

# TROPICAL READINESS WEEK 2024

PRESENTED BY NATIONAL WEATHER SERVICE OFFICES  
SERVING THE STATE OF FLORIDA





# TRAINING GOALS

1. Showcase tools to help you **assess your vulnerability.**
2. Identify & interpret **credible forecast resources.**
3. Answer the question...

**“What should I be doing *now*?”**



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.



35N

30N



# Recover What now?

Prepare  
(Seasonal)

Monitor  
Days 6-7

Get Ready  
Days 3-5

Hunker Down  
< 48 hrs to Impact

Recover  
After Storm

POST-STORM SAFETY

LESSONS LEARNED

RESILIENCY

Q & A

Recordings & Slides (PDF) will be posted at:

<https://www.weather.gov/jax/FloridaTropicalTrainingWeek2024>

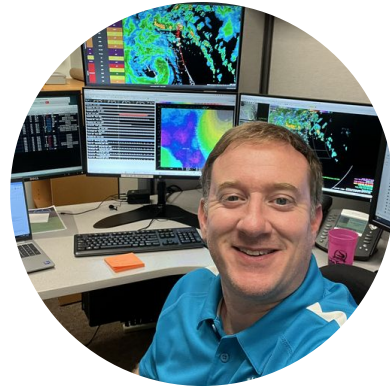


# TODAY'S TEAM



**Robert Garcia**

NWS - Miami, FL



**Ben Nelson**

NWS - Jacksonville, FL



**Brendan Schaper**

NWS - Melbourne, FL



**Mark Wool**

NWS - Tallahassee, FL



**Amy Godsey**

FDEM - Tallahassee, FL



**Jen Hubbard**

NWS - Ruskin, FL



**Felecia Bowser**

NWS - Tallahassee, FL



**Lance Franck**

NWS - Tallahassee, FL



**Angie Enyedi**

NWS - Jacksonville, FL



**Jessie Schaper**

NWS - Melbourne, FL



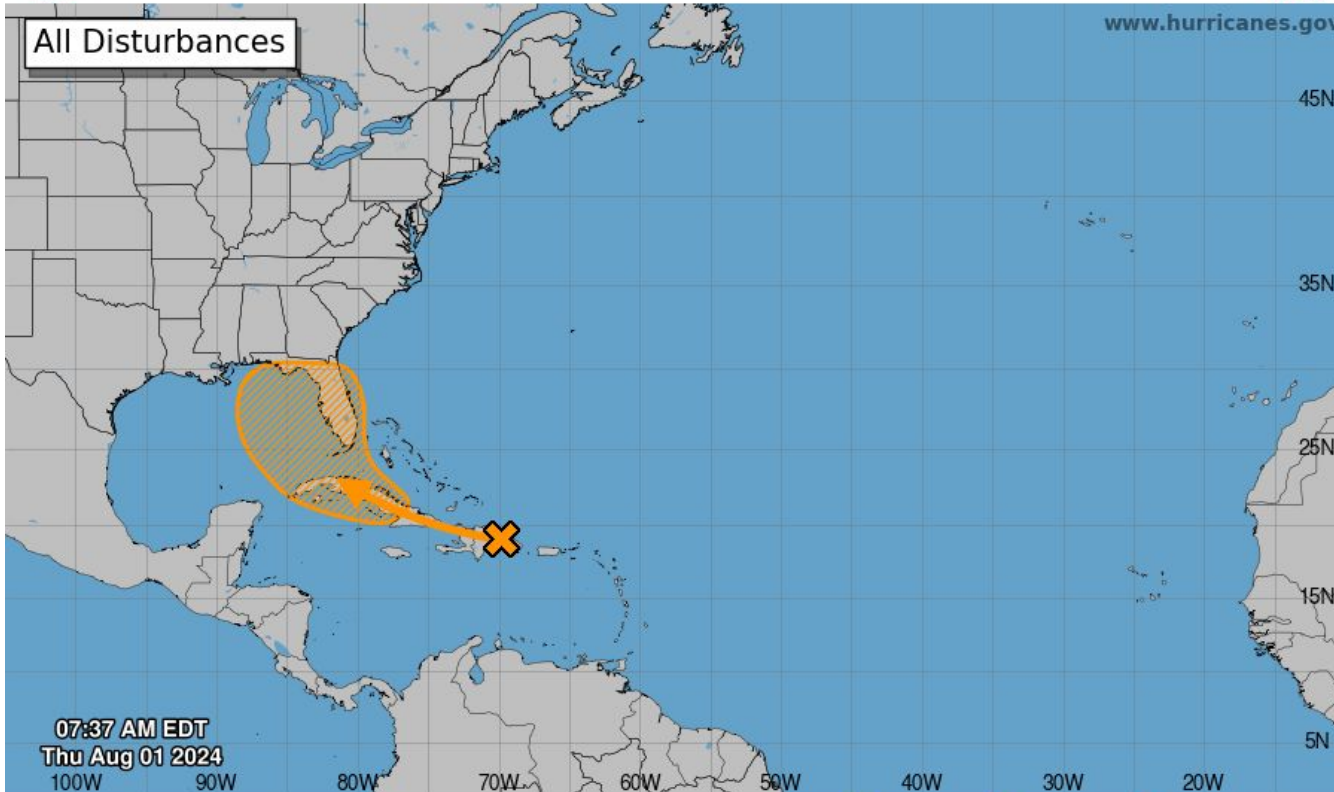
# 7 DAY TROPICAL WEATHER OUTLOOK



## Seven-Day Graphical Tropical Weather Outlook National Hurricane Center Miami, Florida



www.hurricanes.gov



Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%  
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane  
 Post-Tropical Cyclone or Remnants

There is a medium chance (60%) of a tropical cyclone forming somewhere in the shaded area during the next 7 days.

