# Environmental Health

*"Our communities are only as healthy as the air our children breathe, the water they drink, the earth they will inherit . . . We have always found a way to clean the environment and grow the economy at the same time. And we'll do it again."*

**President William Jefferson Clinton, 1998**

The environment is the air, water, land, and structures around us that make up communities. A healthy environment can add to the quality of life for individuals and communities. When the environment is safe, people are more likely to be free from diseases. Protecting Louisiana citizens against disease-causing contaminants in food, water, air, and soil requires collaboration among numerous entities. Government agencies, private businesses, environmental organizations, and private citizens all work to maintain a clean and safe environment. Private and public organizations inform the public about the potentially dangerous effects of some chemicals on people's health. Regulations govern how much of which chemicals can be released and disposed. Having safe food and water and maintaining healthy homes and businesses positively impact health and quality of life.

The Center for Environmental Health Services (CEHS), within the Office of Public Health (OPH) protects the public's health by enforcing the Louisiana State Sanitary Code. The activities of CEHS sanitarians and engineers reduce the likelihood of disease transmission. Water systems are monitored to assure that water is safe to drink. Restaurants, molluscan shellfish growing areas, food and drug manufacturers, and the milk and dairy industry are monitored to assure that Louisiana products are safe for the public. In addition, the CEHS Section of Environmental Epidemiology and Toxicology (SEET) monitors possible human exposures to, and health risks from, events related to chemical agents in the environment. The Louisiana Department of Environmental Quality (LDEQ) monitors air and water quality, chemical spills, toxic releases and efforts to reuse contaminated soil or recycled products.

**DID YOU KNOW?**

*In fiscal year 2003-2004, the CEHS conducted 10,589 inspections of public accommodations and private premises in response to citizen complaints of unsanitary conditions.[1] For information on the State Sanitary Code, contact*

***Office of Public Health***

***Sanitarian Services at 225-763-5553***.

Louisiana has made great strides in reducing its toxic chemical releases. According to the U.S. Environmental Protection Agency (EPA) Toxic Release Inventory (TRI), in 1999 Louisiana ranked 12th in the nation for total releases by state, original and new industries.[2] This represents a substantial improvement over the traditional 1st or 2nd ranking of previous years. However, communities are still faced with many concerns about the environment. Regardless of this progress, people living in Louisiana have expressed fears that, over time, pollution will harm their health.[3]

To address these concerns and to better educate the community, this chapter covers:

- Pesticides
- Fish/shellfish consumption advisories
- Swimming advisories
- Coastal beach advisories
- Protecting shellfish consumers
- Safe drinking water
- Hazardous waste
- Toxic releases
- Indoor air quality
- Ozone non-attainment
- Recycling programs
- Future Environmental Surveillance Trends

# Can Chemicals Make People Sick?

It is difficult to tie a chemical exposure to specific diseases. For a chemical to make someone sick, it must actually enter a person's body and be present in large enough amounts to cause ill effects.[4] Chemicals can be in the air, water, land, homes, and workplaces. Some chemicals are eaten with food or swallowed in water. Others are simply absorbed through the skin or inhaled. The populations most at risk for ill effects from chemical exposure are children, the elderly, and the chronically ill or immune impaired.

## Chemical Exposure and Illness

Linking an illness to a chemical exposure requires extensive tests on both people and the environment. Some of the illnesses that people believe are due to chemical exposures are actually more likely to result from other causes.[5] For example, high rates of lung cancer are more likely to be due to cigarette smoking than a one-time chemical exposure. The effects of personal behaviors and possible chemical exposure are difficult to separate. In addition, the illnesses thought to result from chemical exposure can take years and even decades to be diagnosed. Cancer, for example, is a disease that can take a long time to develop. In the case of some cancers 30 years may elapse between the time of exposure and the onset of illness. Within that time, the person may move, be exposed to other chemicals, or adopt behaviors that could lead to illness.[6]

Much more information is needed to connect chemical release amounts to possible health effects. Some of the factors that determine how chemicals affect people include the toxicological properties of the chemical, the condition or state of the chemical once it reaches the community, the extent of exposure, and other sources of environmental exposures. In addition, individual characteristics such as genetics, age, gender, nutritional status, family traits, lifestyle, and health status are also factors that play a role in determining how chemicals affect our health.[7] Illnesses that occur right after a chemical exposure are called acute illnesses and are easier to explain. For example, if someone gets stomach cramps or vomits after accidentally swallowing a chemical, it was probably due to the chemical.[8]

## Use Pesticides Wisely

Pesticides are chemicals developed to repel, control, or kill pests such as insects, weeds, fungi, or rodents. Pesticides are widely used on agricultural crops, in the home, yard, and public places. The types of pesticides commonly used are also called insecticides, herbicides, fungicides, and rodenticides. In addition to harming pests, many pesticides can also harm pets and people. The harmful effect of a pesticide depends on the strength or toxicity of the chemical ingredients, the amount and the length of time of pesticide exposure, and the way it enters the body.

