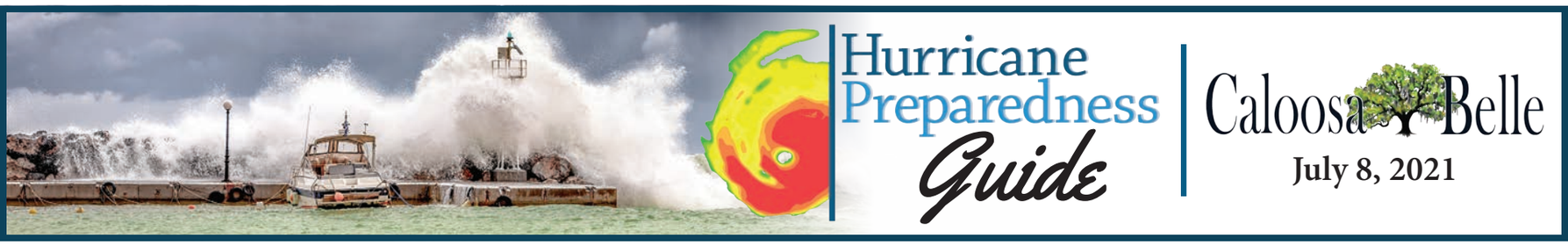


Hurricane misconceptions continue to circulate

By Dennis Feltgen
National Hurricane Center

Millions of people were affected by hurricanes in 2017. Their perceptions have now been reset, but some don't line up with reality. Social science may be the answer to fixing it.

When a hurricane is approaching, many people prepare based on previous experience. But they're not always right. Here's a sampling:

"I live outside of the cone, so I am safe from feeling the effects."

The cone has nothing to do with impacts, only the average track error of the past five years. 2017's Irma went up Florida's west coast, but its wind field grew in size and pushed storm surge onto Florida's east coast.

"It's never flooded here before."

It's not easy to picture 60 inches of rain, but it was one of the biggest stories of Harvey. There's no historical record of that amount, so it's difficult to imagine what it will do.

"I got hit last year and it was a 100 year storm, so I'm in good shape for the next 100 years."

All 100 year storm means is that you have a 1 % chance of it happening to you every single year. That's the same as a 25% chance of flooding in a typical 30-year mortgage. You can get hit in back to back years or even in the same year.

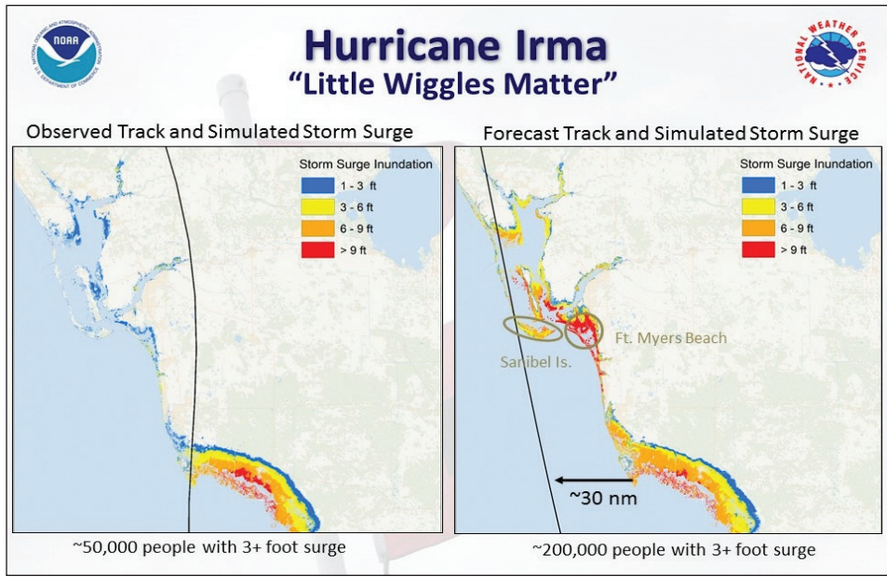
"A very slight wiggle in the track doesn't matter."

That could be true over the middle of the ocean, but not for land. Hurricane Irma proved that. Its wiggle of 30 miles along Florida southwest coast meant the difference between getting only a few feet of storm surge versus 9 feet.

