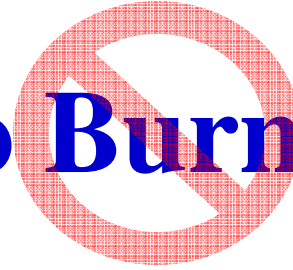
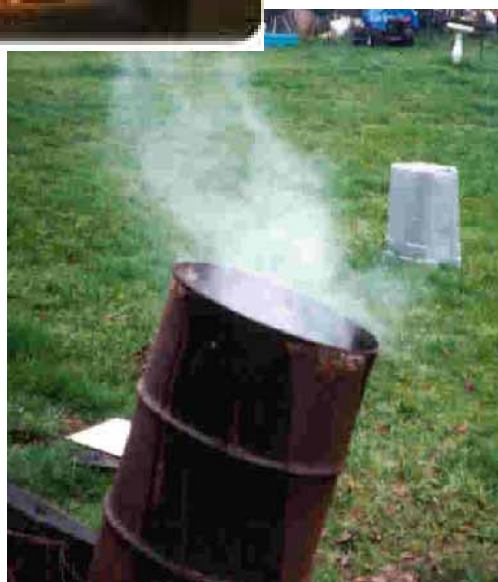


# Learn Not to Burn



## Reducing Backyard Burning of Household Waste



# What is Backyard Burning?

- Backyard burning (BYB) is the uncontrolled combustion of household waste in barrels, open pits, wood stoves, or fireplaces.

(also known as burn barrels, open burning, or household trash burning)



# Why are we Concerned?

Some consider this an issue of the past.



But in reality, this is often a common practice in less urban areas of the U.S.

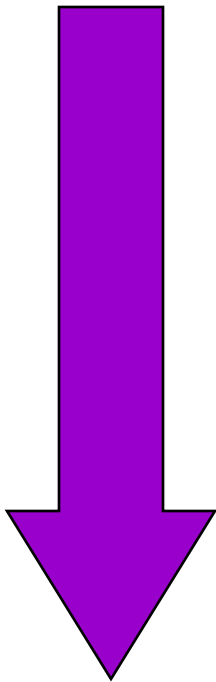
# Why are we Concerned?

- Backyard burning causes accidental fires.
- Backyard burning releases toxic chemicals into environment that can cause adverse health impacts.
- Backyard burning is illegal in many places.



# Release of Toxic Chemicals

Direct Exposure  
(e.g. inhalation)



Indirect Exposure  
(e.g. bioaccumulation)

- Particulate Matter
- Sulfur Dioxide
- Carbon Monoxide
- PAHs
- Metals
- Hexachlorobenzene
- Dioxin

## Direct Exposure Health Effects

- Eye and lung irritant
- Asthma trigger
- Emphysema
- Other respiratory diseases

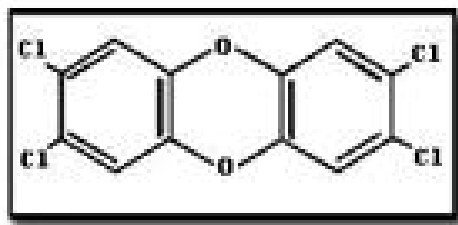
## Indirect Exposure Health Effects

- Reproduction and development effects
- Endocrine Disruption
- Immunosuppression
- Cancer

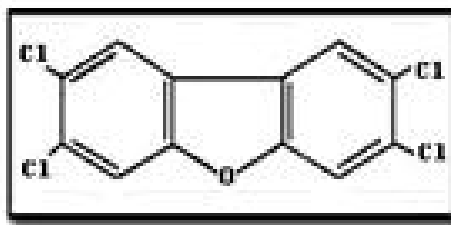
# What are Dioxin-like Chemicals?

- A group of chlorinated organic compounds including dioxins, furans, and some PCBs.
- Produced when most materials are burned.
- Occur from incomplete combustion of fuels or waste, some chemical manufacturing, and high temperature metrological processes. Includes some natural sources (e.g. forest fires).

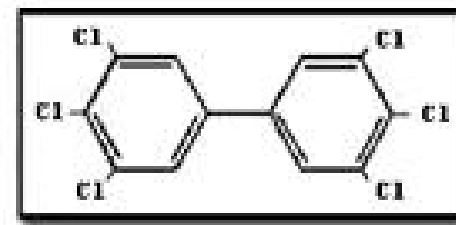
# Dioxin-like Chemicals



**2,3,7,8-  
Tetrachlorodibenzo-p-dioxin**



**2,3,7,8-  
Tetrachlorodibenzofuran**



**3,3',4,4',5,5'-  
Hexachlorobiphenyl**

- Dioxins are a group of chemicals that are “potent animal toxicants” and “likely human carcinogens.”
- There are 30 different Dioxin-like compounds.
- 2,3,7,8 TCDD is the most studied of the chemical class.
- USHHS and IARC classify 2,3,7,8 TCDD as a human carcinogen.