**DID YOU KNOW – *there are laws governing the use and application of pesticides in Louisiana*?** *The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) regulates the manufacture, sale, and application of pesticides. FIFRA establishes minimum standards for pesticide regulation nationwide. In Louisiana, the Department of Agriculture and Forestry (LDAF) regulates pesticide use through FIFRA and the Louisiana Pesticide Law. Pesticide misapplication, such as drift of a pesticide away from its intended target, is illegal and LDAF has the authority to fine offenders.*

***To file a complaint or to report a pesticide misuse, Contact LDAF's 24-hour pesticide hotline: (225) 925-3763***

## Pesticide Exposure

There are three major ways for pesticides to enter the body. If a pesticide is in the air, it can be inhaled and may pass into the bloodstream. If it is in food or water, or if it is accidentally swallowed, it can enter through the stomach. Certain pesticides may pass through the skin. Some pesticides may irritate the skin, eyes, nose and throat if you come into direct contact with them.

Common circumstances of pesticide exposure in Louisiana include:

- Drift of an agricultural pesticide occurring when pesticide drifts as spray from an airplane or tractor moves away from its intended target onto people living, working, or going to school near agricultural fields or other application sites.
- Misuse in storing or applying household pesticides (e.g., insect repellents, foggers, rodent poisons, weed killers, flea and tick control products, and disinfectants).
- Occupational exposure occurring when individuals who work with pesticides, such as farm workers and pesticide applicators, touch or inhale large amounts of pesticides.

## Pesticide Surveillance

The Louisiana Department of Health and Hospitals (LDHH) conducts surveillance of health-related pesticide exposures. The statewide surveillance program obtains acute pesticide exposure data from two sources: the Louisiana Department of Agriculture and Forestry (LDAF) and the Louisiana Poison Control Center (PCC). All LDAF-referred complaints and some PCC complaints, depending on location and circumstance of exposure and severity of health effects, are investigated by LDAF and LDHH. Joint investigation of these complaints involves complainant interview and collection of environmental and health data. LDAF determines if a misapplication has occurred, and LDHH evaluates the health effects.

Pesticide surveillance data are used to estimate the extent of pesticide-related illness, identify populations at-risk and emerging pesticide problems, and to target intervention activities to prevent inadvertent exposure to pesticides. During the 5-year period 1999 through 2003 there were 943 pesticide exposures reported to LDHH. **In Vermilion Parish, there were a total of 30 reported exposures during the 5-year period 1999 through 2003.**[9]

### Taking Care – Taking Control: Pesticide Misuse at an Elementary School

In 2002, a pesticide exposure incident at a public elementary school resulted in adverse health effects for twenty-one school employees. The incident involved an application of an organophosphate insecticide, chlorphyrifos, to the doorways and foundations of temporary buildings in order to control swarming termites and ants.

Immediately following the application, 21 people working in and around the temporary buildings noticed an odor and began to experience symptoms. All twenty-one individuals were sent off site for the remainder of the day. At the time of the application, children were not present and student appointments were cancelled for the remainder of the week. Upon returning to school the following day, several people complained that their symptoms had returned and they were again sent away from school for the remainder of the day. The most commonly reported complaints were headache, sore throat, and allergy-like symptoms. Five days after the incident, symptoms had resolved and everyone returned to work.

Thirty-one states, including Louisiana, have adopted rules or regulations that specifically speak to the application of pesticides on or near school property. Louisiana's Pesticide Law stipulates that schools must: 1.Maintain a record of pesticide use, 2. Apply pesticides at least eight hours preceding presence of students, 3. Employ a certified commercial applicator for all pesticide applications, 4. Submit annually an integrated pest management plan to the LDAF, and 5. Maintain a hypersensitive student registry. Schools are also encouraged to use the least toxic method of pest control. (Louisiana Revised Statute 3:3388)

# Enjoying Louisiana Waters

Louisiana is called a "Sportsman's Paradise!" People of all ages like to swim, ski, tube, and fish in Louisiana's waterways. While such activities are generally safe, people should be aware of potential hazards associated with some waterways. Fish may become contaminated with chemicals and these chemicals may be harmful to people who eat the fish. At times, the water itself may also contain chemicals or bacteria that may be harmful to a person's health if they swim or play in the water. To ensure that the public is informed and to safeguard and protect public health, the state issues and maintains fishing and swimming advisories. The state Departments of Health and Hospitals, Environmental Quality, Wildlife and Fisheries, and Agriculture and Forestry jointly decide which water bodies in the state need health advisories due to contamination.