What to do now:

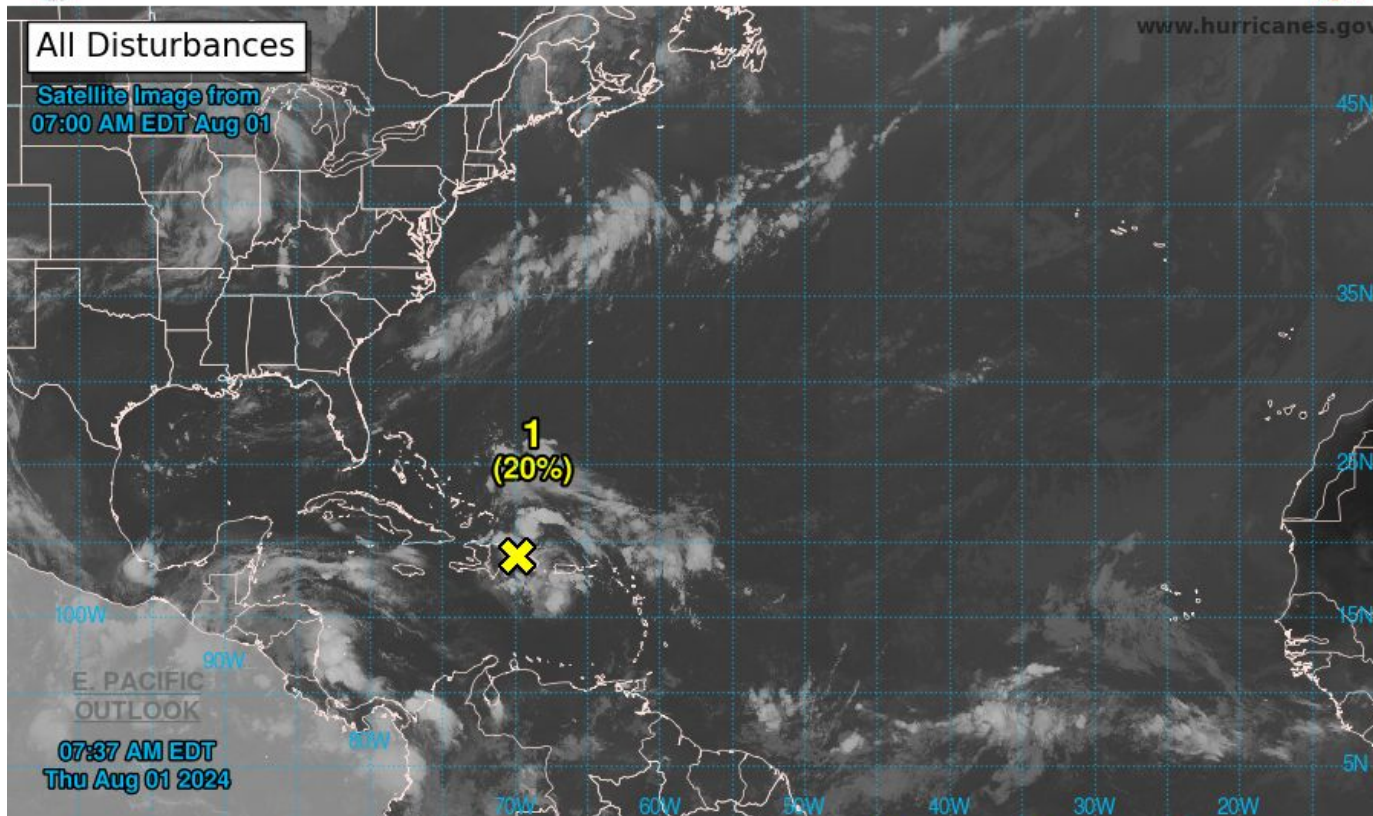
- Stock Supply Kits
- Review Hurricane Plans
- Know your Evacuation Zone
- Monitor here: [www.hurricanes.gov](http://www.hurricanes.gov)

# 2 DAY TROPICAL WEATHER OUTLOOK



## Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

There is a low chance (20%) of a tropical cyclone forming somewhere in the shaded area during the next 2 days.

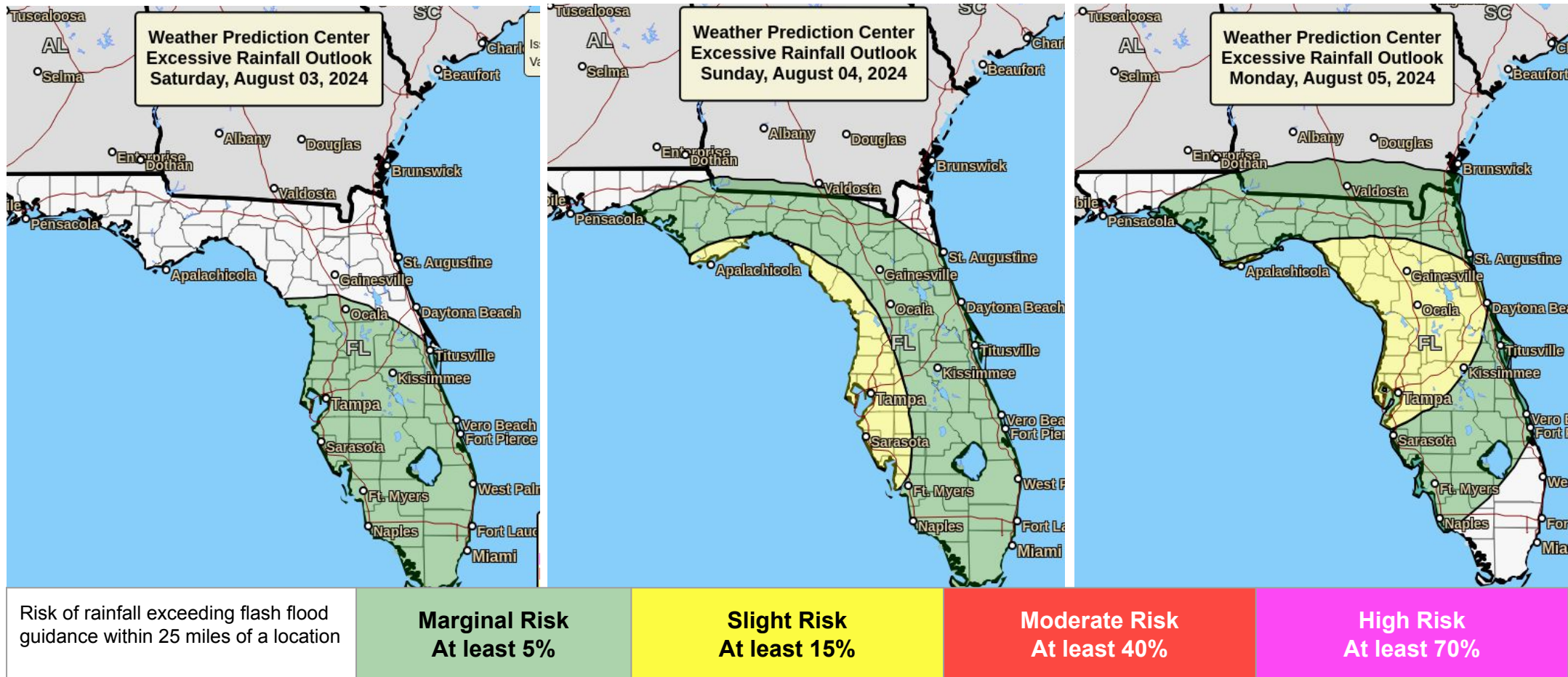
What to do now:

