



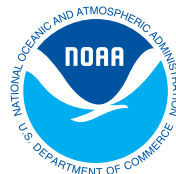
All Hazards
NOAA
Weather Radio
NOAA National Weather Service™

...the voice of the
NATIONAL WEATHER SERVICE



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

October 2007



**American
Red Cross**

What is NOAA Weather Radio All Hazards?

NOAA Weather Radio All Hazards is a round-the-clock source of weather reports and timely hazard information. The NOAA Weather Radio broadcast is known as the “voice” of NOAA’s National Weather Service. NOAA Weather Radio broadcasts are a public service provided by the Department of Commerce’s National Oceanic and Atmospheric Administration (NOAA).

The NOAA Weather Radio system consists of NOAA’s National Weather Service Weather Forecast Office (where the broadcasts originate), a transmission site (station) with antenna tower, and a NOAA Weather Radio receiver in your hand or on your desk at home or in the office.

There are more than 970 NOAA Weather Radio broadcast stations serving the United States, US Virgin Islands, US Pacific territories, Puerto Rico and adjacent coastal waters.

In some areas, the NOAA Weather Radio broadcast may be available in Spanish.

More information can be found at <http://www.nws.noaa.gov/nwr>.

Why do I need a NOAA Weather Radio All Hazards receiver?

When hazardous weather or other life-threatening situations are about to occur in your area, SECONDS can make the difference and ensure your safety. NOAA Weather Radio helps provide that lead-time by alerting you to impending hazards.

The NOAA’s National Weather Service’s vision is to be America’s “no surprise” weather service. Our goal is to provide you with as much lead-time before a hazardous weather-related event occurs and provide you critical information on emergency/life threatening situations.

With early warning from a NOAA Weather Radio receiver you and your loved ones have additional time to take adequate precautions, find shelter, or reach safety. NOAA Weather Radio receivers equipped with an alarm feature can be programmed to sound a tone and give you immediate information about life-threatening situations in your vicinity any time, day or night.

Public safety experts agree NOAA Weather Radio receivers should be standard equipment in every home. They are especially valuable in places entrusted with public safety; including hospitals, places of worship, nursing homes, restaurants, malls, grocery stores, recreation centers, office buildings, sports facilities, theaters, retail stores, bus and train stations, airports, marinas, and other public gathering places.



Legendary comic strip character Mark Trail has rendered an invaluable public service by drawing attention to the dangers associated with flash flooding, tornadoes and hurricanes and the importance of having and listening to NOAA Weather Radio broadcasts. The Mark Trail comic strip created by Jack Elrod is syndicated by King Features.

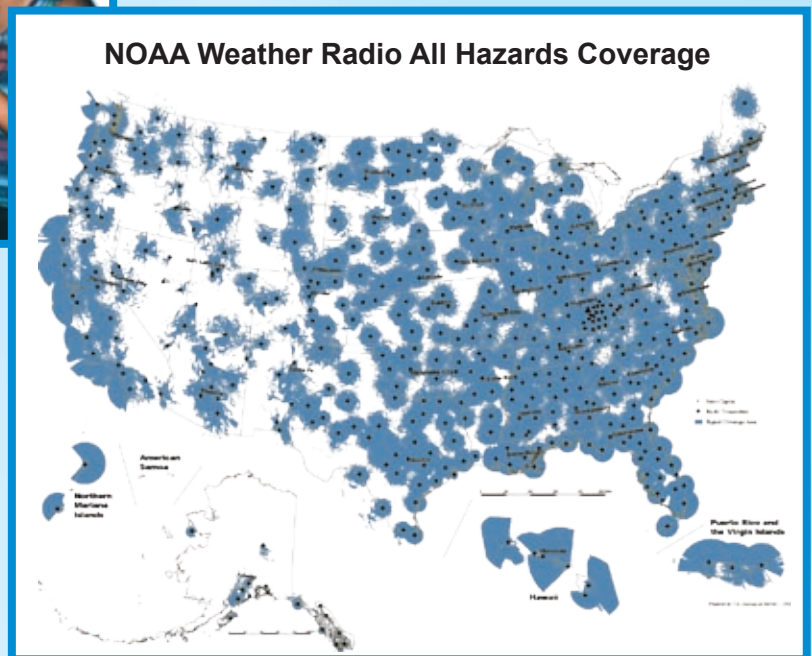
Where can I buy a NOAA Weather Radio All Hazards receiver?

