



South District Bimonthly Linkups

Hurricane Recovery and Preparedness
June 7, 2023



PRESENTATION AGENDA

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Presentation Agenda:

- **Opening remarks:**
 - ❖ Dr. Wesley Brooks, Chief Resiliency Officer.
- **Hurricane Ian Recovery and 2023 Hurricane Preparedness:**
 - ❖ Matt Devitt, WINK News Chief Meteorologist.
- **South District Regulatory Involvement:**
 - ❖ Jennifer Carpenter, DEP South District Director.
- **Potable Water Systems:**
 - ❖ Louise Change, South District Environmental Administrator.
- **Wastewater Systems:**
 - ❖ Landon Reigelman, South District Environmental Manager.
- **Hazardous Waste:**
 - ❖ Pamela Coffin, South District Environmental Consultant.
- **Debris Management:**
 - ❖ Renee Kwiat, South District Environmental Consultant.
- **Permitting:**
 - ❖ Ryan Snyder, South District Program Administrator.
- **Questions.**





STATEWIDE OFFICE OF RESILIENCE

Wes Brooks, Ph.D.
Chief Resilience Officer/ Statewide Office of Resilience

DEP Linkups | June 7, 2023



WES BROOKS, Ph.D.
CHIEF RESILIENCE OFFICER

STATEWIDE OFFICE OF RESILIENCE

Video



THANK YOU

Wes Brooks, PhD.
Chief Resilience Officer

Contact Information:
850-879-5944
Wesley.Brooks@EOG.MyFlorida.com

HURRICANE PREP

A satellite image of a hurricane with a distinct green eye and a well-defined eye wall, set against a background of a map of Florida. The hurricane is positioned on the left side of the frame, while the map of Florida occupies the right side. The text 'HURRICANE PREP' is prominently displayed at the top in large, bold, black letters.

HURRICANE IAN RECAP AND 2023 SEASON OUTLOOK

**WINK
NEWS**

MATT DEVITT

WINK NEWS CHIEF METEOROLOGIST

THE WEATHER AUTHORITY

CAT 4 & 5 GULF LANDFALLS

SINCE 2017



HARVEY
2017



LAURA
2020



IDA
2021



MICHAEL
2018



IAN
2022



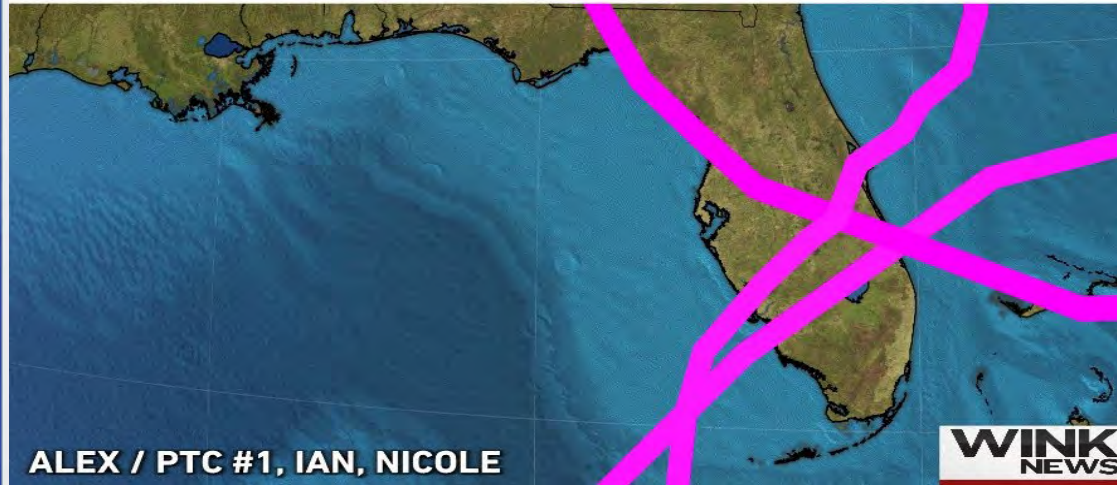
IRMA
2017

HURRICANE SEASON COMPARISON

HURRICANE SEASONS 2018 - 2021

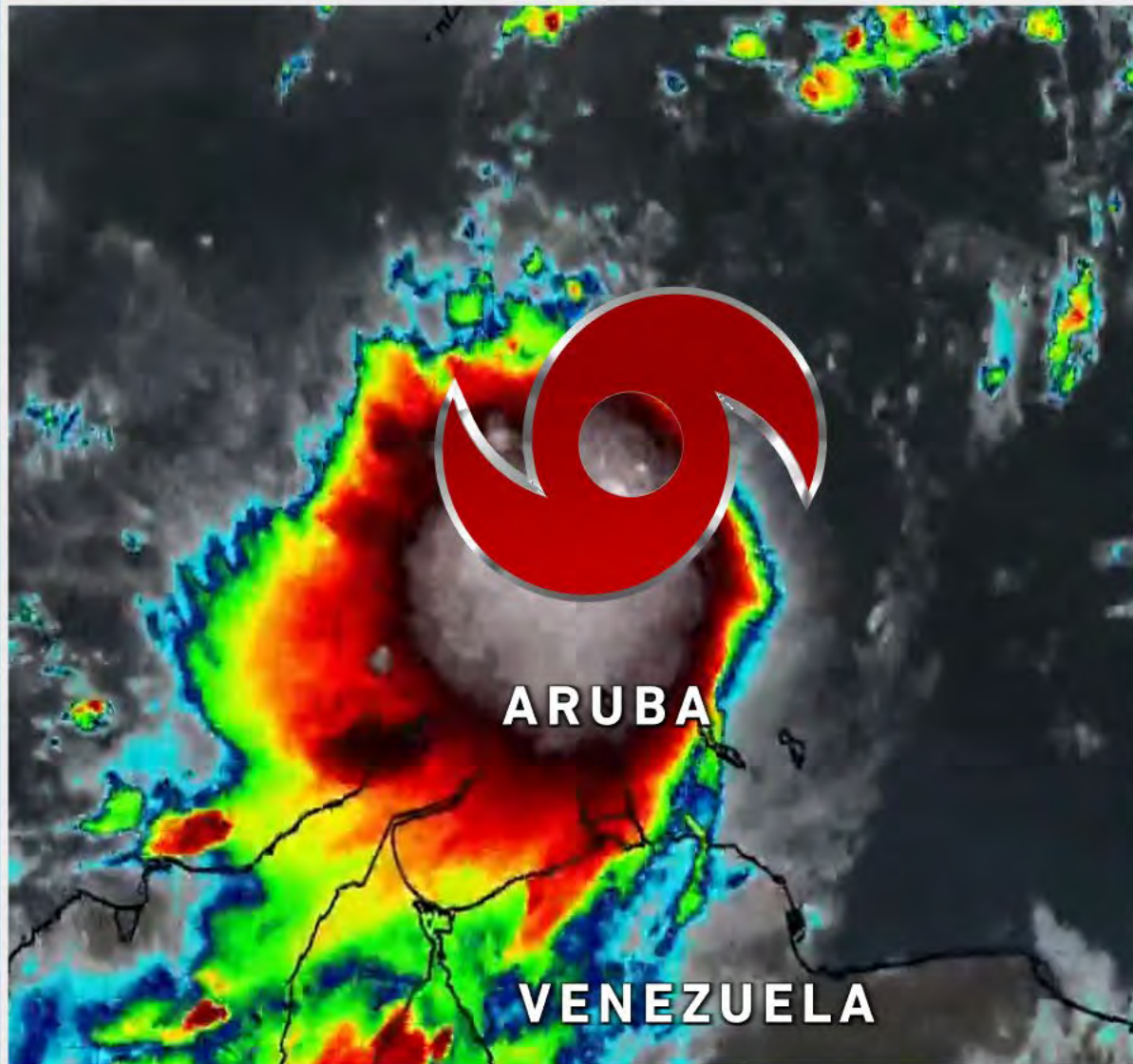


HURRICANE SEASON 2022



ALEX / PTC #1, IAN, NICOLE

HURRICANE IAN TIMELINE



SEPTEMBER 23RD

(FRIDAY, 5 DAYS BEFORE LANDFALL)

**5AM: TD #9 FORMS,
FIRST CONE INCLUDES
SOUTHWEST FLORIDA WITH
HURRICANE POTENTIAL**

**11 PM: TROPICAL STORM
IAN FORMS IN CARIBBEAN**

HURRICANE IAN TIMELINE



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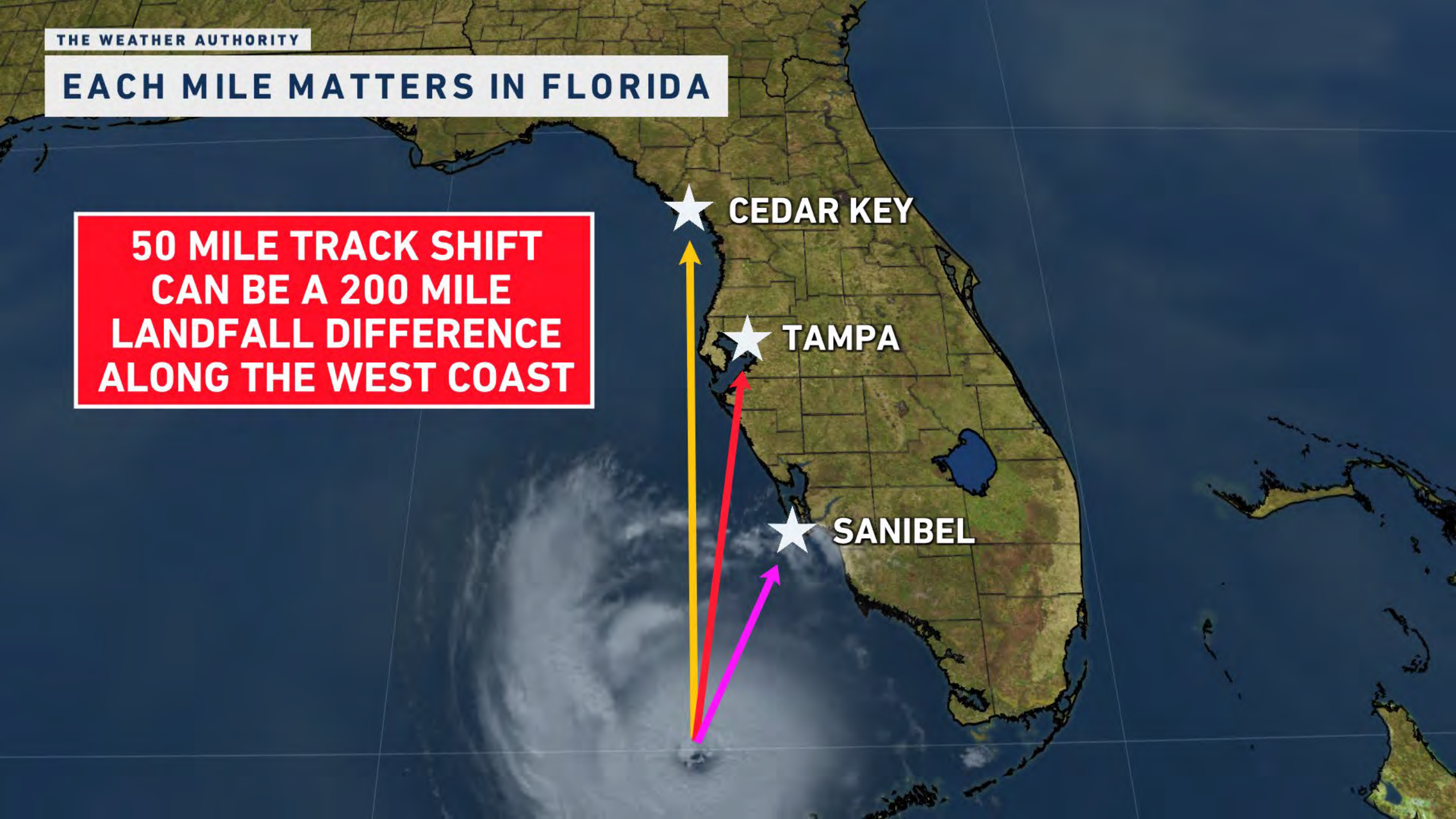
EACH MILE MATTERS IN FLORIDA

**50 MILE TRACK SHIFT
CAN BE A 200 MILE
LANDFALL DIFFERENCE
ALONG THE WEST COAST**

★ CEDAR KEY

★ TAMPA

★ SANIBEL



STORM SURGE WARNING ISSUED VS LANDFALL

CHARLOTTE
MONDAY 5 PM

46
HOURS

**LIFE-THREATENING
SURGE EXPECTED**

LEE
MONDAY 5 PM

46
HOURS

**LIFE-THREATENING
SURGE EXPECTED**

COLLIER
MONDAY 5 PM

46
HOURS

**LIFE-THREATENING
SURGE EXPECTED**

THE WEATHER AUTHORITY

LEE COUNTY NEVER LEFT THE CONE



THE WEATHER AUTHORITY

UNDERSTANDING THE CONE

IAN FORECAST 11 AM SUNDAY, SEPT 25TH



CENTER LINE
BIG BEND LANDFALL
250 MILES AWAY

CONE RIGHT EDGE
ACTUAL LANDFALL
CAYO COSTA

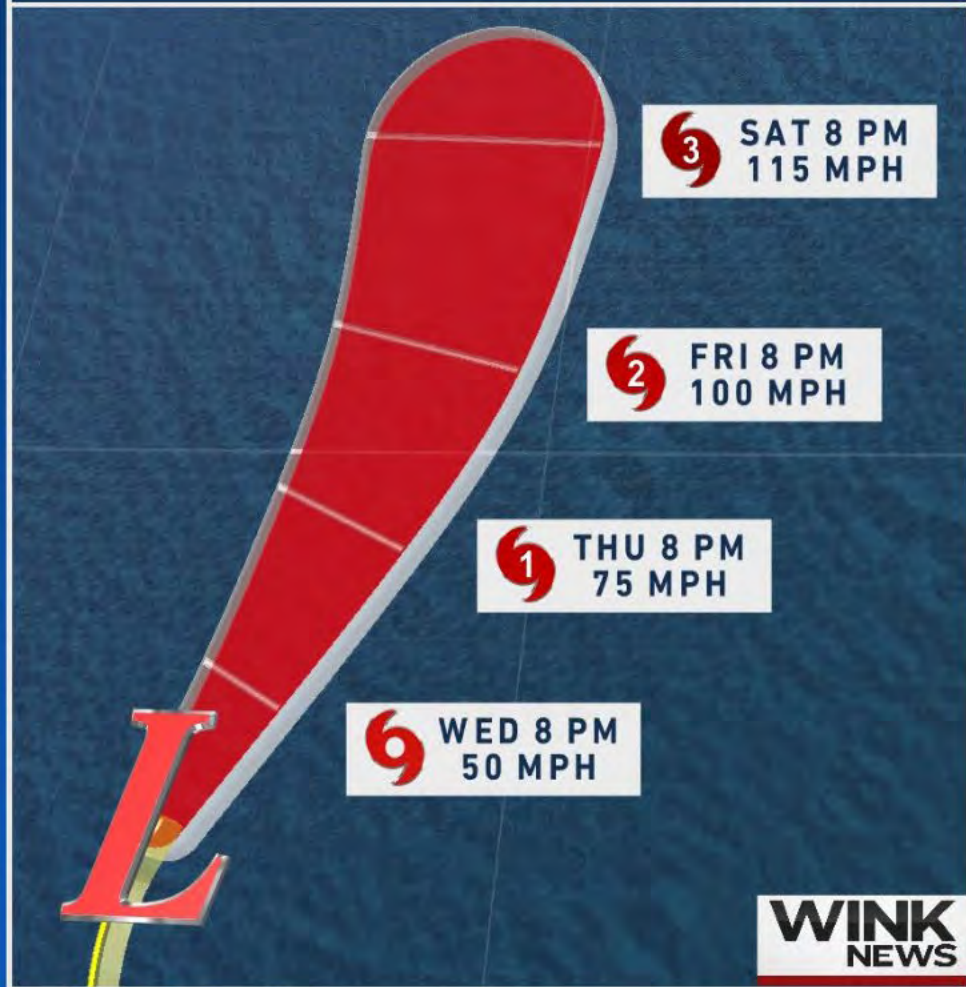
OUT OF THE CONE
8 FEET OF SURGE,
100+ MPH GUSTS IN NAPLES

WINK FORECAST CONE CHANGE

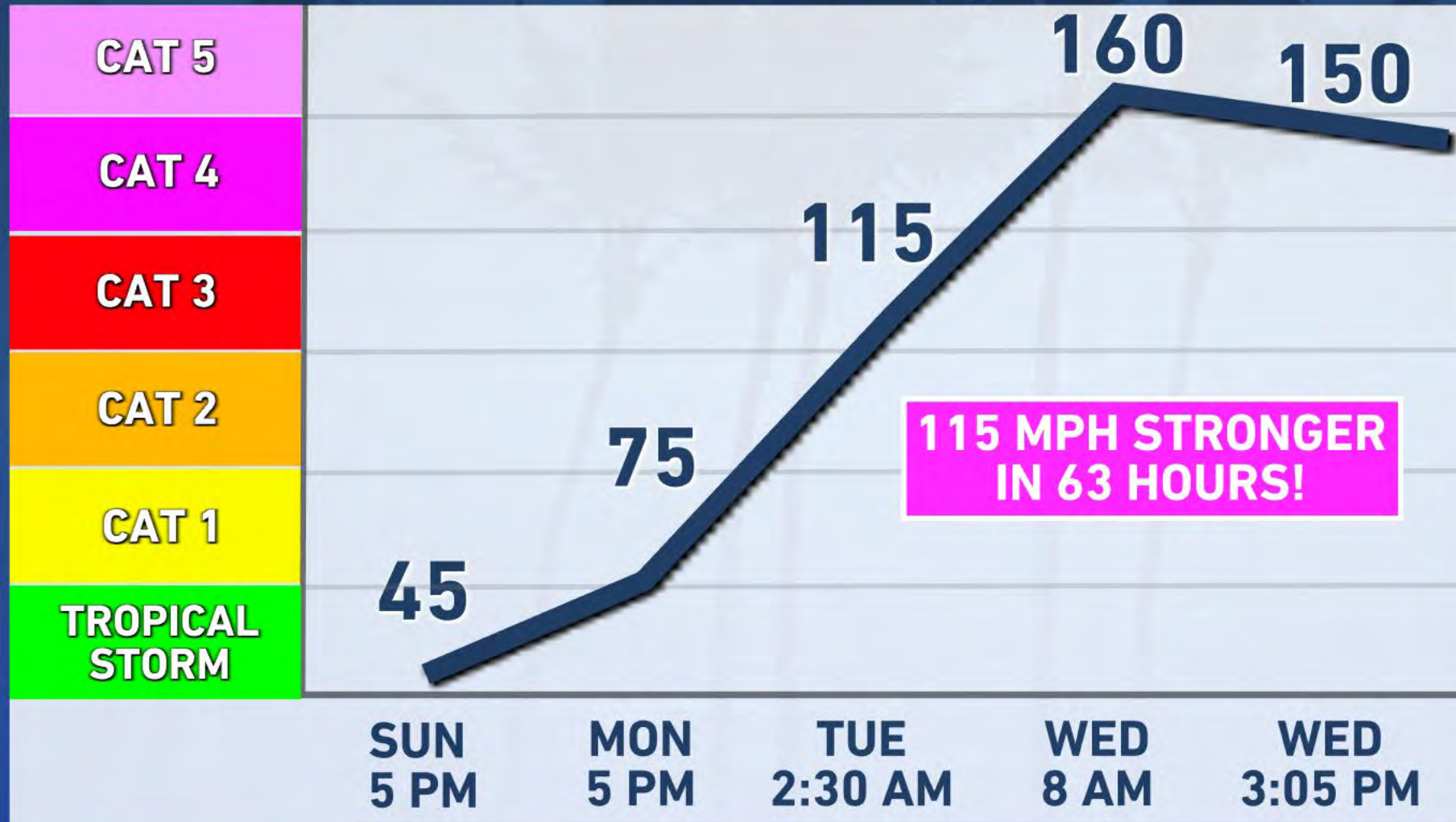
BEFORE



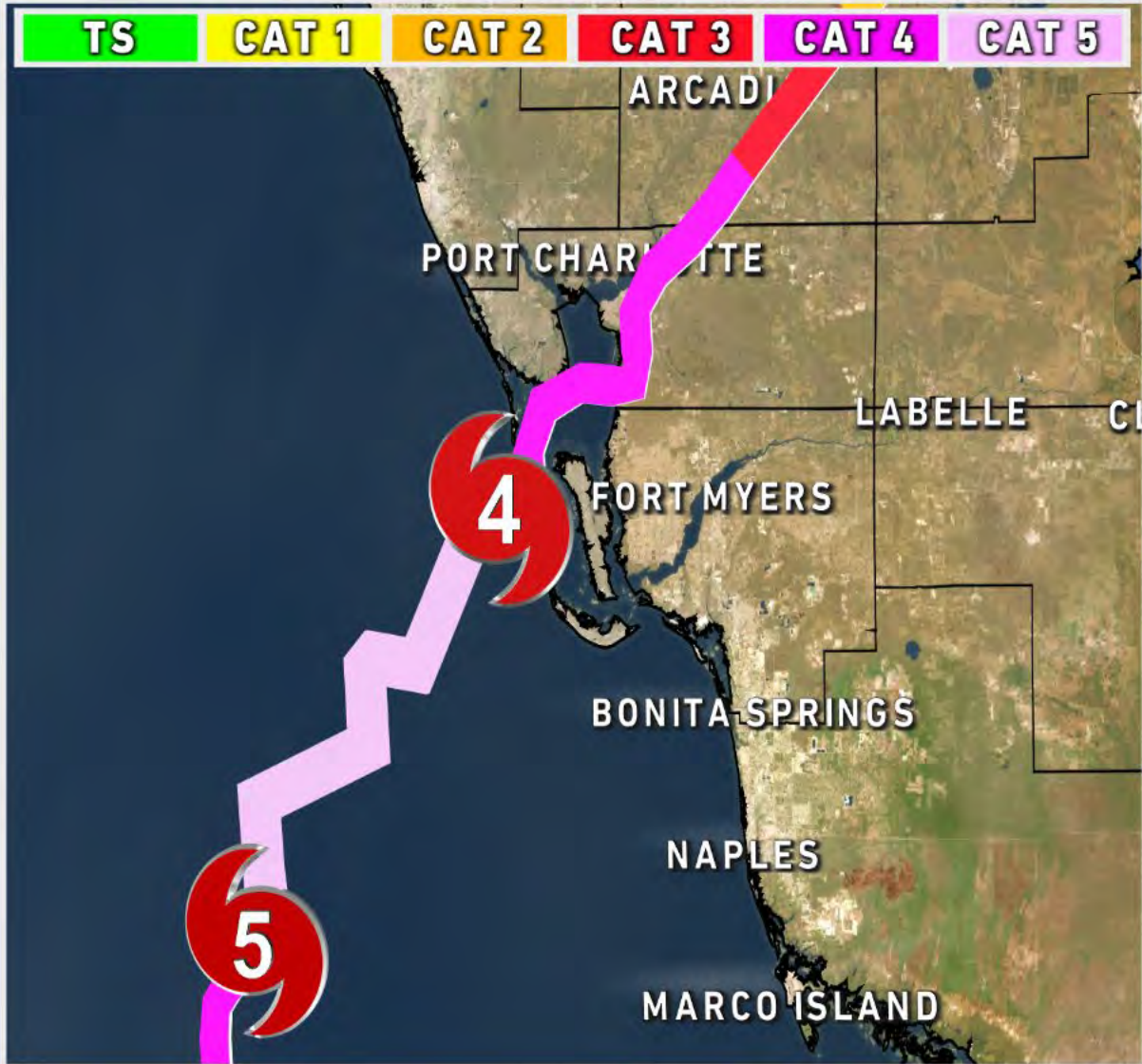
AFTER



IAN RAPID INTENSIFICATION



HURRICANE IAN TIMELINE



SEPTEMBER 28TH

(WEDNESDAY, DAY OF LANDFALL)

8 AM: IAN REACHES PEAK INTENSITY, CATEGORY 5, OFF SOUTHWEST FLORIDA COAST. 160 MPH WIND, 937 MB.

8 AM - 2 PM: CATEGORY 5 FOR 6 HOURS OR LESS.

3:05 PM: IAN MAKES LANDFALL IN CAYO COSTA, LEE COUNTY. 150 MPH WIND, 941 MB.

