

Lecture 2: Design Rules of Thumb

CS 7250

SPRING 2021

Prof. Cody Dunne

NORTHEASTERN UNIVERSITY

Slides and inspiration from Michelle Borkin, Krzysztof Gajos, Hanspeter Pfister, Miriah Meyer, Jonathan Schwabish, and David Sprague

Syllabus critique follow-ups

c.dunne.dev/cs7250s21

[Assignment 1a — Critique the Syllabus](#)

- **Changes:** Any meaningful changes announced on Canvas
- **Grading:** Same as before. Grade breakdown on poorly-named Syllabus page.
- **Late policy:** Still hard cutoff & automatically enforced by Canvas, GitHub Classroom
Option: early self-deadlines, study groups, accountabilibuddies
- **Study groups:** Ask if you want assistance forming to build community.
- **Submission instructions:** Rigid, but we'll clearly specify.
- **Participation:** [Attendance](#) and [Good Contributions](#) updated & clarified.
No penalty for lack of video, should be plenty of opportunities during semester even if you have infrequent technical issues
- **Office hours:** 4x/wk + library, Cody's now after class F
- **Lecture slides:** Online by next class
- **Recording:** No plans to, but we also don't have any exams to cram for.
- **Paper vs. digital sketching:** Paper required, close to plain white.
Based on experience teaching these activities ~7 times. You don't need good drawing skill.
- **Bug bounties:** 4+ days prior
- **Projects:** Pitches + group formation in class and on Canvas, only 1/3 pitched will proceed
- **Canvas + Zoom:** Make sure to log in using Northeastern SSO

CHECKING IN

READING QUIZ

Quiz — Design Rules of Thumb
Password: “1stquiz”

STAFF INTRODUCTIONS



Cody Dunne
Assistant Professor
Instructor



Girik Malik
TA



David Saffo
TA



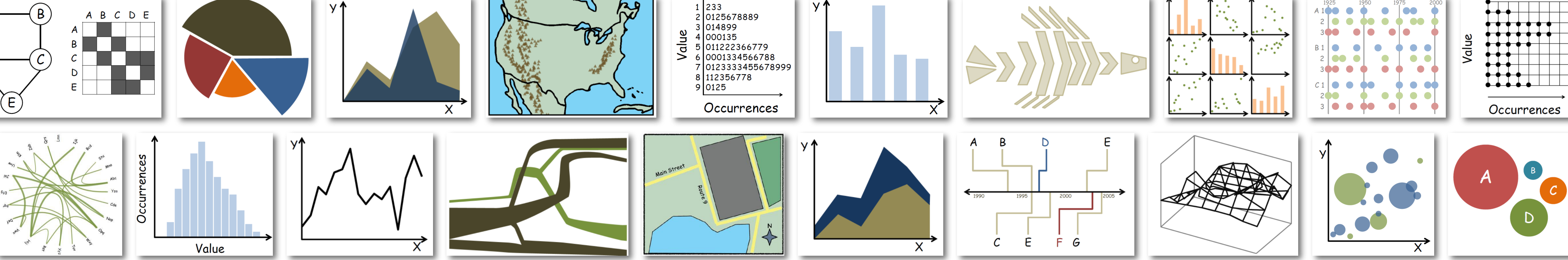
Sara Di Bartolomeo
TA



Sophia Gunzberg
Service-Learning TA

PREVIOUSLY, ON CS 7250...

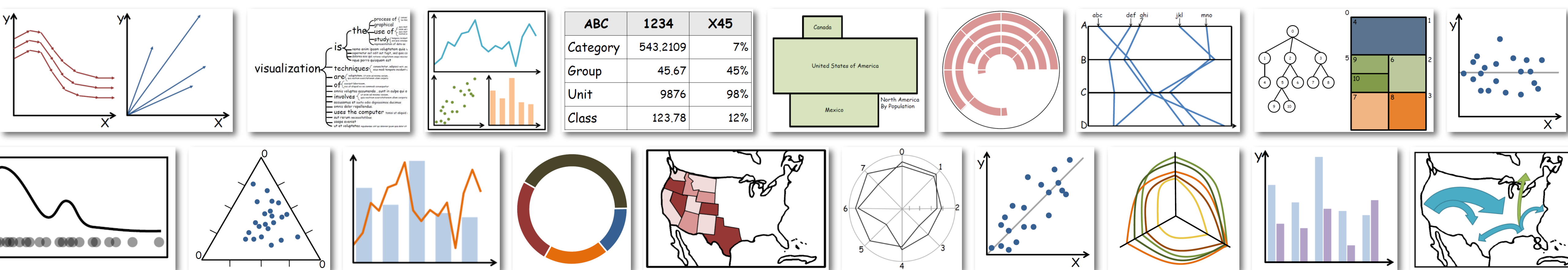
PREVIOUSLY, ON CS 7250...

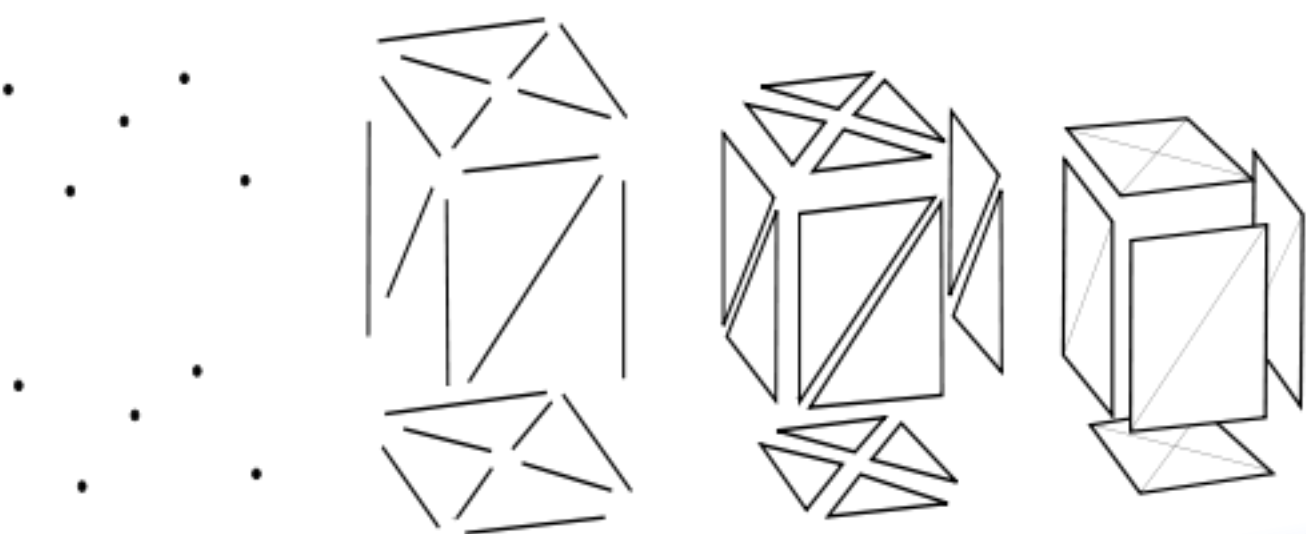


(static or interactive)

