



# Clean Waters

## Starting in Your Home and Yard

Clean Waters is a collaboration of the Connecticut Sea Grant Extension Program and the University of Connecticut Cooperative Extension System's NEMO Project, educating individuals about the impacts of everyday activities on water quality and simple techniques that help protect water resources from the home well to Long Island Sound.

### What's the Big Deal About Water Quality?

It used to be that no one really thought much about water. It came out of the faucet, went down the drain and that was the end of that. If you wanted to go fishing or swimming, you went to the local stream, swimming hole or maybe even took a trip down to Long Island Sound. Nothing to worry about – there's clean water to spare, right?

There are plenty of reasons to worry about water and water quality. We expect to have crystal-clear, pure water for drinking, food production, and recreation AT THE SAME TIME we use our waters for waste disposal. The old slogan, "the solution to pollution is dilution" typified the feeling that anything dumped down a drain, into a river or even into the ocean was going to disappear without a trace. We now know that NO aquatic system, even an ocean, can absorb unlimited human pollution. Just ask someone with a contaminated well, clambers in a town where shellfishing is prohibited due to pollution, residents of a town where a water conservation emergency has been declared, or sailors who find rafts of plastic trash in the middle of the ocean. They'll tell you that water, both in terms of quantity and quality, is not to be taken for granted.

The need to prevent water pollution has been recognized for years. The federal and state Clean Water Acts were passed in the early 1970's specifically to clean up discharges from industry and sewage treatment plants. We now know the problem is much more complicated than simply ordering a plant to stop discharging pollutants. Factories and sewage treatment plants are two examples of "point source pollution", where pollution enters the water from a specific source. All other types of water pollution are lumped together in a category called "nonpoint source pollution" or "polluted runoff." These pollutants fall from the sky, wash from the land during rain storms, travel across the state in streams and rivers, and even get dumped into storm drains or directly into the water by the thousands of individuals who don't realize that what they are doing causes water pollution. The Environmental Protection Agency now considers nonpoint source pollution the NUMBER ONE threat to water quality in the United States.

Through our everyday activities, we all cause water pollution without realizing it. The exhaust and oil from driving cars, materials washed down drains or flushed down the toilet, pet wastes, fertilizers and pesticides used in yards, all contribute to water pollution. Making simple changes in our everyday activities can help reduce some types of pollution. For example, conserving water both saves money and helps septic systems or the local sewage treatment plant remove pollutants more effectively. Choosing non-toxic alternatives for household cleaning products reduces water pollution, cleaning bills, and our exposure to hazardous materials. Rethinking landscaping and gardening practices reduces the need for pesticides, fertilizer, and irrigation, thus reducing the potential for contaminating local waters.

These are just a few examples of personal efforts that protect water quality. There are many written materials available, including this fact sheet series, with information on different ways to help prevent water pollution. Please take some time and find out how you can help protect our most important natural resource - clean water.

#### WHAT POLLUTES WATER?

There are six major types of pollutants that affect water quality. Some are primarily a human problem, but others can damage the entire ecosystem.

**Sediment:** Dirt and sand are natural substances that become pollutants when they end up in the water in excessive quantities. Sediment changes the shape of streambeds, smothers feeding and nursery areas of aquatic animals, and carries other pollutants into the water. Erosion from poorly managed construction sites, agricultural fields, or suburban gardens are major sources of sediment pollution. Another major source is road sand applied to improve winter driving conditions.

**Debris:** Non-degradable trash, mostly plastic, when carelessly disposed of, will often end up in a

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The Connecticut Sea Grant College Program, based at the University of Connecticut, is part of a national network of university-based programs sponsoring coastal and marine-related research, outreach and education.



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nearby water body. Humans find it ugly, as well as hazardous when it entangles boat propellers. Aquatic animals can also become entangled, or mistake plastic for food, and strangle or starve.

**Pathogens:** Pathogens are the bacteria and viruses that cause disease. They generally come from fecal material from humans and their pets, or from wild animals and birds. When the potential concentration of pathogens in the water exceeds certain limits, areas must be closed to shellfishing or swimming in order to prevent infections or disease outbreaks. Major sources of pathogens include: failing septic systems, leaky sewer lines, and concentrations of animal waste from pets, farm animals or wildlife.

**Toxic Contaminants:** Many of the tens of thousands of chemicals in use today are harmful to both humans and aquatic organisms. Some of these chemicals can be passed through the food chain and concentrate in top predators (like humans). Extremely small concentrations of some toxic materials in the water can kill the eggs and larvae of many animals. Sources of toxic contaminants range from the exhaust and fluids that come from automobiles to the cleaning and disinfectant products used in homes to the pesticides used in yards, farms and parks.

**Nutrients:** Materials that are necessary for plant growth, primarily forms of nitrogen or phosphorus, are known as nutrients. When too many nutrients end up in an aquatic system, they alter the natural

plant community and can cause massive plant growth known as algal "blooms" which deplete oxygen concentrations in the water. Excess nitrates in drinking water have been linked to human health problems, including heart conditions and birth defects.

**Thermal Pollution:** During summer months, thermal pollution can make the water in critical aquatic habitats too warm for sensitive native plants and animals to survive, as well as allowing the spread of non-native species. Overheated water can result from the removal of vegetation that shaded the stream, runoff from hot roofs and parking lots, or the collection of water in shallow unshaded ponds.

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**Other Fact Sheets in this Series:**

- Managing Your Hazardous Household Chemicals
- Caring for Your Septic System
- Conservation Landscaping for Water Quality
- Integrated Pest Management for the Homeowner
- Animal Waste and Water Quality
- Backyard Biodiversity: Selecting Plants for Habitat and Water Conservation
- Environmentally Friendly Lawn Care
- Seasonal Yard Care Tips
- Boating for a Better Environment
- Household Water Conservation

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