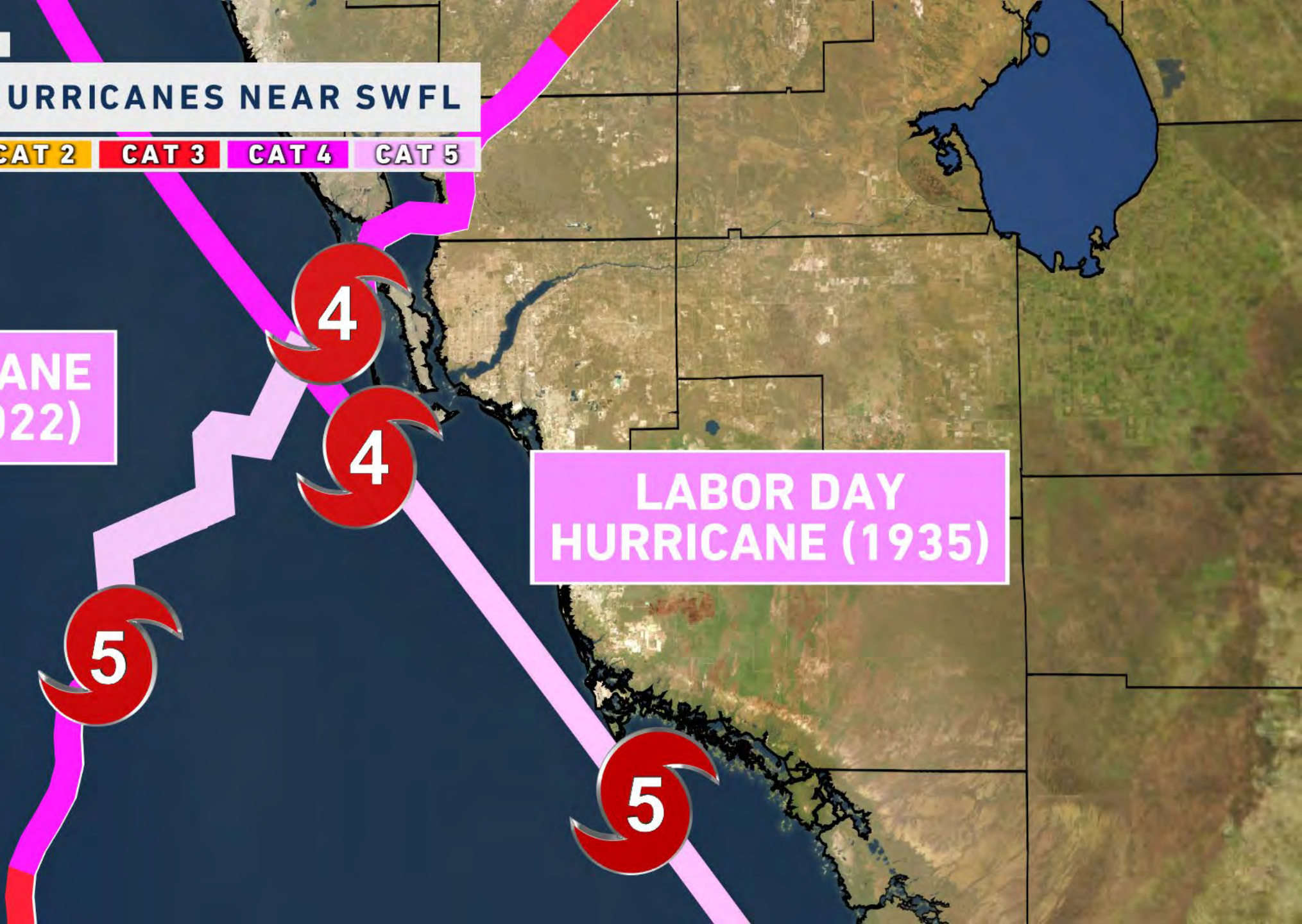
THE WEATHER AUTHORITY

CATEGORY 5 HURRICANES NEAR SWFL

TS CAT 1 CAT 2 CAT 3 CAT 4 CAT 5

HURRICANE
IAN (2022)

LABOR DAY
HURRICANE (1935)



IAN STORM SURGE



LIVE

WINK
DOPPLER **3X**

3:14 PM

THREE TIMES
MORE POWERFUL

PORT CHARLOTTE

75

27

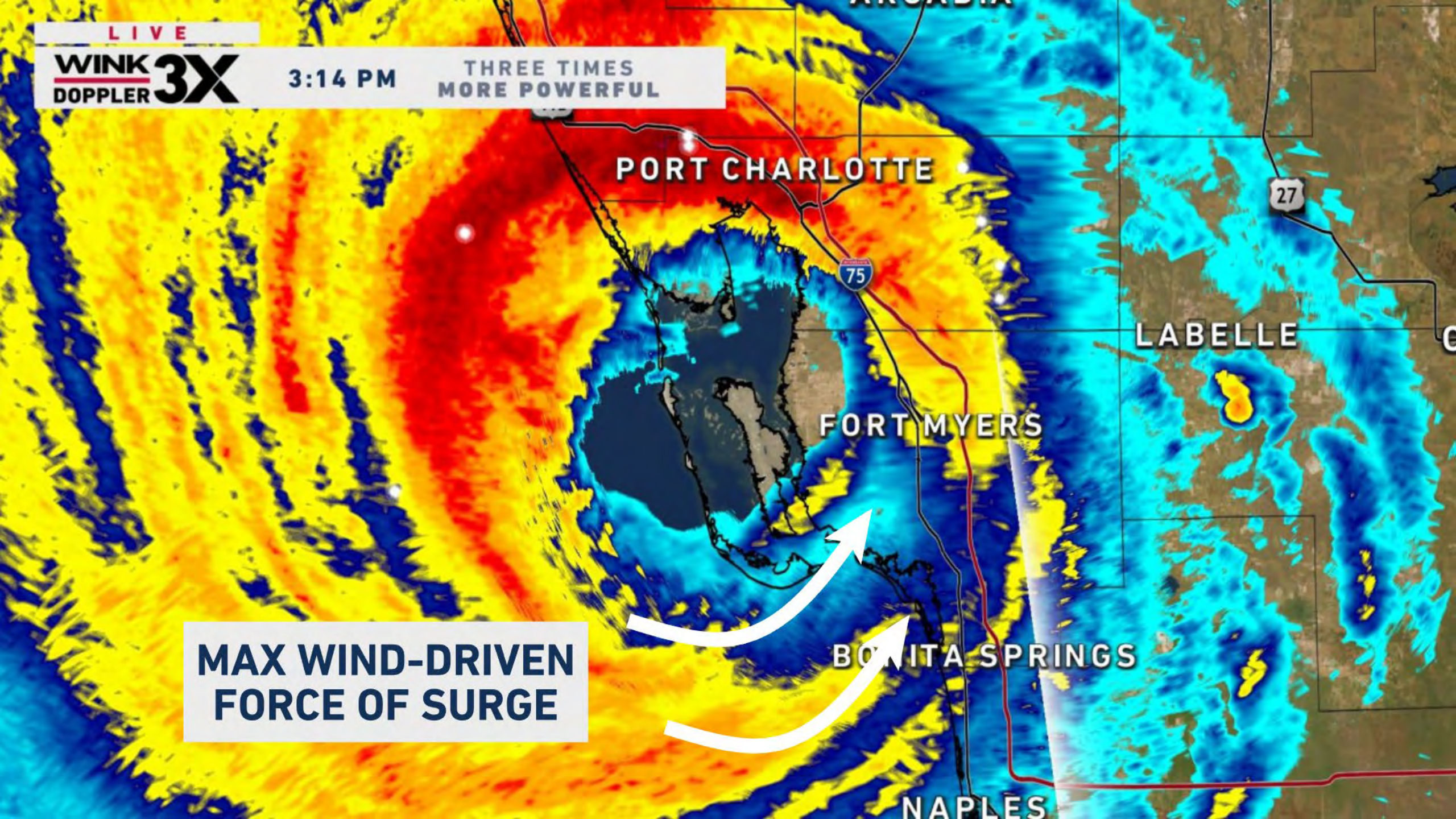
LABELLE

FORT MYERS

**MAX WIND-DRIVEN
FORCE OF SURGE**

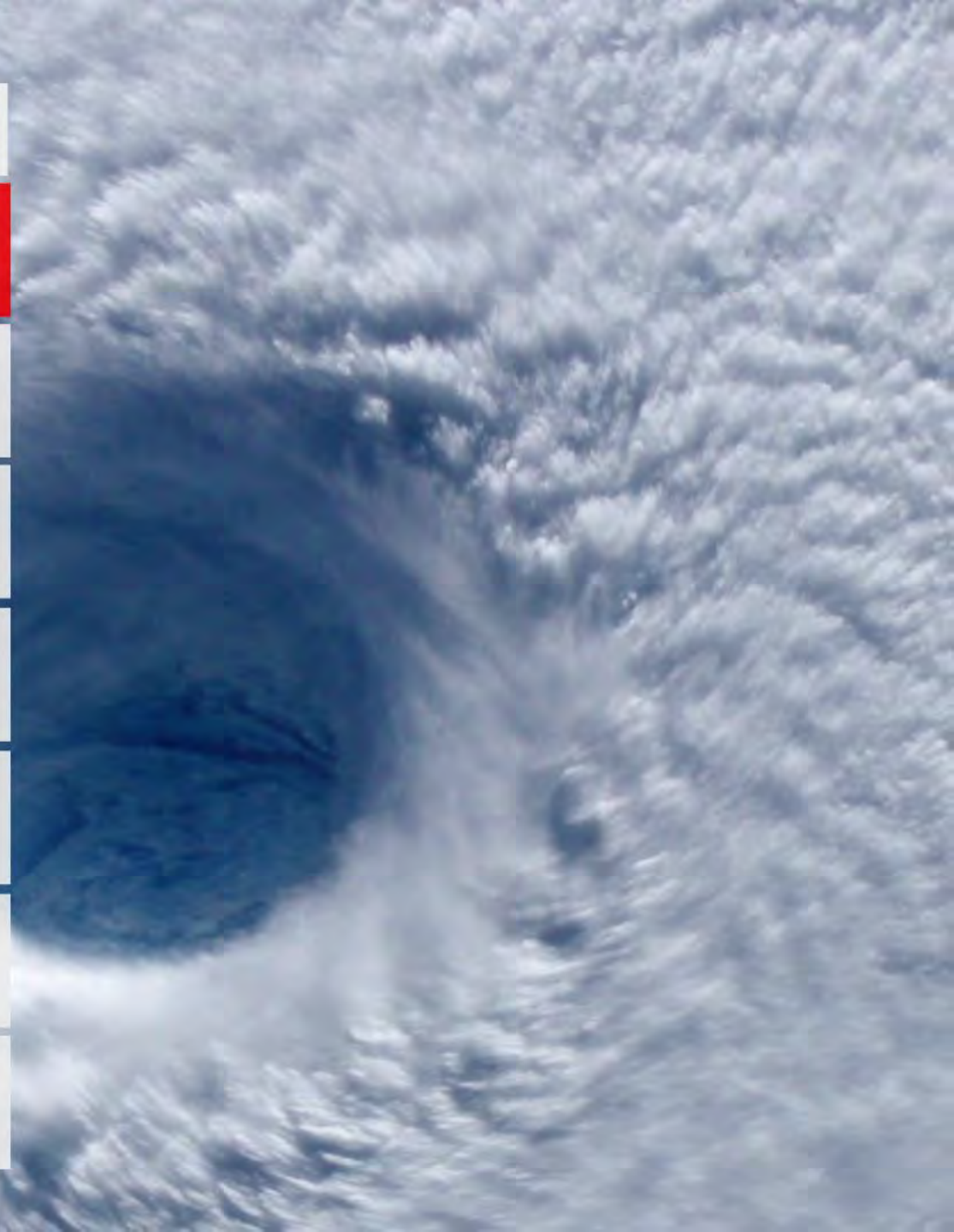
BOWITA SPRINGS

NAPLES



SW FLORIDA'S HIGHEST STORM SURGE

1) IAN - 2022 FORT MYERS BEACH	15'
2) HURRICANE - 1873 PUNTA RASSA	13'
3) DONNA - 1960 SOUTHERN COLLIER COUNTY	11'
4) IRMA - 2017 SOUTHERN COLLIER COUNTY	10'
5) WILMA - 2005 SOUTHERN COLLIER COUNTY	8'
6) CHARLEY - 2004 SANIBEL & FORT MYERS BEACH	7'
7) HURRICANE - 1921 PUNTA GORDA	7'



THE WEATHER AUTHORITY

HURRICANE IAN STORM SURGE

1 - 3'

3 - 6'

6 - 9'

9 - 12'

