

Reaching Vulnerable Populations: Deaf and Hard of Hearing Communities

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National Weather Service - Atlanta

Georgia



National Weather Service

Building a Weather Ready Nation



NWS Mission

“Provide weather, water, and climate data, forecasts, warnings, and impact-based decision support services for the **protection of life and property** and enhancement of the national economy.”



Takeaways for Today

WHY understanding risk & vulnerability is essential

HOW messaging is interpreted by those with auditory and visual challenges

WHAT it looks like to get critical weather & safety info to the DAHH community



Why does this matter?

**Not
Everyone:**

Has up-to-date **technology**
Speaks the same **language**
Lives in a **highly populated area**
Is fully **able bodied**
Knows about **preparations**
Has the same **culture or beliefs**



Considerations of Communicating Hazardous Weather



Hazard

An event natural or human caused which increases risk for injury, death or property damage.



Considerations of Communicating Hazardous Weather



Exposure

Who or what could be affected from a hazardous event.

Determined by total contributions related to people, residences, businesses, and infrastructure



Considerations of Communicating Hazardous Weather



Vulnerability

The level of susceptibility exposed elements and humans are to impacts from an event. This can vary on situation, time, and space.



Considerations of Communicating Hazardous Weather

Additional Considerations

- ➔ **Time of day**
- ➔ **Traveling through unfamiliar areas**
- ➔ **Belief that an event can't happen to them**
- ➔ **Understanding the risk**
- ➔ **Response depends on past experience**
- ➔ **Can people respond appropriately?**



Regarding Underserved communities / vulnerable populations – what are you doing in your counties/communities to improve messaging and preparedness?

Nobody has responded yet.

Hang tight! Responses are coming in.



Deaf and Hard of Hearing



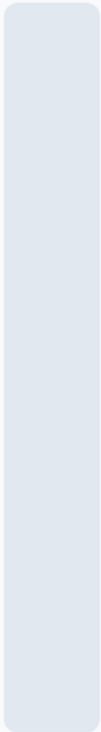
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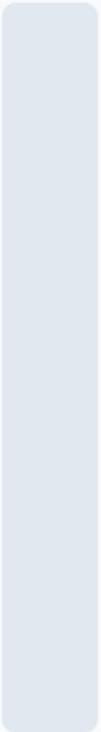
ASL is the same as English.

0%



True

0%



False



ASL \neq English

Over 30 million Americans are Deaf or hard of hearing

No written form of American Sign Language (ASL)

Closed Captions (CC) does not work for everyone

For those born deaf, English is a second language!



What is your experience using ASL and/or English Sign Language?

No experience

0%

Some experience with ASL/no English sign language.

0%

Some experience with English sign language/no ASL.

0%

Some experience with both.

0%

Routinely use ASL.

0%

Routinely use English Sign Language.

0%

Ample experience with both.

0%



Lost in Translation:

What Vulnerability Sounds Like

Jennifer Saari

Meteorologist | National Deaf & Hard of Hearing Outreach Team Lead
Workshop from the National Weather Association Meeting
September 2023

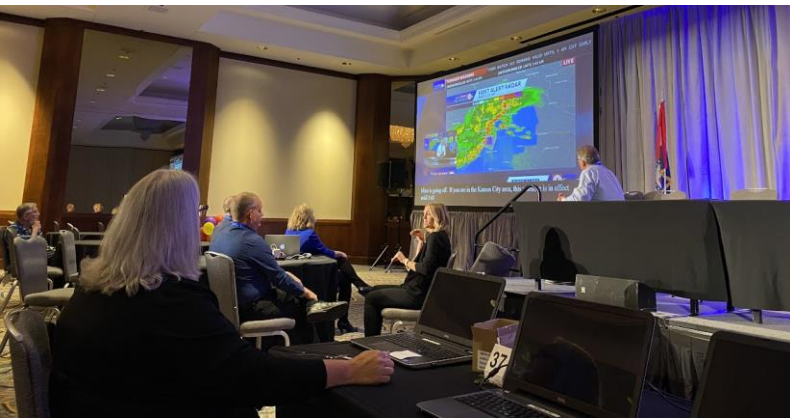
meet.google.com/qcu-xncy-fpy
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PIN: 438 432 073#



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NWA Workshop: Lost in Translation- What Vulnerability Sounds Like

- Highlighted to the audience, the experience of not having your hearing during a hazardous weather situation. Special guests from the local Kansas City area who are deaf or hard of hearing lead this workshop, walking the audience through TV coverage of a tornado warning, the importance of communication access, the barriers that exist, and provide the audience with some tools and suggestions to take home with them.



Lost in Translation- What Vulnerability Sounds Like



Video courtesy of KMBC

Note, this exercise is not to critique KMBC coverage, it was donated to be part of an educational workshop exercise during the NWA 2023 Conference.