NOAA Weather Radio receivers are available at many retail stores, electronic outlets, department stores, boat and marine accessory businesses and some drug stores. NOAA Weather Radio receivers can be purchased through mail order by telephone or from the Internet.

NOAA Weather Radio receivers come in many sizes and with a variety of functions. The basic NOAA Weather Radio receiver can range in cost from about \$20 to roughly \$100 with various features. High-end specialty NOAA Weather Radio receivers for

commercial applications cost more than \$100 and are well suited for public facilities and emergency management applications. Regardless which NOAA Weather Radio receiver you choose, make sure it can receive all seven NOAA Weather Radio frequencies, has an alert tone feature for emergency notification, and the Specific Area Message Encoding (SAME) feature.

Most NOAA Weather Radios are either battery-operated portables, or AC powered models with battery backup. These NOAA Weather Radios can be used in many different emergency situations at home, at work, outside, or on a boat within range of a NOAA Weather Radio broadcast.



What is Specific Area Message Encoding (SAME)?

SAME allows you to receive alerts only for the areas you choose. Even if you're asleep, you will not be awakened for warnings that are issued several counties away from you. If your radio has the SAME feature, you enter the SAME code for your county or other adjacent counties covered by the local NWR broadcast that you want to receive.

SAME is a key feature of NOAA Weather Radio and lets you utilize our warning system to its fullest potential. SAME codes are available by telephone at 1-888-NWR-SAME (888-697-7263) or on the Internet at <http://www.nws.noaa.gov/nwr/indexnw.htm>.



Is NOAA Weather Radio All Hazard available in my area?

NOAA Weather Radio broadcasts can generally be heard within 40 miles of the nearest NOAA Weather Radio station/transmitter. Many things affect the reception of the broadcast signal. Large bodies of salt water may increase the broadcast range, while forested areas, deserts, and mountains have a tendency to reduce the effective range. Interfering buildings or structures may reduce reception in large cities, while higher locations may enhance reception.

You can determine the NOAA Weather Radio broadcast coverage by checking the station listings and coverage areas on the NOAA Weather Radio website at <http://www.nws.noaa.gov/nwr/nwrbro.htm>

If you are having trouble receiving the NOAA Weather Radio broadcast in your area, here are some steps that may help:

- Attach an indoor or outdoor antenna
- Vary the position of the radio
- Place the radio nearer to a window or on the upper-most floor of your building
- Move it away from other electronic equipment.

Any questions about NOAA Weather Radio reception (or lack thereof) at your location should be sent to the Weather Forecast Office nearest your location. Contact information is provided at <http://www.stormready.noaa.gov/contact.htm>

NOAA Weather Radio All Hazard Frequencies

NOAA Weather Radio stations broadcast on one of seven discrete frequencies to deliver weather and hazard information. During an emergency, NOAA's National Weather Service forecasters interrupt routine NOAA Weather Radio broadcasts by sending out a special tone followed by information on the public emergency.

NOAA Weather Radio Frequencies

162.400 MHz
162.425 MHz
162.450 MHz
162.475 MHz
162.500 MHz
162.525 MHz
162.550 MHz

NOTE: If a NOAA Weather Radio receiver is moved from one location to another the frequency may need to be changed to continue to receive broadcasts. A few NOAA Weather Radio receiver models feature an automated channel/signal search function to find another usable signal when the current signal is out of range. Signal loss or fades may be experienced in large cities where signals may be blocked by buildings, in mountainous regions and valleys, and when transiting through valleys, marginal or no broadcast coverage. Be aware your system may also have SAME codes pre-programmed that are fine for home or office but not for your trip or new location. Be sure to check the NOAA Weather Radio web page(s) mentioned for the frequency and coverage information you need for your hike, trip, travels, etc.



Partnering for a Safer Future



Emergency preparedness begins with you.



If you are not receiving NOAA Weather Radio broadcasts in your area, it may be due to terrain features or manmade structures in the path of the signal, or other conditions of nature that prevent signal reception. It could also be because there is no NOAA Weather Radio transmitter serving your area. While the National Weather Service has met its goal to provide NOAA Weather Radio broadcast service to at least 95 percent of the National population, there are still areas in the country that are not yet covered/within range of a NOAA Weather Radio station. Our network expansion program continues to provide new or upgraded transmitters in many locations around the country. This expansion effort is aided by the actions of local and state governments, local businesses, and civic organizations as they partner with NOAA's National Weather Service. Through written agreements, these public and private partners purchase and install NOAA Weather Radio transmitters in areas currently without service. Additional information on the Internet can be found at <http://www.nws.noaa.gov/om/all-haz/all-haz5.htm>.