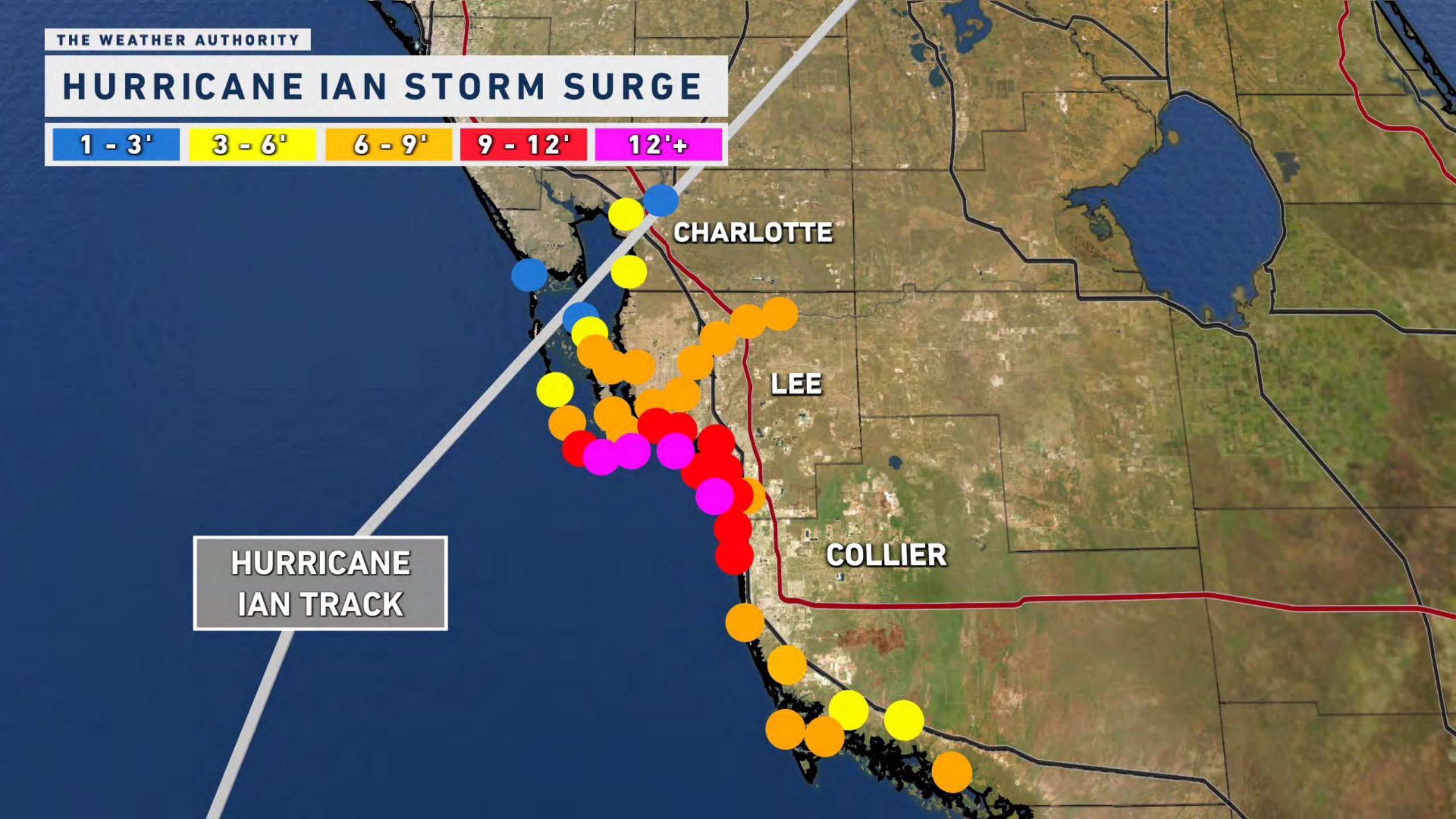
12'+

HURRICANE
IAN TRACK

CHARLOTTE

LEE

COLLIER



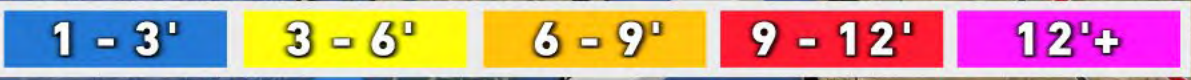
THE WEATHER AUTHORITY

IAN REVERSE / NEGATIVE SURGE

CHARLOTTE COUNTY



HURRICANE IAN STORM SURGE



HURRICANE IAN TRACK

BOCA GRANDE



PINE ISLAND

CAPTIVA



SANIBEL



CAPE CORAL

NORTH FORT MYERS

FORT MYERS

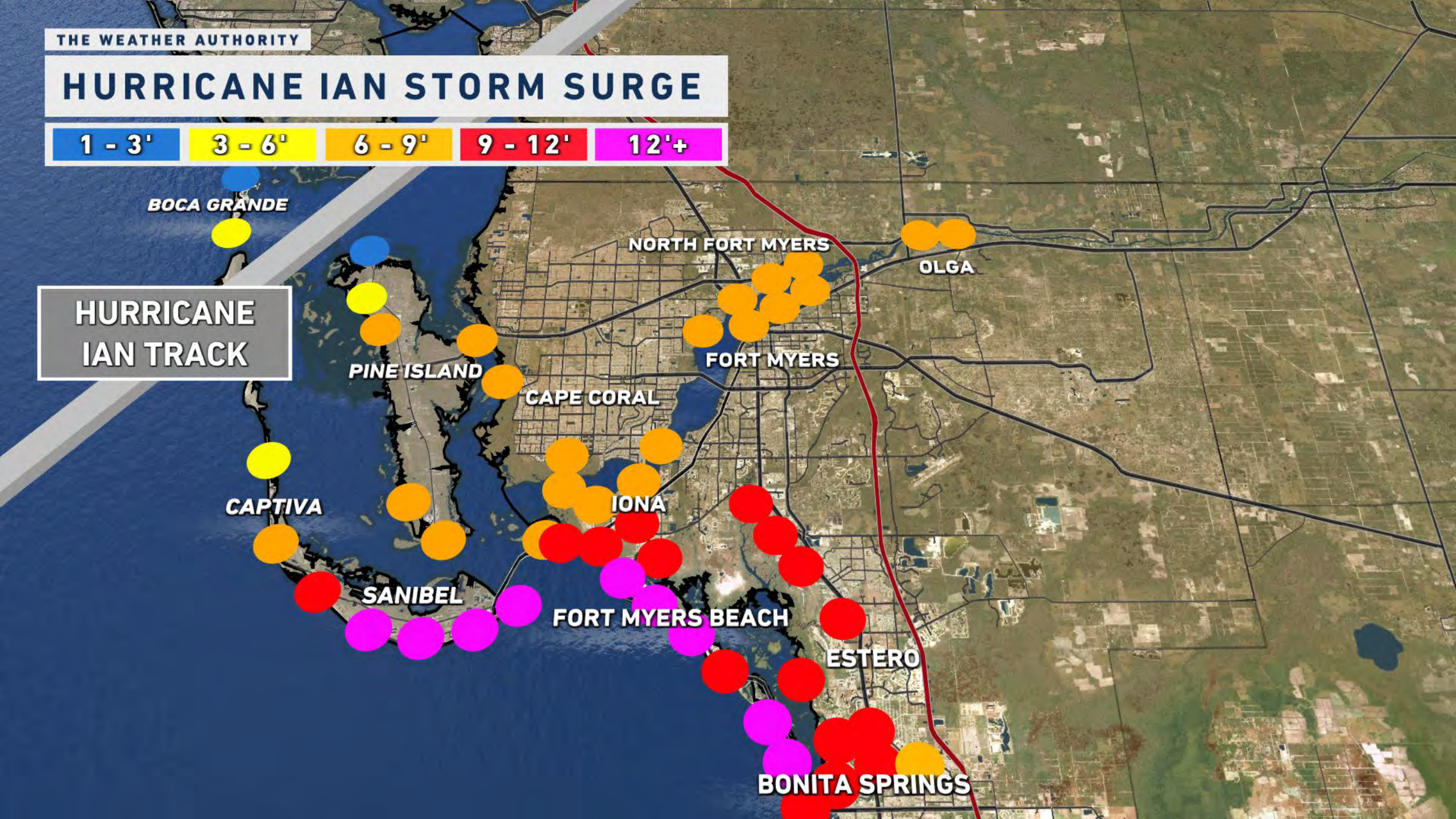
OLGA

IONA

FORT MYERS BEACH

ESTERO

BONITA SPRINGS



THE WEATHER AUTHORITY

WINK DURING HURRICANE IAN

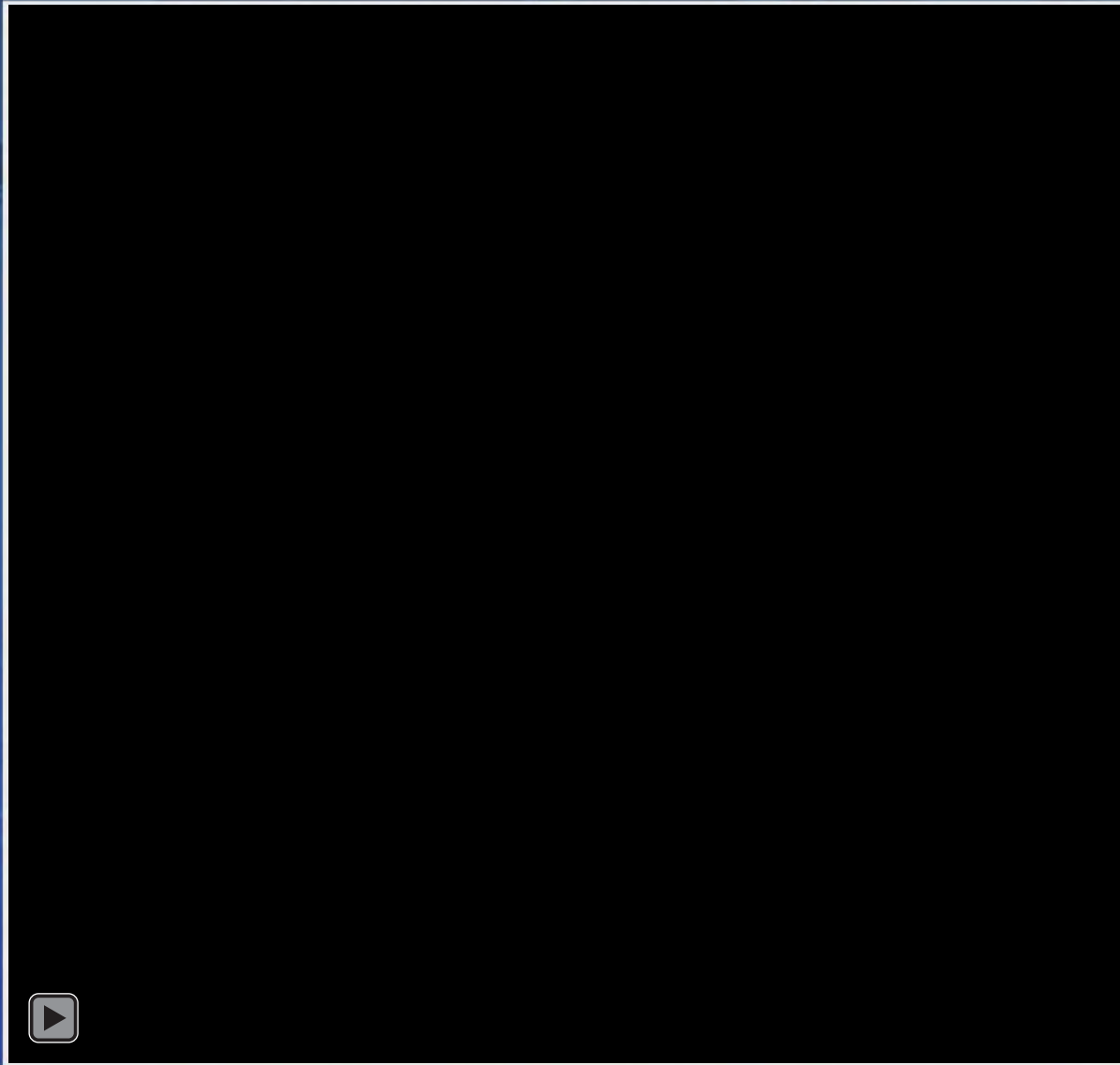


THE WEATHER AUTHORITY

WINK DURING HURRICANE IAN



WINK DURING HURRICANE IAN



THE WEATHER AUTHORITY

WINK DURING HURRICANE IAN



WINK DURING HURRICANE IAN

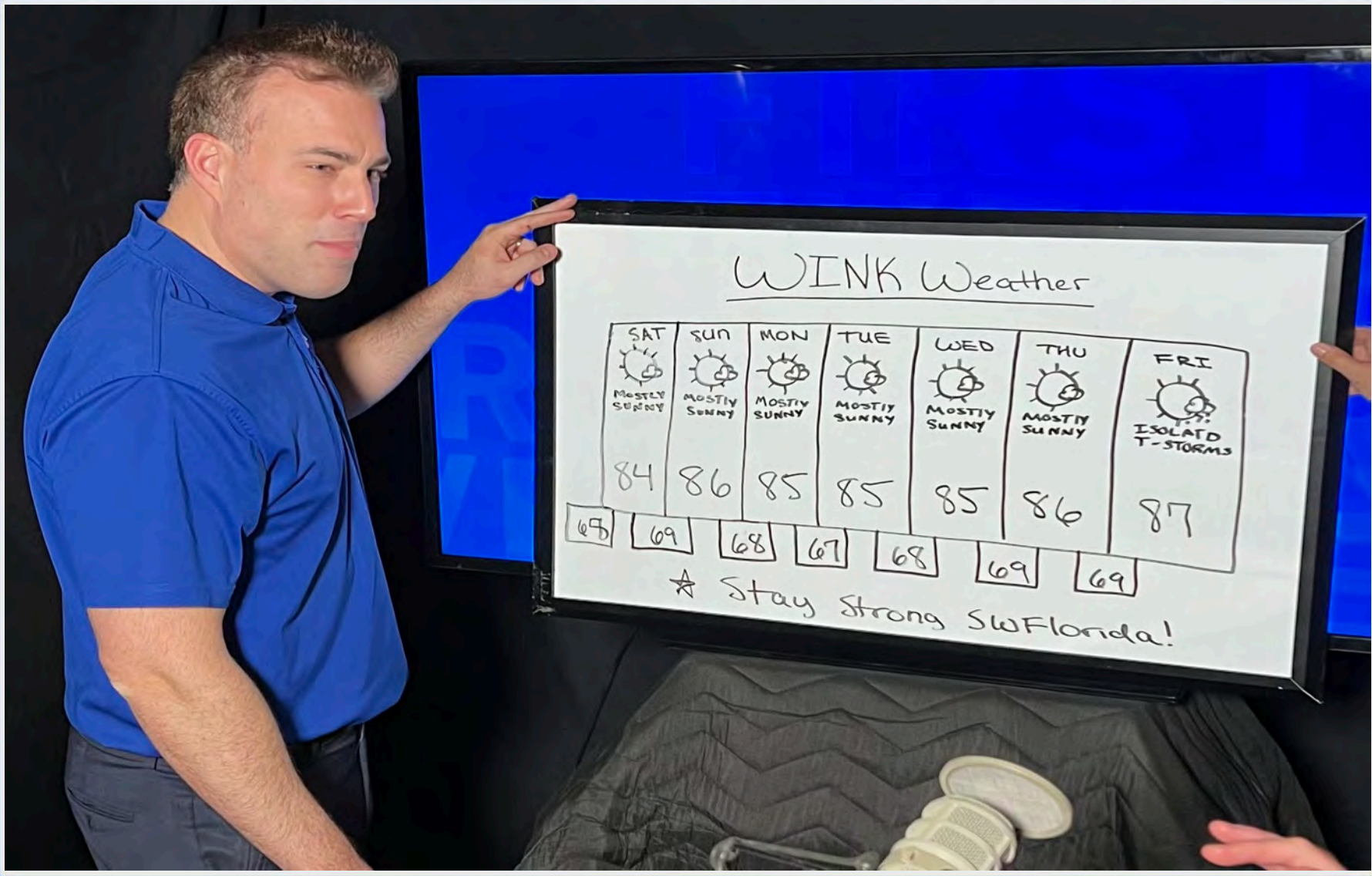


THE WEATHER AUTHORITY

WINK DURING HURRICANE IAN



WINK DURING HURRICANE IAN



THE WEATHER AUTHORITY

WINK DURING HURRICANE IAN



THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



DOWNTOWN FORT MYERS

THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



NAPLES

© Courtesy Johnny Lauder

THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



THE WEATHER AUTHORITY

HURRICANE IAN PICTURES

FORT MYERS



THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



NAPLES

THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



NAPLES

THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



NAPLES AIRPORT

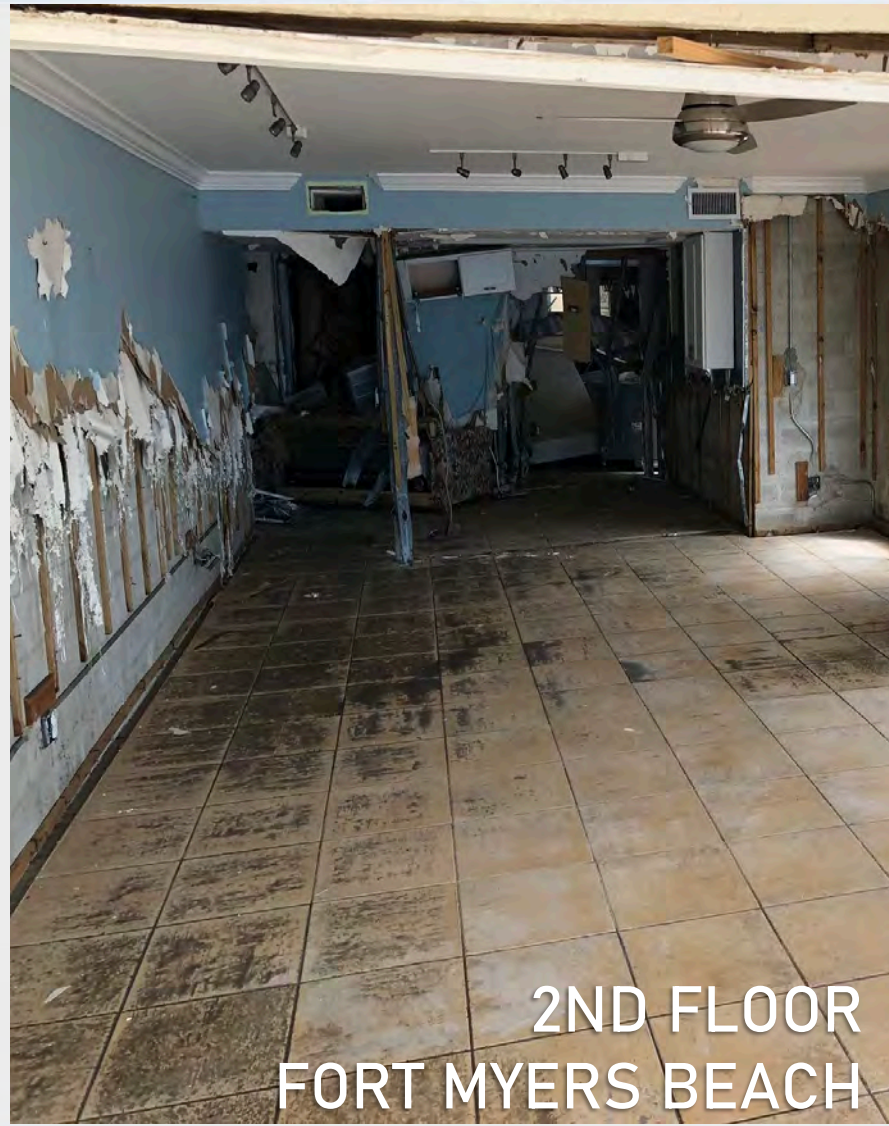
THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



LEE COUNTY

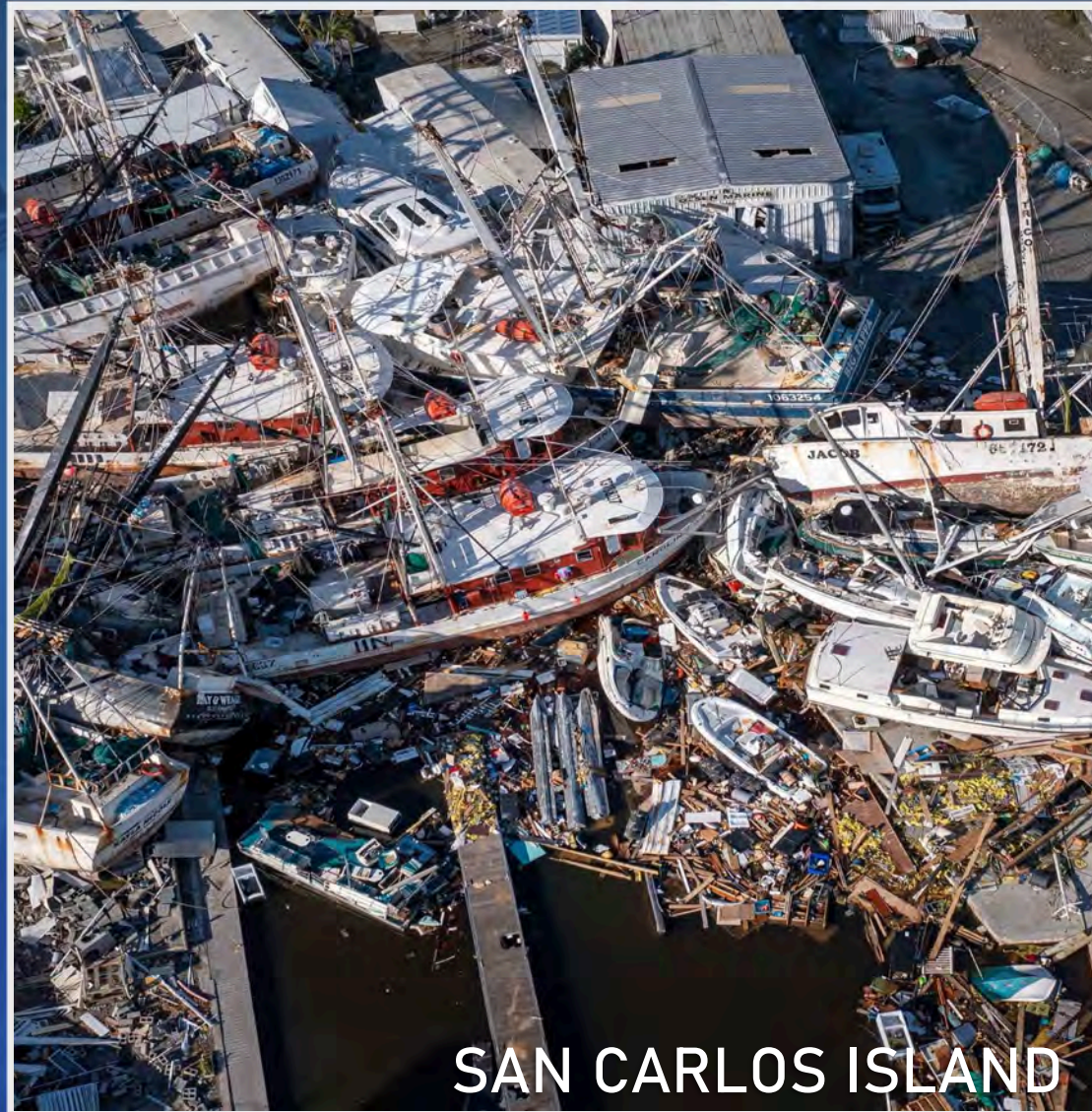
HURRICANE IAN PICTURES



2ND FLOOR
FORT MYERS BEACH

THE WEATHER AUTHORITY

HURRICANE IAN PICTURES



SAN CARLOS ISLAND

THE WEATHER AUTHORITY

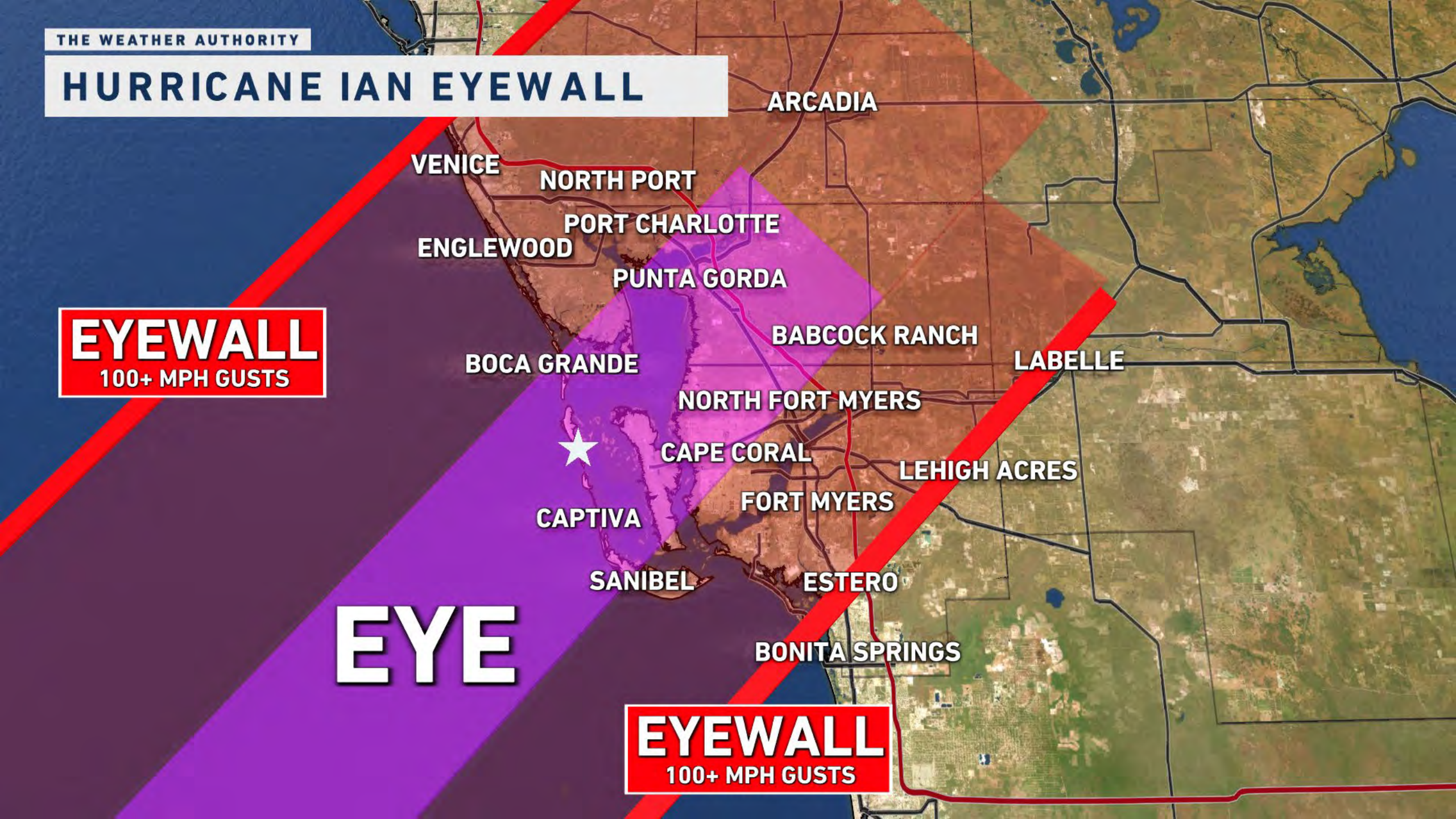
HURRICANE IAN EYEWALL

EYEWALL
100+ MPH GUSTS

EYE

EYEWALL
100+ MPH GUSTS

ARCADIA
VENICE
NORTH PORT
PORT CHARLOTTE
ENGLEWOOD
PUNTA GORDA
BOCA GRANDE
BABCOCK RANCH
NORTH FORT MYERS
CAPE CORAL
LEHIGH ACRES
FORT MYERS
CAPTIVA
SANIBEL
ESTERO
BONITA SPRINGS
LABELLE