## Fish/Shellfish Consumption Advisories

The Louisiana Department of Environmental Quality (LDEQ) tests fish caught from local water bodies for chemicals. Most of the time fish are a healthy and safe food to eat. They are a good, low-fat source of protein. However, sometimes fish or shellfish from a certain water body are found to contain pollutants such as organic contamination and mercury that could be harmful to human health. When this happens, the Office of Public Health (OPH) may recommend that an advisory be issued. These health advisories inform people that certain types of fish or shellfish from that water body may not be safe to eat or should only be eaten in limited quantities.[10]

While there are a number of fish consumption advisories for organic chemicals, the majority of Louisiana's fish consumption advisories result from mercury contamination. Mercury in fish is not a new problem, or even one that is unique to Louisiana. It is a global issue resulting from natural and man-made releases of mercury. Over time the mercury that is deposited in our lakes, rivers, and oceans build up in the fish that inhabit them. When we eat a lot of fish that contain high levels of mercury, we can accumulate mercury too. That's when health problems may occur. Mercury affects the brain and nerves, therefore unborn babies and young children have the greatest risk of harm because their nervous systems are still forming. It is for this reason that women of childbearing age should pay close attention to fish consumption advisories.[11]

***For a list of fish consumption advisories contact SEET at***
***504-568-8537, toll-free 1-888-293-7020,***
***or online at www.oph.dhh.louisiana.gov/reports.htm.***

## Swimming Advisories

Because there are inherent health risks found in all lakes, rivers, streams, bayous, and other natural waters, each spring the Department of Health and Hospitals reminds residents to take simple precautions while swimming, boating, tubing, or simply wading in the water. In addition to the natural risk and the need for safety, people should be aware that some bodies of water are not safe to swim or recreate in due to contaminants or pollution.

Swimming advisories for specific bodies of water are generally established due to fecal coliform contamination. However, a limited number of swimming advisories have been based on chemical contamination of water or sediments. Fecal coliform contamination of a water body can be caused by a number of possible sources including absent or inadequate sewage systems, poorly maintained septic tanks, direct sewage discharges from camps, and pasture and animal holding area runoff.

Microorganisms can enter the body through the mouth, nose and ears, as well as through cuts and wounds. Microscopic germs such as E. coli, salmonella, vibrio vulnificus, rotavirus and others can be found in most natural waterways. Some microorganisms occur naturally. Others come from human and animal waste. These enter the water from sewage overflows, polluted storm water runoff, sewage treatment plant malfunctions, urban and rural runoff after it rains, boating wastes, malfunctioning individual sewage treatment systems, and agricultural runoff. Therefore, swallowing the water or immersing one's head in it increases the risk of illness. Possible water-related illnesses include diarrhea, sore throat, stomach cramps and/or vomiting.

The DHH news release "Swim at Your Own Risk" reminds people of these risks and discusses some precautions people should take to reduce their risk of illness. In summary the advisory lists the following precautions:

- Do not swim in areas with warnings against swimming.
- Do not swim near a drainage pipe or in a ditch, or near runoff or littered areas.
- Avoid swimming after heavy rains.
- Avoid ingesting or swallowing the water.
- Minimize immersing your head when swimming.
- Avoid swimming with an open cut or wound.
- Shower after swimming.

***A complete listing of current Fish & Swimming Advisories is available from LDEQ at 225-219-3590, or online at www.deq.louisiana.gov/surveillance/mercury/fishadvi.htm***

## Coastal Beach Advisories

Swimmers, boaters, and other recreational water users such as fishermen and crabbers can suffer gastrointestinal and other illnesses by accidentally ingesting, immersing or wounding themselves in water that contains enteric pathogens (bacteria and viruses). Health risks to recreational users can change dramatically from day-to-day, depending on factors such as rainfall and sewage discharge treatment levels. Louisiana, through its Beach Monitoring Program, monitors levels of indicator bacteria (i.e., fecal coliforms and enterococci) at selected coastal marine beaches each week during the summer months. The Office of Public Health posts an advisory at a beach when there is a heightened risk to swimmers. The advisory remains in effect until bacteria levels at the sampling locations meet bacteriological water quality criteria.[12]

## Protecting Shellfish Consumers: Restricting or Closing Oyster Harvesting Areas

Louisiana classifies 8 million acres of wetlands, marsh, and open coastal waters for the harvest of Molluscan shellfish (oysters) in accordance with the National Shellfish Sanitation Program (NSSP). Consumers of raw or undercooked Molluscan shellfish can be exposed to bacteria and viruses that shellfish have accumulated from the water in which they grow. Louisiana's Office of Public Health, Molluscan Shellfish Program surveys the shoreline of shellfish waters to identify actual and potential sources of pollution that can affect water quality. Louisiana also collects water quality samples to better determine the effect of pollution sources and to help understand how water quality varies in response to currents, tides, and storm events. This information is used to set the management classification for the area, including the monitoring plan. The Molluscan Shellfish Program monitors over 700 sample sites monthly for the indicator bacterial (fecal coliforms) content.

The State Health Officer may close areas to harvesting when monitoring data or experience predicts a heightened risk to consumers. Under the NSSP, some shellfish areas are permanently closed due to the elevated risk posed by point sources of human contamination or chemical pollution or when the long-term presence of contamination exceeding standards is documented. Some shellfish areas may be temporarily closed when short-term events known to increase contamination occur, such as a tropical storm or hurricane or the failure of a sewage treatment system. These temporarily closed areas are re-opened to harvest when monitoring shows the short-term contamination has abated and the water quality again meets standards.