- Stock Supply Kits
- Review Hurricane Plans
- Know your Evacuation Zone
- Monitor here: [www.hurricanes.gov](http://www.hurricanes.gov)



# EXCESSIVE RAINFALL OUTLOOKS

- There is the potential for localized flooding & flash flooding this weekend into next week.
- Flooding rainfall potential is possible regardless of the categorization of the tropical system.
- If in a flood prone area, consider early mitigation (ex: move objects to higher ground)





# RECOVERY



**DON'T VENTURE OUT UNTIL IT'S SAFE**

## RECOVERY

# Don't be a "Social Media-rogist"

- After a storm is NOT the time to go viral!  
Don't be a Social Media star!
- Stay off the roads so first responders can do their jobs.
- Putting your or others lives in danger is **not** worth the likes and views.





# RECOVERY

## POLL QUESTION

RECOVERY

—  
At what point would you feel it's safe to venture outside?

- a. During the eye
- b. When the rain ends
- c. When the wind dies down
- d. When flooding subsides





# RECOVERY

**HAZARDS CONTINUE**

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# RECOVERY

## HAZARDS CONTINUE

RECOVERY

- **Water:** Ongoing river and tidal flooding
- **Wind:** Weakened structures have increased wind damage vulnerability
- **Exposure** to the elements for recovery teams & population, such as heat, rain, severe weather
- **No power, damaged shelter** = increased risk of heat stress, especially vulnerable populations





# RECOVERY WATER HAZARDS



RECOVERY

- Inland & river flooding
- Compromised bridges or causeways
- Isolated communities
- Submerged hazards
- Contaminated water



*Photo: Shannon Stapleton; Reuters*



# RECOVERY

## WATER HAZARDS



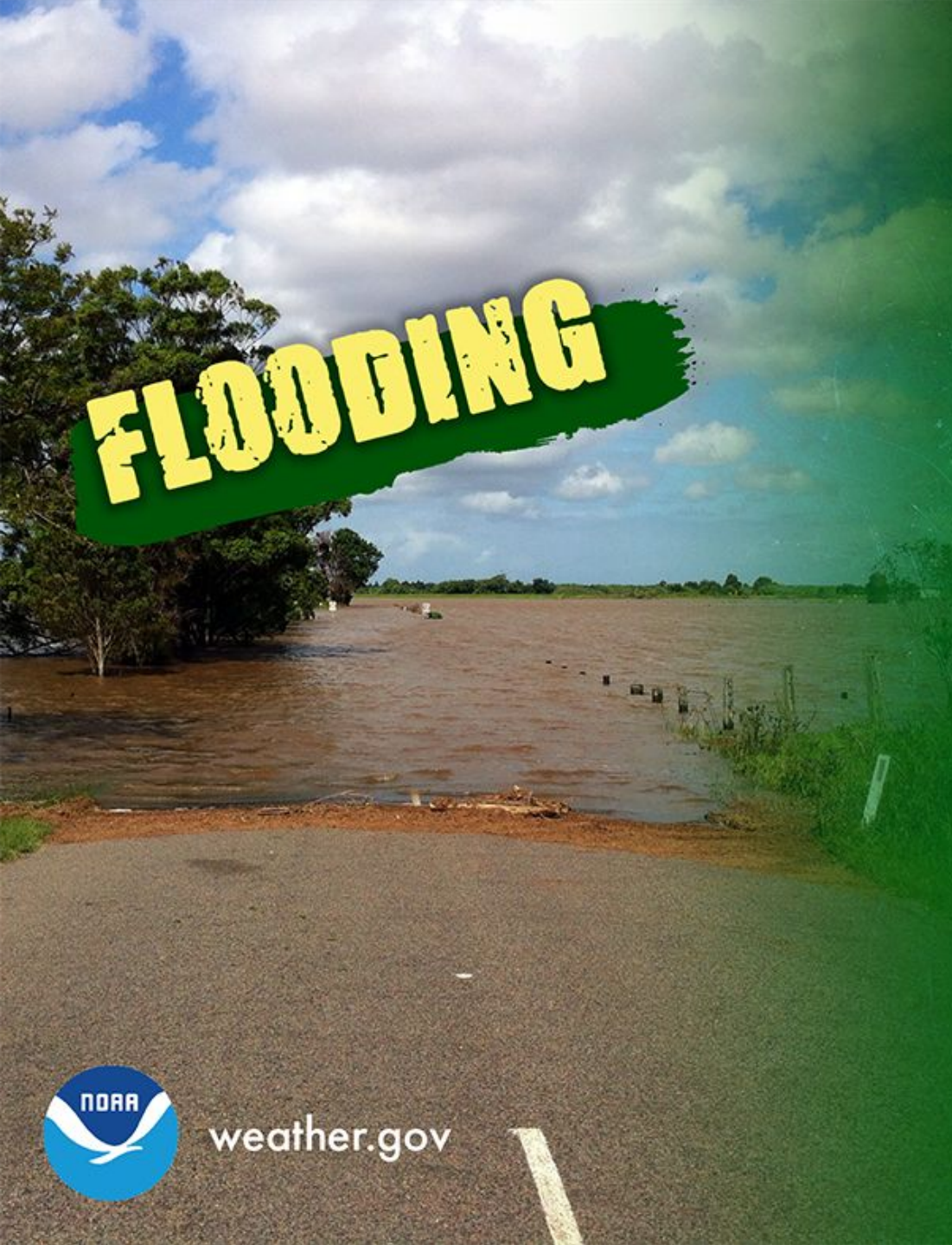
RECOVERY

- Could see extended periods of flooding
- Be prepared to be self-sufficient for at least **1 week**
- Rescuers may not be able to get to you for some time

**Long term:** A combination of heavy rain & gusty winds could lead to debris blocking storm drains.







# Small Decisions can have a **BIG IMPACT.**

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- Turn around and don't drive through a flooded roadway
  - Don't drive around barricades
  - Delay travel until conditions improve
- 



weather.gov

Don't let a bad decision be your last.



