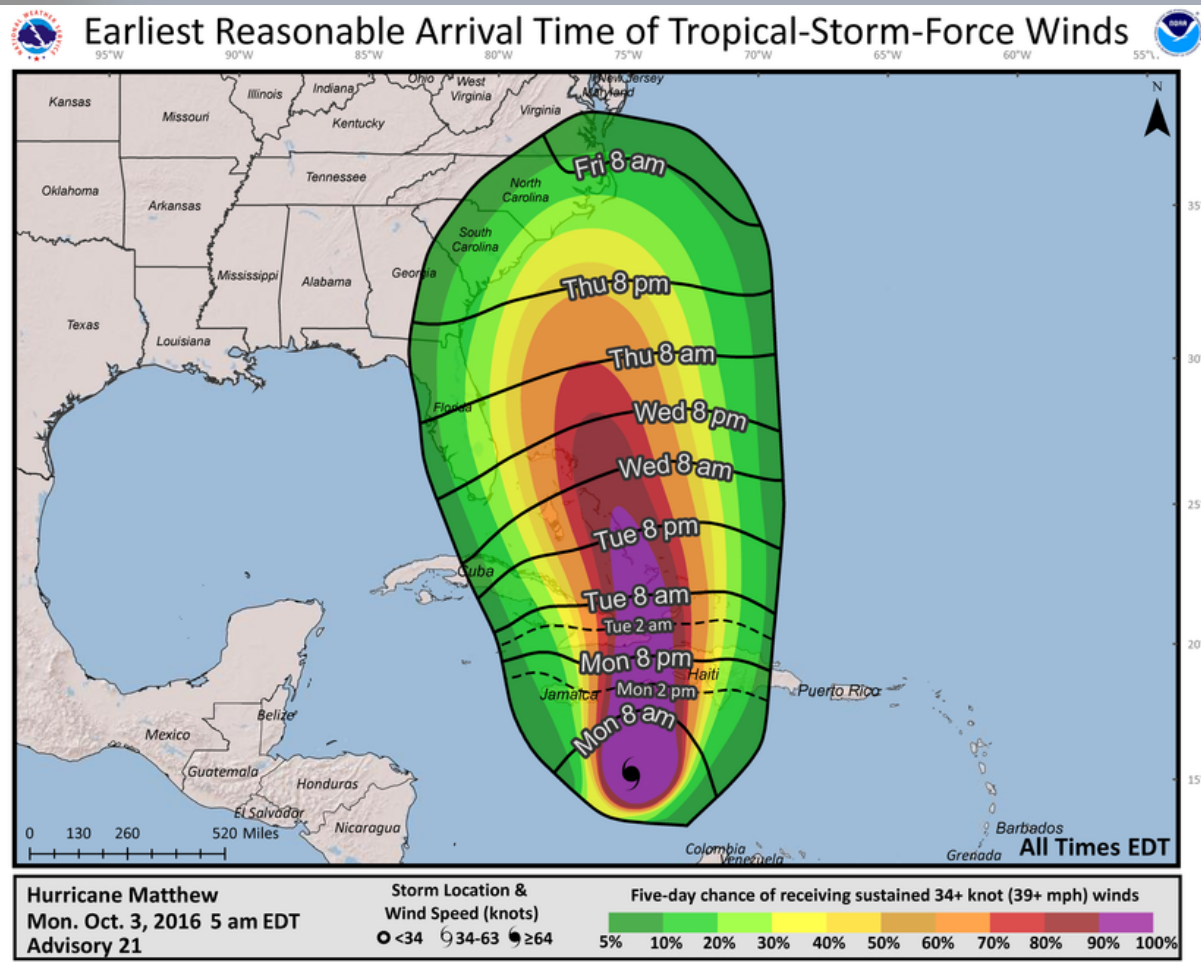
- ✓ Mimic changes at NHC as much as possible
- ✓ “Time of Arrival” graphics
- ✓ TCP – Tropical Cyclone Public Advisory; DISCUSSION AND ~~48 HOUR~~ OUTLOOK
- ✓ SLOSH guidance for entire state
- ✓ 64 kt radii forecast at 48 hours
- ✓ Internal 60, 144 and 168 hour forecasts
- ✓ Gridded TCM