THE WEATHER AUTHORITY

EYE OF HURRICANE IAN

NORTH CAPE CORAL



SW FLORIDA HURRICANES BY WIND

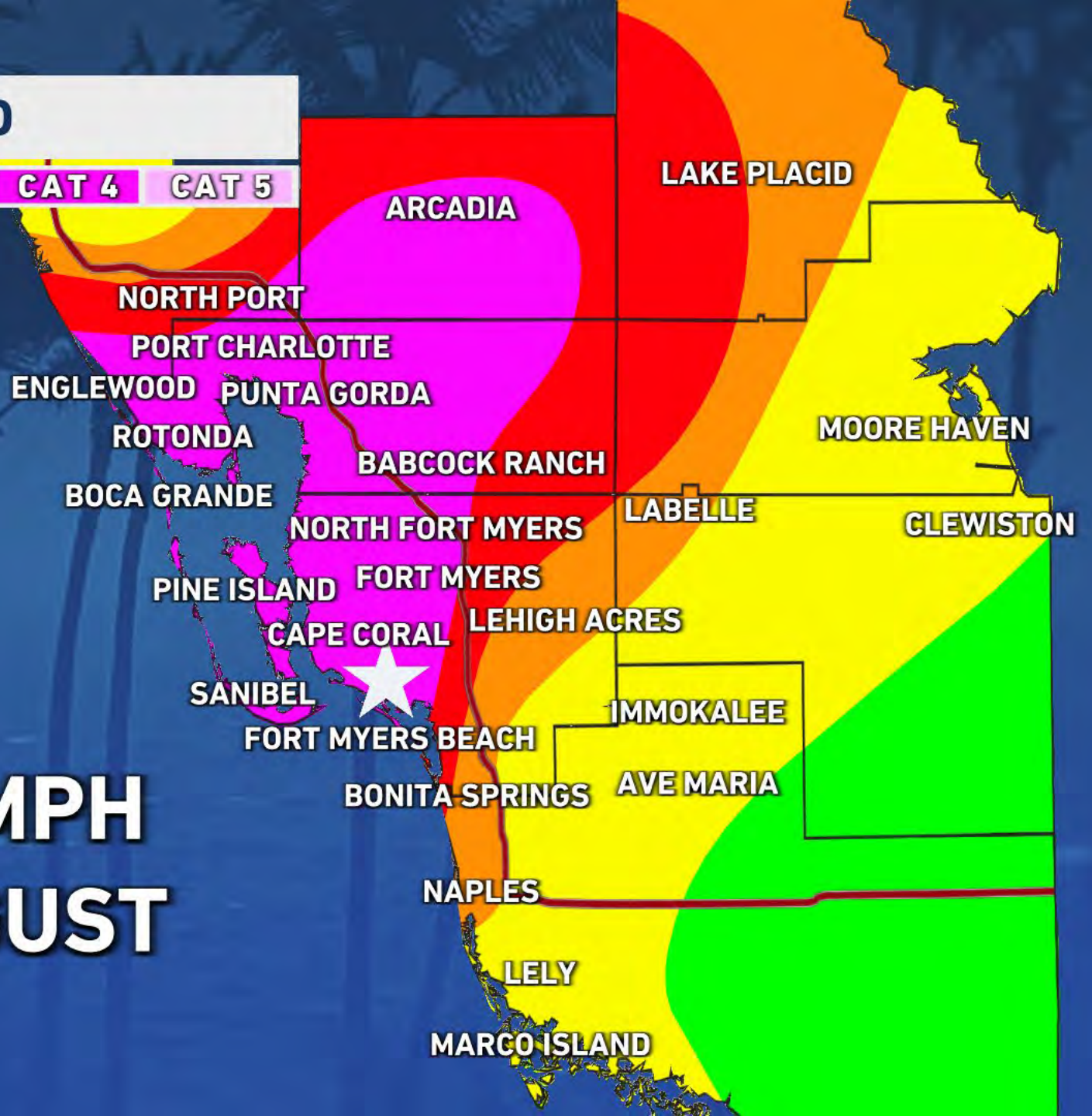
1) IAN - 2022 CAYO COSTA	150 MPH
1) CHARLEY - 2004 CAYO COSTA	150 MPH
3) HURRICANE - 1948 CHOKOLOSKEE	130 MPH
4) DONNA - 1960 GOODLAND	120 MPH
4) WILMA - 2005 CAPE ROMANO	120 MPH
6) IRMA - 2017 MARCO ISLAND	115 MPH
6) HURRICANE - 1873 CAPTIVA	115 MPH

THE WEATHER AUTHORITY

HURRICANE IAN WIND

TS CAT 1 CAT 2 CAT 3 CAT 4 CAT 5

140 MPH
CAPE CORAL GUST

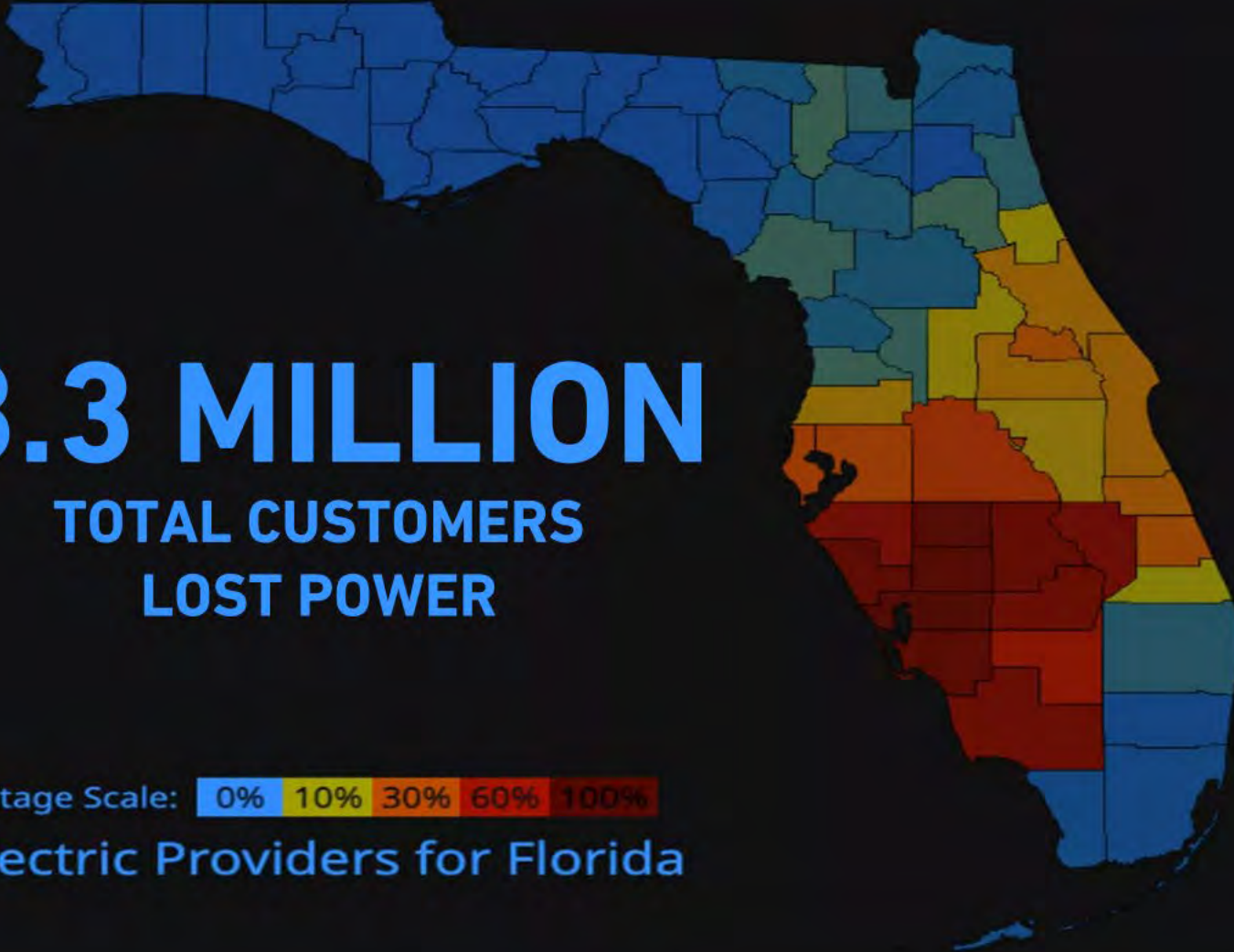


HURRICANE IAN POWER OUTAGES

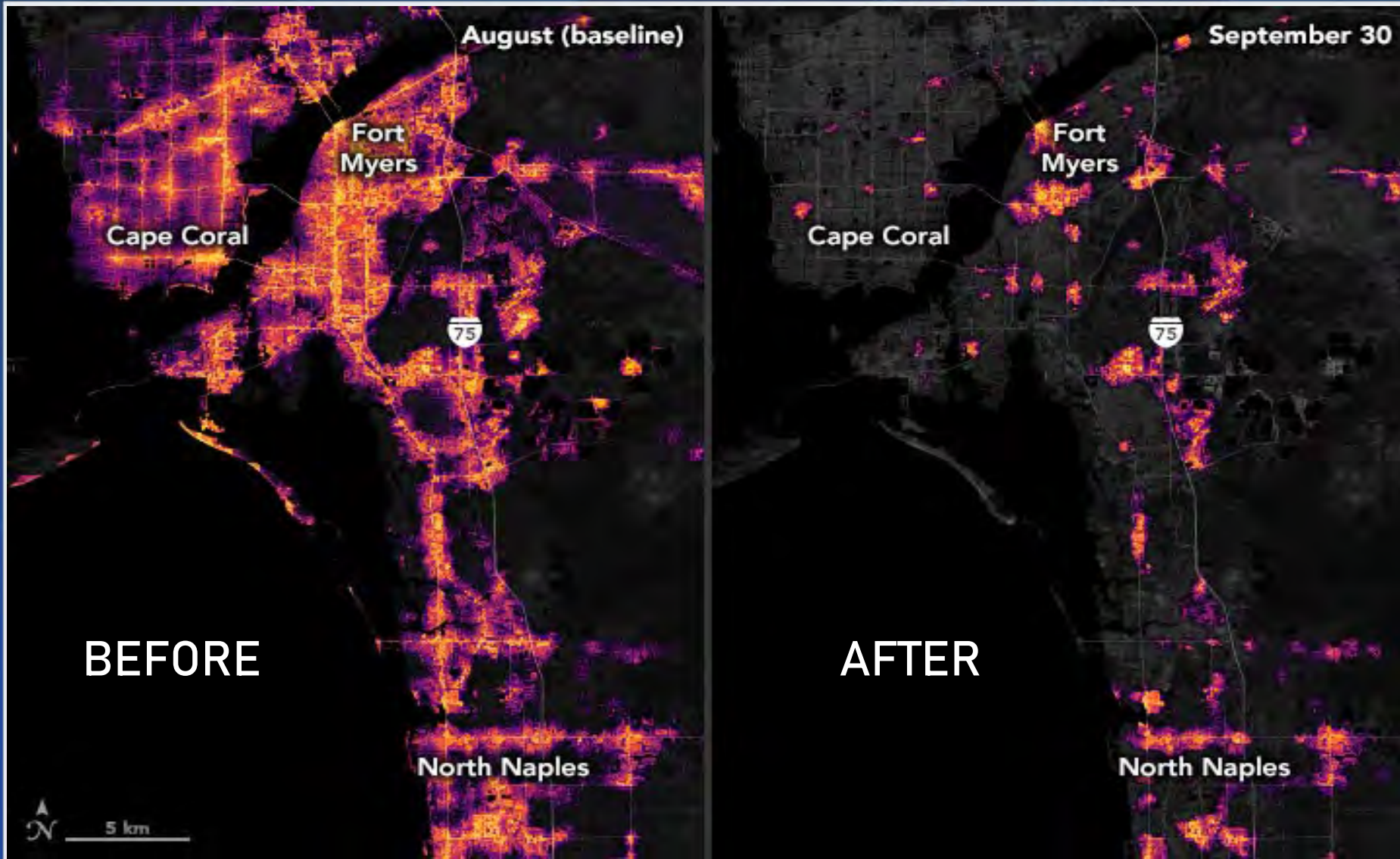
3.3 MILLION
TOTAL CUSTOMERS
LOST POWER

Outage Scale: 0% 10% 30% 60% 100%

Electric Providers for Florida



HURRICANE IAN POWER OUTAGES



THE WEATHER AUTHORITY

HURRICANE IAN PICTURES

CAPE CORAL



SW FLORIDA HURRICANES LANDFALL SPEED

HURRICANE - 1873

CAPTIVA

24 MPH

WILMA - 2005

CAPE ROMANO

23 MPH

CHARLEY - 2004

CAYO COSTA

21 MPH

IRMA - 2017

MARCO ISLAND

12 MPH

DONNA - 1960

GOODLAND

10 MPH

IAN - 2022

CAYO COSTA

9 MPH

HURRICANE - 1948

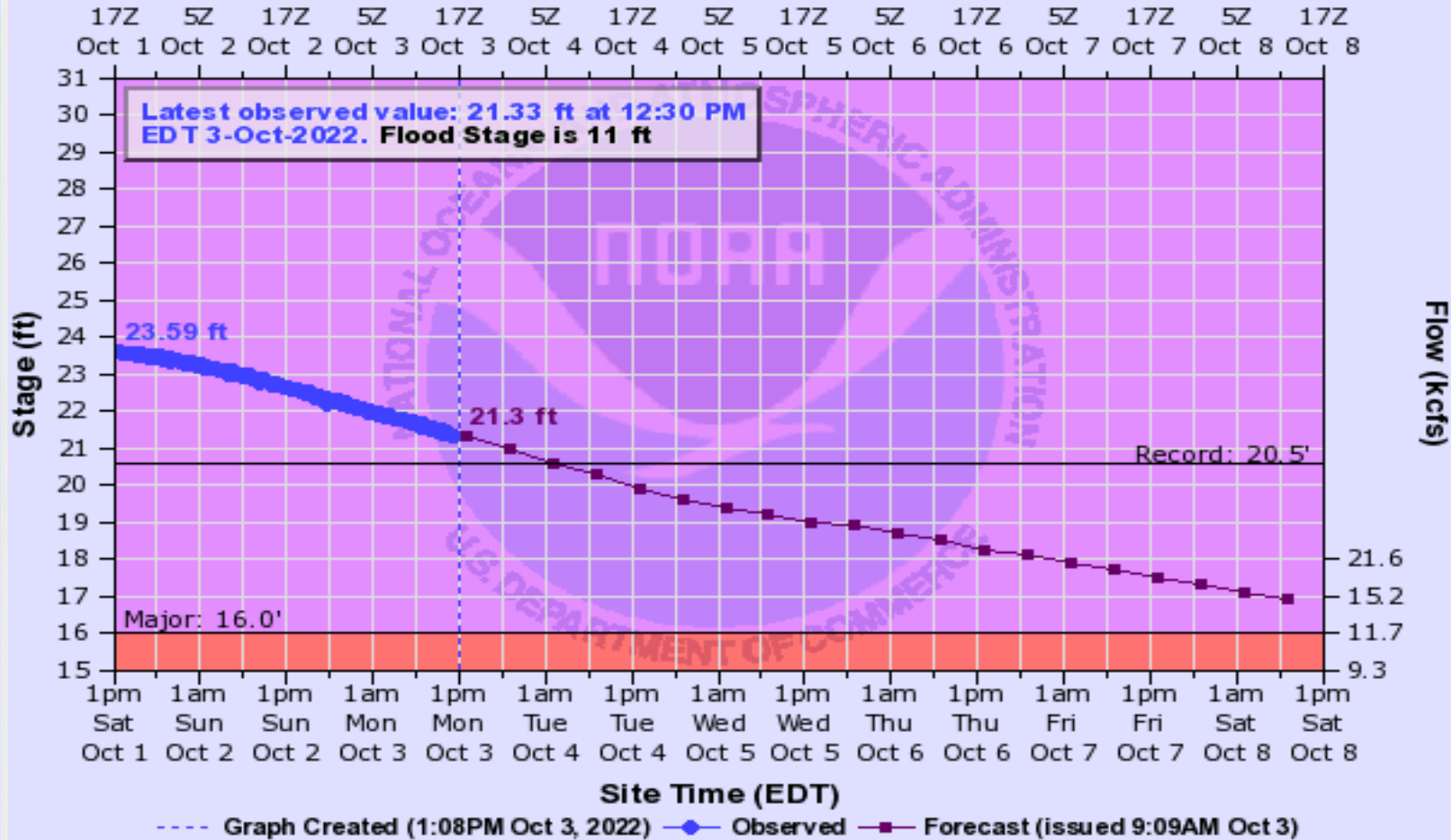
CHOKOLOSKEE

7 MPH

IAN HISTORIC RIVER FLOODING

PEACE RIVER (FL) AT SR 70 ARCADIA

Universal Time (UTC)