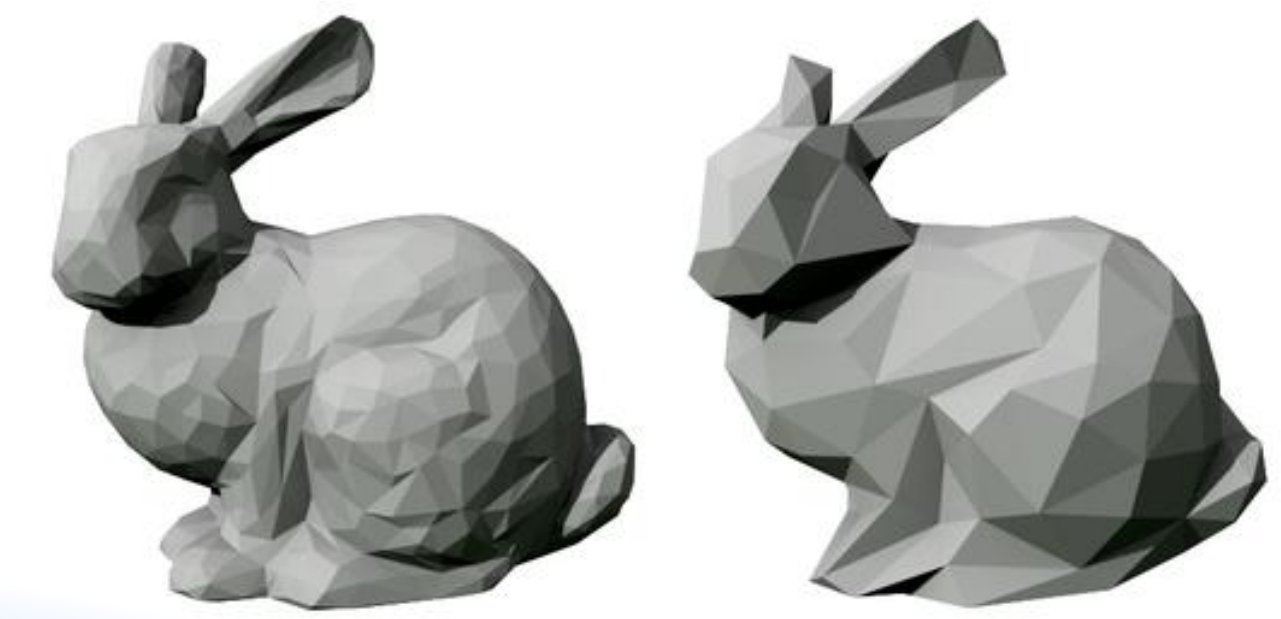
(abstract or spatial)

visualization: the visual representation of data to reinforce human cognition





computer graphics



HCI

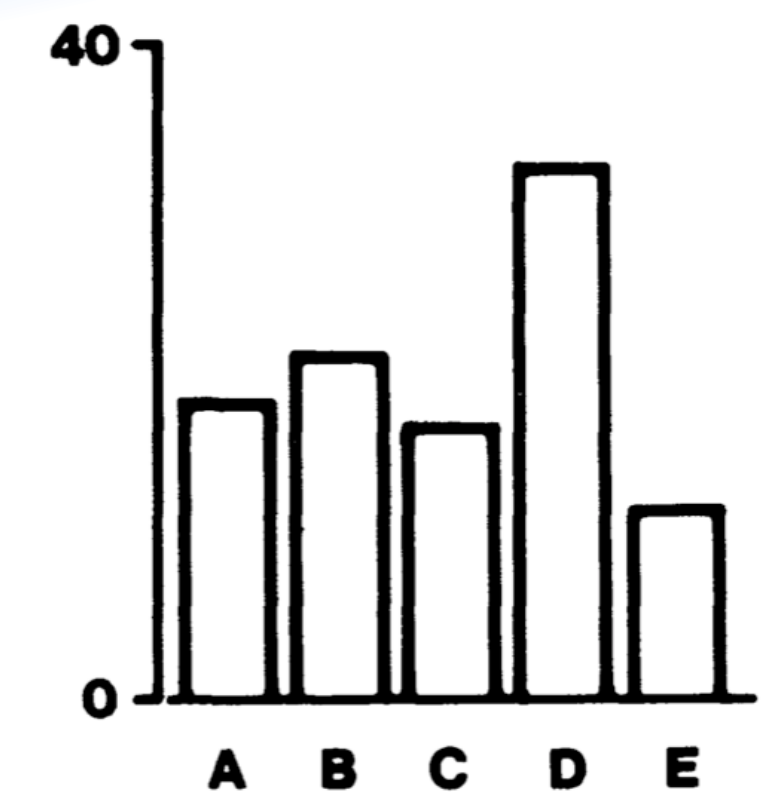
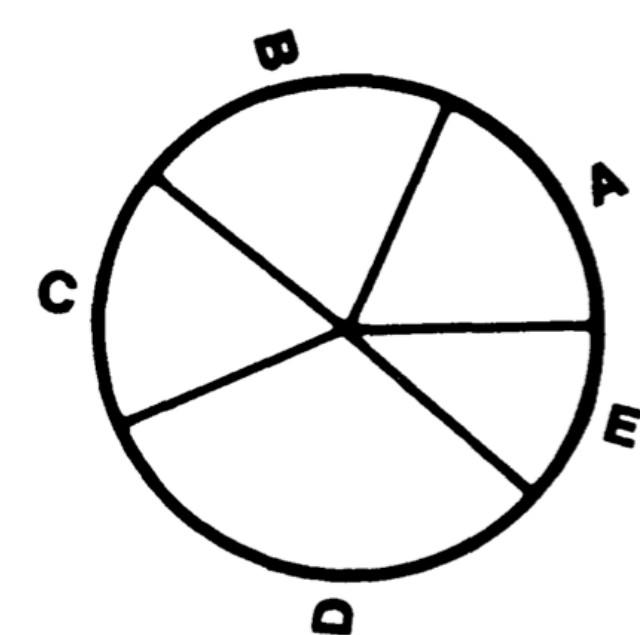
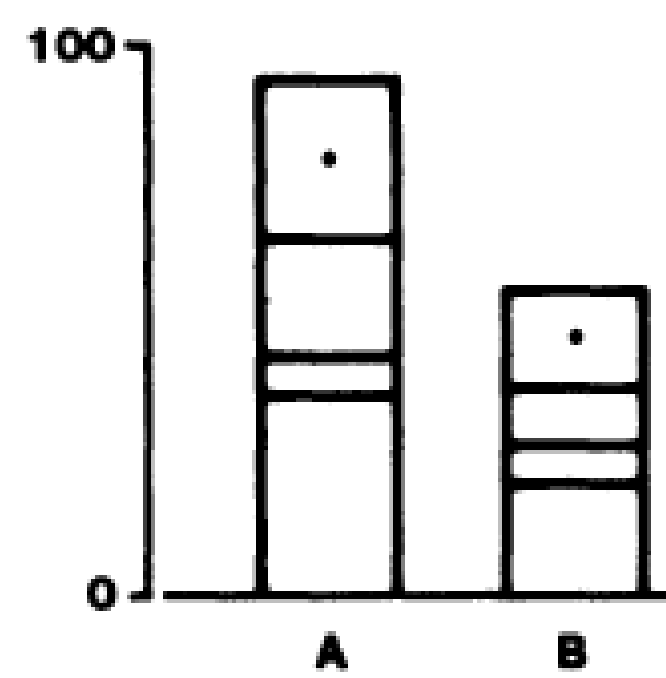
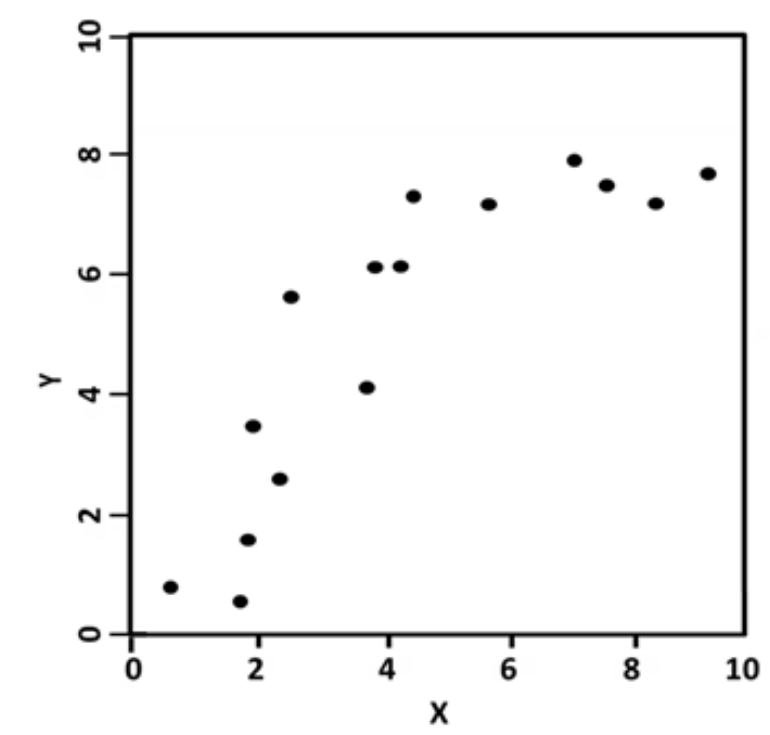
design