"We went through a Cat 4 and nothing bad happened"

Many people in Key West will tell you Irma was a Cat 4 there. The reality is they only got Cat 1 winds. You had to go 20 to 30 miles away to find the Cat 4 winds. The reality is that you've got to understand exactly what you went through and that you may not have seen the strongest part of that storm.

How do we line up perception with reality? The answer lies in social science. A project will soon begin at NOAA's National Hurricane Center to find ways to better communicate the risk from the hurricane hazards, find out how people are interpreting our products and to make sure everything is actionable. We have to plan for what COULD happen, not what has happened in the past. It's a life and death proposition.



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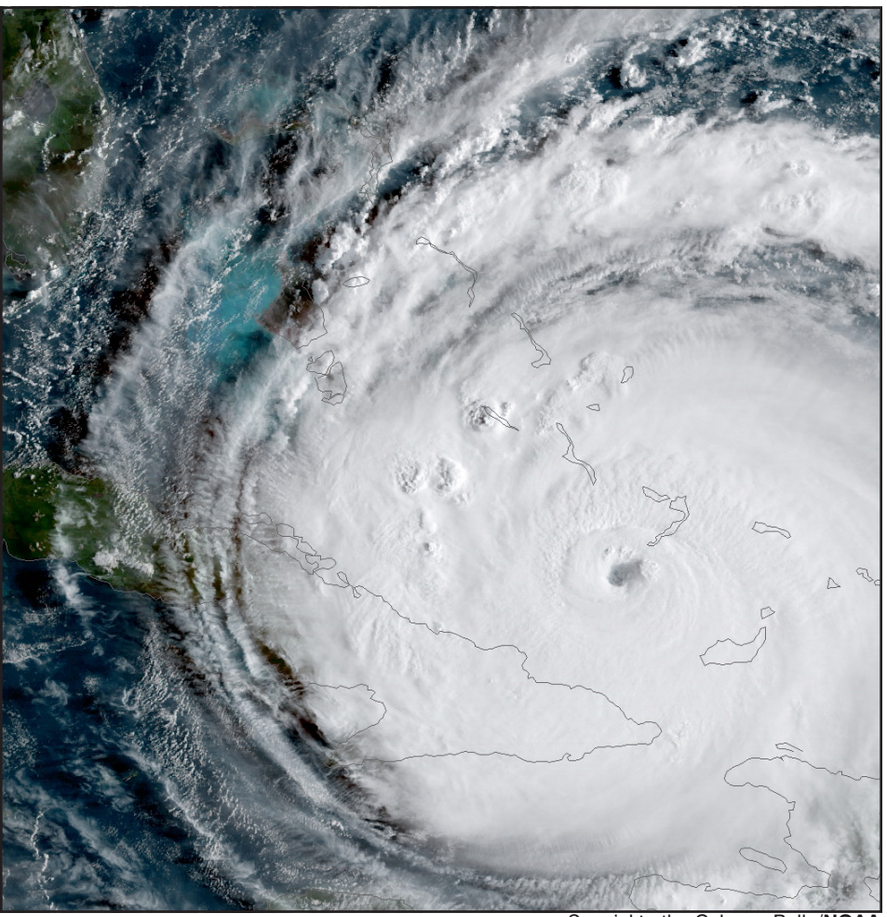
A small change in the path a hurricane takes can make a big change in the number of people affected by storm surge.



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Hurricane Irma hit Florida in 2017.

Will you need to disinfect your well after it is flooded?

By Yilin Zhuang
Water Resources Regional Specialized Agent, UF/IFAS

Hurricanes bring excessive rain. When heavy rains bring flooding to an area, your private well may not be safe to drink. It may be in danger of contamination from pollutants found in the flood waters.

If your well has been flooded, such as your well head was surrounded by flood waters or it was submerged in flood waters, your private well might be in danger of contamination from pollutants found in the flood waters.

The only way to know if you water is safe to drink or not is to have it tested. Bacterial contamination is common after a well is flooded. Find a certified lab to test your water for bacteria (coliform bacteria and E.coli). The Environmental Laboratory Certification Program was established in 1979 to ensure laboratory quality and capacity to perform testing of drinking water regulated in the Florida Safe Drinking Water Act. You can assess this link to find a certified drinking water testing lab: https://fldeploc.dep.state.fl.us/aams/org_search.asp.