# STAY OUT OF FLOODWATERS



*Floodwaters hide dangers that can cause sickness, injury or even death.*



Animals  
& insects



Dangerous  
chemicals



Live wires



Sewage



Harmful  
bacteria



Sharp objects  
& debris



weather.gov





# RECOVERY

## WIND HAZARDS



- Structures weakened by wind/storm surge are vulnerable
- Weaker gusts can do additional damage to structures, including exterior walls and roofing
- Compromised trees or limbs may fall, blocking roadways and downing power lines
- Loose objects, such as storm debris, could be blown about



Photo: NOAA

# RECOVERY

## WIND HAZARDS



Photo: FEMA

- Temporary Housing
- Manufactured homes more vulnerable to severe weather (Ex: strong thunderstorm winds)
- Roof tarps vulnerable to wind gusts 30 - 40 mph



NWS MLB Irma Survey



Miami Herald



# RECOVERY

## POLL QUESTION



What is your biggest concern after a tropical system?

- a. Heat/No Power
- b. Lack of medical care
- c. Returning home
- d. Fixing Damage





# RECOVERY

## INDIRECT FATALITIES

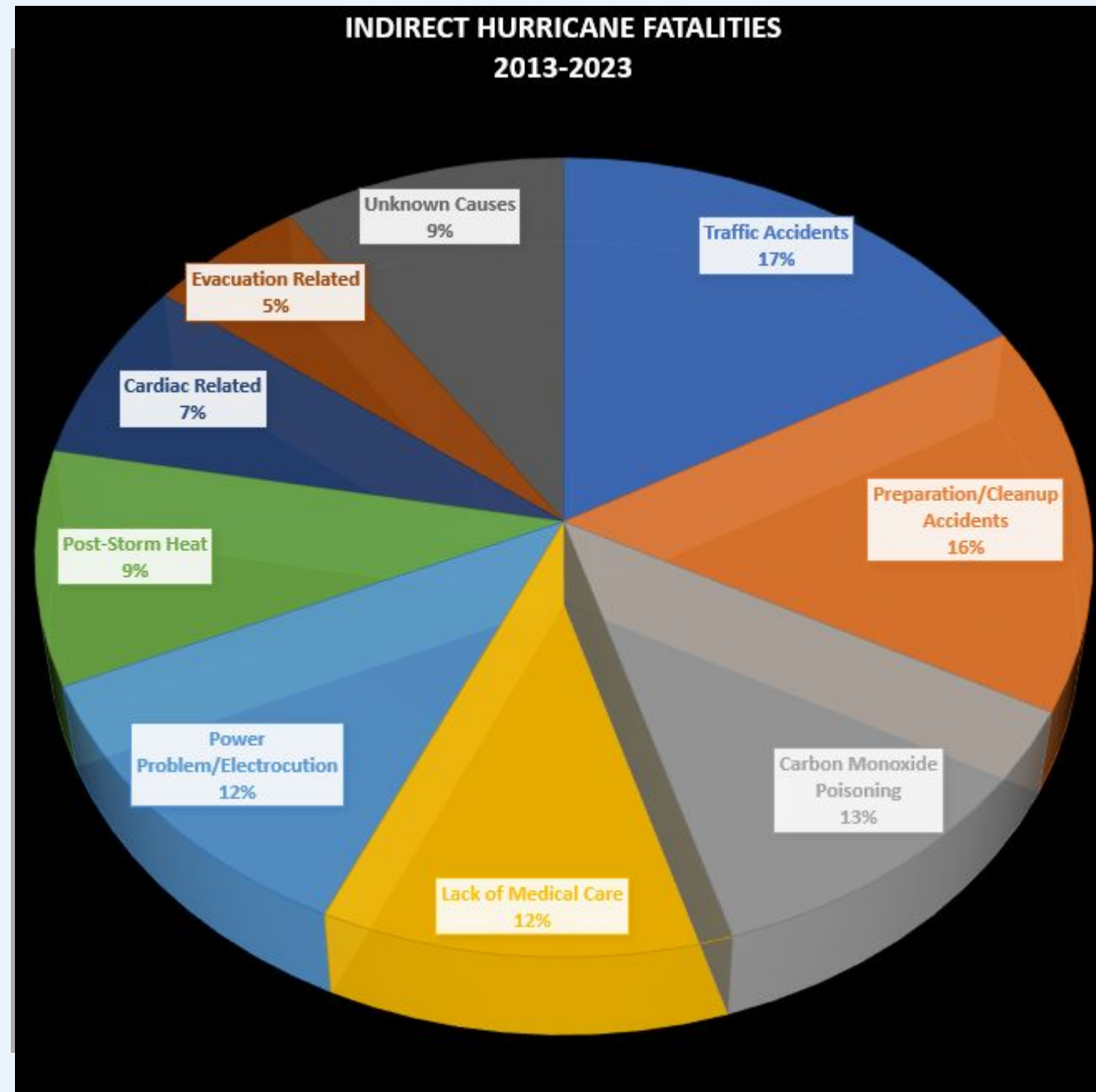
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# INDIRECT FATALITIES

## DYK...

Over the past 10 years, there has been nearly an equal number of **Indirect** fatalities as **Direct** fatalities from US tropical cyclones.