visualization

psychology

art

statistics



No catalogue of techniques can convey a willingness to look for what can be seen, whether or not anticipated. Yet this is at the heart of exploratory data analysis. ... the picture-examining eye is the best finder we have of the wholly unanticipated.

– Tukey, 1980

Hall of Fame or Hall of Shame



Prof. Krzysztof Gajos

wind map

past patterns

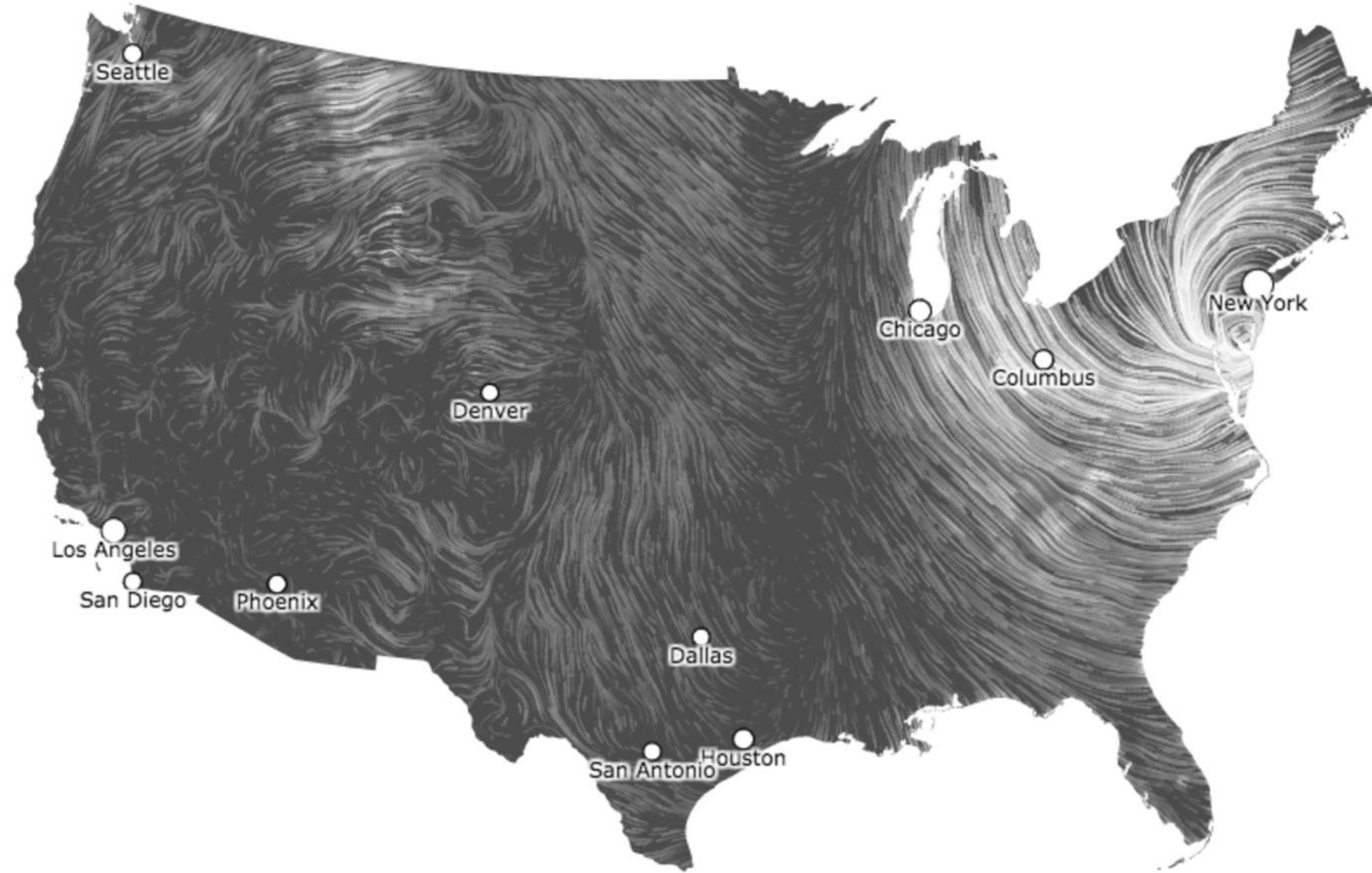
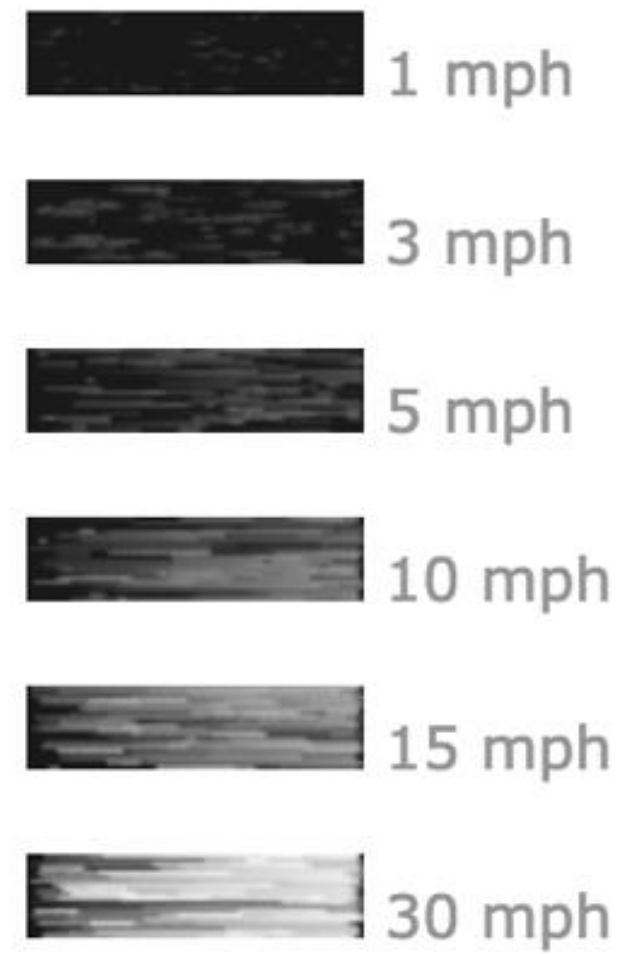
<previous next>