For information about developing a partnership agreement with NOAA's National Weather Service, please contact your local Weather Forecast Office.

Is Your Community StormReady?

To help Americans prepare for the ravages of hazardous weather, the National Weather Service has designed StormReady, a program aimed at arming America's communities with the communication and safety skills necessary to save lives and property. More information is available at www.nws.noaa.gov/stormready.

**StormReady**
NATIONAL WEATHER SERVICE®



What is “All Hazards” Messaging?

In addition to present weather conditions, forecasted weather, advisories, watches and warnings issued by NOAA’s National Weather Service, broadcasts over NOAA Weather Radio may include non-weather related hazards/emergency information.

Working with other Federal agencies and using the Federal Communications Commission’s (FCC) Emergency Alert System (EAS), NOAA Weather Radio is an all hazards dissemination radio network, making it the single source for the most comprehensive weather and emergency information available to the public.

Examples of non-weather events include:

- Toxic chemical incidents
- Nuclear power plant accidents
- Forest or brush fires that threaten your community
- Amber Alerts
- Local and/or national alerts as deemed appropriate by emergency authorities
- Post event information in certain situations.



Non-Weather Related Emergency Message

NOAA’s National Weather Service Weather Forecast Offices have pre-arranged agreements with emergency managers to facilitate the receipt and transmission of emergency non-weather related messages. Typically, your local Weather Forecast Office will receive an alert directly from a local or state government official or emergency management agency representative, then interrupt the NOAA Weather Radio broadcast using the special alert tone and SAME codes.

Planning for Disaster

All family members should be aware of and prepared in the event an emergency or life-threatening situation occurs. Whether you or they are at school, work, home or on vacation, a plan of action is needed. The action plan should answer the questions:

- What do I need?
- Whom do I call?
- Where should I go?

Plans should be updated, discussed, and practiced at least annually so everyone understands.

Having a NOAA Weather Radio receiver to monitor changes in the weather and emergencies in the area should be an integral part of every plan. When HAZARD or EMERGENCY messages are sent by official agencies, a NOAA Weather Radio receiver will keep you informed.

Severe weather information is available at <http://www.nws.noaa.gov/om/severeweather/index.shtml>.

Available publications on weather-related threats can be found at <http://www.nws.noaa.gov/om/brochures.shtml>.



Weather and Warnings for People Who are Deaf or Hard of Hearing

People who are deaf, hard of hearing, or visually impaired can be alerted to severe weather and other hazards by special devices connected to the NOAA Weather Radio receiver. These attention-getting devices may include strobe lights, bed-shakers, and even sirens. These devices, once activated, should prompt the user to go to their normal source of news and/or information for further details.

With the SAME feature, external alarms can be programmed for activation when warnings are issued for a particular county and event.

Some NOAA Weather Radio receiver models provide a limited caption-like front message display (TORNADO WARNING, FLASH FLOOD WARNING, etc.). These models can give deaf and hard of hearing individuals basic information regarding the nature of the event or emergency.

For more information go to: http://www.nws.noaa.gov/nwr/special_need.htm

Tornado

A tornado is a violently rotating column of air that is in contact with the ground. Waterspouts are tornadoes that occur over water. Tornadoes are produced by severe thunderstorms and are sometimes accompanied by hail.

Tornadoes are classified according to the damage caused using the Fujita Scale **. The majority of tornadoes produced are between F0 (weak; lasting 5-10 minutes) and F3 (strong; lasting 20+ minutes). Only 2% of all tornadoes that occur in a given year are F4 or F5 (violent; lasting 60+ minutes).

Each year about 1000 tornadoes touch down in the United States. Only a small number actually strike occupied buildings. One of the most important things you can do to prevent being injured when a tornado occurs is to be alert to the onset of severe weather. Listen to NOAA Weather Radio.