- **DIRECT:**  
Death from storm surge & flooding rain (example: drowning)
- **INDIRECT:**  
Death that would have not occurred if storm hadn't occurred (example: Carbon Monoxide poisoning due to improper generator use, due to a power outage caused by storm wind damage)



# CASE SCENARIO

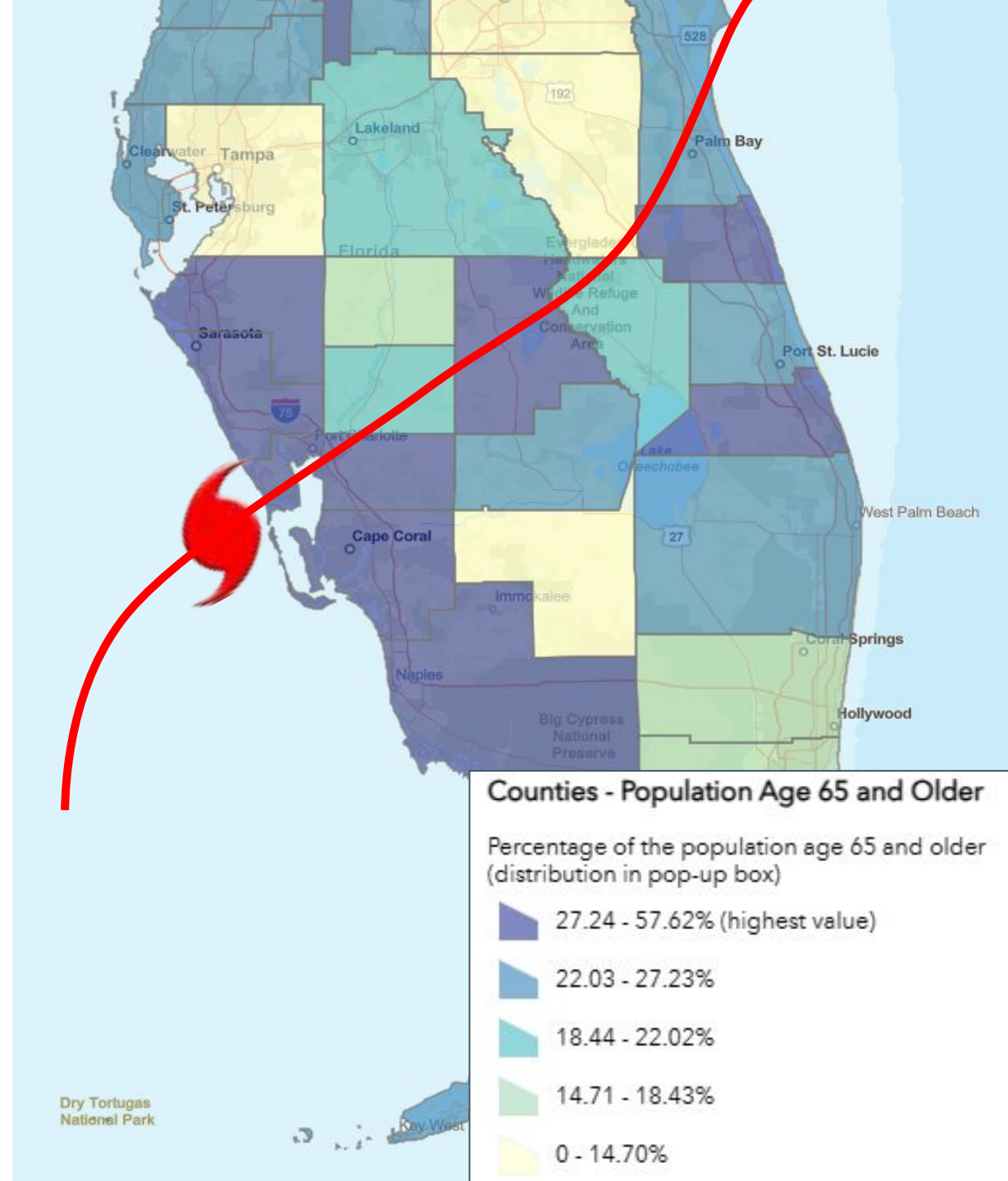
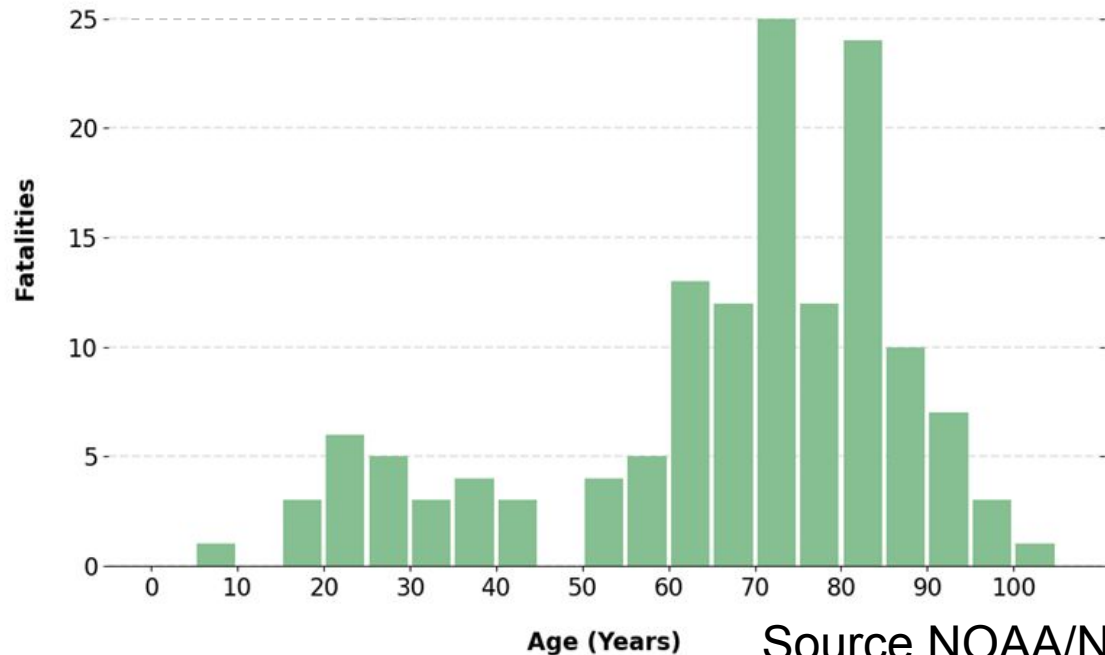
## Hurricane Ian 2022

About 60% of fatalities were over 60 years old

41 out of 66 **Direct** deaths storm surge

90 deaths **Indirect** (medical, heat, CO, accidents)

Total (Direct + Indirect) Deaths Related to Hurricane Ian (2022)





# Staying Safe After A Storm

Consider the following when making your post-storm safety plan:



Have a way receive the latest safety updates



If you've evacuated, do not return until the area is declared safe



When returning, plan alternate routes as many roads may be blocked



Once home, know how to turn off your utilities if necessary



Do not drink or prepare food with tap water until it is declared safe



Follow safety precautions when using ladders, power tools, etc to clean up



# Use Caution After Storms



If you evacuated, only return home when directed it's safe to do so



Remain vigilant, as hazards remain: heat, downed powerlines, floodwaters, & more



Clean up safely: don't push yourself, and check on neighbors



Only use generators outdoors, 20+ feet from your home



Prepare for the likelihood that help and communications may not be available





*Hurricane Preparedness*

# Help Your Neighbor



Help your neighbors prepare



Help your neighbors evacuate



Check-in after the storm passes

weather.gov





# After the Storm: **HAZARDS REMAIN**



## ***Be careful near damaged buildings***

Do not enter a damaged building until local authorities say it's safe. Leave your home if there's shifting or unusual noises. If you smell gas, get outdoors immediately and call 911.



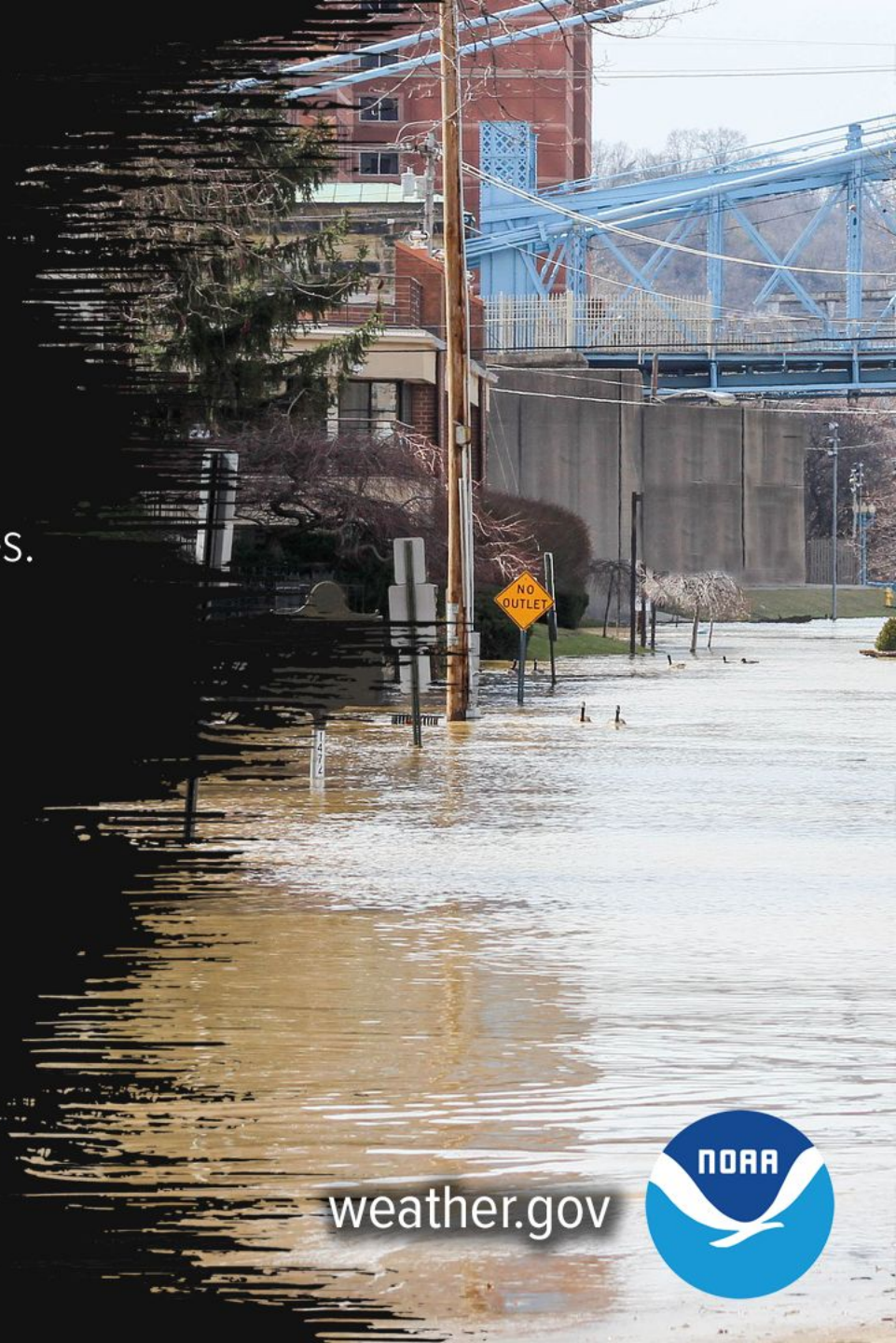
## ***Watch out for power lines***

Stay far away from damaged power lines, whether they've fallen to the ground or are dangling overhead.



## ***Don't walk or drive through floodwaters***

They can contain harmful bacteria, chemicals, sharp objects, live wires and reptiles/other animals. It only takes 12 inches of fast-moving water to sweep a car away.