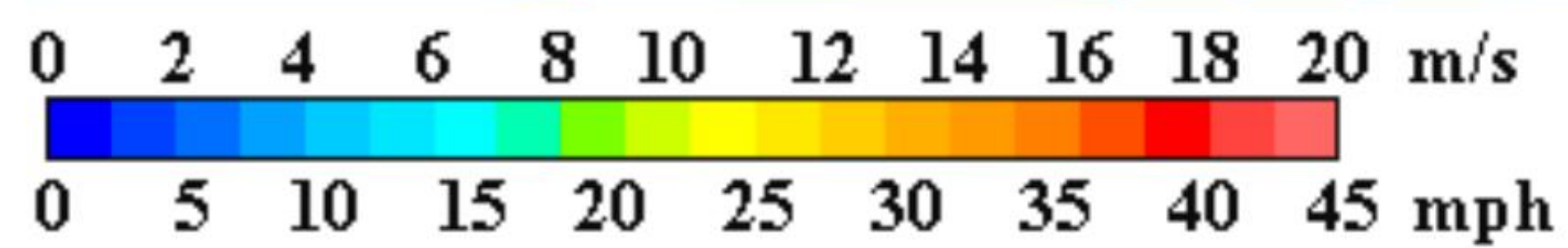
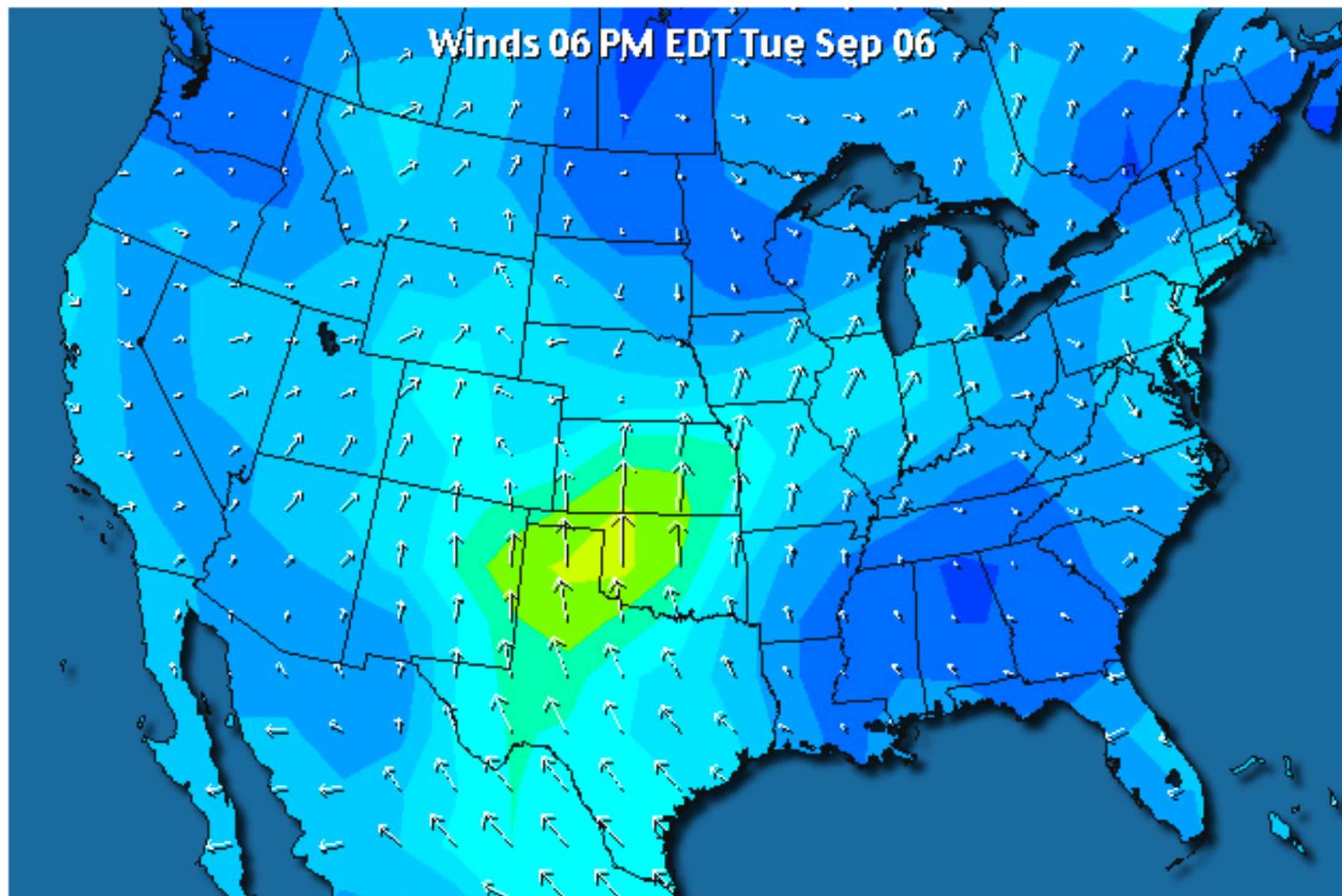
October 29, 2012