Federal, state and local governments are increasing efforts to coordinate beach advisories and shellfish harvest area restrictions, but there will always be some differences. Because predicting heightened risk differs, waters can be open for recreational use while the same or adjacent waters are restricted or closed for shellfish harvesting and vice versa, without exposing the public to a heightened risk of illness.[13]

***For a list of coastal beach advisories and shellfish reclassification maps, refer to the Web site at www.oph.dhh.louisiana.gov.***

## Water Bodies Supporting Their Designated Uses

Another way to measure the quality of surface water is to look at how well lakes, reservoirs, and streams meet their designated use categories. Categories of use include primary and secondary contact recreation, and fish/wildlife breeding. Drinking water supply, agriculture, and outstanding natural resource uses, as determined by LDEQ, are also included. There are many possible reasons why water bodies do not support their use. Likewise, there are many strategies to improve water bodies. Runoff from land areas is a major problem that contributes to poor water quality. Some water bodies have shown marked improvement after aggressive state and local interventions.

## Safe Drinking Water

Groundwater can be exposed to runoff and contamination from chemicals above ground. Many people get their water from wells and other sources that groundwater can seep into. Contamination is easier to prevent than it is to clean.

> ***DID YOU KNOW – Approximately 94.8% of Louisiana citizens are served by public water systems?*** *Over 50,000 water samples are gathered and tested annually to assure chemical, bacteriological and radiological quality of water as prescribed by the U.S. Environmental Protection Agency.*[14]

The Well Head Protection Program is designed to protect the quality of the drinking water supply obtained from community wells. Protecting the quality of drinking water in this case is done by protecting the surface and subsurface area around a water well.[15] Currently, 20% of groundwater community water systems in Louisiana participate in the Well Head Protection Program. This means that of all the people who are served by community water systems that get their drinking water from groundwater, over 70% are part of the well head protection program.[16]

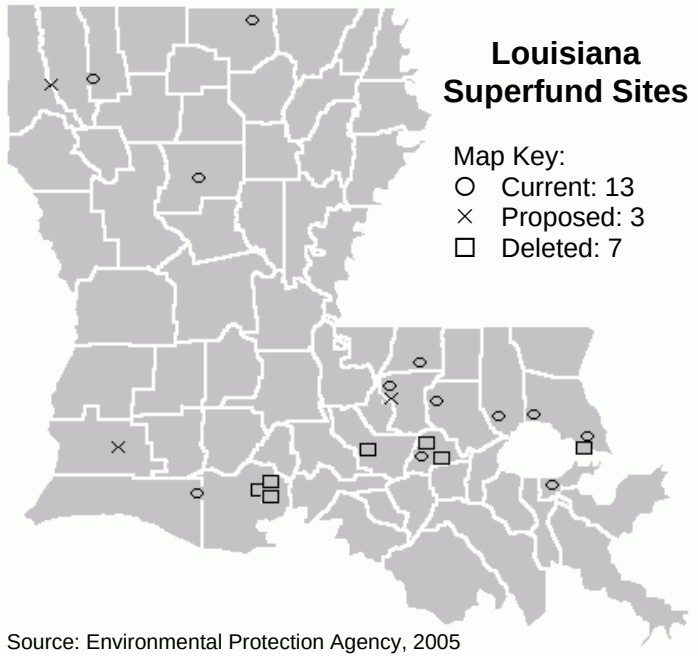
Drinking water is often taken for granted. Yet some systems are in disrepair and in need of improvement. As a result of state and federal legislation, the Louisiana Drinking Water Revolving Loan Fund (DWRLF) was created to assist public water systems in financing needed drinking water infrastructure improvements. Since 1999, the Office of Public Health's DWRLF Program has received a total of approximately $78 million in capitalization grants from the U.S. Environmental Protection Agency and has awarded 19 loans totaling in excess of $58.5 million to 15 water systems in Louisiana**.** The DWRLF Program staff continually promotes the loan program and works with several additional water systems annually in completing the application process to obtain low interest loans.[17]

## Hazardous Waste

Hazardous wastes are toxic substances or dangerous chemicals that are being misused or have not been disposed of properly. These wastes can pollute the environment and may cause harm to people's health. A hazardous waste site is a field, landfill, or any place where hazardous wastes have been left or thrown away. The Section of Environmental Epidemiology and Toxicology (SEET) has worked on over 50 hazardous waste sites in Louisiana. There are close to 700 sites in the state.[18]

### Superfund Sites

Sites can be placed on the National Priorities List (NPL) by the EPA. This list includes Superfund sites, proposed Superfund sites, and occasionally other sites which are of public interest. Superfund sites qualify for federal cleanup money. As of May 2005, there are 13 current Superfund sites in Louisiana and three proposed sites. Once the EPA judges a site to be no longer a threat, it is deleted from the NPL. Seven sites in Louisiana have been deleted to date.[19]




Source: Environmental Protection Agency, 2005
www.epa.gov/superfund/sites/npl/la.htm

## Brownfields

There is also an effort to reuse contaminated land called Brownfields. These fields are former industrial sites whose use is limited because of contamination. Those who reclaim them for business and commerce may be able to receive funding from federal sources in direct monies or tax relief. New regulations regarding Brownfields and their beneficial uses were begun in 1999. Since then there are several Brownfield projects occurring throughout the state of Louisiana.[20]

***If you find dumped waste, call for help before touching or moving the waste. For assistance contact the Louisiana Department of Environmental Quality at (225) 219-3640.***

### Proper Disposal of Household Mercury

Mercury is the only common metal that is liquid at room temperature. Follow these safe practices for handling and disposing of small amounts (less than 1 teaspoon):

**Always** evacuate children and pregnant women from the area.

**Always** handle the mercury carefully.

**Always** wear rubber gloves.

**Never** use a vacuum cleaner to clean up a mercury spill.

**Always** scoop the mercury onto a sheet of paper or suction it with an eyedropper and place it in a medicine vial or similar airtight container.