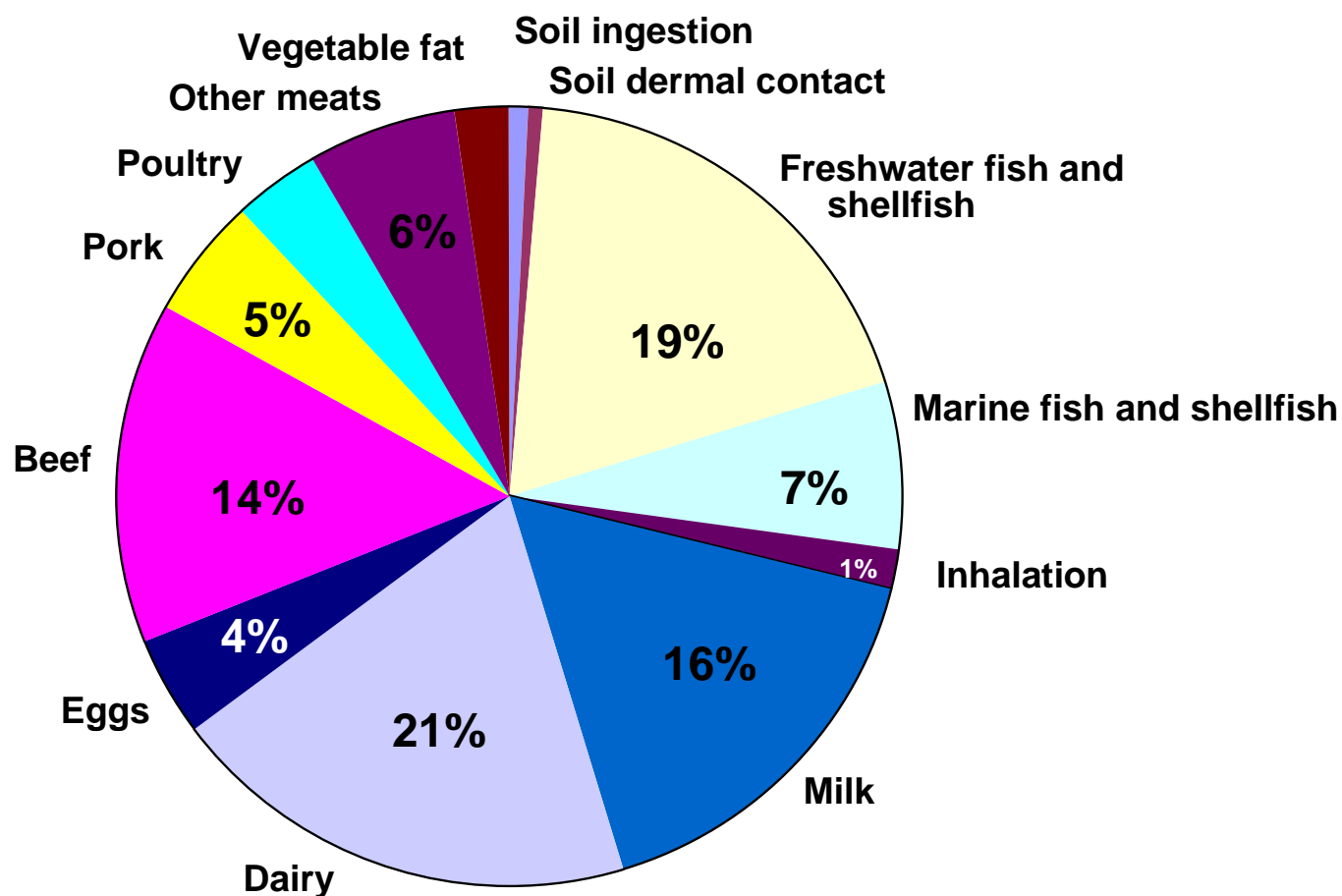


# Why are Dioxins a Problem?

- Persist in the environment.
- Shown to be highly toxic in animal and human studies – even at extremely low levels.
- Impact reproduction & development, suppress the immune system, and can cause cancer.
- Bioaccumulative and remain in the body for a long period of time.
- Principal route of exposure is via food intake.