1. Played the video without audio or captions.
 - Asked the audience what they experienced, what was going on, what they should do, what did they look at
 - Asked our D/HH panel the same questions
2. Played the video with audio and captions on.
 - Asked the same questions to the audience and panel



Lost in Translation- What Vulnerability Sounds Like

D/HH Panel Final Words

- ASL is **not** the same as English
 - For Deaf individuals, ASL is their first language
- It is estimated that about 15% of the American population – or around *37.5 million people are deaf or hard of hearing*. This includes people who have a partial loss of hearing, as well as those who are completely deaf.
 - This will increase with the Baby Boomers aging
- CC doesn't cover it all and it's not always accurate.
- Use legends, time of arrival tools, boxes on the screen (ex: clicking on polygon that has the type of warning and expiration time.
- Draw or point out what needs to be focused on and note which way it's going (TV & SM)
- Flipping back and forth too quickly, can't focus on what needs to be looked at, so again, draw, and explain. Not everyone is familiar with the V and CC, or certain reflectivity signatures.
- Provide safety info, what actions to take



Closed Captioning Problems

- May not always be in sync
- Automated Speech Reader does not include non-speech elements
- Poor audio quality = poor transcription quality



Visual Considerations



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Alternative Text

Alt Text: Describes the appearance or function of an image on a page.

NWS Atlanta @NWSAtlanta

Don't forget to pack your umbrella. ☁️ Storms are expected to develop throughout the afternoon hours across central Georgia, bringing the threat of damaging winds, lightning, small hail, and locally heavy rain. #gawx

Storms Developing This Afternoon September 7, 2023 9:37 AM
Impacts Possible for Evening Activities . . . Mainly Central Georgia

Timing
Developing after 2 PM,
Lingering Into the Overnight

POTENTIAL HAZARDS

- Isolated storms with lightning as the primary hazard.
- Scattered storms, a couple storms could be severe.
- The primary hazards will be lightning, damaging winds, small hail and locally heavy rain.

Severe Weather Outlook Thursday, September 07, 2023

National Weather Service Peachtree City, GA

9:41 AM · Sep 7, 2023 · 6,602 Views

Images are read aloud by screen readers



NWS Atlanta @NWSAtlanta

Scattered storms are expected to roll into North Georgia this afternoon ☁️ Lightning, damaging winds, and locally heavy rain may impact afternoon and evening activities 🌧️ #gawx

Storms Developing This Afternoon September 12, 2023 8:55 AM
Impacts Possible for Evening Activities . . . Mainly Northern Georgia

Timing
Developing around 2 PM,
Lingering Into the Overnight

POTENTIAL HAZARDS

- Scattered storms, a couple storms could be severe.
- The primary hazards will be lightning, damaging winds, and locally heavy rain.
- Isolated storms with lightning as the primary hazard.

Severe Weather Outlook Tuesday, September 12, 2023

National Weather Service Peachtree City, GA

9:15 AM · Sep 12, 2023 · 6,117 Views



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Do colors even matter?

GO vs **STOP**

Watch vs **Warning**



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Addressing Color Blindness

1 in 12 men
1 in 200 women

Bottom Line:
Less information is understood the closer to the bright yellow/red data is in.

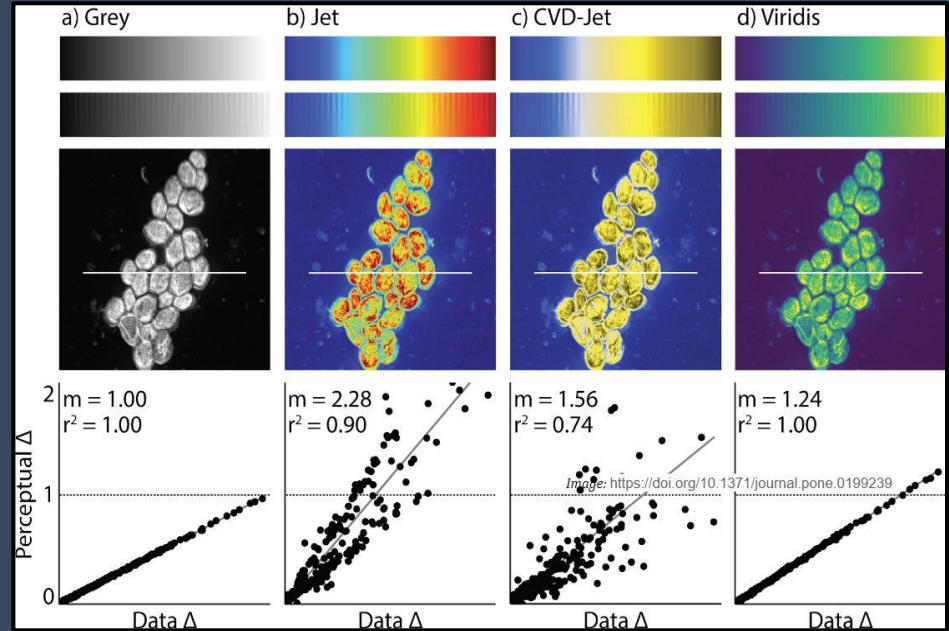


Image: <https://doi.org/10.1371/journal.pone.0199239>

If you had an emergency and you had to get out information in two words or less, what would they be?