**Always** use fans for a minimum of one hour to speed the ventilation.

**Never** throw the mercury away; seek professional guidance on proper disposal.

**Always** keep any objects containing mercury out of the reach of children. (Children found to be playing with liquid mercury or broken fluorescent lamps should be referred to a physician or poison control center immediately.)

**Remember….** Larger amounts require professional assistance. Do not hesitate to call for assistance in handling liquid mercury spills. Large spills of mercury compounds can be life-threatening and should be handled by professionals.

*For additional information, contact the Louisiana Department of Environmental Quality at (225) 219-3266 or (800) 305-6621.*

## Toxic Releases

The Toxic Release Inventory (TRI) provides information on the amount of toxic chemicals released and transferred to the environment. Certain manufacturing facilities are required to submit this information under the Emergency Planning and Community Right to Know Act, which is available to the public on the internet and in a printed annual report. Because toxic chemicals do not recognize borders, Toxic Release Inventory data alone can not determine health risk to a community or an individual. **According to the Louisiana Department of Environmental Quality (LDEQ) 2002 Louisiana Environmental Inventory Report, the state released just over 121 million pounds in total release of toxic chemicals; Vermilion Parish reported 18,624 pounds of toxic releases.** For the state, this represents a steady decline of 578 million pounds (83%) since 1987 and a decline of two million pounds (2%) from 2001-2002.[21]

Environmental Protection Agency (EPA) trend data for toxic releases in Louisiana indicates an overall decrease in the amount of pounds released from 2000 to 2002. EPA's year-to-year trend data analysis is based on a consistent set of reporting requirements to ensure that changes in the data are not reflective of TRI's chemical and industry changes or modifications in those reporting requirements. Comparisons in the table below were made only for chemicals that were reportable with the same definition in the years from 2000 to 2003[22]

**Toxic Releases in Pounds — Trend Data 2000 to 2003**

| Year | Vermilion | | | | Louisiana | | | |
|---|---|---|---|---|---|---|---|---|
| | Release Locale | | | | Release Locale | | | |
| | Air | Water | Under-ground | Land | Air | Water | Under-ground | Land |
| 2000 | 28,853 | . | 0 | 0 | 70,562,307 | 12,982,782 | 51,748,710 | 14,294,651 |
| 2001 | 23,026 | . | 0 | 0 | 58,147,976 | 11,745,602 | 37,217,860 | 15,143,955 |
| 2002 | 18,624 | . | 0 | 0 | 58,271,685 | 11,493,423 | 32,430,596 | 17,252,024 |
| 2003 | 15,094 | . | 0 | 0 | 54,911,708 | 11,265,133 | 35,904,030 | 17,870,783 |

Source: U.S. Environmental Protection Agency, Release Year 2003, comparisons based on 2000-2003 core chemicals. Data set frozen on 12/28/2004 and released to the public May 11, 2005. URL: http://www.epa.gov/triexplorer/trends.htm

"0" Indicates that either a "0" or a "NA" was reported.

"." Indicates that the total annual amount reported was less than 500 pounds, and facility does not manufacture, process, or otherwise use more than 1 million pounds. May also indicate element was not required to be reported for that year.

## Hazardous Substances Emergency Events Surveillance Project

In August of 2000, the Section of Environmental Epidemiology and Toxicology (SEET) was awarded funds to participate in the Hazardous Substances Emergency Events Surveillance (HSEES) project. The HSEES system's ultimate purpose is to provide data that can be used to reduce the injuries and deaths resulting from hazardous substances emergency releases. In collecting health-specific data, SEET hopes to target its efforts to prevent further adverse health consequences from emergency hazardous releases/spills in Louisiana. By focusing on human health outcomes of hazardous substances emergency events, SEET seeks to provide descriptions of the health consequences to employers, employees, first responders, and the general public. Through identifying risk factors associated with injuries and deaths which result from the releases of hazardous substances, strategies can be developed to reduce such consequences.