Tornado brochure can be found on the Internet at <http://www.nws.noaa.gov/om/brochures/ttl.pdf>

**<http://www.spc.noaa.gov/faq/tornado/f-scale.html>



Wildfire

Wildfires can occur from lightning strikes, carelessly tossed cigarettes or matches, unattended campfires, stoves, or stray sparks from a passing vehicle or a faulty electrical device.

Weather is one of the most significant factors in determining the severity of wildfires. The spread rate and intensity of these fires is directly related to the wind speed, temperature, and relative humidity. Seasonal conditions also play a major role.

As information is made available to NOAA's National Weather Service, NOAA Weather Radio provides you with up-to-date information on fires in your area.

See this website for seasonal information: http://www.firewise.org/resources/peak_fire_seasons/index.html



Severe Thunderstorms



Thunderstorms may produce tornadoes, cloud-to-ground lightning, strong winds, flash flooding and hail. Of the 100,000 thunderstorms that occur each year in the United States, about 10 percent are classified as severe.

A thunderstorm is severe if it produces hail of at least $\frac{3}{4}$ " in diameter; winds of 58 mph or stronger; or a tornado.

When conditions are favorable for severe thunderstorms, a severe thunderstorm WATCH is issued on NOAA Weather Radio. A WARNING is issued for areas where severe thunderstorms are highly likely, imminent, or occurring. A WATCH means it's time to prepare for the possibility of severe weather. A WARNING means take action now.

The "Thunderstorm, Tornado and Lightning" brochure can be found on the Internet at <http://www.nws.noaa.gov/om/brochures/ttl.pdf>

Flash Flood

Flash floods are the #1 cause of death associated with thunderstorms.

The two key elements for a flash flood are intensity and duration of the storm. In other words, how hard has it been raining? and for how long? Heavy rains from thunderstorms, hurricanes and tropical storms can cause flash floods (sometimes miles away from the rain event) depending on the location and terrain.

Water levels in gullies and ditches can rise from a meager trickle to heights of 30 feet in seconds given the right terrain conditions. Furthermore, flash flood-producing rains can trigger mud slides.

Keep aware of your surroundings and listen to NOAA Weather Radio. If a Flash Flood Warning is issued for your area, immediately move to higher ground. Never drive through a flood. Most flash flood deaths occur when people get trapped in their vehicles.

Internet links on flooding;

http://www.nws.noaa.gov/om/brochures/Floodsbrochure_9_04_low.pdf

<http://www.nws.noaa.gov/om/brochures/InlandFlooding.pdf>



Marine Safety/ Warnings

Marine Forecast and warning products produced by NOAA's National Weather Service are issued for four marine areas: Coastal Water; Offshore Waters; High Seas; and Great Lakes. Warnings are issued for strong winds (e.g., gale, storm, hurricane-force), hazardous impacts from thunderstorms (wind and hail), waterspouts, tropical storms, and hurricanes.

NOAA Weather Radio broadcasts (within the range of respective transmitters) marine forecasts, warnings, and other valuable marine information over coastal waters and Great Lakes regions of the United States. For detailed information on the dissemination of marine forecasts and warnings; links to current products and marine publications; and websites of NWS Weather Forecast Offices and Centers go to <http://www.nws.noaa.gov/om/marine/home.htm>



Winter Storms

Winter storms are considered deceptive killers because most deaths are indirectly related to the particular weather event. Deaths occur due to traffic accidents on icy roads, heart attacks while shoveling snow, or hypothermia from prolonged exposure to cold.

Keep ahead of the storm by listening to NOAA Weather Radio for the latest winter storm watches, warnings and advisories. To learn how to prepare for severe winter weather at home, at work, in vehicles, in the city and on the farm, go to <http://www.nws.noaa.gov/om/brochures/wntrstm.htm>.





Hurricane

A hurricane is an intense tropical weather system of strong thunderstorms with a well-defined surface circulation and sustained winds of 74 mph or greater.

Hurricanes are categorized according to the strength of their winds using the Saffir-Simpson Hurricane Scale**.



Each year an average of 10 tropical storms will develop over the Atlantic Ocean, Caribbean Sea or Gulf of Mexico. Six of these will become hurricanes. Most remain over water. On average, five hurricanes strike U.S. coastlines in a three-year period. Of these five, two will be major hurricanes (Category 3; winds 110-130 mph and storm surge of 9-12 ft).

Stay aware of the weather by using either a marine radio or NOAA Weather Radio receiver.