8:59 pm EST

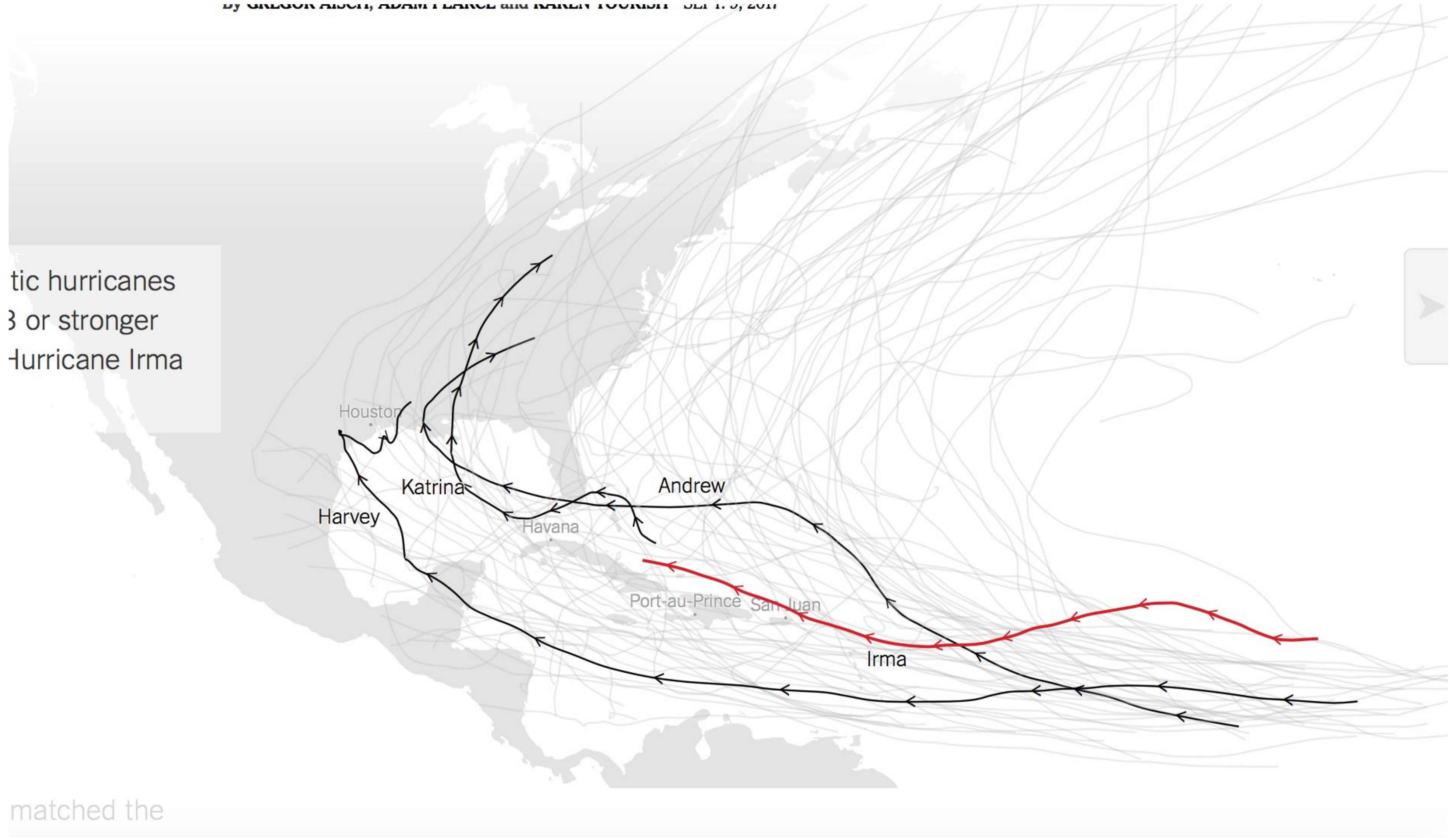
(time of forecast download)

top speed: **45.1 mph**
average: **9.4 mph**





Atlantic hurricanes
3 or stronger
Hurricane Irma

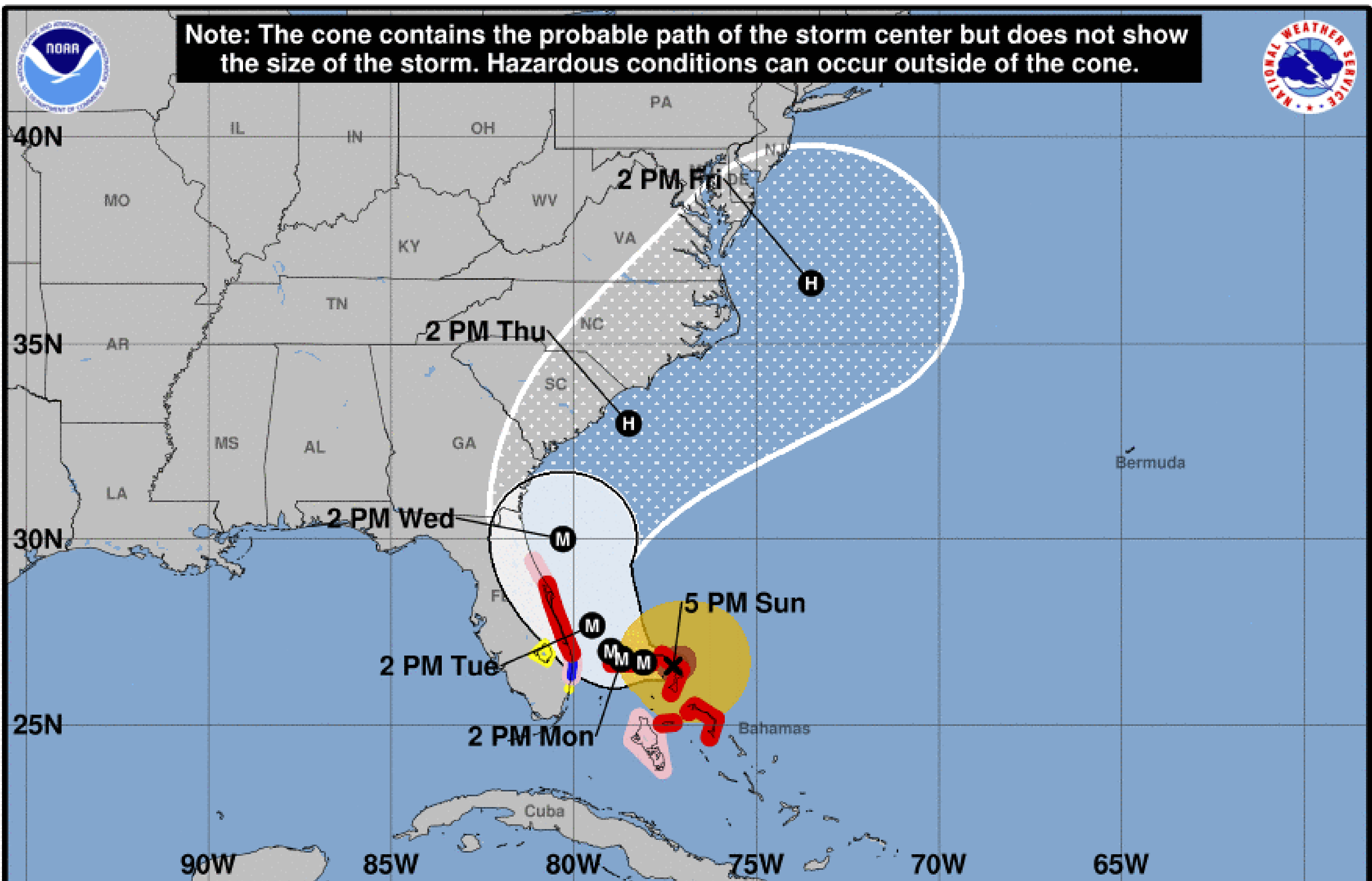


matched the

Hurricane Intensity Scale (Wind Damage)



Category	Wind speed	ms ⁻¹
Category 1	75 - 95 mph	33-42 ms ⁻¹
Category 2	96 - 110 mph	43-49 ms ⁻¹
Category 3	111 - 130 mph	50-58 ms ⁻¹
Category 4	131 - 154 mph	59-69 ms ⁻¹
Category 5	155 + mph	70+ ms ⁻¹



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

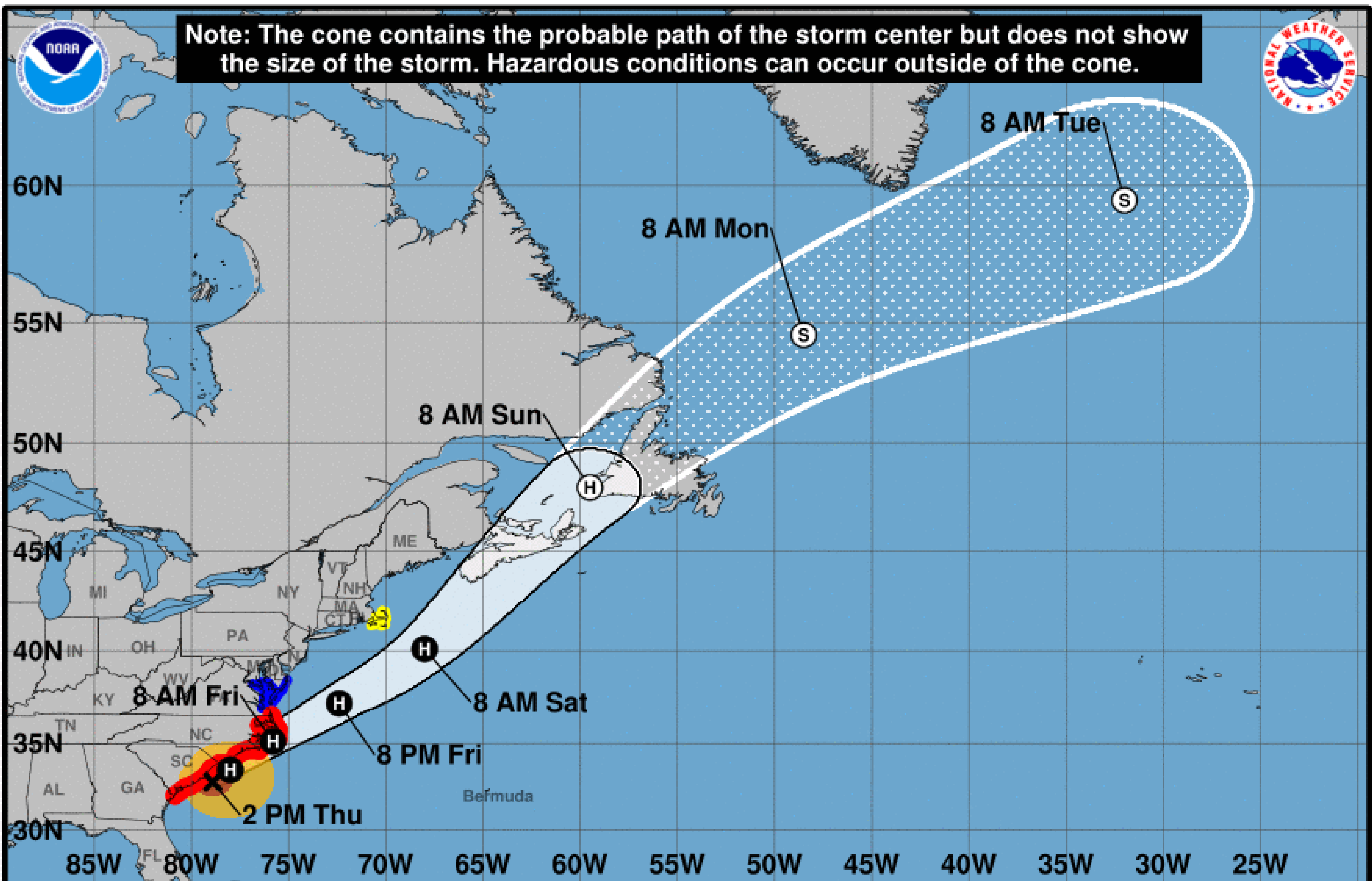
Hurricane Dorian
 Sunday September 01, 2019
 5 PM EDT Advisory 34
 NWS National Hurricane Center

Current information: x
 Center location 26.6 N 77.3 W
 Maximum sustained wind 185 mph
 Movement W at 5 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area:	Watches:	Warnings:	Current wind extent:
Day 1-3 Day 4-5	Hurricane Trop Stm	Hurricane Trop Stm	Hurricane Trop Stm

https://www.nhc.noaa.gov/refresh/graphics_at5+shtml/155815.shtml?cone#contents



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

Hurricane Dorian
 Thursday September 05, 2019
 2 PM EDT Intermediate Advisory 49A
 NWS National Hurricane Center

Current information: x
 Center location 32.8 N 78.9 W
 Maximum sustained wind 110 mph
 Movement NNE at 8 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area:
 Day 1-3 Day 4-5

Watches:
 Hurricane Trop Stm

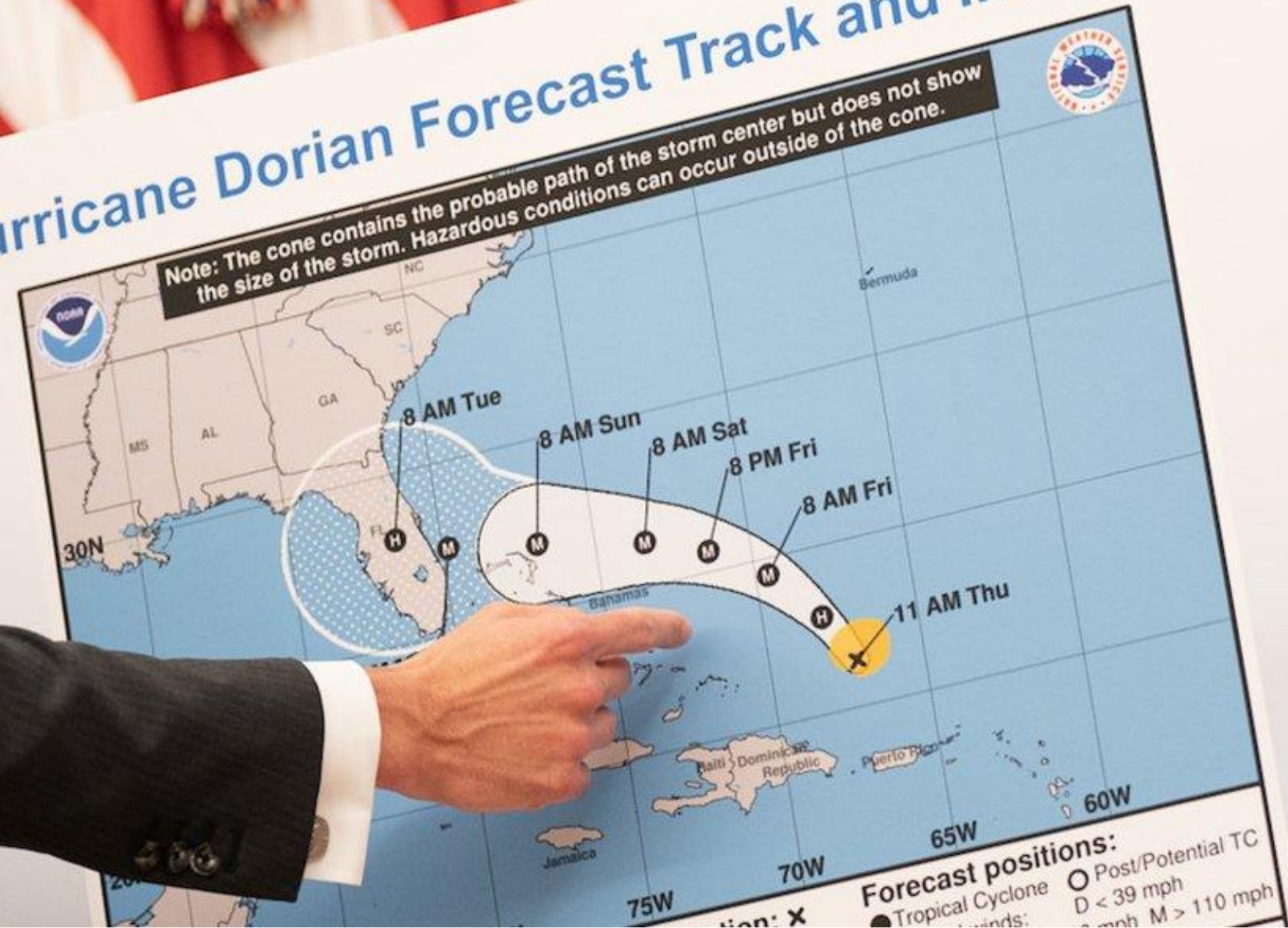
Warnings:
 Hurricane Trop Stm

Current wind extent:
 Hurricane Trop Stm



Hurricane Dorian Forecast Track and Intensity

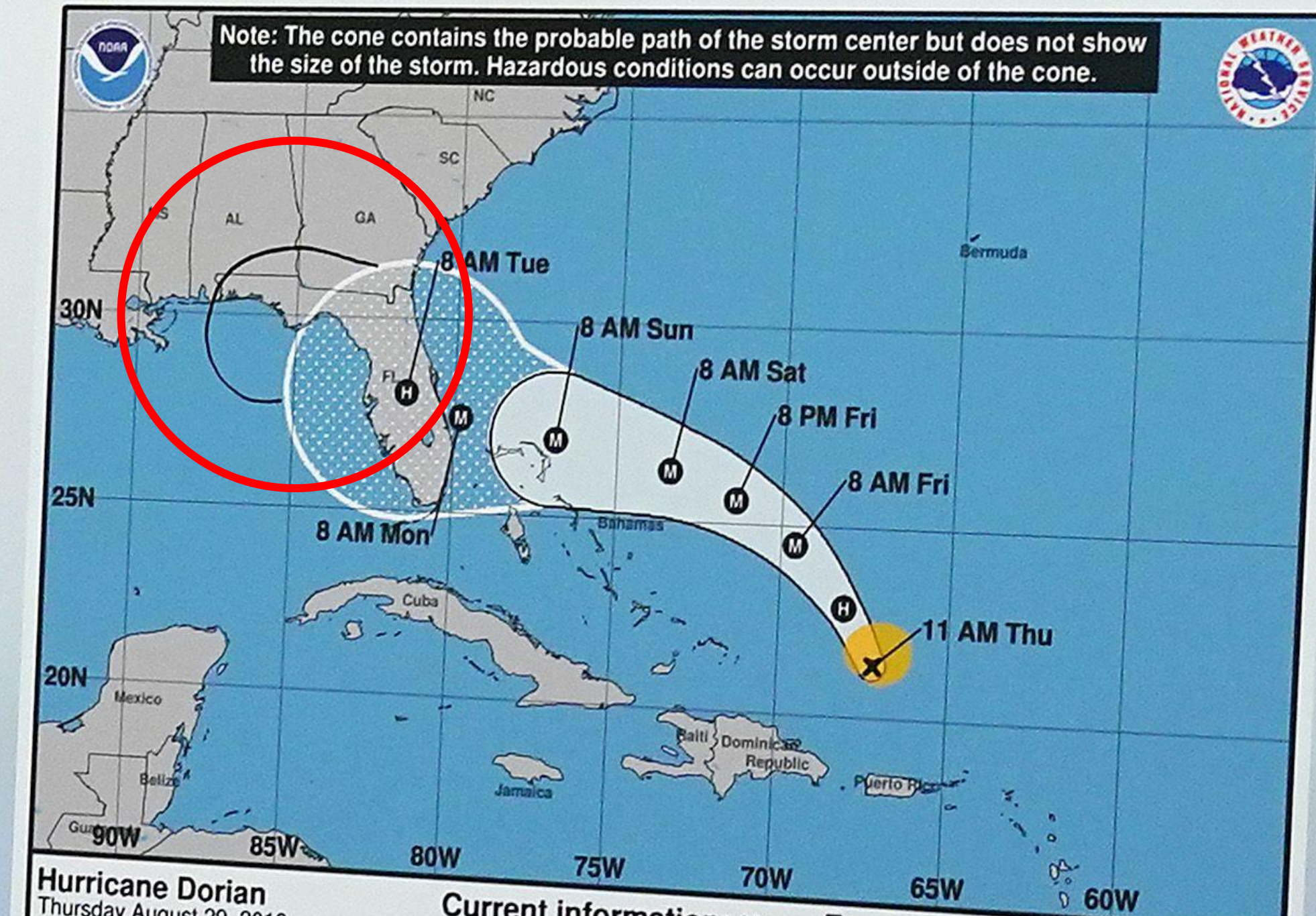
Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.