From January 1, 2001 through December 31, 2003, SEET screened over 25,000 events; of those, a total of 5,372 were initially entered into the HSEES database system. Out of the 5,372 events, 2,241 (41.7%) met the criteria for inclusion in the Louisiana HSEES database.[23]

**Hazardous Substances Emergency Events Surveillance: 2001-2003**

| Location | Events | Substances Released | Deaths | Victims | Events with victims | |
|---|---|---|---|---|---|---|
| | | | | | # | % |
| Vermilion | 0 | 0 | 0 | 0 | 0 | 0.0% |
| All Parishes | 2,241 | 3,481 | 4 | 135 | 48 | 2.1% |

Source: DHH/OPH, Section of Environmental Epidemiology and Toxicology, 2004

# Breathing Free

The air is full of dust and chemicals that cannot always be seen or smelled. Indoor air is affected by outdoor air. Indoor air quality (IAQ) has a greater effect on people's health than outdoor air because they are most likely to be exposed to it. Research indicates that people spend approximately 90% of their time indoors. Thus for many people, the risks to health may be greater from pollutants indoors than outdoors.

**DO YOU KNOW – the common sources of toxins in indoor air?**

*Tobacco smoke*
*Carbon monoxide*
*Bacteria*
*Molds and mildew*
*Viruses*
*Dust mites*
*Cockroaches*
*Pollen*
*Pet dander*
*Paint*
*Cleansers*
*Disinfectants*
*Nitrogen dioxide*
*Formaldehyde*
*Pesticides*
*Lead*
*Asbestos*
*Radon*

*–SEET, 2004*

## Indoor Air Quality (IAQ)

According to the EPA, the air within homes and other buildings can have higher levels of pollutants than the outdoor air; therefore people are exposed to potentially toxic chemicals more often indoors than outdoors. Chemicals can become trapped indoors and result in elevated levels inside buildings.[24]

Experiencing health from indoor air pollutants may occur soon after exposure (acute effects) or years later (chronic effects). Immediate effects may include irritation of eyes, nose and throat. Headaches, dizziness and fatigue are other symptoms. Such sudden effects are usually short term and treatable. These symptoms may show up after exposure to indoor air pollutants.[25]

Some health effects may show up years after exposure has occurred or after long and repeated periods of exposure. These effects include some respiratory diseases, heart disease, and cancer, causing severe symptoms or even death. It is important to improve the quality of air inside homes and buildings even if symptoms are not noticeable.[26] Additional information and data on asthma in children can be found in the Maternal, Child, and Adolescent Health chapter of these profiles.

**"A Few Words on Mold "**

Molds are types of fungi which are found just about everywhere —in the air we breathe, in the soil, on plants, and in buildings. Most molds are not harmful to healthy people but inhaling or touching mold spores may cause an allergic response in some people and can worsen breathing problems such as asthma.

To Prevent/Reduce Indoor Mold Growth:

- Respond quickly to moisture problems.
- Regularly inspect for leaks, mold growth, and musty odors.
- Maintain indoor relative humidity below 60%. Use air conditioners and/or de-humidifiers, use exhaust fans or open windows in bathrooms and kitchens, and vent clothes dryers to the outside.

Tips for Removing Mold:

- Locate the source of moisture and eliminate it.
- Remove the mold by scrubbing it with a detergent and water solution.
- Throw out heavily molded materials.
- Protect yourself during cleaning by wearing gloves, an N-95 disposable respirator, long pants and sleeves, and eye protection.
- The EPA recommends that you consider hiring a professional to clean areas of mold growth larger than 10 square feet.

***In Louisiana, professional mold remediators are required to have a mold remediators license, as stated in Louisiana RS 37:2181—37:2192.***

The Section of Environmental Epidemiology and Toxicology (SEEET) provides telephone consultations and mails printed information to the public. SEET also conducts presentations for groups/associations needing guidance on indoor air quality (IAQ) and associated health effects. ***For questions and concerns about Indoor Air Quality*** **call SEET staff toll free at 1-888-293-7020.**

### Outdoor Air Quality

In Louisiana, the air meets all the National Ambient Air Quality Standards, except for ozone. Ozone is a serious air pollutant linked to industrial and transportation sources. Ozone is the main ingredient in urban smog and leads to shortness of breath, wheezing, coughing, headaches, nausea, and eye and throat irritation. Ozone information is collected by the LDEQ from 45 monitoring stations statewide. While a few monitoring stations are scattered in the northern parishes, the majority are located in the industrial regions of Calcasieu Parish and along the Mississippi River from Pointe Coupee through St. Bernard Parishes.

A non-attainment area is one in which levels of ozone exceed acceptable limits—classification ranges from marginal, moderate, serious, severe to extreme. According to LDEQ, the number of parishes rated as an ozone non-attainment area has gone down from eight in 1996 to five in 2003. During that period Calcasieu (12/02/96), Lafourche (6/2/97), and Pointe Coupee (2/25/02) parishes were re-designated and removed from the list.[27]

Despite increased efforts to reduce ozone, five parishes centered around and including Baton Rouge are currently designated as severe non-attainment areas for ozone—Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge. Failure to achieve attainment could result in the EPA enforcing tighter emission control requirements on all area sources.[28]

## Recycle

Recycling reduces the bulk of garbage going to landfills and conserves energy. It's impressive to know that there are many recycling programs in the state. But there's always room for improvement. Many parishes are responsive and diligent in their reporting of waste and recycling numbers. They have established a mechanism to capture recycling information, not only from governmental recycling program, but non-governmental programs as well. This simply mirrors the wide range of local government waste and recycling programs available in Louisiana.

