

WOOD SMOKE

Background:

Wood smoke consists of a complex mixture of gases (such as carbon monoxide and nitrogen oxides) and very small particles harmful to human health. Dark or smelly wood smoke is the result of incomplete combustion and an inefficient stove. Wood smoke production is greatest when a stove's air supply is restricted, creating a smouldering, smoky fire.

High concentrations of wood smoke can cause serious local air quality problems. Hazardous smoke particles are small enough to seep around closed doors and windows or to pass through ventilation system intake filters. These tiny particles are breathed deep into the lungs, carrying on them chemicals that are hazardous to long-term health.

Long-term exposure to wood smoke can lead to eye and throat irritation, headaches and respiratory illness. Even healthy individuals are at risk, but people with pre-existing heart and respiratory disease such as asthma, the elderly, and children are particularly vulnerable.

What you can Do:

Reduce your wood consumption by 25% and burn cleaner by seasoning it (letting the wood dry out for at least 6 months) before you burn.

- Cut your wood in late winter or early spring at least 6 months before the heating season. Don't forget to shelter your wood from the weather.
- Do not store wet wood in the house. This will increase relative humidity in your house and mold and mildew in the home.
- Smaller pieces of wood burn cleaner because they have more surface area exposed to the flame.
- Keep a good supply of very dry wood for kindling.
- Wood should not sizzle when burned.

For the sake of your and your neighbours' health, **NEVER burn:**

- Fresh cut or "green" wood (such as brush and yard trimmings)
- Pressure-treated or painted wood
- Driftwood
- Particle board or plywood
- Garbage
- Plastic
- Cardboard
- Coal

Improve wood stove efficiency, reduce harmful smoky emissions and save your money!

- **Match the size of your stove to the size of your home.** Smaller stoves generally burn cleaner and use less fuel because of their higher operating temperatures.
- **Look for EPA or CSA certification.** The Canadian Standards Association emission standard (CSA B415) for wood stoves, inserts and small fireplaces recommends that emission levels of wood stoves manufactured in Canada meet or exceed US Environmental Protection Agency (EPA 1990) standards. Stoves meeting EPA standards are sold throughout Atlantic Canada. They are more efficient, completely burn pollutants before they leave the firebox, and cut smoke emissions by as much as 90%.

- **Choose your wood stove location wisely.** Locate your stove where you spend most of your time. Stoves located in the basement result in poor heat distribution, excessive wood use and greater heat loss out of the basement, especially if it is poorly insulated. Basement stoves also are more likely to back-draft than stoves located on the main level.
- **Install your stove safely.** Follow the manufacturer's instructions on clearances and connections. Your installation must also conform to local building and fire safety codes as well as CSA safety standards. Talk to your fire department or building inspector before installation. Notify your household insurer in order to maintain coverage and avoid disputes after installation. Insist that your installer is certified by the WETT (Wood Energy Technical Training) program, Canada's only system for training and recognizing professional competence in the field of residential wood burning.
- **Monitor your stove's performance.** The smoke should burn above the main fire in a yellow/blue turbulent flame. Dull, steady flames, on the other hand, are a sign of oxygen starvation and incomplete combustion. Unburned gases either leave the chimney as air pollution or condense in the chimney as creosote. Excessive smoke from a chimney is another sign of poor combustion. Some smoke may be visible when you first light the fire, but for the remainder of the burn, the flue gases should be almost invisible.

Better Open (Outdoor) Burning:

- Open burning releases toxic chemicals directly into the air we breathe at ground level in our neighbourhoods. Chose to chip and compost yard waste instead.
- When multiple burns occur in a community, they can pollute an entire area for days. This is especially true when burning takes place on calm days with no wind or when there is a temperature inversion (when warmer upper air acts like a lid to hold surface air and smoke near the ground). Inversions most commonly occur in the fall and winter, but is also common overnight and early in the morning during clear and calm conditions any time of the year.
- Because hazardous chemicals are not diluted on calm days, they can build up and remain in the air we breathe for long periods, increasing the risk for health effects and reducing visibility.
- People and neighbourhoods are often right in the middle of smoke plumes, so be considerate of your neighbours and follow these guidelines for burning:
 - **Be Aware of the Regulations:** Many municipalities have by-laws banning open burning. Otherwise, follow provincial regulations. Fire season is between April 16 and October 31. Call **1-866-458-8080** to find out if fires are allowed in your county on the day you wish to burn.
 - **Never start a fire late in the afternoon** as smoke tends to settle near the ground as the air cools at night.
 - **Do not start fires with diesel or other fuel.**
 - **Never burn prohibited materials. (Listed above)**
 - Stay with the fire at all times.
 - See New Brunswick's Policy on Open Burning (Follows).