THE WEATHER AUTHORITY

IAN HISTORIC RIVER FLOODING



DESOTO COUNTY

THE WEATHER AUTHORITY

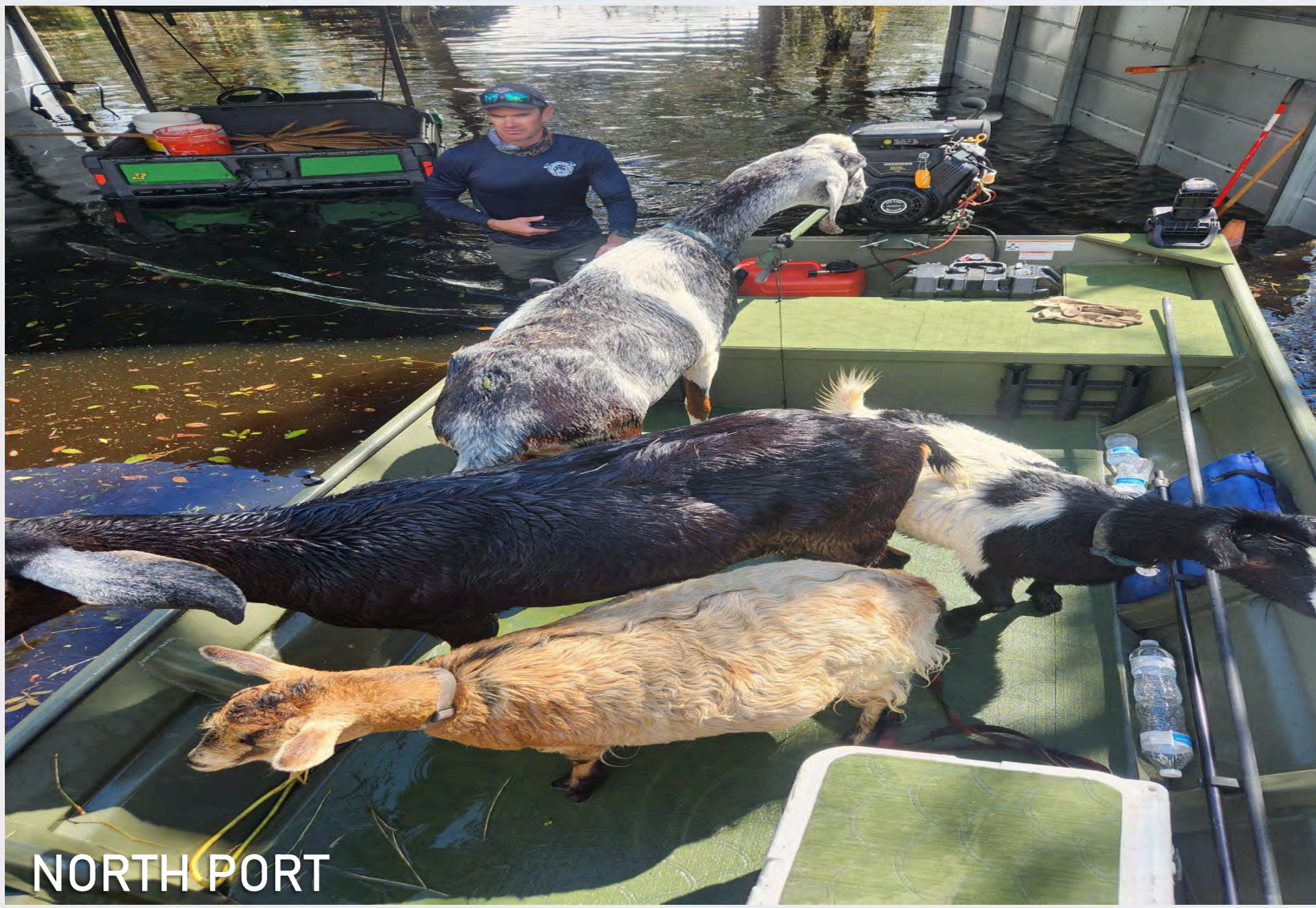
IAN HISTORIC RIVER FLOODING



NORTH PORT

THE WEATHER AUTHORITY

IAN HISTORIC RIVER FLOODING



NORTH PORT

HURRICANE IAN CREATURES

SHARK



SNAKE



GAR

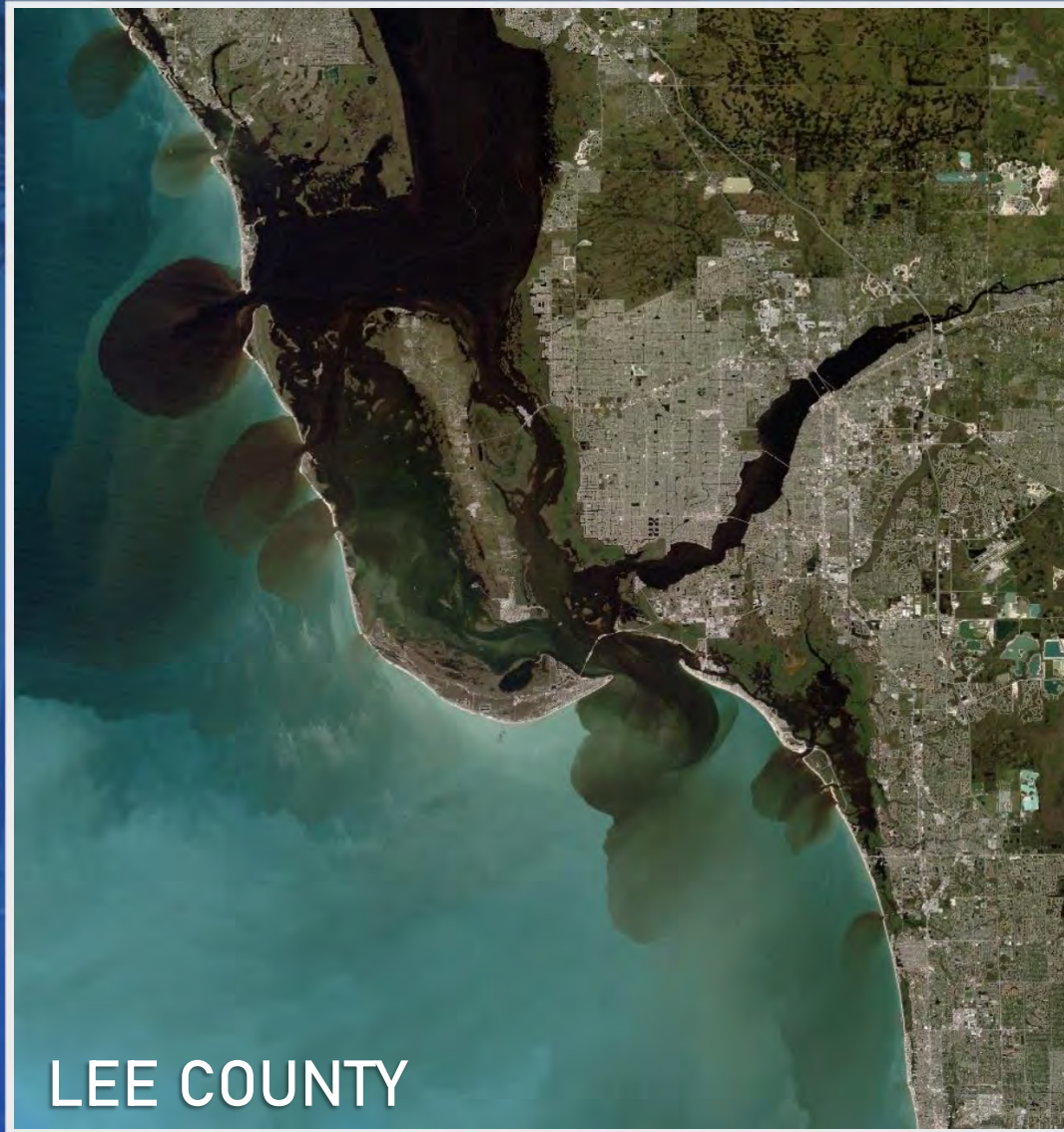


ALLIGATOR



THE WEATHER AUTHORITY

HURRICANE IAN RUNOFF



LEE COUNTY

RED TIDE IMPACT



**AFTER
HURRICANE IRMA
(2017 - 2018)**



**AFTER
HURRICANE IAN
(2022 - NOW)**

HURRICANE IAN BEFORE AND AFTER



FORT MYERS BEACH



HURRICANE IAN BEFORE AND AFTER



FORT MYERS BEACH



HURRICANE IAN BEFORE AND AFTER



HURRICANE IAN BEFORE AND AFTER



HURRICANE IAN BEFORE AND AFTER



NAPLES PIER

HURRICANE IAN BEFORE AND AFTER



MATLACHA

HURRICANE IAN RECOVERY



SANIBEL & CAUSEWAY

HURRICANE IAN RECOVERY

SANIBEL CAUSEWAY



MATLACHA



THE WEATHER AUTHORITY

HURRICANE IAN RECOVERY



HURRICANE IAN RECOVERY

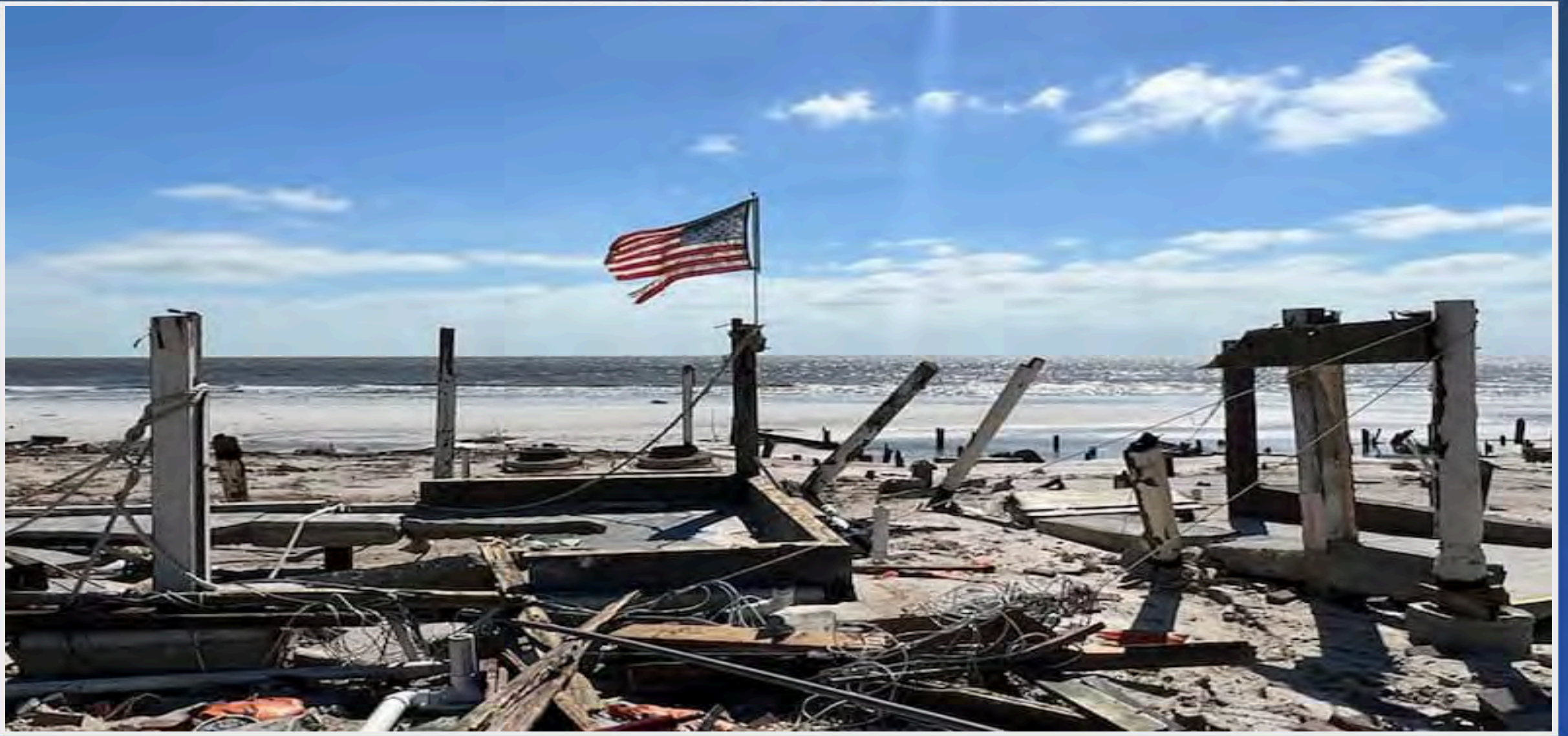


HURRICANE IAN RECOVERY



THE WEATHER AUTHORITY

HURRICANE IAN RECOVERY



2023 STORM NAMES

ARLENE

BRET

CINDY

DON

EMILY

FRANKLIN

GERT

HAROLD

IDALIA

JOSE

KATIA

LEE

MARGOT

NIGEL

OPHELIA

PHILIPPE

RINA

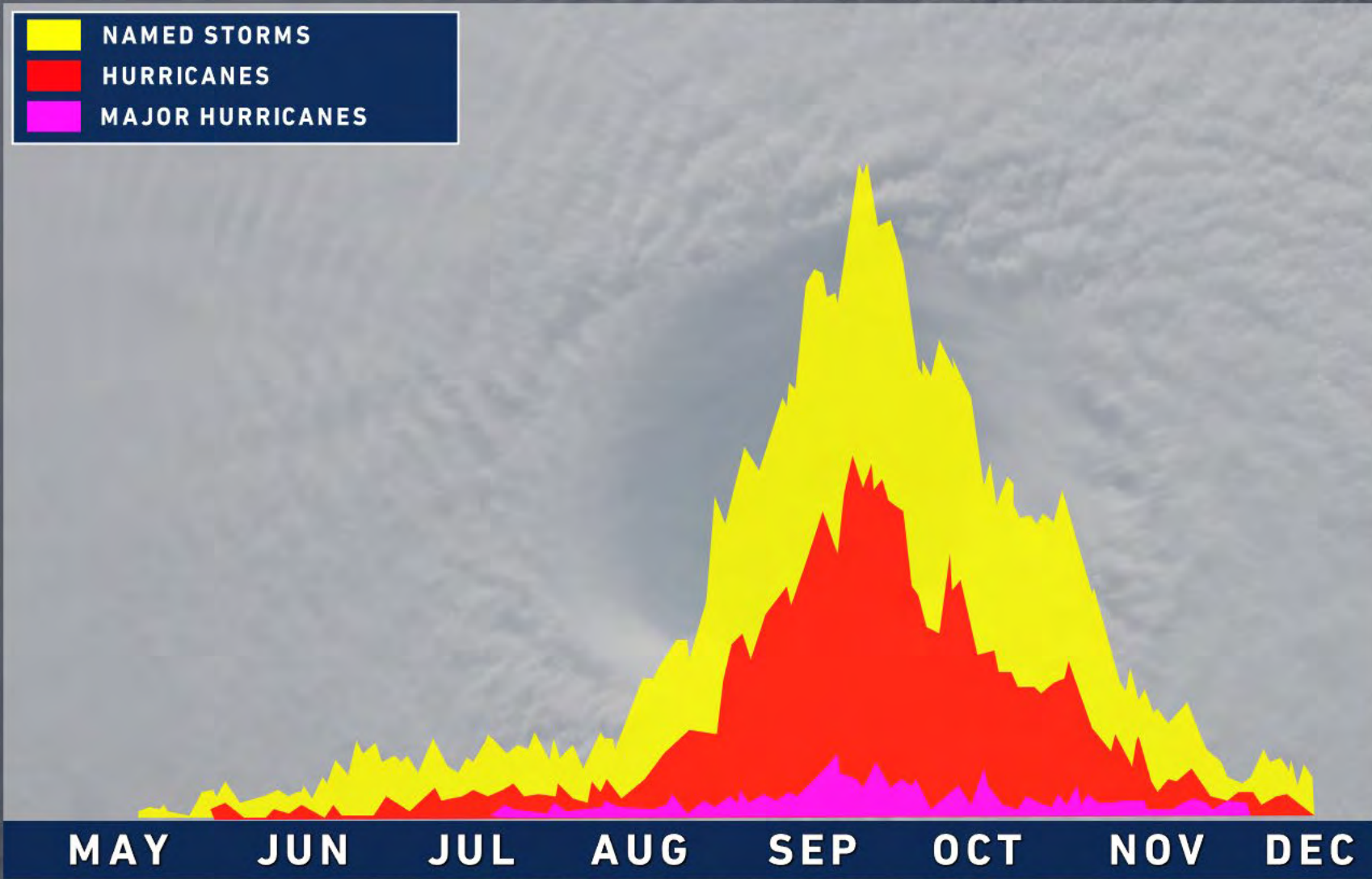
SEAN

TAMMY

VINCE

WHITNEY

TROPICAL ACTIVITY



HURRICANE INGREDIENTS

WARM WATERS



LOW SHEAR



HIGH HUMIDITY

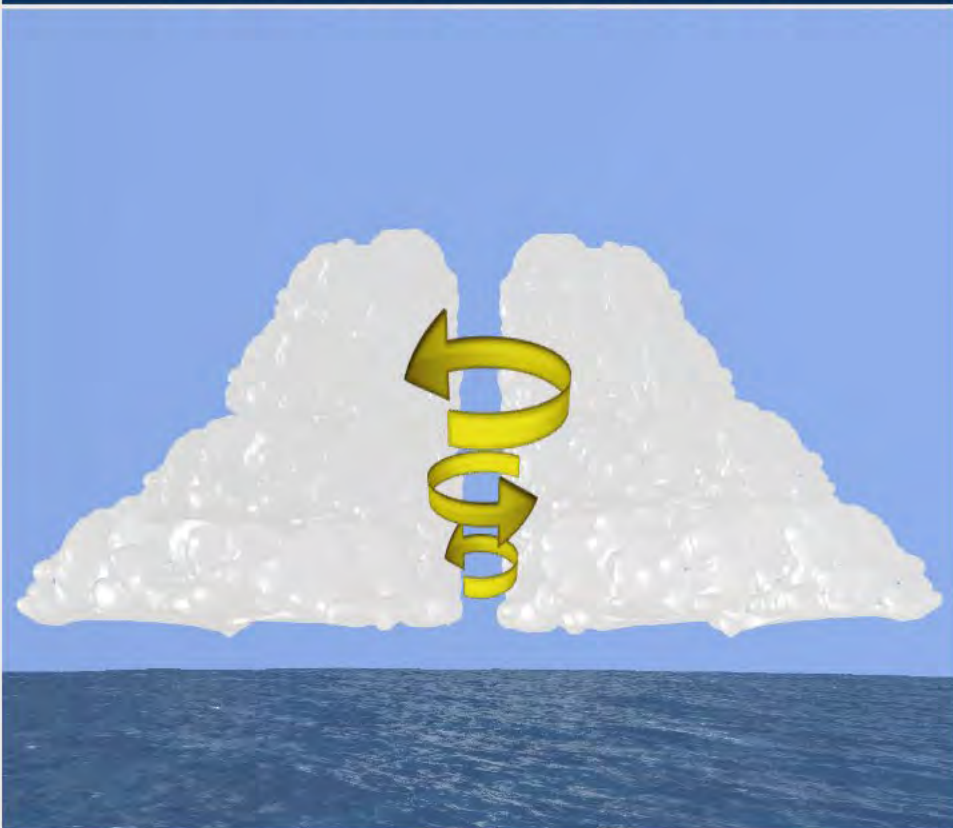


RISING AIR



HURRICANE INGREDIENTS

LOW WIND SHEAR



**LIKELY TO STRENGTHEN,
BETTER ALIGNMENT**

HIGH WIND SHEAR



**LIKELY TO WEAKEN,
MORE DISORGANIZED**

2023 CSU OUTLOOK

	AVERAGE	2022	FORECAST
TROPICAL STORMS	14	14	13
HURRICANES	7	8	6
MAJOR HURRICANES	3	2	2

THE WEATHER AUTHORITY

WATER TEMPERATURES

BELOW AVERAGE

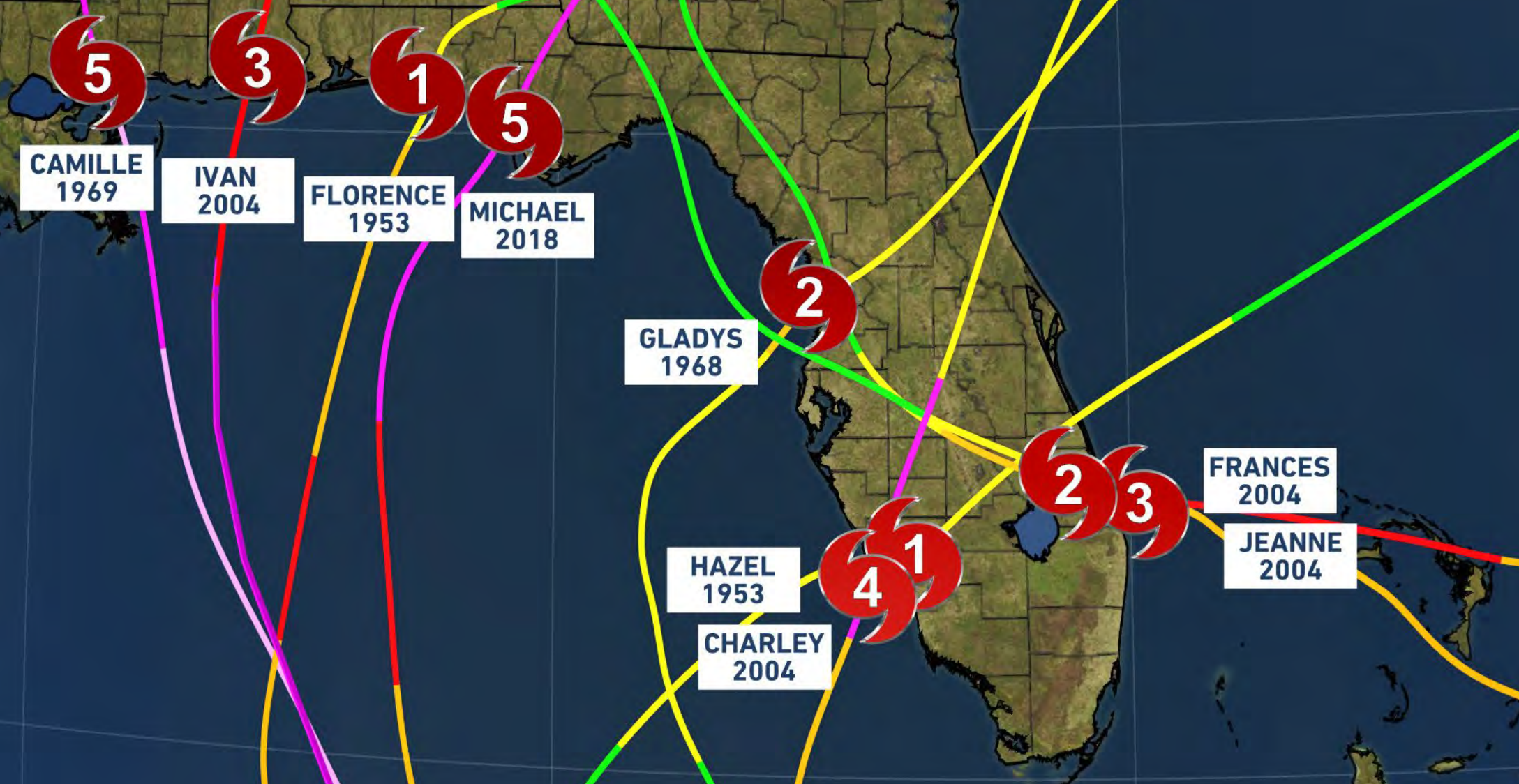


ABOVE AVERAGE

EL NIÑO

- WARMER THAN AVERAGE SST'S IN PACIFIC
- INCREASES WIND SHEAR IN THE ATLANTIC
- CAN LEAD TO LESS TROPICAL ACTIVITY

WEAK EL NIÑO HURRICANES



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STRONG EL NIÑO HURRICANES



BETSY
1965



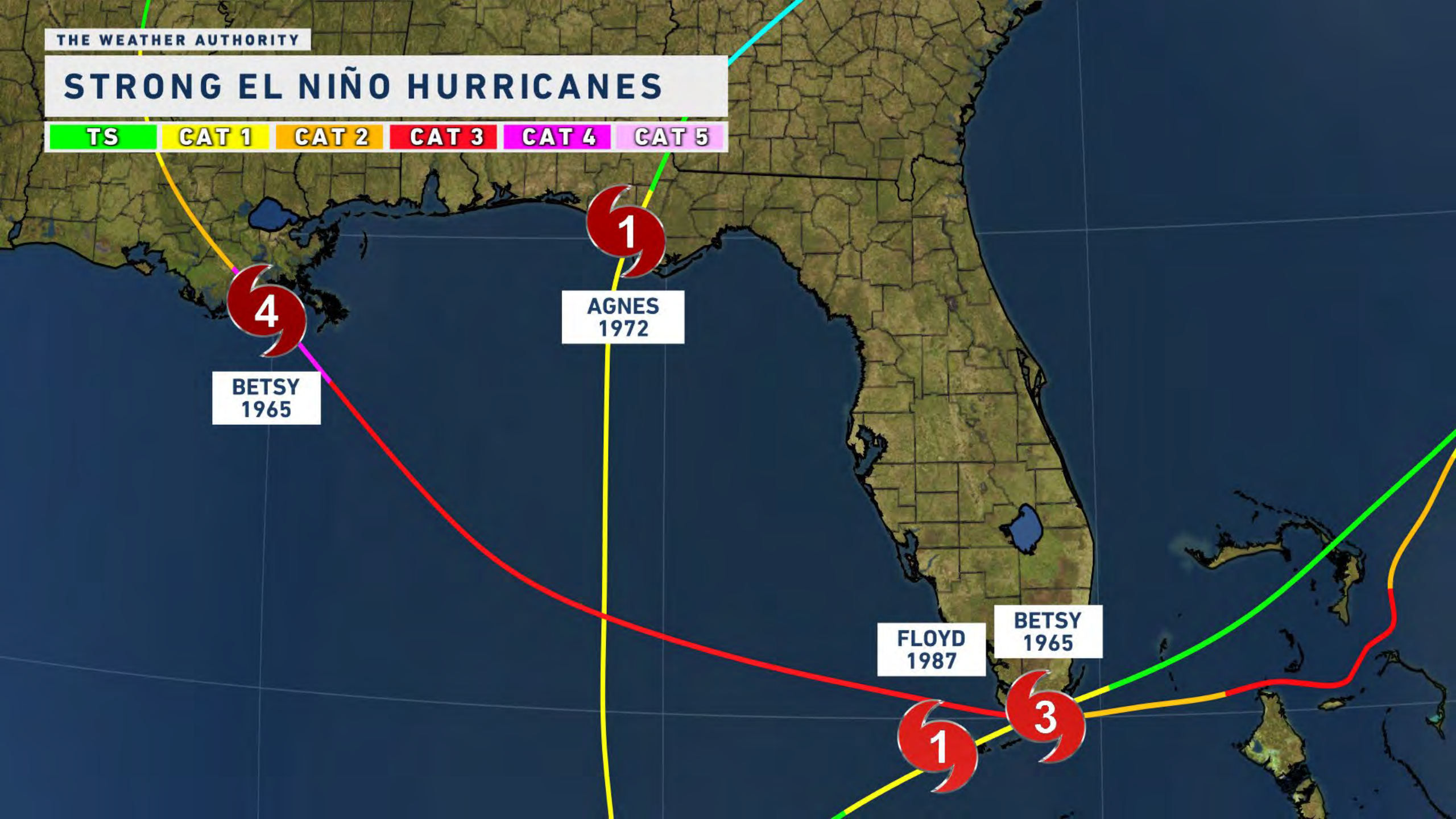
AGNES
1972



FLOYD
1987



BETSY
1965



Hurricane Preparedness

DETERMINE YOUR RISK



Hurricanes bring many hazards to U.S. coastlines and inland areas, including storm surge along the coast, inland flooding due to heavy rainfall, tornadoes, strong wind, rip currents and large waves.