# Adult Average Daily Intake of CDDs/CDFs/Dioxin-like PCBs

**2000 Draft Estimate: ~ 65 pg TEQ<sub>DFP</sub>-WHO<sub>98</sub>/day**



# Evolving Dioxin Science

- **The Good News:**

The average bioaccumulation level in humans has dropped from 55 ppt (in the 1980's) to 25 ppt (1990's)

- **The Bad News:**

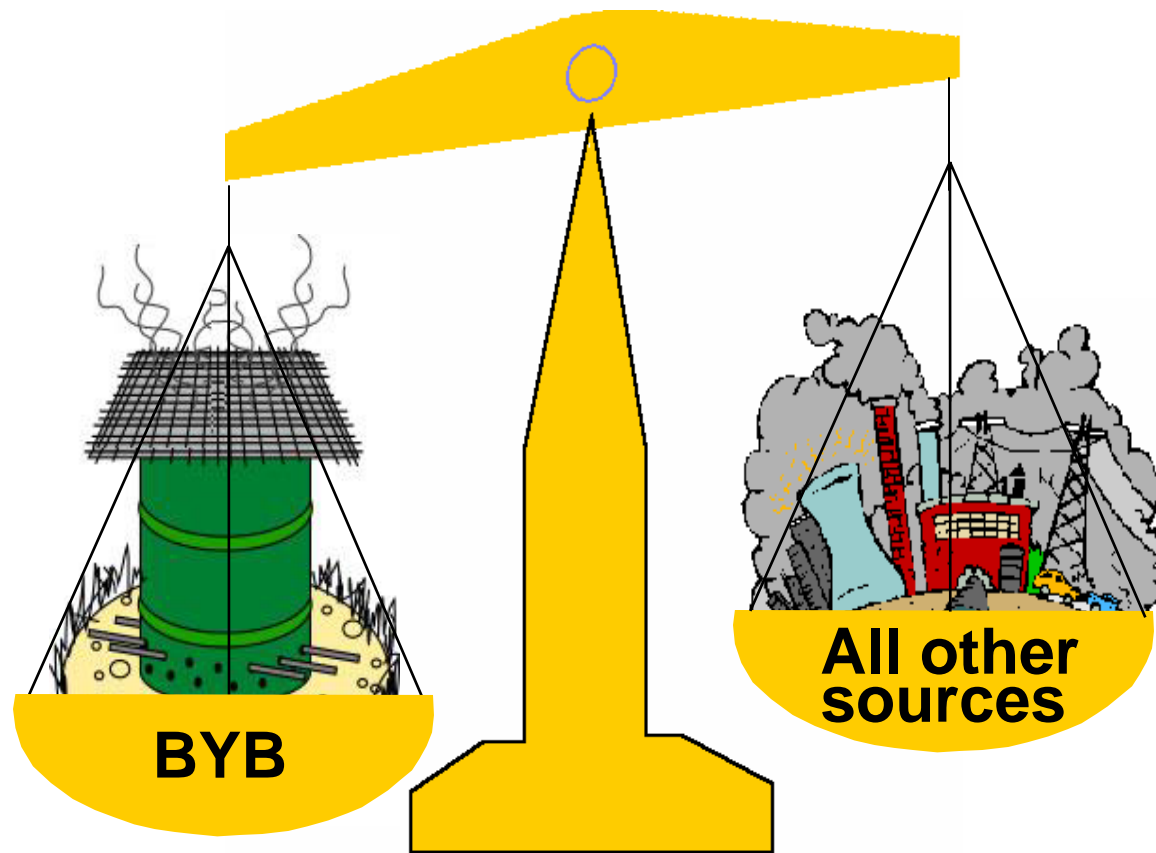
The level at which health effects are detectable in animals and humans is lower than previously estimated.

Consequently, current exposures remain a concern.

- **The Bottom Line:**

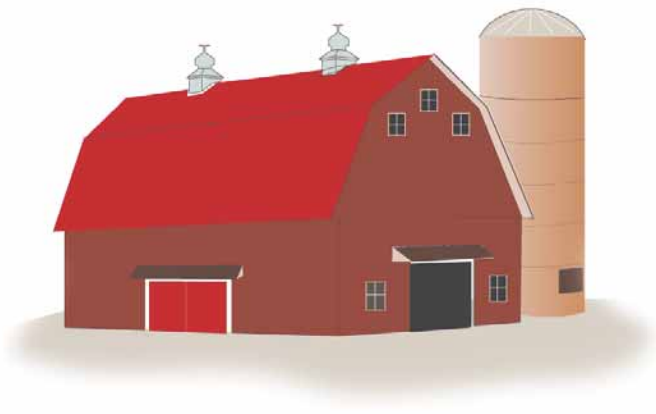
We need to take steps to further reduce dioxin exposure.

