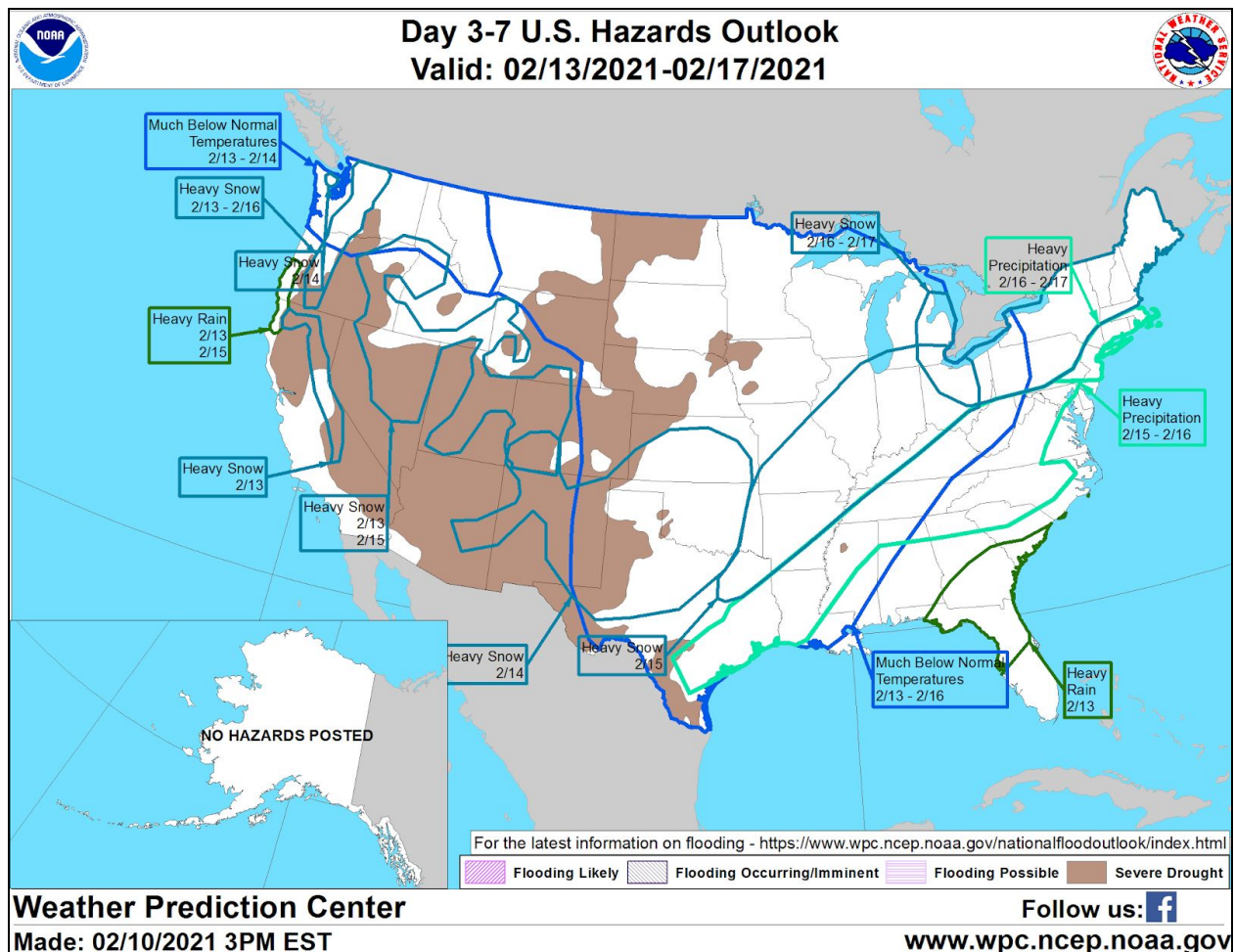


KEY MESSAGES For February 2021 Arctic Air Mass

Document initiated by CR-ROC at 11:00 am CT 2021-02-11

The purpose of this document is to support consistent hazardous climate and weather messages across the NWS Central Region ahead of and during significant events. Many thanks to the USDA, Midwest Climate Center and NCEI for providing information and impacts.