Before you receive your water test result, you need to use alternative safe water sources for drinking, making beverages, cooking, brushing your teeth, washing dishes, and washing areas of the skin that have been cut or injured. Bottled water can be used for these purposes. You can also bring your well water to a rolling boil for at least one minute to kill bacteria.

If your well water test reveals bacteria, the well and water system need to be disinfected. Non-scented chlorine bleach is often used to disinfect a bacterial contaminated well. Keep in mind, the disinfection process includes not only your well but also all the plumbing. If you have water treatment systems or devices, remove all membranes, cartridges, and filters, and replace them after the shock chlorination process is completed.

How To Disinfect My Well?

• Pump out the well to remove any potential contaminants. It is at least three well volumes of water from a faucet near the wellhead, or at a minimum, pump the well for at least 1 hour before beginning the disinfection process.

• Flush out household plumbing including water heater. Make sure the water is clear and free of sediment.

• Turn off electric power to the pump and remove the well cap. Prepare a solution of bleach and water, and pour the solution into the top of the well. The amount of bleach depends on the depth of water in the well and the diameter of the well casing. The bleach should be diluted with 10 parts of water. For example, 1 cup of bleach with 10 cups of water before pouring it into your well.

• Recirculate the water by connecting a hose to a faucet and spraying the water back into the well for at least 10 minutes.

• Open every faucet in the system and let the water run until the smell of chlorine can be detected. Then close all the faucets and seal the top of the well.

• Allow the chlorinated water to stand in the system for at least 12 hours but no longer than 24 hours. You cannot use any water through the system during this period including flushing your toilets. Prepare alternative water supply during well disinfection process.

• The next day, operate the pump by turning on all faucets, beginning with outside and flushing out the water until there is no chlorine odor.

Is My Water Safe Now?

Again, the only way to verify that the water is safe to drink is to have it tested. Send another sample to the certified lab to confirm there is no bacteria in your well water first. Although chlorine bleach is effective against microorganisms, it will not remove chemical contamination that may have gotten into your well.

For more disaster recovery tips, go to disaster.ifas.ufl.edu.

Some tips to remember:

• **Not all bleach is created equal!**

It can be challenging to find disinfecting products after a storm. When you are looking for bleach to disinfect your well, please remember: DO NOT PURCHASE SPLASHLESS BLEACH. Common household bleach usually contains 5-6% sodium hypochlorite (i.e. chlorine). Splashless bleach is a little thicker than regular household bleach. It is less likely to splash, but the sodium hypochlorite concentration is only 1-5%. It is not strong enough to sanitize and disinfect your well. As the label warns, you will be left with a lot of suds in your water! If you have already used the splashless bleach, you will need to flush your well system longer to remove all the suds.

• **Bleach expires too!**

Bleach loses strength in its container over time. Check the "sell by date." If you cannot buy new bleach, try to use bleach that is less than three months old. In addition, only use unscented bleach to avoid adding unneeded chemicals to the water.

• **Right pH is critical!**

To make the disinfection procedure more effective, make sure the pH (i.e. acidity) of the water well is between 6 and 7.5. If the pH of your well is not in this range, consult a well treatment professional to adjust the pH and maintain it in the correct range during the disinfection process.

• **Prepare a chlorine solution!**

Bleach should be combined with 10 parts of water before adding it to the well for the best results. It will reduce the chance of corrosion of the well system. Please note DO NOT mix chlorine solutions with other cleaning products, including ammonia, because toxic gases will be created. The amount of bleach depends on the depth of water in the well and the diameter of the well casing. For example, if your well diameter is 2″ and the well depth is 100 feet, you will need 1 cup of bleach with 10 cups of water before pouring it into your wells.

NOTE: This well disinfection method is also called Shock Chlorination. Please note shock chlorination is not a regular maintenance method. This disinfection method is only used when a new well is drilled, flooding occurs, if bacteria is found, or if the well has been sitting without use for an extended period of time.