Storm surge



Strong winds



Tornadoes



Inland flooding



Rip currents

weather.gov/hurricane



Hurricane Preparedness

DEVELOP AN EVACUATION PLAN



Find out today if you live in a hurricane evacuation zone and identify trusted sources for receiving evacuation orders. Plan for multiple options on where to go and how to get there. Have a go bag for supplies and a plan for your pets. Be prepared to leave immediately if ordered to evacuate.



Find out if you live in an evacuation zone



Plan several routes



Have a go bag for supplies



Plan for your pets



Follow evacuation orders if given

weather.gov/hurricane



Hurricane Preparedness

ASSEMBLE DISASTER SUPPLIES



Make a list of supplies and assemble them before hurricane season begins. Have enough food and water for each person for at least three days. Fill your prescriptions and have medicine on hand. Radios, batteries and phone chargers are also must-haves. Gas up your vehicle and have cash on hand.



Food & water



Medicine & prescriptions



Keep gas tank full



Radio, batteries, phone chargers



Cash on hand

weather.gov/hurricane



Hurricane Preparedness

GET AN INSURANCE CHECKUP



Check in with your insurance agency before hurricane season. Remember that flood insurance must be obtained separately. Prepare your home and vehicles according to your policy. Know where your insurance documents are located and take them with you if evacuating. Visit [floodsmart.gov](https://www.floodsmart.gov) for more.



Check with
your agent



Keep documents
with you



Know your
policy



Consider flood
insurance

[weather.gov/hurricane](https://www.weather.gov/hurricane)



Hurricane Preparedness

STRENGTHEN YOUR HOME



There's a lot you can do around your home to help protect it from hurricane winds. Before hurricane season, trim trees on your property and get approved window coverings. Ahead of storms, collect loose outdoor items, secure all doors on your property, and find a safe location for your vehicle.



Cover windows



Secure loose outdoor items



Trim trees



Move vehicle to a safe location



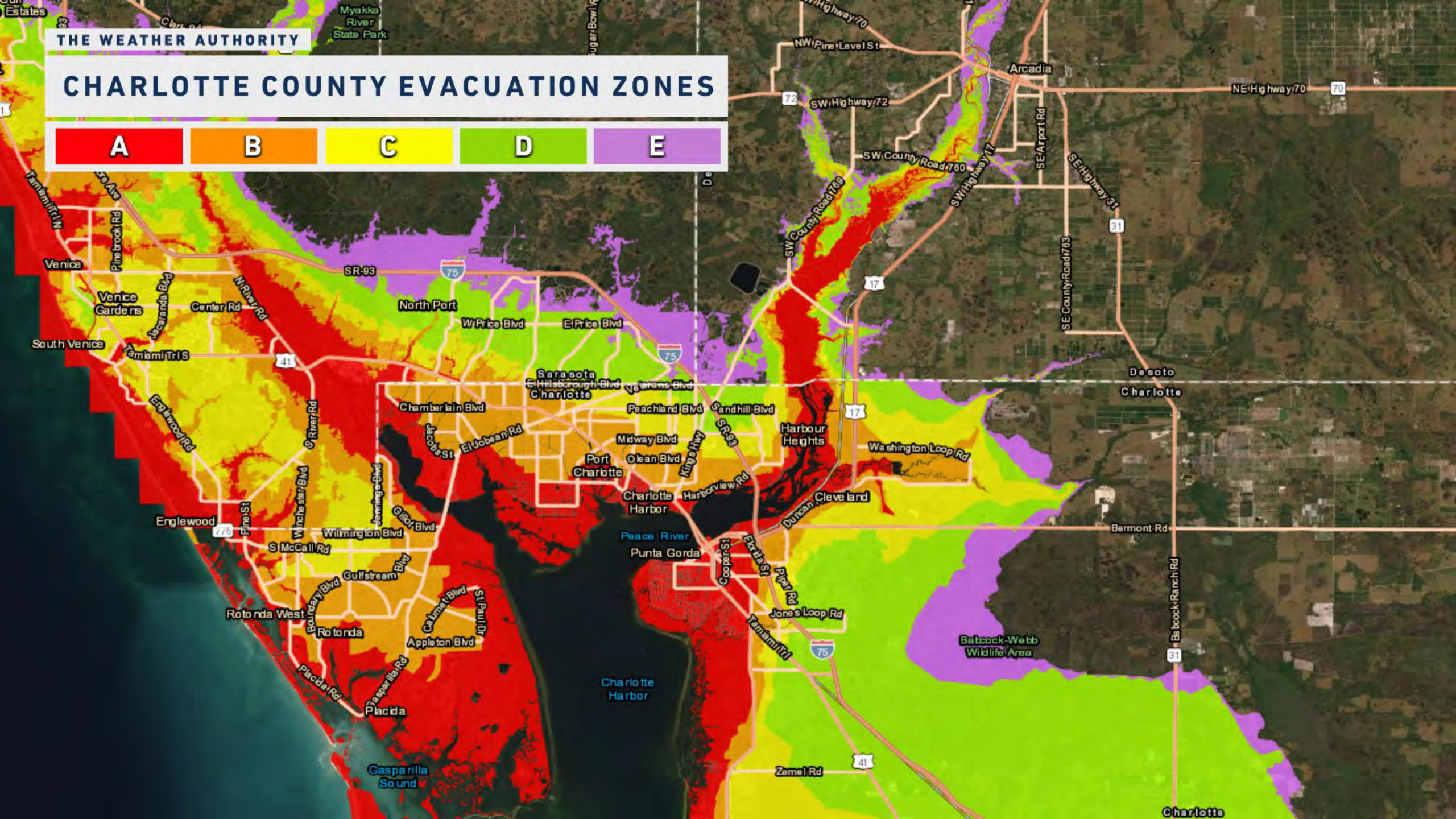
Secure all doors

weather.gov/hurricane



THE WEATHER AUTHORITY

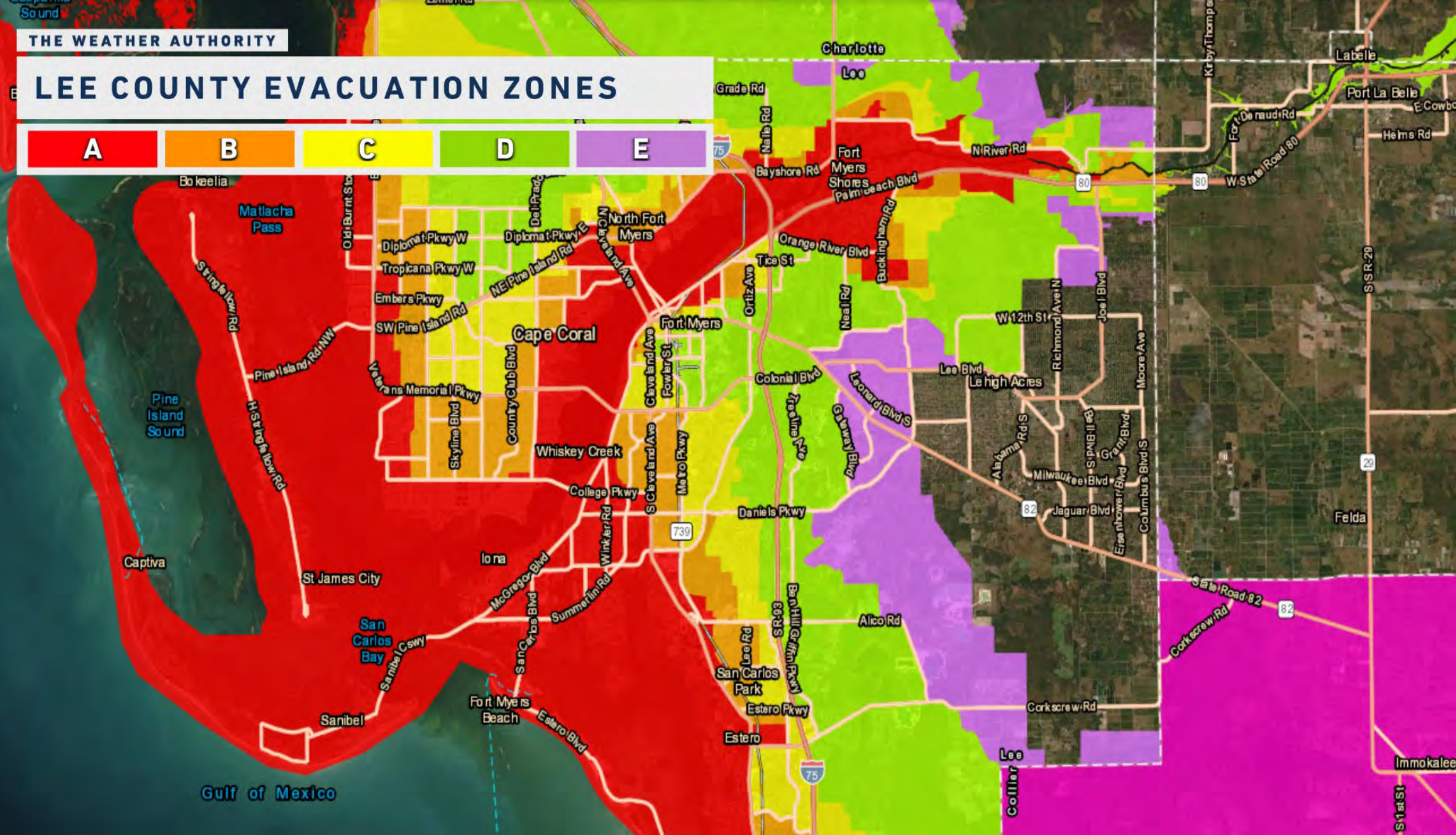
CHARLOTTE COUNTY EVACUATION ZONES



THE WEATHER AUTHORITY

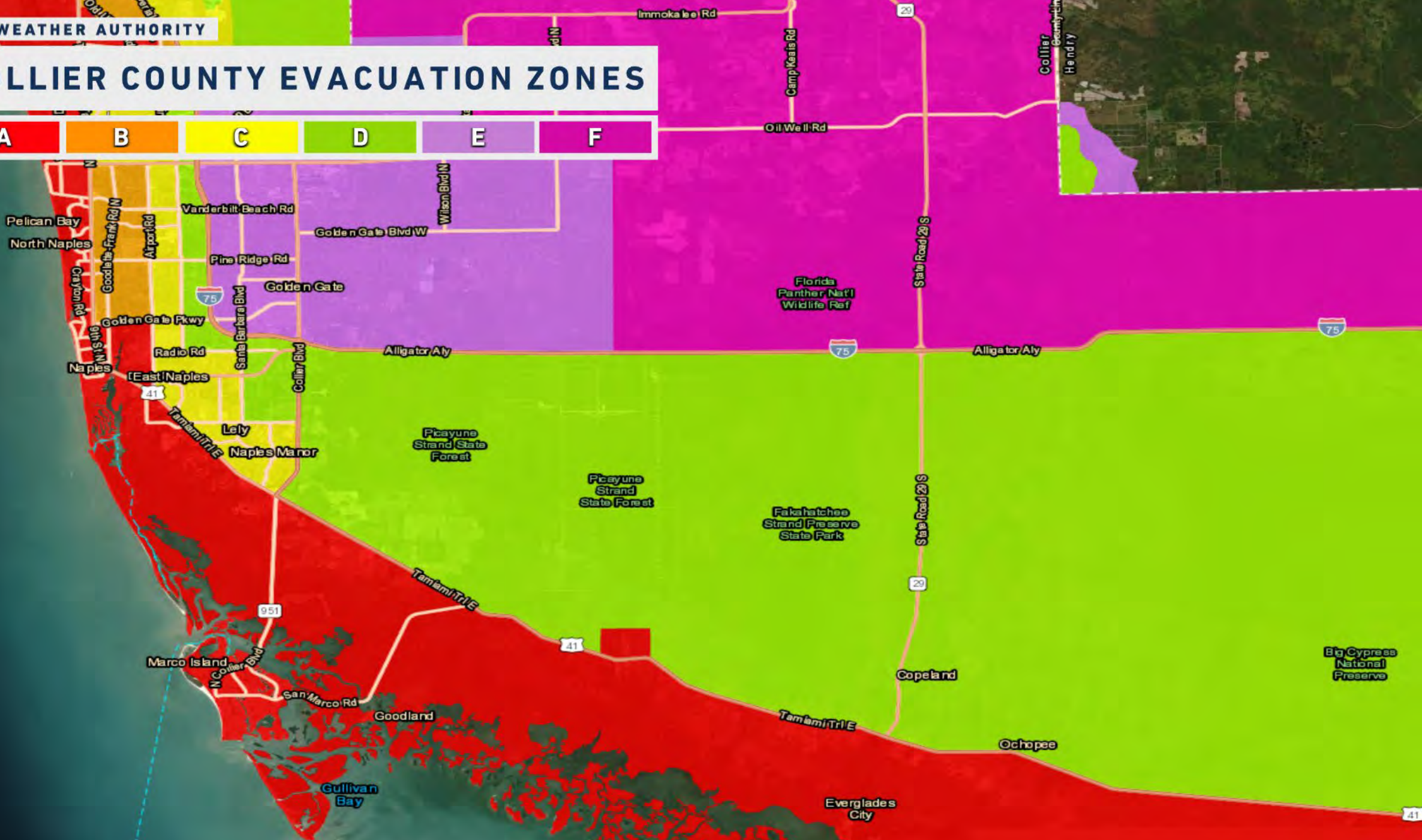
LEE COUNTY EVACUATION ZONES

A	B	C	D	E
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THE WEATHER AUTHORITY

COLLIER COUNTY EVACUATION ZONES



HURRICANE IAN LESSONS

1

DON'T COMPARE STORM EXPERIENCES FROM THE PAST TO HELP YOU PREPARE FOR APPROACHING STORMS. EVERY STORM IS DIFFERENT, INCLUDING THE IMPACTS THEY CAN BRING.

HURRICANE IAN LESSONS

2

DON'T FOCUS SOLELY ON THE CENTER LINE OF THE FORECAST CONE. DESPITE DAILY ADJUSTMENTS IN THE TRACK, LEE COUNTY NEVER LEFT THE CONE AT ANY POINT.

THE CONE HIGHLIGHTS WHERE THE CENTER COULD GO, WITH IMPACTS FELT OUTSIDE OF IT TOO.

HURRICANE IAN LESSONS

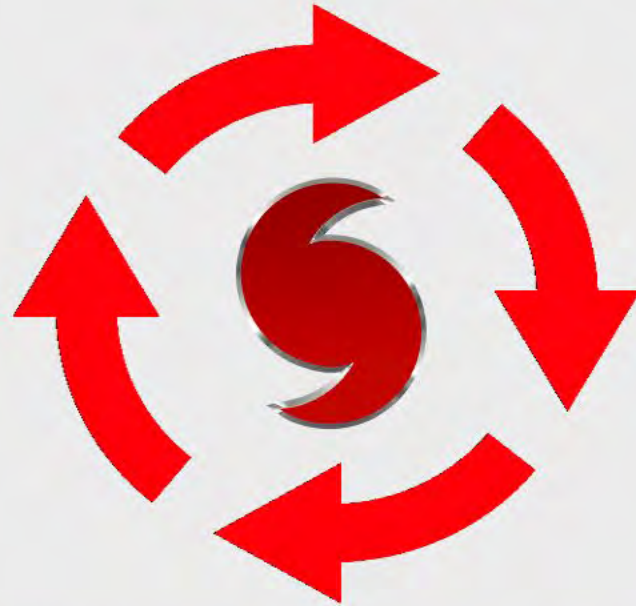
#3

IF TOLD TO EVACUATE, BECAUSE OF THE POTENTIAL OF LIFE-THREATENING STORM SURGE, PLEASE DO SO. TOO MANY STAYED DURING IAN. YOU DON'T HAVE TO ALWAYS EVACUATE ACROSS THE STATE, JUST GET TO HIGHER GROUND AND AWAY FROM THE GULF.

BREAK THE HURRICANE CYCLE!

**DEADLY & DAMAGING
HURRICANE**

**"I'M NOT
LEAVING ON
THE NEXT ONE"**



**SIGNIFICANTLY
LARGER
EVACUATION
NEXT HURRICANE**

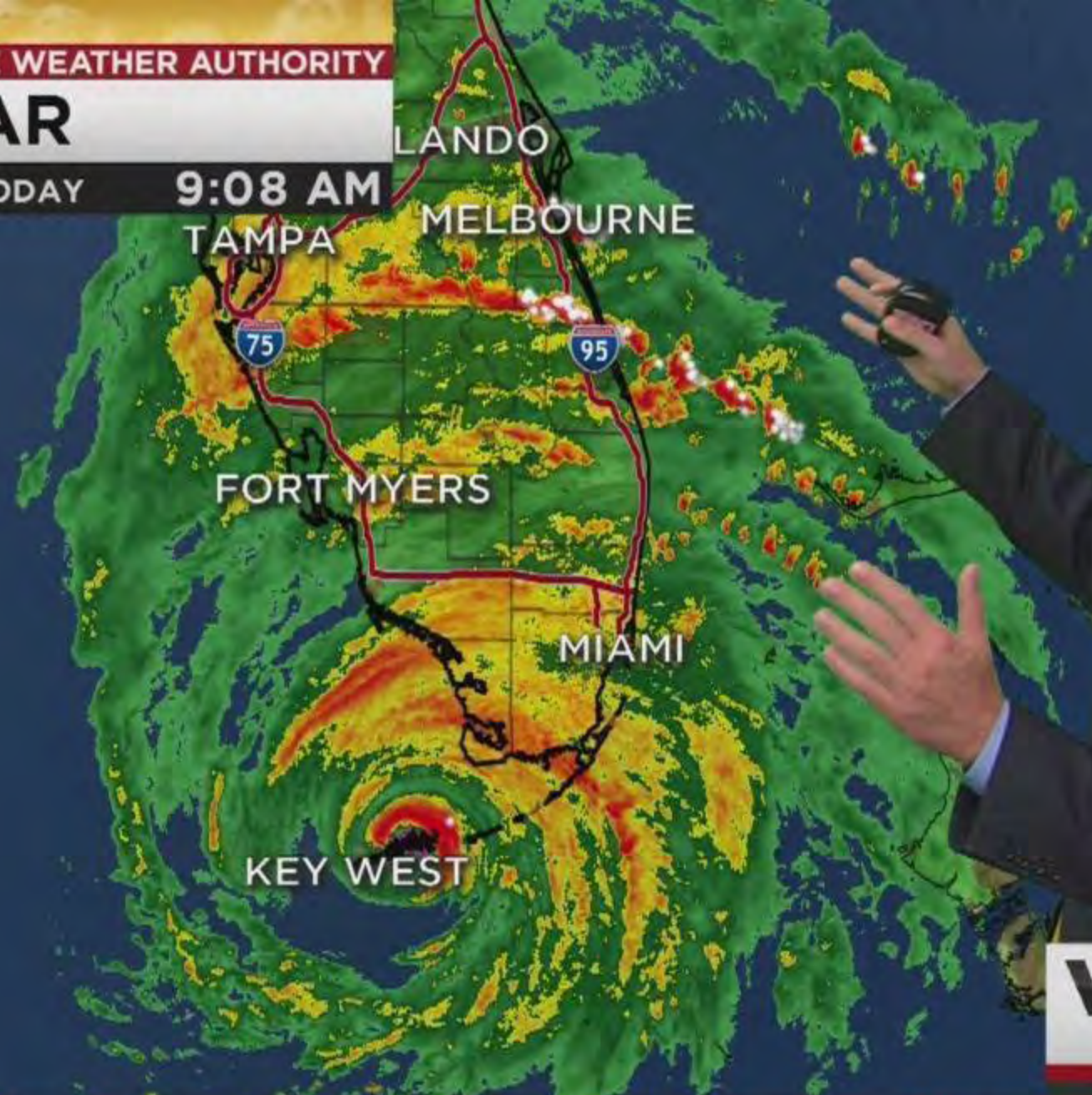
**LONGER TRAVEL TIMES,
BAD EVACUATION EXPERIENCES, OR
HURRICANE DOESN'T REACH EXPECTATIONS**

THE WEATHER AUTHORITY

DOPPLER RADAR

TODAY

9:08 AM



WINK
NEWS

SHELTERS

EVACUATIONS

ALL VA MEDICAL CENTER IN GAINESVILLE.