The most common materials associated with recycling are glass, aluminum, newspaper, plastic and cardboard. Other communities have special recycling pick-ups for Christmas trees and telephone books. Other communities have special recycling days and drop-off points for hazardous materials such as paint and pesticides. Many local governments have advanced, state-of-the-art public service programs that provide a wide range of services including: curbside garbage and recycling pickup, white goods (appliances) wood waste and brush, and furniture pickup. They also have expanded services including electronics collection, recyclable buy-back centers and household collection services. **For 2003, Vermilion Parish recorded recycling 3,905.9 tons of materials.**[29]

# Future Environmental Surveillance Trends

An essential aspect of public health surveillance is providing communities and other stakeholders with timely analysis and interpretation of surveillance data. Environmental scientists can use information from environmental health surveillance systems to track potential environmental risk factors for diseases and other health outcomes. Public health professionals can use tracking data to communicate environmental public health information and program findings to the public. Furthermore, information gathered from tracking can be used to design public health intervention strategies**,** enforce environmental health standards, and to build a scientific foundation on which to base policy decisions.

## Geographical Information System (GIS)

GIS is a computer application for mapping and analyzing geographic data to better understand data relationships and trends. SEET has created a GIS program to maintain public health relevant spatial databases used in the generation of maps for SEET projects. Maps generated by the program can be used by emergency responders when dealing with accidental chemical releases and/or terrorism, by agency personnel during local and statewide drills and as a resource for all GIS projects within the Center for Environmental Health Services. As an example, SEET will use GIS to map disease cluster investigations allowing SEET to address community concerns about the occurrence of cancer at area levels smaller than the parish. This mapping will allow information to be more specific to an area within the parish such as at the zip code level. During the calendar year 2003, SEET was notified of or responded to approximately 21 reports of disease clusters throughout the state.

## Louisiana Environmental and Health Effects Tracking Program (LEHET)

In 2002 the Louisiana House of Representatives passed Act 666 which requires the Louisiana Department of Health and Hospitals (LDHH) and the Louisiana Department of Environmental Quality (LDEQ) to create a working group of environmental and public health professionals and technical experts to develop an environmental health surveillance system. In September 2003, the Section of Environmental Epidemiology and Toxicology (SEET), in collaboration with LDEQ, received funding from the Centers of Disease Control and Prevention (CDC), National Environmental Health Tracking Program (EPHT), to create the Louisiana Environmental and Health Effects Tracking Program (LEHET) to study environmental and social factors, and diseases affecting Louisiana residents to determine if disease trends exist.

## LEHET Pilot Project: Wood Preservation and Treatment Site Monitoring Program

The project will collect groundwater data from abandoned wood preservation sites to:

- describe trends in groundwater contamination and cancer incidences,
- look at the methodological issues in developing indicators for environmental health surveillance and,
- develop useful and realistic technical standards for data collection and management.

The project will use data from the OPH Safe Drinking Water Program and LDEQ groundwater data from 22 abandoned or inactive wood preserving sites to detect the presence of chemicals used during the wood preservation processes. Methods and information collected from this pilot project will be used to develop a model to determine if other environmental contaminants can be linked to cancer and other chronic diseases in Louisiana. Ultimately, the results will demonstrate methods and benefits of linking environmental and health data, and help to reduce the risk of preventable exposure to environmental contaminant.

### Occupational Health Surveillance

SEET plans to develop an occupational health program within LDHH to describe the type and frequency of work-related diseases and injuries occurring in Louisiana. Several programs within LDHH have access to data containing information about occupationally related injuries and illnesses. Using those pre-existing DHH data sources, SEET will begin to evaluate the data allowing SEET to set priorities for occupational health surveillance and to target interventions.

### Fish Testing

As more water bodies within the state are tested for mercury and other chemicals, the volume of fish tissue data continues to increase. SEET plans to complete a comprehensive analysis of the available fish tissue data for the state of Louisiana. Some of the goals of the analysis include identifying data trends, pinpointing any data gaps, and making recommendations to improve the advisory process.

### Population-Based Blood Mercury Services

In recent years, SEET has conducted blood mercury screens for targeted groups including commercial fishers and their families, women of childbearing age, and people who regularly eat fish from local water bodies. Preliminary results and anecdotal data indicate there may be a segment of the population in Louisiana which has elevated blood-mercury levels resulting from the consumption of locally caught fish. The Section of Environmental Epidemiology and Toxicology (SEET) plans to continue to work to identify these groups and offer them free blood mercury testing and educational outreach.

### Assessing Hazardous Waste Sites

SEET will conduct heath consultations on specific exposure questions evaluating site conditions at hazardous waste sites. These brief, written health consultations will take less time yet be more responsive to specific concerns.

### Faster Response to Chemical Spills

SEET plans on working with physicians and other health professionals across the state of Louisiana to develop a rapid response system for emergency events involving chemical releases. This will allow them to respond more quickly and correctly to individuals who are exposed to chemicals in their environments.

