

**If you're  
burning  
garbage,  
you're  
making  
poison.**

*"We've been  
doing it for  
generations,  
so what's the  
big deal now?"*

Burning garbage in your backyard—whether done in a traditional burn barrel, wood stove, fire-pit, or at the cabin—is far more harmful to your, health, our health, and the environment than previously thought.

## Backyard garbage burning can affect your health

### Garbage has changed

Until a few decades ago, burning garbage in the backyard was much less dangerous to your health. Fifty years ago, most household garbage contained only untreated paper, wood, and glass. Today's garbage contains paper, plastics, and other types of packaging waste that release a hazardous mixture of carcinogens and other toxics (such as lead, mercury, and arsenic) when burned. Even seemingly harmless items, like paper, mail, packaging, and cardboard boxes used for frozen pizzas and vegetables, can give off toxic emissions.

### Smoke

Pollution created by backyard garbage burning increases the health risk to those exposed directly to the smoke, which is an irritant that especially affects people with sensitive respiratory systems, as well as children and the elderly. Exposure to smoke can also increase the risk of heart disease, cause rashes, nausea, and headaches.

### Dioxin

But the health concerns go well beyond those who are directly exposed—to those indirectly exposed to these toxic chemicals through their food. Among the health risks posed by backyard burning, dioxin—a known, potent human carcinogen and endocrine disrupter—is the main concern. Dioxin can have significant impacts on human immune, developmental, and reproductive systems. Dioxin exposure is especially harmful for children, pregnant women, and the elderly.

In Minnesota, dioxin is of particular concern since a recent survey shows that 45 percent of rural Minnesota residents still burn their garbage (*see our website*). Because burn barrels are more common in the rural, agricultural areas of the state, there is particular concern about high levels of dioxin settling on crops and in our streams and lakes—and eventually

winding up in the food we eat. Dioxin produced by backyard burning is deposited on plants, which in turn are eaten by animals. When people eat meat and dairy products, the dioxin is also absorbed. In fact, over 90 percent of all human dioxin uptake comes from meat and dairy consumption.

The EPA has been conducting exhaustive studies of dioxins for years. The good news is that as we've reduced the amount of dioxin in the environment, we've seen a corresponding reduction in the average level of dioxins in humans—from an average of 55 parts per trillion (ppt) in the 1980s to 25 ppt by the 1990s. The bad news, however, is that further studies show that health effects are detected at levels below 1 ppt.

An example of how dioxin in the smoke from burning garbage can end up in our food. When livestock eat feed that has been contaminated with dioxin, they concentrate the chemical in their milk and meat.

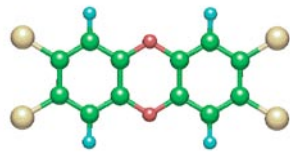
### Dioxin and our food



[www.pca.state.mn.us/burnbarrel](http://www.pca.state.mn.us/burnbarrel)

## The arguments for reducing backyard burning are clear

- Largest remaining source of dioxin, a potent carcinogen, as well as other health and environmental risks.



- Nearly 45% of rural Minnesotans and an estimated 20 million Americans still burn their garbage on-site.



- Proximity to animal feed and food crops creates a serious risk to our food supply.



- Backyard burning contributes to nearly half of all wildfires in Minnesota each year.



### Reduction efforts in Minnesota

In Minnesota, open burning of household garbage is banned, with the exception of farms where regularly scheduled pick up of waste is not "reasonably available to the resident" (Minn. Stat. §§ 17.135 and 88.171). However, 28 of Minnesota's 87 counties have passed no-burn/bury resolutions to close this exemption.

Statewide, the MPCA is working on the first phase of its Burn Barrel Reduction Campaign, a multi-year effort to reduce backyard garbage burning throughout Minnesota. Based on recommendations to the Legislature in the 2005 Solid Waste Policy Report, the MPCA will work to eliminate burn barrels by 2010.

**Partnerships with state and local government.** The MPCA has also worked with counties, local units of government, haulers, and rural residents on programs designed to reduce the use and prevalence of burn barrels and backyard burning through education, incentives, enforcement, and infrastructure development. Many counties like Houston, Otter Tail, Carver, Chisago, Crow Wing, St. Louis, and the Western Lake Superior Sanitary District have seen significant reductions in burn barrel use as a result of programs developed in partnership with neighboring counties, the MPCA, and DNR. Many other counties are also concerned about backyard garbage burning; 24 counties were being awarded burn barrel reduction grants in northeast, southwest, and east central Minnesota in 2007 with more projects expected to begin throughout 2007 and 2008.

## Did you know?



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The U.S. EPA estimates that one burn barrel (from an average family of four) can produce as much or more dioxin as a full-scale municipal waste incinerator burning 200 tons per day.

Burning garbage in burn barrels or fire pits creates low-temperature fires (less than 2,200° F), which receive very little oxygen and produce a lot of smoke. Under these conditions, a variety of toxic substances are produced and then released directly into the air without being treated or filtered.

### Local governments leading the way

Chisago County reduced the number of residents who use burn barrels by 40 percent in four years after passing a no-burn resolution and conducting an education and incentive program called the Burn Barrel Buy-Back Campaign (4Bs). In a joint effort with local haulers, this program offered six months of garbage service at half price to residents who turned in their old burn barrels and signed up for garbage service. The haulers collected residents' old burn barrels and ash and disposed of them at no charge. This had the added benefit of increasing the number of customers for local haulers; and after a short time, the haulers were actively promoting the program to residents. This project was funded by a grant with the MPCA, and MPCA staff worked hand-in-hand with the county to develop the program.

Other local governments are using various education and reduction programs along with parts of Chisago's 4Bs program. Crow Wing and St. Louis have both conducted education campaigns through billboard displays, and St. Louis is in the process of measuring the impact on the number of people who no longer use burn barrels. With its successful Bernie the Burn Barrel TV ads, WLSSD has continued its education campaign, hosted a well-attended workshop for elected officials on burn barrels, and worked with the MPCA to update *Clearing the Air: Tools for Reducing Residential Garbage Burning*, a resource for Minnesota local governments.



### For more about the dangers of burning or how to get involved in the campaign

[www.pca.state.mn.us/burning](http://www.pca.state.mn.us/burning)

651-296-6300 | 800-657-3864



Minnesota Pollution Control Agency