# BYB Emissions are Greater Than All Other Quantified Sources Combined



The BYB concern is not just about releases, but also exposure...

**Most BYB occurs in rural areas where emissions can readily contribute to contamination of animal feed and grazing lands.**



# Why is Backyard Burning a Priority?

- BYB is the largest remaining quantified source of dioxin emissions.
- BYB used by an estimated 20 million Americans.
- Proximity to animal feed and food crop production increases concern.
- Reducing BYB also reduces other toxic releases including metals, PAHs, and particulate matter.
- Reducing BYB will reduce accidental fires.



# Three Tiered Approach: Education, Infrastructure, and Compliance

- Educate government officials and the general public on the concerns of BYB.
- Provide information on infrastructure and alternatives to BYB in rural areas.
- Strengthen state, tribal, and local ordinances on BYB. Support greater compliance with existing regulations.

# What Can the Public Do?



- Share the message
- Identify other waste disposal methods in your community
  - Reduce (avoid disposable items)
  - Reuse (more use means less waste)
  - Recycle (paper, plastics, metallic items)
  - Compost (leaves, yard waste, vegetable wastes)
  - Identify local landfills which accept waste





## What Can Local Officials Do?

- Find an option for your community within our case studies
- Use the EPA toolkit for support and ideas
- Contact EPA or your state agency for assistance
- Spread the word – make sure your constituents know that burning trash is dangerous.

# What's Inside the Toolkit ?

- Introduction to the issue
- Powerpoint presentation
- Case studies of successful national, regional, and local burn barrel programs
- Current trash burning laws in the Great Lakes Region
- Example ordinances on reducing trash burning
- Available brochures and outreach materials
- The Western Lake Superior Sanitary District Toolkit
- Information on infrastructure and waste transfer stations
- Links to Additional Resources

# Hubbard County Minnesota

- In 1994, the County banned open trash burning
- The ban has been received positively by citizens
- The County provided two waste transfer stations and 14 recycling sheds in the county
- The facilities are paid for by a special tax assessment
- Trash burning has been virtually eliminated
- Success is due, in part, to the fact that residents are not charged a tip fee at waste transfer stations and recycling centers, and also because the county refused to accept ashes from burn barrels.



# St. Regis Mohawk Tribe

## New York

- From 1995-99, the Tribe developed a solid waste management plan, planned a waste transfer facility, and began an outreach campaign on burn barrels.
- In 2002, banned burn barrels except with a permit and began trash pick up service for \$2.00 per bag.
- Transfer station was built with funding from USHUD, USEPA, USDA, and IHS.
- Compliance with ban has been high, particularly since residents have become educated on the topic.





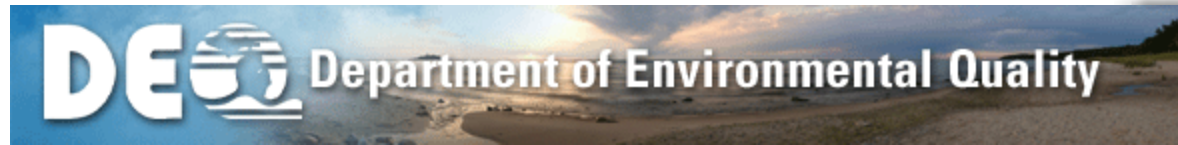
# Air Defenders

- Interactive program for 5<sup>th</sup> grade students and up
- Includes lecture, science experiments, video, songs, video game and more
- Provides background information for adults or parents
- Helps students understand how individual behavior impacts everyone's environment

# GREAT LAKES INTER-TRIBAL COUNCIL



 Ontario



Environment  
Canada

Environnement  
Canada



INDIANA  
DEPARTMENT OF  
ENVIRONMENTAL  
MANAGEMENT



New York State Department of  
Environmental Conservation



 Minnesota Office of **Environmental Assistance**



Illinois Environmental  
Protection Agency



Minnesota Pollution Control Agency



# Where Can You Get More Information?

Information on the national program, links to local programs, and other resources may be found on line at:

[www.openburning.org](http://www.openburning.org)

[www.epa.gov/msw/backyard](http://www.epa.gov/msw/backyard)