Nobody has responded yet.

Hang tight! Responses are coming in.



National & Local Initiatives



Lightning Safety Campaign

- How can deaf people 'hear' thunder?
- Creation of local graphics



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National & Local Initiatives

Deaf Awareness Week

- Web and social media campaign during 3rd week of September - every year
- Sharing of local and national graphics



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Weather Safety: Deaf and Hard of Hearing



1. What is NOAA All-Hazards Radio (NWR)?

- NOAA All-Hazards Radio receives National Weather Service (NWS) warnings, watches, forecasts and other hazard information 24 hours a day.
- [Brochure](#) (PDF). Need Acrobat Reader? Download a copy [here](#).

- Safety
- Severe Weather

2. What adaptors are available for deaf and hard-of-hearing individuals?

- Several off-the-shelf radios from many manufacturers.
- Visual and vibrating alarms and simple text readouts are available with many off-the-shelf NWR. Click [here](#) for known manufacturers that allow for adaptors.
- Three warning lights indicate the level of the alert (statement, watch or warning)
- Liquid crystal display readout indicates specific types of warning such as "Tornado Warning" or "Thunderstorm Warning"
- Programmable state/county selections screen out statements, watches and warnings for other areas.
- The battery-operated NOAA All-Hazards Radio can portable at home, work, school or play, or while travelling, boating or camping.

Watch You Tube video below both captioned and using ASL to step you through the process of configuring of one type of NOAA Weather Radio with adaptors.



Lightning Safety



Tornado Safety



Flood and Flash Flood Safety



Severe Thunderstorms



Know Your Location and Seasonal Weather Threats



Receiving Weather Alerts and Preparedness Plan Tips



Rip Current Safety



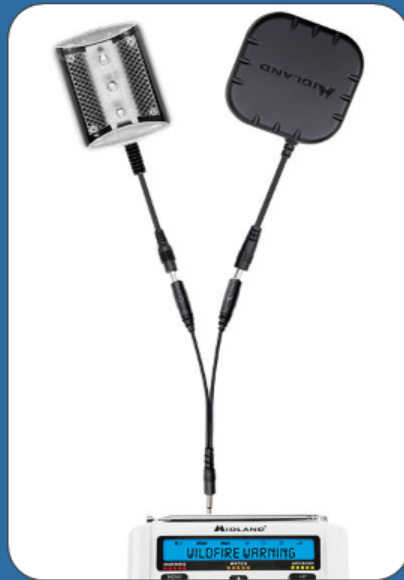
Hurricane Awareness

Includes:
-Lightning
-Severe TS
-Tornadoes
-Flood
-Rip
Currents

weather.gov/wrn/dhh-safety

Weather Safety: NOAA Radio Attachments

Weather Radio Attachments for the **Deaf and Hard of Hearing**



Bundle

Includes white LED strobe light, pillow shaker with clip, Y cable, and 4 AA batteries. Separate red strobe light is available if you prefer.

Compatibility

Attachments are compatible with any weather radio with the Public Alert logo.

Other Information + Where Can I Get These?

Search online for:
Weather Radio Attachments



When you are in the field after a storm, what do you have in your supply kit?

Nobody has responded yet.

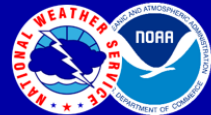
Hang tight! Responses are coming in.



Weather Safety: After an Emergency

Deaf and Hard of Hearing

Ways to Communicate After a Weather Emergency



Flashlight



Pen and paper



Whistle or air horn



Hearing aid with extra batteries



Fully charged cell phone, charger or battery bank



Keep these items inside a water-safe container and bring them with you to your safe place.

Contact information for interpreting services, friends, and family.

Introducing...

Jimmy Peterson

Executive Director

Georgia Center for the Deaf and Hard of Hearing

NWS Atlanta and GCDHH will be collaborate on messaging for Deaf and Hard of Hearing



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**If the representative
from GCDHH has
something to present,
this is their slide(s)**





“Learn ASL”



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Shelter Now



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Tornado & Hurricane



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Emergency



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Watch & Warning



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Flood



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What would you like to see from the NWS that would improve reach to vulnerable/underserved communities?

Nobody has responded yet.

Hang tight! Responses are coming in.



Takeaways for Today

WHY understanding risk & vulnerability is essential

HOW messaging is interpreted by those with auditory and visual challenges

WHAT it looks like to get critical weather & safety info to the DAHH community



Special Thanks

Jimmy Peterson - GCDHH

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Christiaan Patterson - NWS Greenville-Spartanburg

Meaghan Thomas - WKRN News - Nashville



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