# The Community Can . . .

It is important for residents to be involved in researching and advocating for policy changes to improve the environment. Surveillance and informational data from both private and public organizations combined with a community's own records can help people prioritize their concerns. Communities can record the number of health complaints that may be related to the problem as well as their own observations of the wildlife, land, air and water around them. Using these bits of information, communities may select one or two environmental issues to address. Some ways that communities positively impact the environment are by recycling, protecting land from development and changing policies on chemical disposal in their areas.

### Understand how environmental regulations are made

- Environmental regulations are made through a legal and legislative process. Communities can investigate the regulations, assist in enforcing them and advocate for change if they need or want to.
- Put environmental improvements high on the political agenda.

### Educate your community members on the safe use of pesticides

- Use non-chemical methods of pest control when possible. Around the home, such measures include removing sources of food and water (such as leaky pipes) and destroying pest shelters and breeding sites (such as litter and plant debris). Contact your parish extension agent for effective non-chemical methods of control.
- Always read the label before using a pesticide. Follow the directions including all precautions and restrictions.
- Open, mix, and dilute pesticides outdoors or in a well-ventilated area.
- If there are children in the household, store pesticides and other household chemicals out of their reach and/or in a locked cabinet.
- Before applying a pesticide, remove children, their toys, and pets from the area and keep them away until the pesticide has dried or as recommended by the label.
- For more chemical, health, and environmental information about pesticides, call the National Pesticide Information Center (NPIC) at 800-858-7378, or visit their Web site at www.npic.orst.edu.
- In case of a pesticide emergency, seek medical attention or call the Poison Control Center toll-free at 1-800-256-9822.

### Monitor fishing and swimming advisories

- Increase awareness in your community of water bodies that may have advisories on activities. These advisories may be for fishing, swimming, boating, or wading.
- For more information about the fish you purchase in a restaurant or grocery store, contact the United States Food and Drug Administration (FDA) at (800)-Safefood or log on to their Web site at www.cfsan.fda.gov/seafood1.html.

**Protect yourself and the community from hazardous waste**

- Stay out of restricted areas.
- Do not allow children to play on or near a site which contains hazardous waste.
- Become informed. Learn more about the health effects of certain chemicals. For more information on health and hazardous waste sites, call SEET toll-free at 1-888-293-7020.
- Have your soil or water tested if you have serious reason to think it may be contaminated.
- If you think you have a health effect from a chemical exposure see your doctor.
- Educate people in your community about factors that contribute to cancer. If you notice an unusually high amount of a particular type of cancer clustered in a very small geographic area over a short period of time, you may contact SEET toll free at 1-888-293-7020.

**Protect yourself and the community from chemical spills**

- Call the Louisiana State Police Hazardous Materials HOT LINE at (225)925-6595 or toll free at 1-877-925-6595 to report the event. Make sure you receive any necessary medical attention.
- Listen to your TV or radio for up-to-the-minute instructions. LDEQ will handle the spill clean-up. SEET will provide information on potential health effects from the spilled or released chemical(s).

**Improve your water quality**

- If you get your water from a community public water system, review your annual Consumer Confidence Report (often titled “The Water We Drink”), which each system is required to publish annually by July 1st. This document contains information about the quality of the drinking water for your system and also advises if your system had any violations of the Safe Drinking Water Act during the previous year.
- You may also request to view a copy of your system’s Source Water Assessment Plan, which lists and ranks any contamination hazards for your system.
- If you are interested in determining if your water system is secure against any actions to contaminate the water supply, see if your community water system is one of the more than 280 systems to have enrolled in a grassroots water watch program called the Water Awareness Response Network (WARN). If your system is not enrolled, encourage the system participants to enroll with the Safe Drinking Water Program within the Office of Public Health. For more information call (225) 765-5038.
- If you have a private water well, be aware that you are responsible for your own water quality. If you wish to test your water for contaminants, you may purchase a bacteriological test kit from your Parish Health Unit. The Office of Public Health lab will perform the analysis of a homeowner’s drinking water for a fee. You may also contract with private companies to test your water for chemicals. A list of companies licensed by the State can be obtained by calling (504) 568-5359.

### Breathe free

- A main contributor to indoor air contamination is environmental tobacco smoke (ETS). Ask smokers to smoke outside, instead of in your home or workplace.
- Join vanpools, carpools or use public transportation to support reducing ozone production. Ride a bike to work more often. Walk to the store. Be careful outside and do not overstrain yourself on Ozone alert days. This includes when you exercise or participate in other activities.

### Leave the environment the way you found it

- If you change the oil in your car yourself, dispose of it appropriately. Large oil change stations often recycle the oil. Don't leave car batteries lying around.
- Make a compost heap. Recycle your leaves, grass clippings, and organic food leftovers into fertilizer for your garden. Contact your local garden center for information.

### Initiate a recycling program or report your current program statistics to LDEQ.

- Initiate special recycling projects such as Christmas trees and telephone books.
- If curb-side recycling pick-up is not available, place recycling containers in specific locations in the parish.
- Encourage churches, schools, etc. to recycle newspaper as a fund-raising project.

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