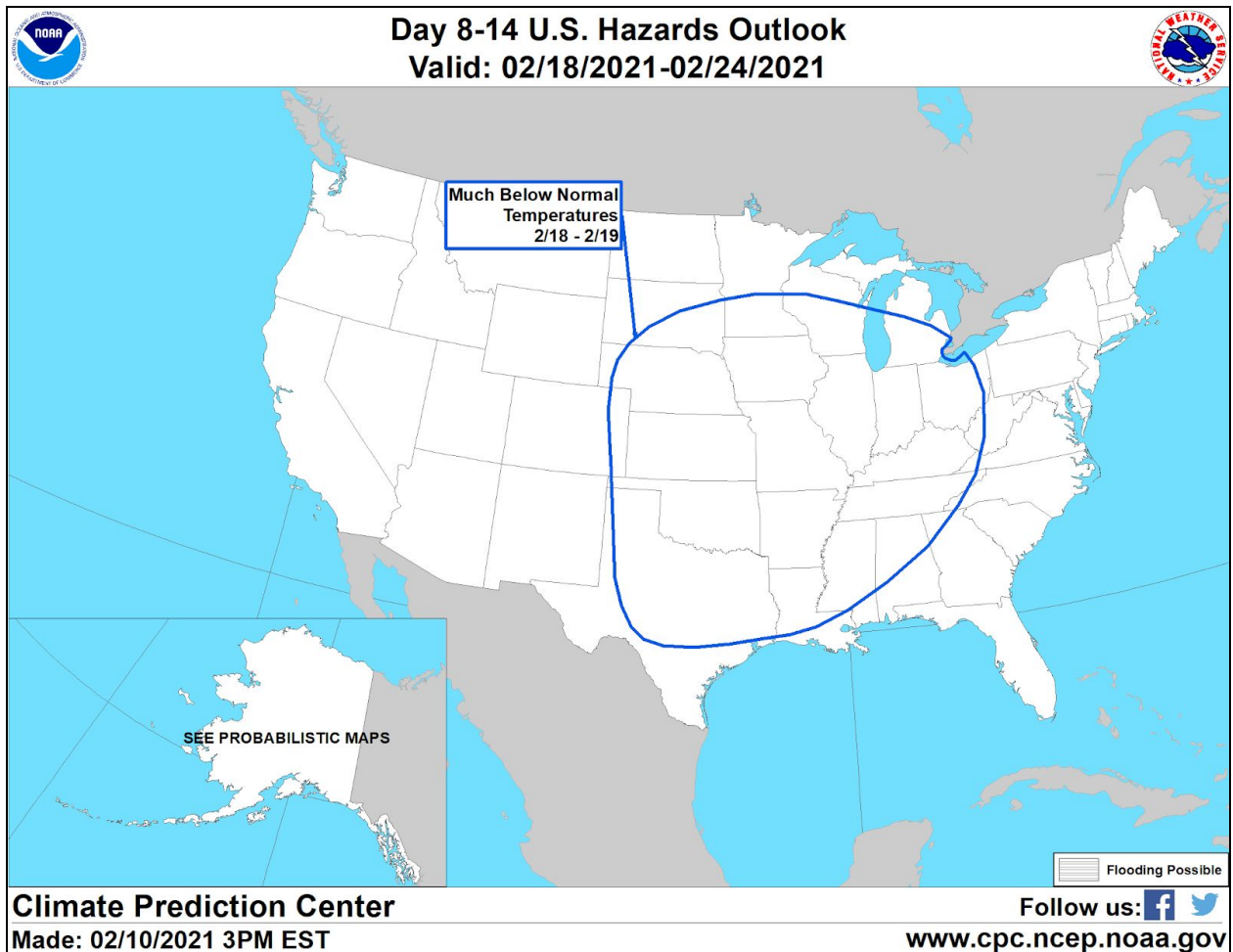
Key Messages



February 13-17, 2021

- A deeply entrenched arctic air mass will continue to bring widespread below to much below normal temperatures (25-45 degrees below normal) to many sections of the lower 48 through most of the period. Many near or record-breaking low maximum temperatures are expected late this weekend into early next week.
- Temperatures will remain below zero over the Northern Plains this weekend. Sub-zero low temperatures will extend as far south as parts of the Texas Panhandle and eastward into Wisconsin and northern Michigan/Illinois through Monday, with single digits reaching the Texas/Mexico border and into the Northeast. Temperatures will begin to moderate some by Wednesday.

- Any winds will exacerbate the very cold air mass, leading to dangerously low wind chills for much of this area. This arctic air mass will not entirely spare the western states as cold air settles over the Pacific Northwest where much below normal temperatures are also expected this weekend.



February 18-19, 2021

- An anomalous cold spell will persist throughout most of the Plains, Ohio Valley and Middle Mississippi Valley. The highest risk for the coldest temperatures will settle across the Central Plains and Great Lakes.
- There is the potential for record breaking overnight lows reaching as far south as the Middle Mississippi Valley during this time period.
- Combined temperatures and winds will result in wind chills well below -20 degrees across a large part of the Plains and into the Great Lakes regions during this time period. There is also the potential for locations across the Northern Plains to have wind chill values below -40 degrees.
- There are signs that warmer temperatures are possible across the Great Plains and Mississippi Valley after February 20.

Prolonged Cold Impacts

Why is extreme cold so dangerous?

For People: Extremely cold air comes every winter and affects millions of people across the United States, and this is the first time we've experienced such a prolonged stretch of cold air so far this winter season. The arctic air together with brisk winds, can lead to dangerously cold wind chill values. People exposed to extreme cold are susceptible to [frostbite](#) in a matter of minutes. Areas most prone to frostbite are uncovered skin and the extremities, such as hands and feet. Hypothermia is another threat during extreme cold. [Hypothermia](#) occurs when the body loses heat faster than it can produce.

For Animals: Although most livestock are well adapted to cold weather, severe wind and cold can cause significant problems for livestock and their owners. Under extreme winter storm conditions, simple shelters alone may not be effective in protecting livestock. There will also be an increased stress on calving operations due to this cold weather. Most domesticated animals are not equipped to handle extreme temperatures for long periods.

For Infrastructure: Prolonged cold can increase the soil frost depth penetration, resulting in frozen pipes and frost heaving on area roads and structures. There will also be very heavy energy use and energy production. Cold weather is especially hard on car batteries and can take up to twice as much current to start an engine compared to under normal conditions.

For rivers: Extreme cold and especially the duration of extremely cold air can lead to river ice formation and river ice thickening. This increased ice formation could cause some localized flooding concerns. An additional concern is if sufficient river ice ultimately remains in place into March, then any quick warm-ups that occur could lead to quick ice and snowmelt (where snow is present). If any significant rainfall events occur, then the combination of river ice in place, snowmelt runoff and rain runoff could potentially lead to significant river ice-breakup jamming and flooding.

Who's most at risk?

Victims of hypothermia are often:

- Older adults with inadequate food, clothing, or heating
- Babies sleeping in cold bedrooms
- People who remain outdoors for long periods—the homeless, hikers, hunters, etc.
- People who drink alcohol or use illicit drugs.
- Animals without adequate/warm shelter. [More info](#) courtesy of the state of New Jersey on protecting livestock.

Preparing for cold weather

- **Check the forecast at [weather.gov](#)** or your favorite weather app, station, etc. Make checking the forecast part of your regular routine so you'll know when to expect cold weather.

- **Adjust Your Schedule:** If possible, adjust your schedule to avoid being outside during the coldest part of the day, typically the early morning. Try to find a warm spot for your children while waiting for the school bus outside.
- **Protect Your Pets, Livestock and other Property:** If you have pets or farm animals, make sure they have plenty of food and water, and are not overly exposed to extreme cold. Provide warm bedding during extremely frigid weather as warm bedding is essential for all livestock. Heavy rain or snow also can make the air cold and moist. Make sure that there is adequate bedding for each animal whether it gets used or not. Replace it when needed.
- **Take precautions** to ensure your water pipes do not freeze. Know the temperature thresholds of your plants and crops.
- **Fill up the tank:** Make sure your car or vehicle has at least a half a tank of gas during extreme cold situations so that you can stay warm if you become stranded.
- **Dress for the outdoors** even if you don't think you'll be out much.
- **Update Your Winter Car Survival Kit:** Make sure your car survival kit has the following:
 - Jumper cables: flares or reflective triangles are great extras
 - Flashlights: Replace the batteries before the winter season starts and pack some extras
 - First Aid Kit: Also check your purse or bag for essential medications
 - Baby, special needs gear: If you have a baby or family member with special needs, pack diapers and any special formula or food
 - Food: Stock non-perishable food such as canned food and a can opener, dry cereal and protein rich foods like nuts and energy bars
 - Water: Have at least 1 gallon of water per person a day for at least 3 days
 - Basic toolkit: Pliers, wrench, screwdriver
 - Pet supplies: Food and water
 - Radio: Battery or hand cranked
 - Cat litter or sand: For better tire traction
 - Shovel: To dig out snow
 - Ice scraper: Even if you usually park in a garage, have one in the car.
 - Clothes: Make sure you dress for the weather in warm clothes, gloves, hat, sturdy boots, jacket and an extra change of clothes for the cold
 - Warmers: Pack extra for body, hands, feet
 - Blankets or sleeping bags: If you get stranded in traffic on a lonely road, you'll be glad to have it.
 - Charged Cell Phone: Keep a spare charger in your car as well

Additional Links

CDC: [Tips to Prevent Hypothermia & Frostbite](#)

FEMA: [Winter Weather Safety Social Media Toolkit](#)

NWS: [Cold Safety Page](#)