WINK

DESOTO M

LIVE

WINK
DOPPLER **3X**

12:03 PM

THREE TIMES
MORE POWERFUL

CHARLOTTE

L.A.

FORT MYERS

BONITA

MARCO ISLAND

THE WEATHER AUTHORITY

HURRICANE IAN MOVING ON SHORE

12:03
78°

WINK

WINK
DOPPLER
3X

HURRICANE PREP

HURRICANE IAN RECAP AND 2023 SEASON OUTLOOK

WINK
NEWS

MATT DEVITT

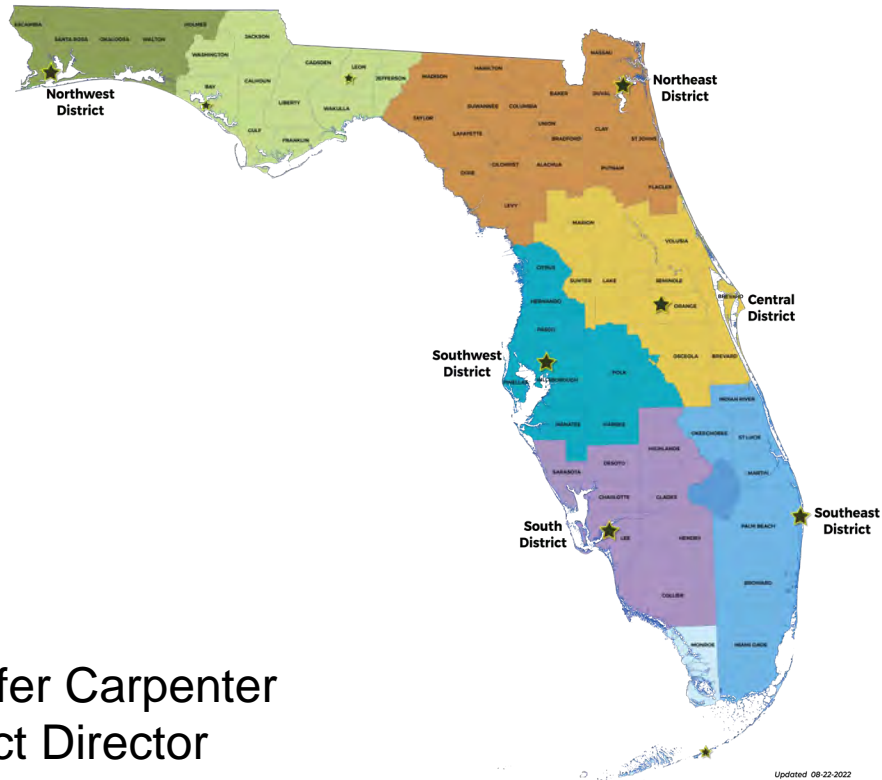
WINK NEWS CHIEF METEOROLOGIST



SOUTH DISTRICT REGULATORY OFFICE

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The six **regulatory** district offices review permit applications, conduct inspections of permitted facilities, respond to reports of environmental damage and conduct compliance assistance and enforcement activities.



Hurricane Recovery and Preparedness:

- Permitting.
- Utilities.
- Marine Debris.
- Disaster Debris Management Sites.
- Emergency Response.



Jennifer Carpenter
District Director



Hurricane Preparedness and Recovery for Potable Water Systems

Louise Chang
Environmental Administrator/ South District
Florida Department of Environmental Protection

DEP Linkups | June 7, 2023



HURRICANE PREPAREDNESS

POTABLE WATER SYSTEMS

- Be Proactive versus Reactive.
 - Prepare before hurricane season starts.
 - WaterTracker: Assign a representative to update status.
 - WATERTracker@FloridaDEP.gov or **866-742-0481**.
 - Operational status updates.
 - Update Emergency Response Plan.
 - Update Operations and Maintenance Manual with contacts.
 - Include cell numbers.





HURRICANE PREPAREDNESS

POTABLE WATER SYSTEMS

Facility Preparations:

- Review backup power and flood resilience preparations.
- Expect interruption of electrical utility service.
- Have generator capacity and fuel to maintain the raw water supply, treatment and distribution pumping capability.
- Expect areas prone to flooding.
- Protect electrical panels and equipment and non-submersible assets.
- Have treatment, repair and backup chemicals, tools, equipment, vehicles, personnel and management systems arranged to respond to emergency situations.





HURRICANE PREPAREDNESS

POTABLE WATER SYSTEMS

- **Boil Water Notices:** no bullet
 - Report to DEP or delegated local program.
 - 239-344-5600 (DEP South District).
 - SouthDistrict.PWS@FloridaDEP.gov.
 - Recission messaging should be clear and concise for customers and the use of maps are recommended to define the areas being cleared.
 - BWN Guidelines.
 - <http://www.FloridaHealth.gov/environmental-health/drinking-water/2019-hurricane-letter-food-bulletin-bwn-guidelines.pdf>

INDUSTRY BULLETIN for Florida's Food Industry SUBJECT: BOIL WATER NOTICE GUIDELINES May 2002

BOIL WATER NOTICE, By Authority of Section 391.906 and 489.965-067, Florida Statutes
These procedures must be observed while a "BOIL WATER NOTICE" is in effect:

TAP WATER

- Do not serve water from faucets until local health authorities advise the water is safe for consumption. Use only bottled water from an approved source and/or boiled tap water. Boil water in a rolling boil for one minute for all infectious organisms.
- An alternative method for areas without power is disinfection by mixing eight drops (one eighth teaspoon) of unscented household bleach (four to six percent chlorine) per gallon of tap water and allow to stand for 30 minutes. If the water is cloudy in appearance, add another 8 drops and let stand again for 30 minutes. (Water will not be taste but may have a chlorine odor and taste.) Note: Using bleach may not kill all parasites that may be present. Boiling is recommended if practical.

ICE, ICE MAKING, BEVERAGE, & WATER VENDING

- Ice bagged or made prior to the issuance of the boil water notice may be used.
- Ice produced in ice machines after the issuance of a boil water notice must be discarded and machine not restarted until the water supply is deemed safe by local health authority. Sanitize the interior of the ice machine, ice trays and built in containers with two teaspoons (100+ ppm) of household bleach in one gallon of water prior to restarting the ice machine or sanitizer.
- Discontinue or turn off water vending machines, drinking fountains, meters, ice making units and soda machines and prevent their use.
- Filters in water lines should be replaced if the water supplier advised customers of filter administration is planned in the filters. Information regarding the presence of particles will be provided by your water supplier or through the news media.

HANDWASHING

- Do not use tap water for handwashing. Use only bottled water from an approved source or boiled (and safely cooled) tap water or disinfected (unperfumed) tap water. After proper handwashing, use a sanitizing solution on the hands. This may be accomplished by using a commercial hand sanitizer that requires no time or use a chlorine bleach solution of two teaspoons of household bleach in one gallon of water. Single-use gloves may be used to provide additional protection after proper handwashing.
- No bare hand contact with ready-to-eat food is allowed while boil water notice is in effect.

COOKING & CLEANING

- Food equipment, utensils and food contact surfaces that must be cleaned in place (does not fit into a three-compartment sink) may be cleaned with steam, with no additives, a sanitizing mix of bottled or boiled water and bleach (50-100 ppm) or other approved sanitizing solution.
- Do not use tap water for food processing or food preparation until the BOIL WATER NOTICE is lifted by local authorities. Use only bottled water from an approved source and/or boiled tap water for these purposes.

DISHWASHING/HANDWASHING

- Thoroughly wash, rinse and sanitize dishes, food equipment and utensils with bottled water from an approved source, or with cooled tap water or disinfected tap water utilizing a three-compartment sink or the approved method. Use single-serve packets when possible.
- Mechanical dishwashers may be used only to remove food residue and debris, if followed by a manual wash, rinse and sanitation as described above.

REISSUING THE BOIL WATER NOTICE

- You will be advised by the local Health Department directly or through the news media when a "BOIL WATER NOTICE" has been rescinded (lifted). AFTER the "BOIL WATER NOTICE" is lifted, allow water to run for five minutes at each tap to flush the lines with safe water. Remember to include meters, drinking fountains, ice makers (found in the food trucks), soda machines, etc., when flushing the lines.

If you require further information, please contact your local water supplier. If you have questions about the Boil Water Notice Guidelines, please contact your licensing agency.

Florida Department of Agriculture and Consumer Services: 850-345-9200	Florida Agency for Persons with Disabilities: 850-488-4257	Department of Children and Families: 850-487-1111
Florida Department of Business and Professional Regulation: 850-487-1000	Agency for Health Care Administration: 888-473-3450	Florida Department of Health: Local County Health Department
www.MyFloridaState.com spr.myflorida.com www.FDA/CFR.gov	Ron DeSantis, Governor	www.MyFloridaState.com www.MyFlorida.com www.FloridaHealth.gov



HURRICANE PREPAREDNESS & RECOVERY

POTABLE WATER SYSTEMS

- [General Hurricane and Tropical Storm Guidance](#)
boldface/no bullet
 - Information for Drinking Water and Wastewater Facility Operators.
 - National Hurricane Center.
 - Florida's Water/Wastewater Agency Response Network (FlaWARN).
 - Mutual aid response network.
 - [BMPs for Water and Wastewater Systems](#)
 - WATER Tracker.
 - Report event-related status and submit needs and request resources.

The FlaWARN logo, consisting of a white circular icon with a stylized water drop or wave inside, followed by the text "FlaWARN" in white on a dark blue background.

FlaWARN





THANK YOU

South District Drinking Water Program

Louise Chang

239-344-5630

Louise.Chang@FloridaDEP.gov

Dessy Owiti

239-344-5637

Dessy.Owiti@FloridaDEP.gov



Hurricane Recovery and Preparedness for Wastewater Systems

Landon Reigelman

South District Wastewater Program | Environmental Manager
Florida Department of Environmental Protection

DEP Linkups | June 7, 2023



HURRICANE RECOVERY WASTEWATER SYSTEMS

Recovery-centered focus after the storm

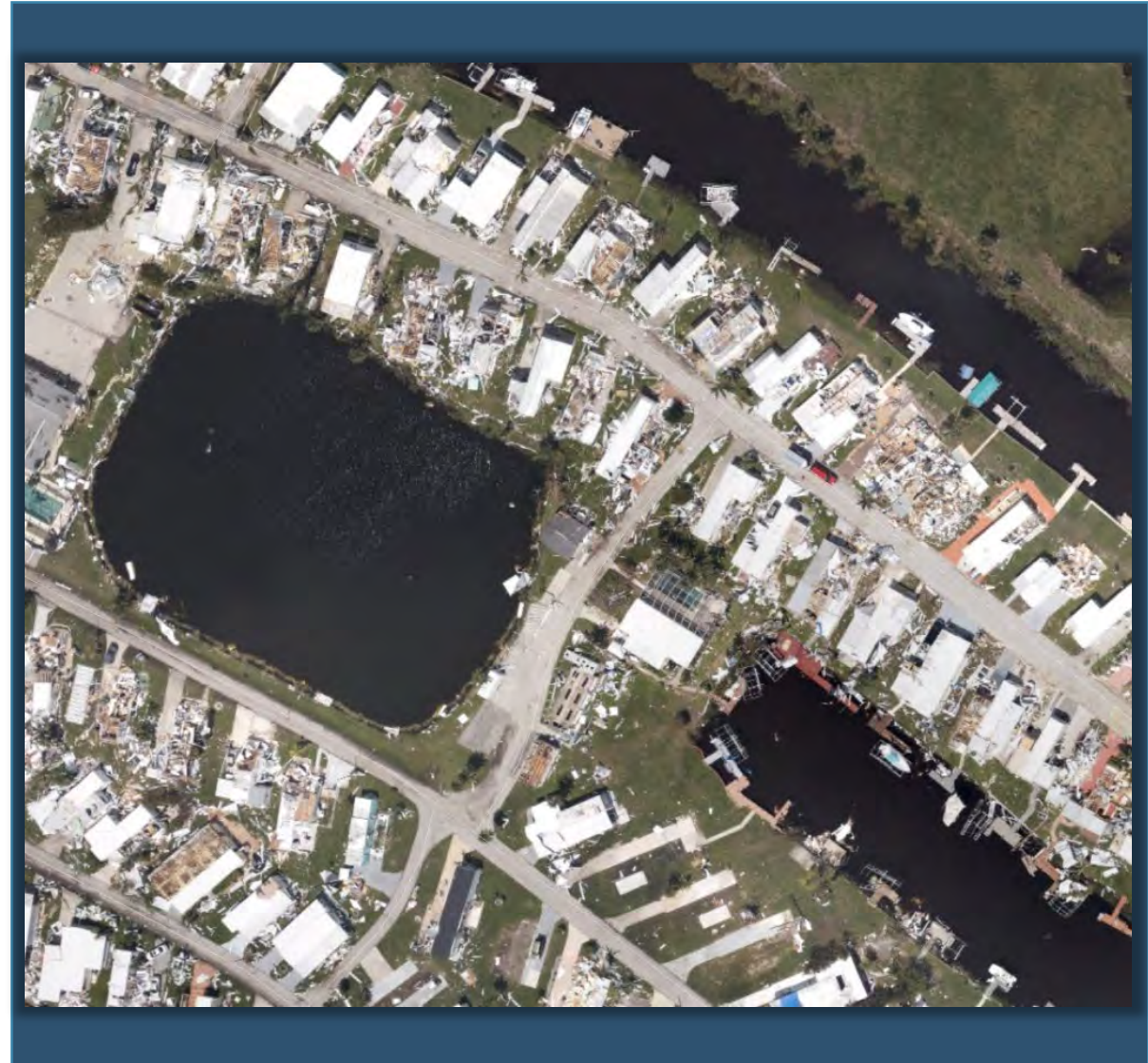
- Restoring functionality of utilities.
- Emergency orders.
- Sanitary Sewer Overflow (SSO) sampling.

Overall recovery progress after Hurricane Ian

- Functionality of wastewater treatment plants (WWTPs).
- Overcome problems with collection systems.

Citizen concerns

- Recording citizen-observed SSOs after the storm.
- Capturing the most accurate picture of the impacts.





HURRICANE PREPAREDNESS

WASTEWATER SYSTEMS

FlaWARN

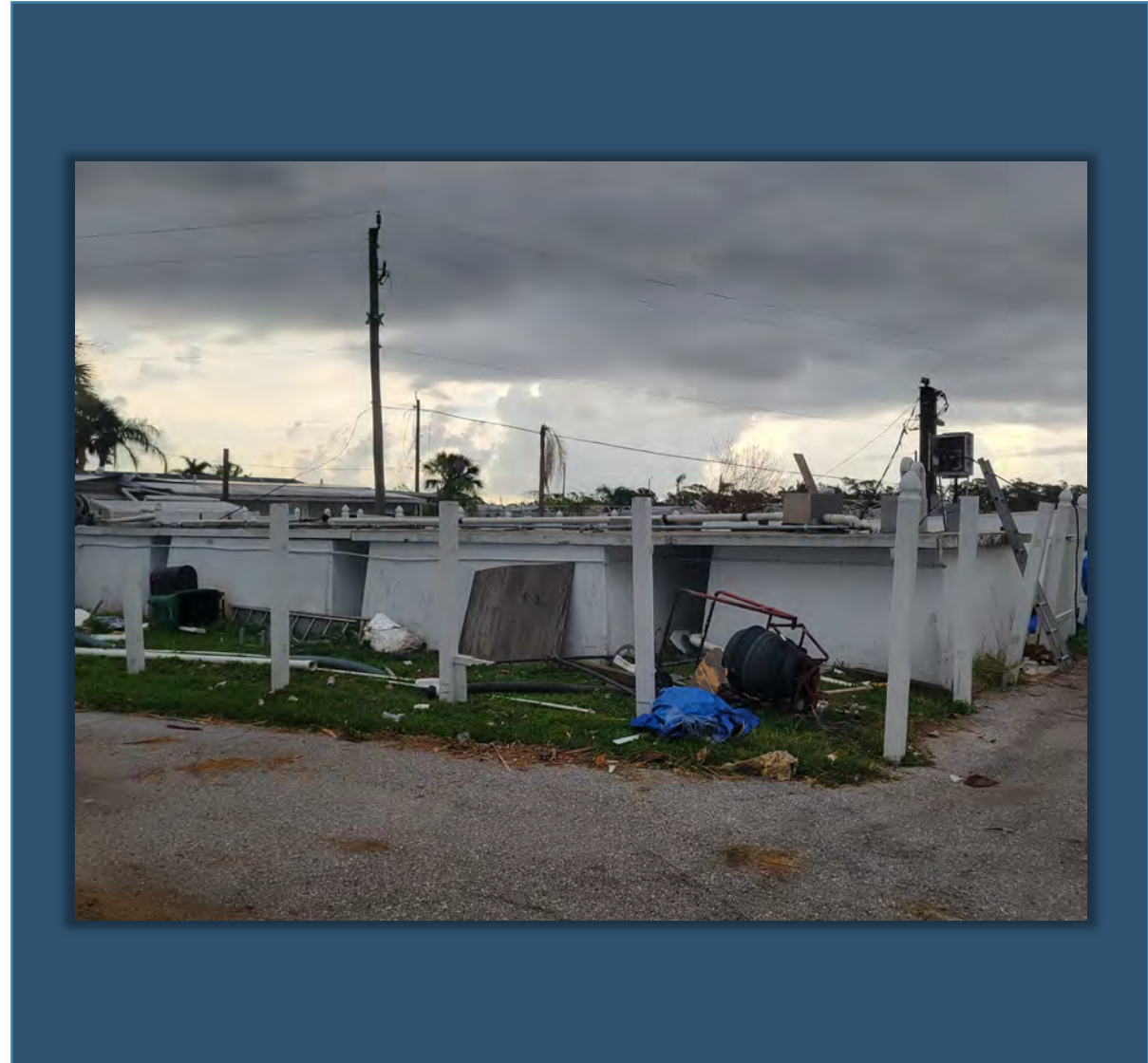
- Participating in mutual aid agreements.
- Utilities helping utilities.

Water Tracker

- Ensure the right staff have access to WATER Tracker.
- Contact your DEP district office for assistance.
- Familiarize yourself with the portal.

Documentation

- Updating documents as necessary for a successful response.
- Operations and maintenance manuals for facilities and collection systems:
 - SOPs, SOPs, SOPs.
 - SCADA versus “The Old Days.”
 - Digital and paper copies.
- Emergency Response Plans.





HURRICANE PREPAREDNESS

WASTEWATER SYSTEMS

Shoring up infrastructure and equipment:

- In-place generators and bypass pumps.
 - Monthly checks.
- Telemetry.
- Portable generators and bypass pumps.
- Vacuum trucks.
- Fuel and chemical storage.
- Up-to-date contracts and mutual aid agreements.

Understanding potential impacts, staging equipment and staff:

- Coastal areas vulnerable to storm surge.
- Low-lying areas prone to inland flooding.
- Projected hurricane tracks.

Communication:

- Regrouping after the storm and assessing staffing.
- Staff coordination and hierarchies.
 - Contingency plans.





THANK YOU

Landon Reigelman
South District Wastewater Program
Florida Department of Environmental Protection

Contact Information:
239-344-5633
Landon.Reigelman@FloridaDEP.gov



MANAGEMENT OF STORM-GENERATED HAZARDOUS WASTE

Pamela Coffin

Environmental Consultant South District

Division of Waste Management / Compliance Assistance Program

Florida Department of Environmental Protection

June Linkups | June 7, 2023



PRESENTATION AGENDA

HAZARDOUS WASTE

Presentation Agenda

- Preparedness & Prevention:
 - Know Your Waste.
 - Plan and Prepare.
- Hazardous Waste Recovery:
 - DEP Contacts for Hazardous Waste.
 - County Program Contact Lists.
- Episodic Event:
 - Types of Episodic Events.
- Temporary Staging Areas:
 - Identifying a Temporary Staging Area.
 - Waste Collection in a Temporary Storage Area.
- Temporary Hazardous Waste Emergency EPA ID Number.





KNOW YOUR WASTE

HAZARDOUS WASTE

Characteristic/Listed Wastes:

- Ignitibility.
- Corrosivity.
- Reactivity.
- Toxicity.
- Listed wastes/specific industrial process wastes.

Household Hazardous Wastes (HHW):

- Cleaning supplies.
- Lawn chemicals.
- Pesticides.
- Oil.
- Oil-based paints and stains.
- Batteries.
- Fire extinguishers.
- Propane tanks.
- Fluorescent bulbs.