Several publications on hurricanes are available on the Internet at <http://www.nws.noaa.gov/om/brochures.shtml>

** http://www.nhc.noaa.gov/HAW2/english/basics/saffir_simpson.shtml

What to Listen for...

| | Watches | Warnings |
|-------------------------------------|--|--|
| Severe Thunderstorm | "Severe thunderstorms are possible in your area." | "A severe thunderstorm is imminent or has been indicated by Doppler radar or reported by storm spotters." |
| Tornado | "Tornadoes are possible in your area. Remain alert for approaching storms." | "A tornado is imminent or has been indicated by Doppler radar or reported by storm spotters. Move to your pre-designated place of safety immediately!" |
| Flash Flood or Flood | "Flash flooding is possible in your area." | "Flash floods are occurring or imminent. Take necessary precautions immediately." |
| Winter Storm | "Hazardous winter weather conditions, such as heavy snow and/or ice are possible in your area." | "Hazardous winter weather conditions are forecast to occur within 12 hours or are about to begin in your area. Stay indoors." |
| Hurricane or Typhoon | "Hurricane conditions are possible in the specified area of the watch, usually within 36 hours." | "Hurricane conditions are expected in the specified area of the warning, usually within 24 hours. Complete storm precautions and evacuate if directed by officials." |
| Other Hazards or Emergencies | | "The (official agency) has reported a (hazard event) affecting the following areas: (a list/location follows)." |

Report transmitter outages at : nwroutage@noaa.gov or (888)886-1227

Use the above e-mail or phone number to report dead air on your local NWR frequency or to report the failure to hear a weekly test (Wednesdays between 10:00 a.m. and noon, local time)



Family Disaster Plan

Prepare for hazards that could affect your area with a family disaster plan. Where will your family be when disaster strikes? They could be at work, school or in the car. How will you find each other? Will you know if your children are safe? Disaster may force you to evacuate your neighborhood or confine you to your home. What would you do if basic services—water, gas, electricity or telephones—were cut off?

Steps to Take

I Gather information about hazards. Contact your local National Weather Service office, emergency management office, and American Red Cross chapter. Find out what type of disasters could occur and how you should respond. Learn your community's warning signals and evacuation plans. Assess your risks and identify ways to make your home and property more secure.

II Meet with your family to create a disaster plan. Discuss your plan with your family. Pick two places to meet: a spot outside your home for an emergency, such as fire, and a place away from your neighborhood in case you can't return home. Choose an out-of-state friend as your "family check-in contact" for everyone to call if the family gets separated. Discuss what you would do if advised to evacuate.

Implement your plan.

- III 1** Post emergency telephone numbers by the phone.
- 2** Install safety features in your house, such as smoke alarms and fire extinguishers.
- 3** Inspect your home for potential hazards (items that can move, fall, break or catch fire) and correct them.
- 4** Have your family learn basic safety measures, such as CPR and first aid; how to use a fire extinguisher; and how and when to turn off water, gas and electricity in your home.
- 5** Teach children how and when to call 911 or your local Emergency number.
- 6** Keep enough supplies in your home for at least 3 days. Assemble a disaster supplies kit. Store these supplies in sturdy, easy-to-carry containers, such as backpacks or duffle bags. Keep important documents in a waterproof container. Keep a smaller disaster supplies kit in the trunk of your car.

A Disaster Supplies Kit Should Include:

- | | | |
|--|---|--|
| ■ A 3-day supply of water (one gallon per person, per day) | ■ One blanket or sleeping bag per person | ■ Emergency tools |
| ■ Non-perishable food | ■ First-aid kit | ■ Flashlight, extra batteries |
| ■ One change of clothing and shoes per person | ■ Battery-powered NOAA Weather Radio and a portable radio | ■ Extra set of car keys and a credit card or cash |
| ■ Prescription & non-prescription medicines | | ■ Special items for infant, elderly or disabled family members |

IV Practice and maintain your plan. Ensure your family knows meeting places, phone numbers and safety rules. Conduct drills. Test your smoke alarms monthly and change the batteries at least once each year. Test and recharge your fire extinguisher(s) according to manufacturer's instructions. Replace stored water and food every 6 months. Contact your local National Weather Service office, American Red Cross chapter or emergency management office for a copy of "Preparing for Disaster" (Red Cross A4600/FEMA475).

LOCAL SPONSORSHIP: