WINDSTORMS
in the Pacific Northwest

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Although we (thankfully) escape the threat of hurricanes, Oregon and the Pacific Northwest are no strangers to strong and damaging winds. Each fall and winter, multiple Pacific low-pressure systems impact the Pacific Northwest producing strong winds up to 60 mph, and causing damage and power outages, according to the National Oceanic and Atmospheric Administration, *National Weather Service*.

Most recently, in February of 2002, a sudden and strong windstorm caused as much as 30 million dollars in damages in Western Oregon and resulted in a Presidential Disaster Declaration for five Oregon Counties. The storm brought a two to three hour period of high winds that was classified by the National Weather Service as "explosive cyclogenesis" – a cyclone where surface barometric pressure is falling at a rapid rate. Wind gusts were strongest near the coast, where they ranged from 75 to more than 100 miles per hour, while gusts ranging from about 40 to 70 miles per hour were reported further inland. Power was out in some parts of the state for nearly a week.

Colton Road, near Junction City, February 7, 2002. Photo by Tyree Wilde.

Van Buren Street Bridge, Corvallis, October 1962. OSU Archives.

40th Anniversary of the Columbus Day Storm

Forty years ago on Columbus Day, October 12, 1962, the strongest non-tropical windstorm ever to hit the lower 48 states in recorded American history struck the Pacific coast. Originally referred to as "Typhoon Frieda," an extra tropical cyclone later named the "Columbus Day Storm," claimed 46 lives, injured hundreds more, and knocked power out for several million people. The storm was 1,000 miles long and 125 miles wide and for two hours it pummeled Benton County and Western Oregon. Wind gusts were officially recorded in Corvallis at 127 mph … before the wind gauge went out of service. Trees and power lines were downed everywhere and Corvallis's Avery Park was impassable for weeks.

[1] Information credits: 2002 "Windstorms" brochure, **National Oceanic and Atmospheric Administration, *National Weather Service* and Washington State Military Department, *Emergency Management Division;* Oregon Emergency Management** and **FEMA** "*Reducing Windstorm Damage to Property and Electrical Utilities*," Excerpts from a March 11, 1993 address to Oregon Building Officials by **Patrick D. Lewis, BCA**; **Corvallis Parks and Recreation;** and **Benton County Office of Emergency Management and Search and Rescue**.

The Columbus Day Storm is considered the benchmark of all windstorms, against which all others are compared. The storm struck northern California in the early morning, moved quickly north along the Oregon and Washington coasts during the day before dissipating in British Columbia that night. Wind speeds peaked along the Oregon coast, with sustained winds of 150 mph and gusts up to 179 mph reported from Cape Blanco, and gusts to 138 mph at Newport, Oregon. Many wind reports were lost because of power outages, with peak winds likely occurring after the power was out.

Photo of Avery Park after the Storm, Courtesy of Corvallis Parks and Recreation.

The Columbus Day storm packed hurricane-force winds causing $235 million in property damage ($1.4 billion in 2001 dollars). In addition, it blew down over 15 billion board feet of timber (valued at $750 million in 1962 dollars!) from the west coast to as far inland as western Montana.

City of Eugene. Trees and utility lines downed by wind, February 7, 2002. Tyree Wilde, National Weather Service.

What to Do?

The 1962 Columbus Day and February 7, 2002 storms are only two of many memorable and damaging Western Oregon wind events. Given that we can anticipate and are vulnerable to future sudden and severe windstorms, it makes sense to do what can be done to minimize the injury and damages and to plan for disruptions in electrical power. Many measures are simple, inexpensive and are proven to be effective.

First, here are some of the things that are known from experience about windstorm damages:

Isolated tree in Sweet Home area snapped by wind, February 7, 2002. Tyree Wilde, National Weather Service.

Some Facts About Windstorms

- Falling trees or blowing debris cause most fatalities and cause severe damage to buildings and vehicles.
- Power pole and line damage cause widespread power outages.
- Failure of roof cover and structures can lead to additional damage and entry of wind and rain into a home or business.
- Garage doors are the weakest point in the outer structure of a house.
- Exterior, load-bearing walls of buildings can fail resulting in collapse of the roof.
- Weathered, loose window frames are exceptionally vulnerable during severe windstorms.
- Light metal buildings can totally collapse. Less sturdy shelters, such as bus stop shelters, are vulnerable and are probably not safe for taking cover.
- While a structure may be generally sound, broken windows can cause injures inside and outside the building and extensive damage to building contents.

Before a Windstorm 

- Assemble a disaster supplies kit. It should be portable and prevent water and pest damage.
- If you have a home generator, be sure you know how to properly site it, operate it, and store any needed fuel. Review instructions, inspect and test your generator before storm season arrives.
- Organize your neighborhood. The Linn-Benton Neighborhood Emergency Training Program ("LB NET") teaches tips and techniques and provides neighbors with resource materials for emergency preparedness and neighborhood emergency response. Call 766-6864 to schedule a presentation. No charge, flexible scheduling to include evenings and weekends.
    - Create a family emergency preparedness kit.
    - Discuss and conduct emergency drills with your family in your home.
    - Complete a home safety evaluation and take steps to make your home and neighborhood safer *before* the storm occurs.
    - Identify who in your neighborhood may need special assistance.
    - Determine what your neighborhood resources may be to help each other in an emergency.

During a Windstorm 

- Above all, don't panic. Take quick action to protect yourself and others.
- Turn off the stove if you're cooking when the power goes out, and turn off other gas appliances.
- If you are indoors, move away from windows or other objects that could fall, and stay on lower floors in a multi-story home.
- If you are outdoors, move into a building and away from trees, power poles and other objects that could fall. Stay away from any downed power or utility lines.
- If you are driving, pull off the road and stop away from trees or power poles. If possible, walk into a safe building.
- Listen to your car or battery powered-radio for emergency instructions.

After a Windstorm 

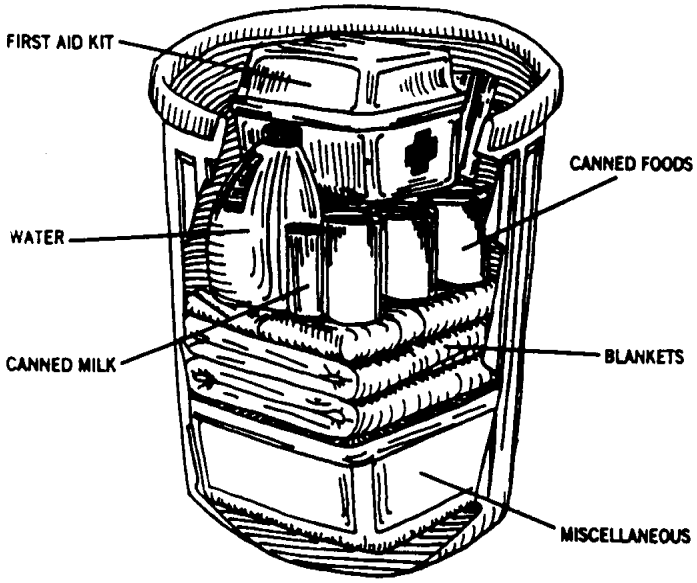
- Check yourself and those around you for injuries.
- If you can do so without delay, put on a coat, sturdy shoes, leather gloves protective eyewear and a helmet (safety helmet, bicycle or motorcycle helmet). These items will help to protect you as you evacuate and if you go to help others.
- Carefully evacuate damaged buildings. Watch for dangerous broken objects and falling debris.
- Provide assistance to others if you can do so, especially the elderly, disabled or small children.
- Monitor your battery-operated radio or weather radio. Radio stations will broadcast what to do, the location of emergency shelters, medical aid stations and the extent of the damage.

Disaster Supply Kit

Now is the time to check the contents of your disaster supply kit or assemble one if you do not already have one. It is also a good idea to keep a smaller version in each vehicle.

A 3-day home emergency kit should contain:

- One gallon of water per person, per day (a 3-day minimum).
- Non-perishable food for each person – foods that require no refrigeration, cooking or preparation.
- Keep a 7-day supply of vital medications on hand at all times. Keep an up to date list of all medications, dosages, prescribing physicians and medical conditions in your disaster kit.
- First aid kit including bandages, scissors, latex gloves, sterile bands, sterile roll bandages, tweezers, petroleum jelly, cleansing agents, antiseptic ointment or spray, ACE bandages, and a first aid booklet.
- Toilet paper, feminine supplies, plastic garbage bags and ties, infant supplies, soap and personal hygiene items.
- Unscented household bleach to purify additional water.



- Tools and supplies including cooking/eating utensils, some cash, fire extinguisher, pliers, compass, aluminum foil, flares, wrench to shut off utilities, flashlight and extra batteries, chemical lights or "light sticks" (no fire hazard), non-electric can-opener, matches (be careful here, matches and candles pose a fire hazard), pencil and paper, whistle, shelter tarps, dust mask and work gloves.
- Battery-operated radio and NOAA Weather Radio with a tone alert.
- Sleeping bag, blankets and at least one change of clothing and footwear for all household members.
- Keep important family documents in a waterproof container in your home and keep copies in your disaster kit.
- Remember provisions for your pets, including a pet carrier.
- Maintain and know how to use a fire extinguisher.

For more information, contact:

Benton County Emergency Management and Search & Rescue, 541.766-6864, www.co.benton.or.us/sheriff/ems/index.htm
Washington State Military Department, Emergency Management Division, www.wa.gov/wsem
National Oceanic and Atmospheric Administration, www.noaa.gov
National Weather Service, www.nws.noaa.gov
Oregon Emergency Management, http://www.osp.state.or.us/oem/index.htm
Federal Emergency Management Agency, www.fema.gov