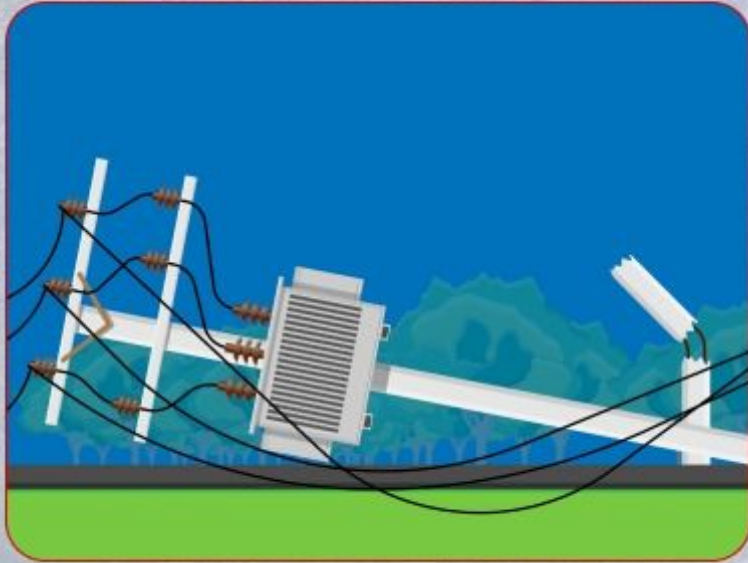


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# POST STORM CLEAN-UP



**Never handle a downed powerline - don't attempt to cut any lines either**



**Don't bring generators indoors - they release carbon monoxide**



**Wear the appropriate safety gear - goggles, heavy gloves and a hat**

**FLORIDADISASTER.ORG**





# After the Storm: **POWER OUTAGE**



## **Use flashlights, not candles**

This will avoid risk of fire. Turn on flashlights before entering buildings, to avoid producing a spark that could ignite leaking gas.



## **Practice portable generator safety**

Use outdoors, at least 20 feet away from doors/windows/garages to avoid carbon monoxide poisoning. Properly ground, and don't overload.



## **Be careful with food and water**

Food in the fridge can start to spoil after as little as 4 hours. Drink bottled/boiled water only, as purification systems may not be working. Use camp stoves/grills outdoors only.

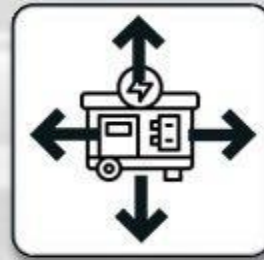
weather.gov



# 13% of Indirect Fatalities from Carbon Monoxide Poisoning



Keep generator at least 20 ft from your house



Make sure there is at least 3-4 ft clearance around the generator



Never run a generator inside a house or garage

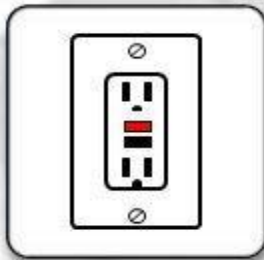


Always use grounded cords

**Install carbon-monoxide detectors**



Make sure cords are rated for the proper wattage



Always use GFCI protection



# After the Storm: **CLEANING UP**

12% of Indirect Fatalities from  
Power Problems/Electrocution



## ***Don't push yourself***

Straining the body can lead to heart attacks and other serious issues. Perform cleanups slowly, taking lots of breaks.



## ***Be careful with chainsaws***

Wear protective gear. Keep a safe distance from bystanders. Avoid contact with fallen power lines to prevent electric shock. If you aren't trained to use them, leave power tools to the experts.



## ***Stay safe in the heat***

Stay hydrated. Wear light, loose-fitting clothing. Take breaks in shaded areas or in air conditioning. Cleanup during cooler hours if possible.



weather.gov





# CARDIAC & HEAT RISK



## POST-STORM STRESS & OVER-EXERTION

- Storm recovery affects us mentally, physically & emotionally with increased vulnerability
- During clean-up, take frequent breaks & care for yourself - **DON'T PUSH IT!**



7% of Indirect Fatalities from Cardiac Arrest

Photo: Arkansas Democrat-Gazette  
Colin Murphey



9% of Indirect Fatalities from Post-Storm Heat

# DANGEROUS HEAT & NO POWER?



Keep blinds closed to prevent sunshine from heating the indoors



Stay hydrated and wear lightweight, light-colored clothing



Go to the coolest part of the house or building (usually the basement)



Find local cooling centers: malls, libraries, movie theaters, etc



Reduce body temperature by taking a cool shower/bath, or putting hands/feet in cool water

Always monitor yourself and others for symptoms of heat illness.  
***Call 911 in the event of heat stroke!***





# HEAT SAFETY WHEN WORKING



Drink a cup of cool **water** every 20 minutes, even if you aren't thirsty. For long, strenuous jobs, drink a beverage with electrolytes.



Take regular breaks to **rest**. During hot conditions, skipping breaks is not safe!



Take breaks in the **shade** or a cool location.



Look for any signs of heat illness, including muscle spasms, nausea, dizziness, and fainting. When in doubt, call 911.



[weather.gov](https://www.weather.gov)  
[osha.gov/heat](https://www.osha.gov/heat)



**OSHA**  
Occupational Safety  
and Health Administration



# Heat Impacts: Vulnerable Populations



## PREGNANT

Extreme heat events have been associated with adverse birth outcomes such as low birth weight, preterm birth, infant mortality, and congenital cataracts.



## NEWBORNS

Newborns are extra sensitive to heat because their ability to regulate body temperature is limited.



## CHILDREN

Young children and infants are particularly vulnerable to heat, as their bodies are less able to adapt to heat than adults. Those under four are especially vulnerable.



## ELDERLY

Older adults, especially those who have preexisting diseases, take certain medications, live alone or have limited mobility are at higher risk for heat illness.



## CHRONIC ILLNESS

People with chronic medical conditions are more likely to have a serious health problem during a heat wave.

### Source:

*The Impacts of Climate Change on Human Health in the United States, A Scientific Assessment (U.S. Global Changes Research Program)*

weather.gov



# RECOVERY

# MENTAL HEALTH

- Going through a hurricane is traumatic for many – **You are NOT alone** in feeling scared, anxious, exhausted, confused, mad, sad, frustrated, etc.
- Stick to your daily routine as much as possible – get some exercise (clean up will probably be plenty!), enough rest & eat/hydrate properly
- Connect with family, friends, and your community, especially those who've been through something similar
- If symptoms last more than a couple weeks & begin to limit joy in your daily life, reach out to a mental health professional for help



<https://www.floridahealth.gov/programs-and-services/emergency-preparedness-and-response/healthcare-system-preparedness/disaster-behavioral-health/index.html>



# RECOVERY

## MEDICAL CARE

- Medical facilities may operate on a limited basis if they've sustained structural damage or power loss
- Mobile health units may be available to provide basic services (ex: treat of cuts, scrapes, bruises, mild illnesses)
- **Wash your hands often with soap & clean water**  
*Especially* if cleaning & handling items in flood water or sewage
- If you suspect contaminated water, use an alcohol-based hand sanitizer to decrease the risk of illness and infection

12% of Indirect Fatalities from Lack of Medical Care



Photo by Mooney Bryant-Penland

# RECOVERY

## SAFE WATER

### PRO TIP

Save & Cleaning out 2 liter bottles and filling with tap water

You can freeze these & store in your frig/freezer – they will help keep food longer & when they thaw, you can use as potable water!