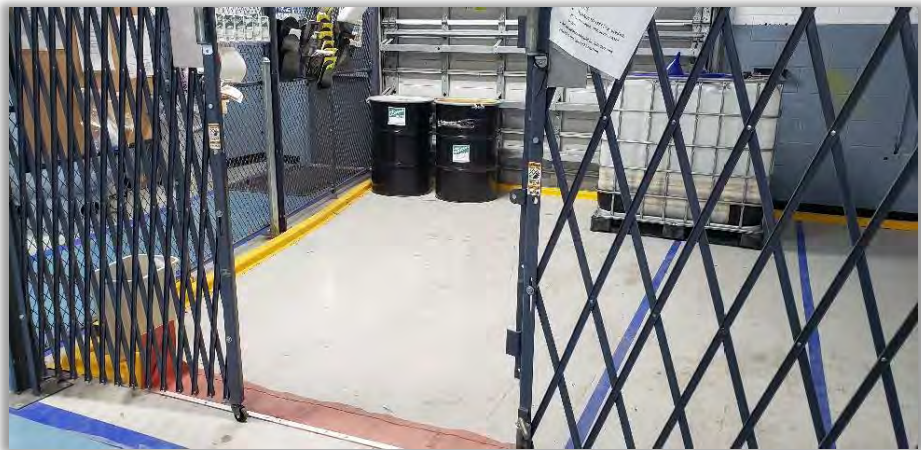




PLAN AND PREPARE HAZARDOUS WASTE

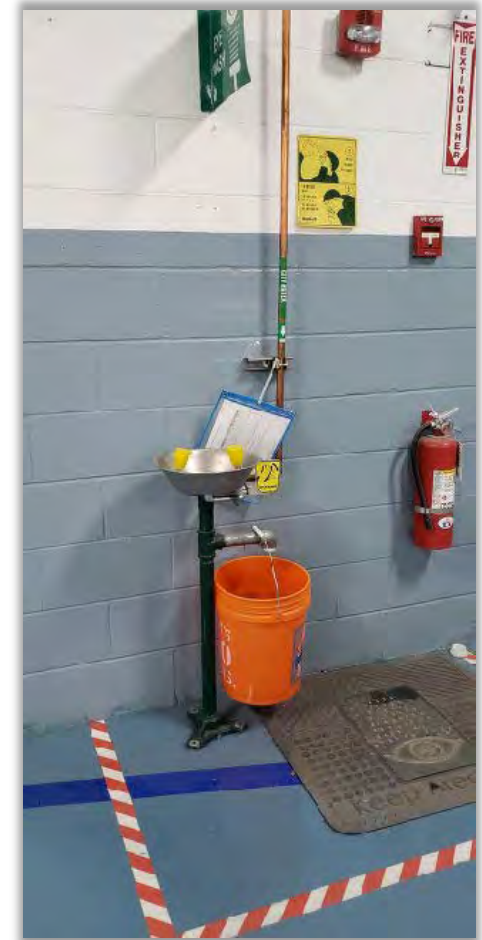
Individuals:

- Take waste to the county HHW collection center.
- Prepare with two weeks of supplies (food, batteries, flashlights, propane/fuel, grill, medical supplies, etc.....).



Businesses:

- Emergency equipment/procedures.
- Contingency plan.
- Proper container management.





HAZARDOUS WASTE RECOVERY

HAZARDOUS WASTE

Individuals:

- Attempt to segregate debris at the end of the road or ditch.
- Do not stack or lean.
- Place away from structures (trees, poles, meters, hydrants).

Businesses:

- Contact DEP district office or Tallahassee to notify of episodic event (existing EPA ID) or apply for a temporary EPA emergency ID (no EPA ID).





EPISODIC EVENT

HAZARDOUS WASTE

Episodic Event:

- The episodic generation provisions are applicable to very small quantity generators (VSQGs) and small quantity generators (SQGs) of hazardous waste.
- Definition of episodic event: An episodic event is any activity, either **planned** or **unplanned**, that does not normally occur during generator operations and results in an increase in the generation of hazardous wastes exceeding the calendar-month quantity limits for the generator's usual category.

Types of Episodic Events:

- A **planned episodic event** is one for which the generator planned and prepared, including regular maintenance, tank cleanouts, short-term projects and removal of excess chemical inventory.
- An **unplanned episodic event** is one the generator did not plan or reasonably did not expect to occur, including but not limited to production process upsets, product recalls, accidental spills or acts of nature, such as tornadoes, hurricanes or floods.



TEMPORARY STAGING AREAS HAZARDOUS WASTE





IDENTIFYING A TEMPORARY STAGING AREA HAZARDOUS WASTE

A suitable Temporary Staging Area should be:

- Located on an impermeable surface.
- Located in a secure area with limited access.
- Of sufficient size to allow for separation of incompatible materials and adequate aisle space to allow for inspections and emergency access.

A suitable Temporary Staging Area should:

- Provide adequate spill control and fire protection equipment.
- Be managed by persons with appropriate HAZWOPER and HAZMAT training.





COLLECTION IN A TEMPORARY STAGING AREA

HAZARDOUS WASTE

Waste Collection in a Temporary Staging Area

The waste in the temporary staging area should be:

- Separated from incompatible materials.
- Maintained in closed containers that are in good condition and appropriate to the nature of the waste.
- Protected from the elements.





TEMPORARY HAZARDOUS WASTE EMERGENCY EPA ID NUMBER HAZARDOUS WASTE

Temporary Hazardous Waste Emergency EPA ID Number

Pursuant to Chapter 62-730.161, Florida Administrative Code (F.A.C.), emergency identification numbers should be issued during emergency events to track shipments of hazardous waste.

- Contact the DEP district or Tallahassee hazardous waste contact with the information requested on the form, “Application for a Hazardous Waste Emergency EPA/DEP Identification Number (DEP Form 62-730.900(3)).”



CONTACTS

HAZARDOUS WASTE

County Program Contact Lists

- 2023 Contact lists.
- County household/small business hazardous waste collection program contacts.
- County hazardous waste compliance program contacts.

South District :

(Counties: Charlotte, Collier, DeSoto, Glades, Hendry, Highlands, Lee, Sarasota)

Pamela Coffin: 239-344-5659

Email: Pamela.Coffin@FloridaDEP.gov

2295 Victoria Avenue, Ste. 364

Fort Myers, FL 33901.

Tallahassee Office:

Jeff Gregg: 850-245-8816

Email: Jeff.Gregg@FloridaDEP.gov

Sarah Keith Valentine: 850-245-8782

Email: Sarah.K.Valentine@FloridaDEP.gov

2600 Blair Stone Road

Tallahassee, FL 32399.



THANK YOU

Pamela Coffin

Environmental Consultant / South District
Division of Waste Management / Compliance
Assistance Program
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Contact Information:

(239) 344-5659

Pamela.Coffin@FloridaDEP.gov



Hurricane Ian Debris Management and Lessons Learned to Date

Renée J. Kwiat, CHMM,
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Florida Department of Environmental Protection

June Linkups | June 7, 2023

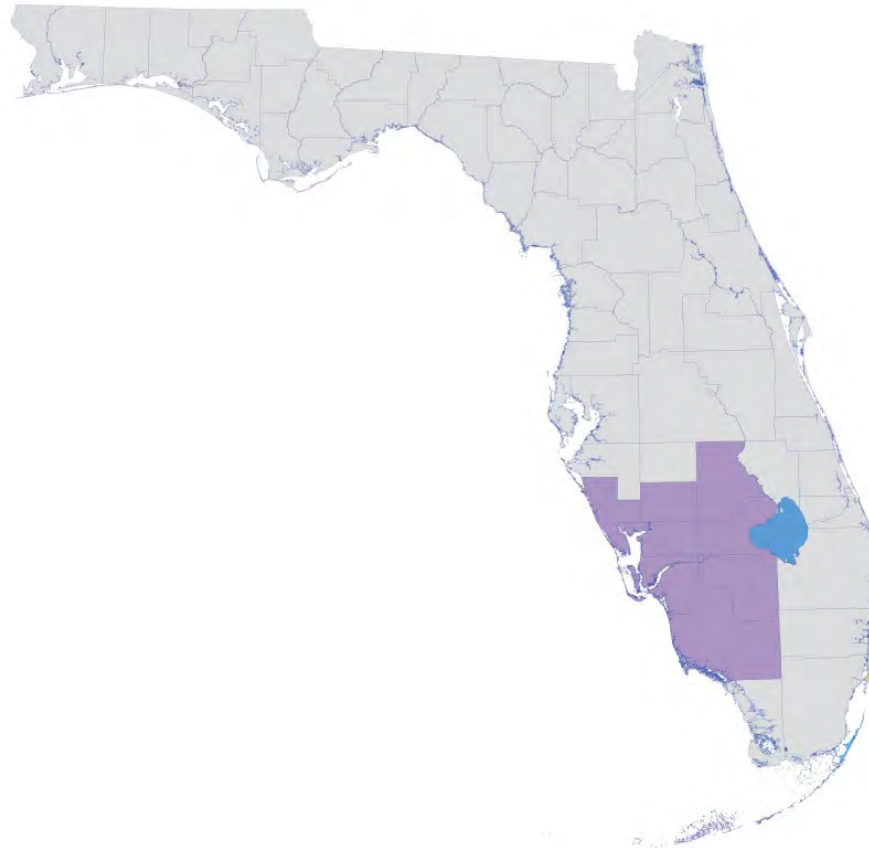


DEBRIS MANAGEMENT

HAZARDOUS WASTE

South District:

Charlotte, Collier, DeSoto, Glades, Hendry, Highlands, Lee and Sarasota





Disaster Debris Management Guidance

- The intent of the Disaster Debris Management Site Guidance is to clarify the waiver of certain requirements and conditions with regard to solid waste management under a declared state of emergency to expedite response and recovery efforts.
- The waiver of certain rules for solid waste compliance are conditional*.
- All restrictions, setbacks and cleanup must be adhered to for each site.
- * The intent does not eliminate liability for negligence from DDMS while in use.



Disaster Debris Management

- Yard Waste Debris.
- Construction and Demolition (“C&D”) Debris.
- Class III Wastes.
- Ash (from controlled burning of yard wastes).
- White goods/electronics.
- Mixed Waste Debris (i.e. C&D mixed with yard waste debris).



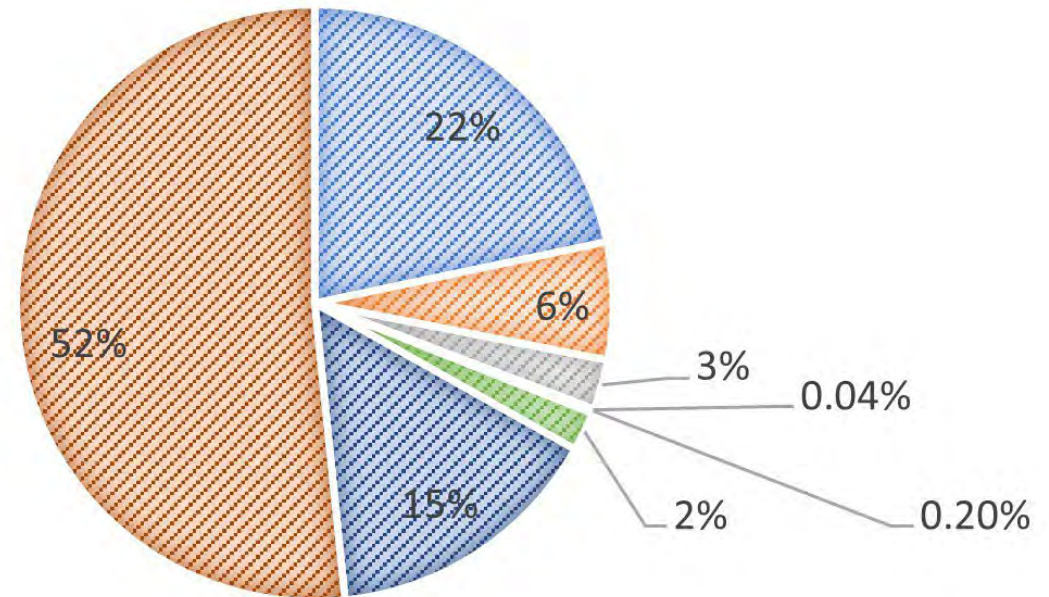
DEBRIS MANAGEMENT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Hurricane Ian
debris collection
for all counties as
of 5/9/2023 totals
**21.5 Million
Cubic Yards
(CY).**

PERCENT BY COUNTY

■ Charlotte ■ Collier ■ DeSoto ■ Glades ■ Hendry ■ Highlands ■ Sarasota ■ Lee





DEBRIS MANAGEMENT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Unincorporated Lee County Debris Total Comparison

IRMA Grant Total (ROW Haul In Collection)

Debris Type	Cubic yards	Percent of Total
C&D	66,604	4%
Veg	1,683,344	96%
Grand Total	1,749,948	100%

IAN Total as of 5/7/2023 (ROW Haul In Collection)

Debris Type	Cubic Yards	Percent
C & D	2,283,903	36%
Veg	3,912,147	61%
Sand/Concrete	176,000	2%
Total	6,378,095	100%



DEBRIS MANAGEMENT

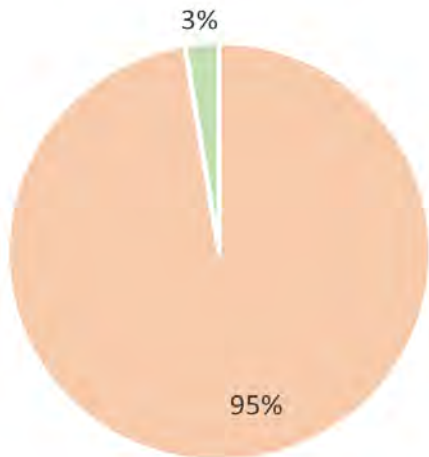
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

- The high percentage of C&D (construction and demolition debris) seen in this storm is indicative of storm surge damage in urban areas.
- The final destination for the majority of this waste is local landfills.

Debris totals for Lee County: 11.1 M CY

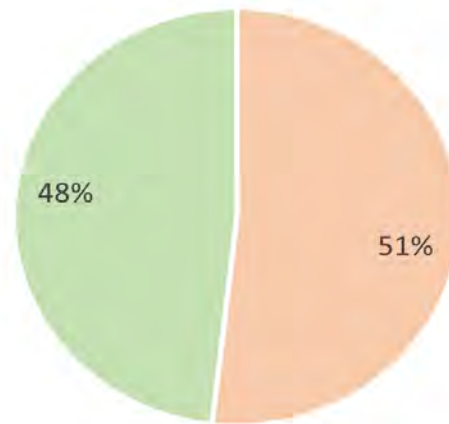
Unincorporated Lee:	6.4M CY
City of Sanibel:	1.93M CY
Cape Coral	1.97M CY
Fort Myers Beach	843,757CY

Fort Myers Beach



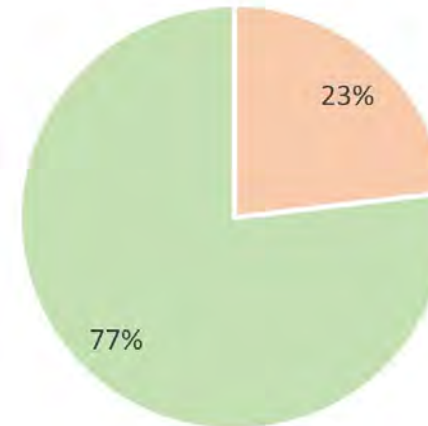
C & D Vegetative

Sanibel



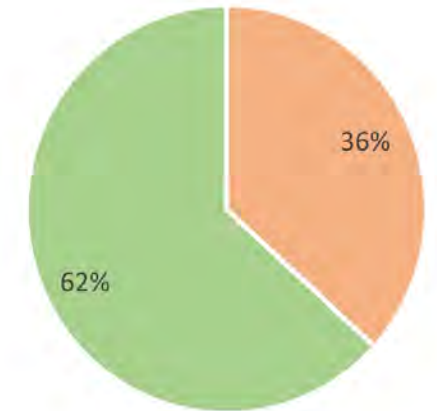
C & D Vegetative

Cape Coral



C & D Vegetative

Unincorporated Lee



C & D Vegetative



DEBRIS MANAGEMENT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

- The total authorized DDMS for land was 354 statewide. Of those, 137 were in the SD.
- As of May 9, 2023, there were 105 DDMS active in the SD.
- 47 of the 61 initially authorized in Lee County are still active.
- Most counties have closed or are nearing closure on most of their DDMS, with the exception of FDEM mission sites.



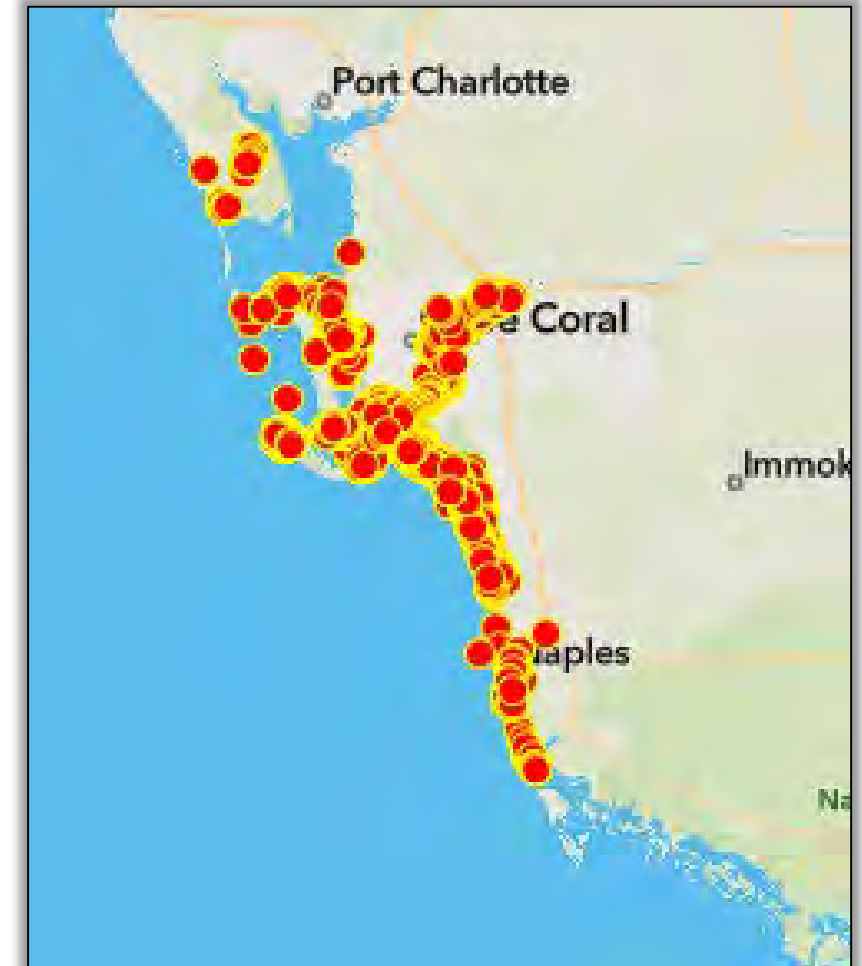


DEBRIS MANAGEMENT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Florida Department of Emergency Management Wet Debris Removal Mission as of May 8, 2023:

- Operating in Charlotte, Lee and Collier County Coastal Areas.
- 64 Crews and 51 Trucks Operating on May 8, 2023.
- Total debris removed 687,600 CY since November 12, 2022.
- Total white goods removed 649 items.





DEBRIS MANAGEMENT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Lessons Learned: Pre-Authorization, Pre-Storm, and Post-Storm New Sites





DEBRIS MANAGEMENT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Lessons Learned: Closure and FEMA Reimbursements





THANK YOU

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Renee.Kwiat@FloridaDEP.gov



Hurricane Recovery and Preparedness ERP

Ryan Snyder

Permitting I Program Administrator
Florida Department of Environmental Protection

DEP Linkups | June 7, 2023



EMERGENCY FINAL ORDER (PERMITTING)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

What activities are considered exempt?

The EFO's intention is to let people repair what was legally there directly before the storm event.

- Repair, restore, or replace structures to the conditions that were authorized or otherwise legally existed prior to the storm event.
- Repair structures on state owned submerged lands that are water dependent, like a residential dock.
- Remove debris and trash, sunken vessels, vegetation, and structural remains that have been deposited into waters or wetlands, so long as no dredging or filling occurs.
- Government entities - Restore elevations and contours of uplands, wetlands and submerged lands and navigation channels by local, regional, and state governments.



EMERGENCY FINAL ORDER (PERMITTING)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

What activities may qualify for a Field or an Individual Authorization?

- Replacement of structures that are completely destroyed.
- Pre-existing non-water dependent activities on state owned submerged lands.
- Regrading, dredging or filing uplands, wetlands and submerged lands, if not a government entity.
- Trimming or altering mangroves.
- Removal of debris, sunken or grounded vessels, vegetation, and structural remains that have been deposited into waters or uplands if it requires filling or dredging.
- Other activities that cause minimally adverse impacts as determined by the department.



EMERGENCY FINAL ORDER (PERMITTING)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

What activities are not authorized in the Emergency Final Order?

- The Emergency Order does not authorize the construction of structures that did not legally exist prior to the storm. Legally existing includes prior permitting or exempt activities as well certain projects that are considered grandfathered.
- Contact your local District Office to verify what is covered.
- [Post-Storm Guidance on Environmental Resource Permitting](#)

District Contact Information

<https://floridadep.gov/districts>

Northwest District
850-595-8417
NWD_ERP_Applications@FloridaDEP.gov

Northeast District
904-256-1700
DEP_NED@FloridaDEP.gov

Central District
407-897-4100
DEP_CD@FloridaDEP.gov

Southwest District
813-470-5700
SW_ERP@FloridaDEP.gov

Southeast District
561-681-6600
SED_Permitting@FloridaDEP.gov

South District
239-344-5600
SD_ERP_Permit@FloridaDEP.gov

Southeast District Branch Office -
Marathon 305-289-7070
SED_Permitting@FloridaDEP.gov



THANK YOU

Ryan Snyder

South District Permitting

Florida Department of Environmental Protection

Contact Information:

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Ryan.Snyder@FloridaDEP.gov



QUESTIONS