Hurricane Dorian Forecast Track and Intensity

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



Hurricane Dorian
 Thursday August 29, 2019
 11 AM AST Advisory 21
 NWS National Hurricane Center

Current information: x
 Center location 21.4 N 67.2 W
 Maximum sustained wind 85 mph
 Movement NW at 13 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area:
 Day 1-3 Day 4-5

Watches:

Hurricane Trop Stm

Warnings:

Hurricane Trop Stm

Current wind extent:
 Hurricane Trop Stm

Opinion

Those Hurricane Maps Don't Mean What You Think They Mean

We use hurricane forecasts to warn people. Why do we misinterpret them so often?

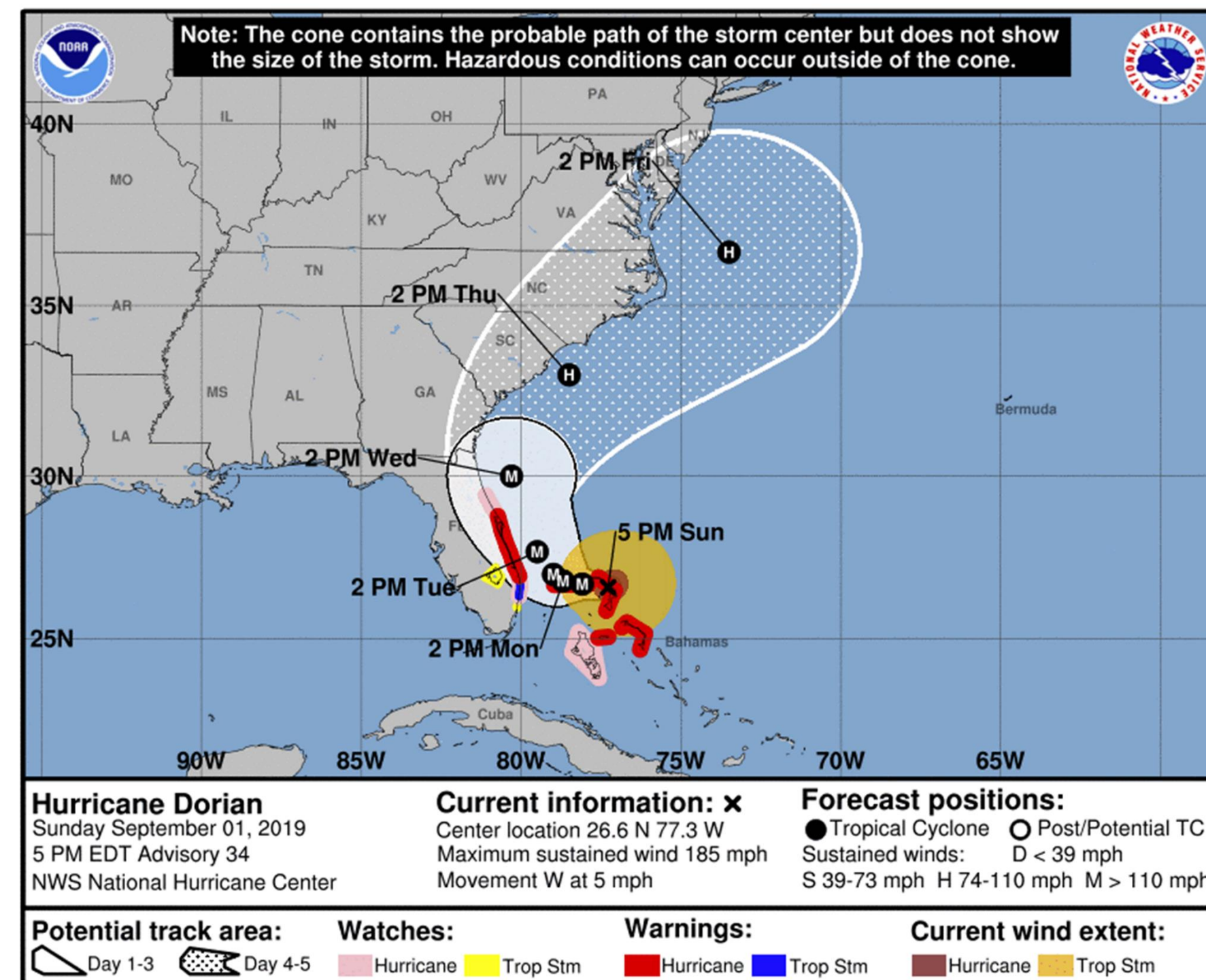
By Alberto Cairo

With Tala Schlossberg

In-Class Redesign — Hurricane Funnel

35 min

northeastern.instructure.com/courses/63405/assignments/874494



https://www.nhc.noaa.gov/refresh/graphics_at5+shtml/155815.shtml?cone#contents

Upcoming Assignments & Communication

<https://northeastern.instructure.com/courses/63405/assignments/syllabus>

Look at the upcoming assignments and deadlines

- Textbook, Readings, & Reading Quizzes — Variable days
- In-Class Activities — 11:59pm same day as class
 - T: Lecture & in-class programming on JS development
 - F: Lecture & in-class activity on Tableau
- Assignments & Projects— Generally due **R 11:59pm**
 - Assignment 2 due **R (6 days)**
- [Project Overview](#)

Everyday Required Supplies:

- 5+ colors of pen/pencil
- White paper
- Laptop and charger

Use Canvas Discussions for general questions, email the TAs/S-LTA/instructor for questions specific to you.