SAFE H2O



For drinking, cooking, washing wounds and brushing teeth, use bottled water, boiled water or disinfected water.

7-8 drops  
(about 1/8 tsp.)  
bleach per  
gallon of water.

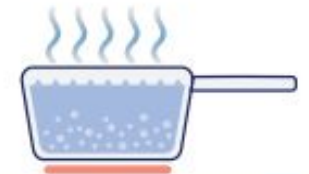


### DISINFECTING

1. Add 8 drops of plain unscented house hold bleach (4–6% strength) or 7 drops of high strength bleach (8.25% strength) per gallon of water.
2. Mix and let stand for 30 minutes.
3. If the water is cloudy after 30 minutes, repeat once.

### FOR BOIL WATER NOTICES

Hold a rolling boil for 1 minute to kill organisms.





# RECOVERY SAFE FOOD



Tampa Bay Times

Keep refrigerator & freezer doors closed to maintain a cold temperature – becomes a **COOLER!**

- Food is generally safe if it has ice crystals or if 40° F or colder
- FREEZERS: Full Freezer: Food is safe for about 48 hours  
Half-full Freezer: Food is safe for about 24 hours
- REFRIGERATORS: Food is safe for about 4 hours
- For unopened cans dirtied by flood water: Remove labels & soak cans for 30 minutes using clean, disinfected water
- Don't eat from bulged or opened cans

If unopened!

From the FDA



<https://www.fda.gov/food/food-safety-during-emergencies/protect-food-and-water-during-hurricanes-and-other-storms>

# RECOVERY

## SAFE FOOD

The **Coin Rule** helps assess if your freezer thawed during a power outage

1. Put a small cup of water in your freezer & let it freeze
2. Before the storm, put a coin on top of the frozen ice.
3. When you check the coin, if it has settled down into the cup and is frozen over with ice, then you will know that it had thawed due to a power outage.



ABC4



# RECOVERY

## TRAFFIC HAZARDS

After a tropical system, use extra caution when driving

- Watch for flooded areas, downed power lines, down trees, debris  
**ESPECIALLY AT NIGHT!**  
Do not drive through or across hazards
- Look for missing/non-working signs & traffic lights
- If a traffic light isn't working, treat the intersection as a four-way stop

17% of Indirect Fatalities from Traffic Accidents



Facebook/Cherokee County Sheriff's Office

**RECOVERY**

**PREPAREDNESS  
-AND-  
LESSONS LEARNED**



## RECOVERY

# POLL QUESTION ON PREPAREDNESS

—  
What have you done to prepare thus far this hurricane season?

- a. Secured my home
- b. Confirm your evacuation zone
- c. Let others know where I will shelter
- d. Stock emergency supply kit
- e. Nothing yet



## RECOVERY

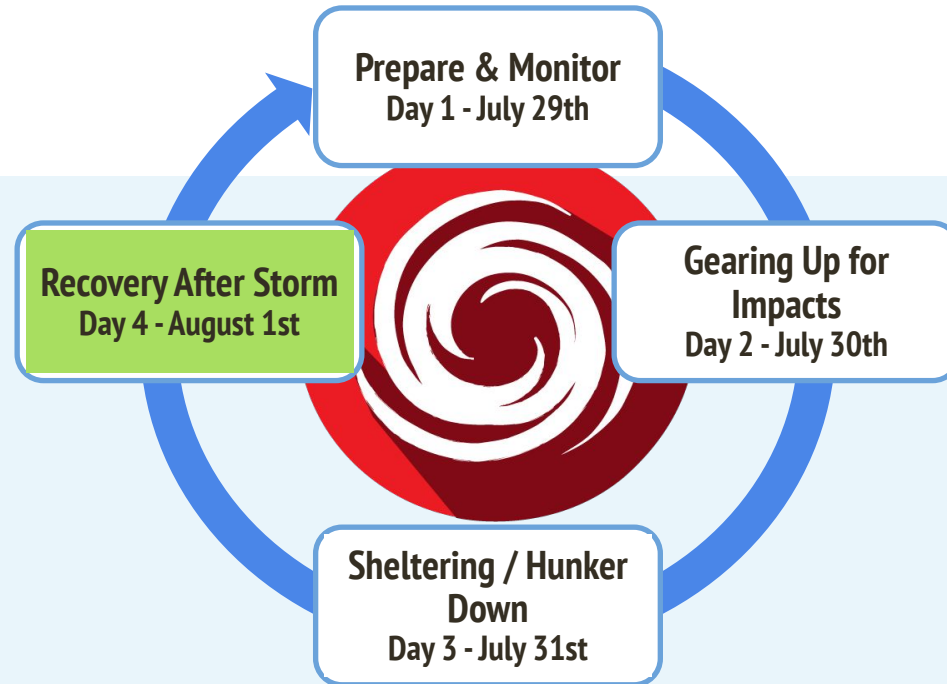
# POLL QUESTION ON LESSONS LEARNED

—  
What would you do differently having experienced a hurricane?

- a. Homeowners insurance checkup
- b. Follow evacuation orders
- c. Not go through the storm alone
- d. At least a week of food/water/cash
- e. A reliable way to get updated, official information







**You have completed “Day 4”...well done!  
Thank you for participating**

*Session certificates will be emailed to each attendee*



Program Website



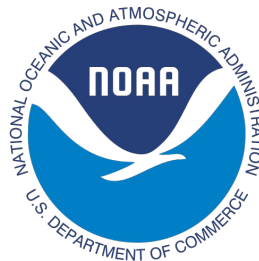
Submit questions



**BE PREPARED.  
STAY AWARE.**

<https://www.weather.gov/jax/FloridaTropicalTrainingWeek2024>

[WWW.WEATHER.GOV](http://WWW.WEATHER.GOV)



[WWW.HURRICANES.GOV](http://WWW.HURRICANES.GOV)