Time of arrival graphic: earliest reasonable/most likely



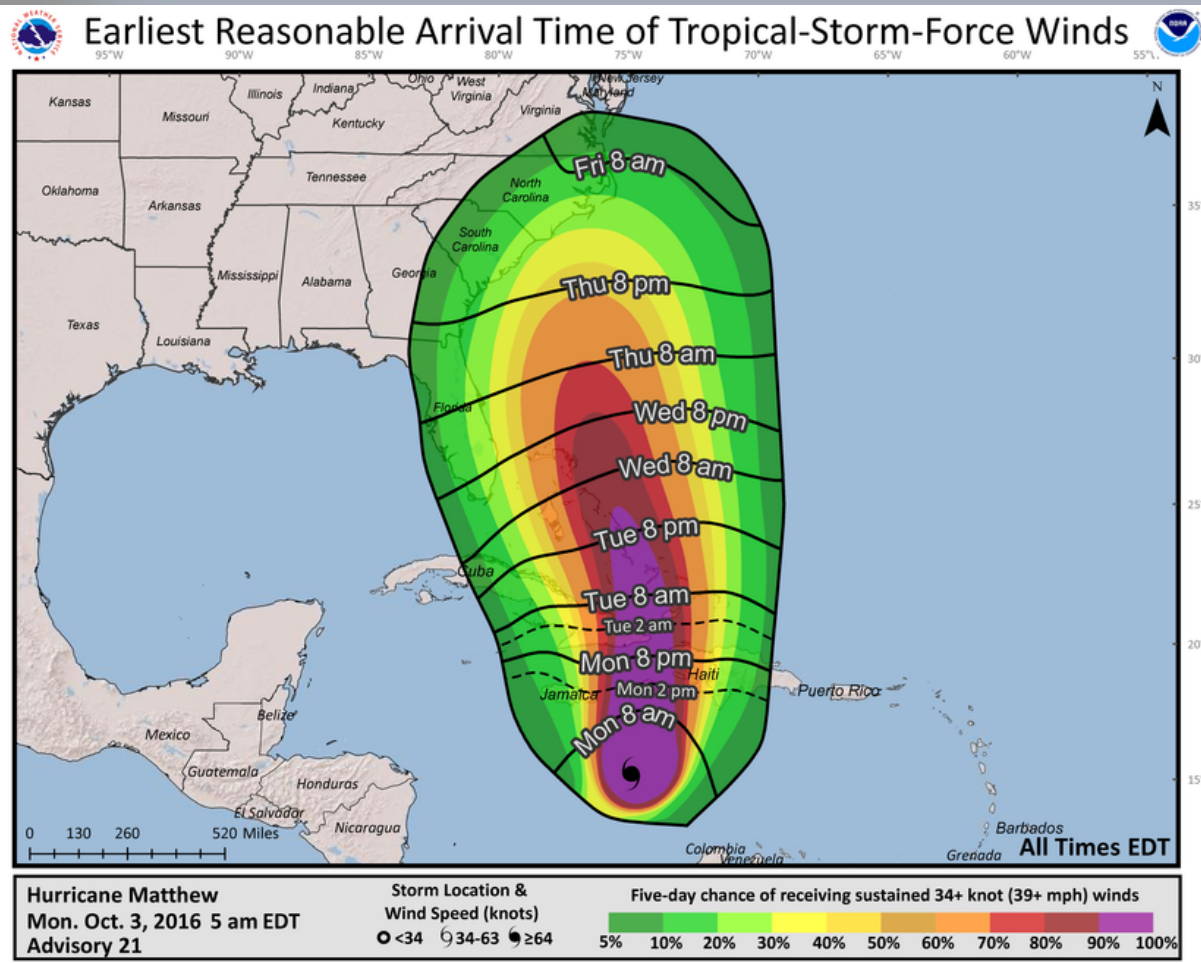
anticipated arrival of sustained tropical-storm-force winds