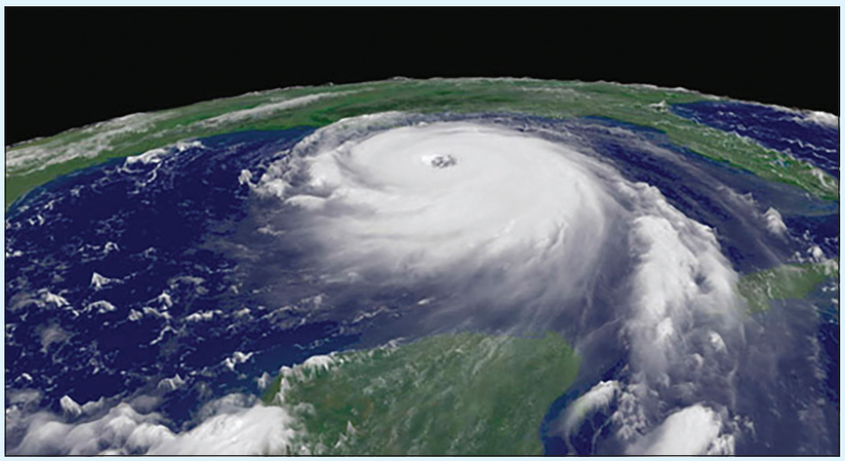
How much water do you need for your hurricane supply?

By Katherine Allen, Lisa Hamilton, and Yilin Zhuang
UF/IFAS

GAINESVILLE — The Atlantic hurricane season extends from June 1 through Nov. 30. NOAA's Climate Prediction Center is predicting another above-normal Atlantic hurricane season. Forecasters predict a 60% chance of an above-normal season, a 30% chance of a near-normal season, and a 10% chance of a below-normal season. However, experts do not anticipate the historic level of storm activity seen in 2020.

Do you know how much water you need during an emergency?

A safe drinking water supply is important during an emergency. The Federal Drug Administration (FDA) and Federal Emergency Management Association (FEMA) recommend that households store one to one and one-half gallons of water per person for a minimum of a three-day supply. For a family of four that is a minimum of 12 to 18 gallons of water.



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Hurricane Katrina, in 2005, reached Category 5 status.

Purchasing and storing an adequate supply can be costly and take up considerable space. In addition, thin plastic water jugs can degrade over time, leaking and/or becoming contaminated. To reduce costs, storage concerns, and ensure a safe water supply, consider sanitizing household containers for storing needed water.

DIY a safe water supply for hurricane season

DIY Containers: Sanitize household containers and fill with water when a storm is approaching.

- First, wash the inside and outside of each container with soap and hot water.
- Next, sanitize containers with a solution of 1 teaspoon of non-scented household bleach per quart of water.
- Close the container tightly and shake well, making sure that the bleach solution touches all of the internal surfaces of the container
- Let the container sit for 30 seconds and pour the solution out.
- Finally, rinse thoroughly with plain clean water. Avoid using milk containers because they can be hard to clean. Bacteria can grow quickly in a milk container, contaminating the water stored in it. However, if there is no alternative, special care should be taken when sanitizing these containers.
- After containers have been filled with clean water, label them with the words "Drinking Water" and mark the date of storage. Direct heat and light can slowly damage plastic containers, resulting in eventual leakage, so they should be stored in a dark, cool, and dry place.
- Lids should be tightly closed to prevent contamination. Store water away from gasoline, kerosene, pesticides, or similar substances because vapors from these materials can penetrate plastic.

How to store these emergency water supplies?

Water can also be stored in a freezer. Frozen water provides the added benefit of helping to keep frozen food cold for a longer time if power is out for an extended period and you can use in coolers to keep food cold and then drink once melted.

Use only plastic containers to store water in a freezer, as glass may not be able to withstand the pressure of expanding ice.

To minimize exposure to bacteria, open a container just before use and then refrigerate it if power is available. If no refrigeration is available, keep the container up high, away from children and pets. Use water from opened containers within 1 to 2 days if possible.

To learn more about hurricane preparedness, please watch the recordings on the YouTube channel UF/IFAS Extension: Water Resources.

Emergency Kit Checklist

Use this checklist of items suggested by the American Red Cross to put together a hurricane preparedness emergency kit.

☐ Nonperishable food items

☐ Tape

☐ Emergency survival blanket

☐ Towels

☐ Rain poncho

☐ Water

☐ First aid kit

☐ Flashlight

☐ Multi tool

☐ Batteries

☐ NOAA weather radio

☐ Personal hygiene items