Time of arrival graphic: earliest reasonable/most likely



Will also be available as kml file

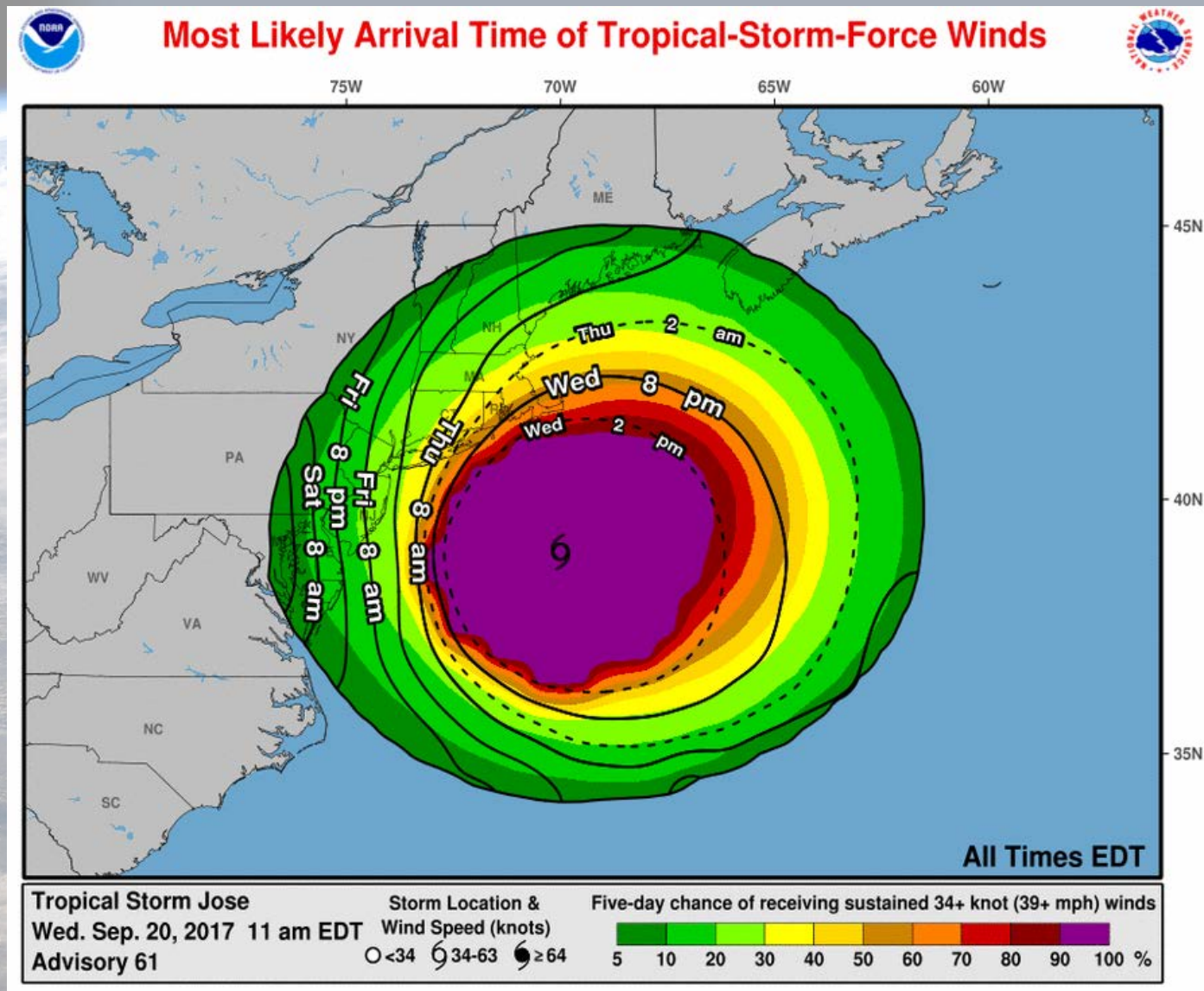
Time of arrival graphic: earliest reasonable/most likely



Earliest reasonable: no more than a 1-in-10 (10 percent) chance of seeing the onset of sustained tropical-storm-force winds

Most likely: the time before or after which the onset of tropical-storm-force winds is equally likely (50%)

Time of arrival graphic: earliest reasonable/most likely



Slow-moving and/or unusual track forecasts can lead to graphics that are difficult to interpret

Public Advisory: Discussion & Outlook

- Currently in the TCP (Tropical Cyclone Public Advisory):

DISCUSSION AND 48 HOUR OUTLOOK

- New in 2018:

DISCUSSION AND OUTLOOK

- This change will allow forecasters to discuss the TC forecast routinely through 72 hours, with flexibility to discuss the forecast through 5 days when conditions warrant.
- TCD – Tropical Cyclone Discussion remains best way to determine forecaster confidence, model spread, etc.

Storm Surge Forecasting

- Utilize SLOSH MEOW data internally in 2018 season to inform storm surge forecast values, but no Storm Surge Watch/Warnings for Hawaii in 2018.
- Begin experimental issuance of Storm surge Watch/Warnings for Hawaii in 2019.

CPHC Tropical Cyclone Forecast Parameters

Forecast Hour (Day)	Position and Intensity	34 kt wind radii	50 kt wind radii	64 kt wind radii
3 (adv time)				
12				
24 (1)				
36				
48 (2)				NEW
72 (3)				
96 (4)				
120 (5)				

New items for 2018

- Internally: 60 hour forecast points as well as Day 6 and 7 forecasts
- These forecasts will be scrubbed from public facing ATCF decks
- Shared with WFO(s) through text products (PRERCL and PRETCM)

Summary of new items for 2018-9

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Thank You
Questions & Comments

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