The Lowdown on Poop

By Sandy Corkern and David Bankston

Louisiana is a sportsmen's paradise. Many people enjoy outdoor activities here, and modern transportation provides access to remote areas to enjoy nature, especially in the many bayous, streams, and coastal areas of the state. Therein lies the problem — lots of people equals lots of waste in Louisiana's waters.

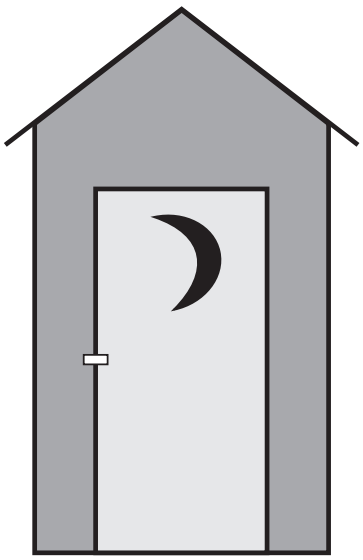
Waste disposal wasn't a serious problem when only a few people fished, hunted ducks, boated, swam, and enjoyed Louisiana's beautiful outdoors. Today, most people spend some time in Louisiana's waters, and visitors come from all over the world to enjoy these places too. Nature can no longer break down and assimilate such volumes of wastes efficiently.

Discharges from human sources can cause problems such as:

- **Eutrophication**. This is a natural process that can be aggravated by human activity. This term describes a situation in which the organic and mineral content of water reaches such high levels that it causes a reduction in the amount of dissolved oxygen in the water. When human waste, which contains nitrogen and phosphorus, are introduced into water, they provide nutrients for an initial growth spurt or "bloom" of algae and other aquatic plants. When this bloom dies, the decaying matter uses up much of the available dissolved oxygen, creating a hypoxic or low oxygen situation. Eventually the animals and plants that live in the water can no longer survive the low oxygen condition and must either move to areas of higher dissolved oxygen or die.

- **Pathogens**. These are microorganisms that cause diseases in humans. Although many occur naturally in some waters (ex. *Vibrio vulnificus*), untreated discharges can add pathogens. Pathogens include bacteria, protozoans, and viruses, and can be encountered while swimming, through cuts and abrasions or by eating contaminated foods. The Hepatitis A virus, Salmonella, Norwalk virus and others can be introduced into the water by improperly treated sewage. While contact with most of these may cause only moderate symptoms such as diarrhea, nausea, vomiting and fever in most people, some individuals may become severely ill or even die.

- **Aesthetic and economic damage.** Businesses that cater to swimming, tubing and canoeing enthusiasts can be severely impacted by closures caused by contamination. The oyster industry has been faced with significant economic loss due to harvesting areas being closed by contamination. Fishing guides, marinas and sporting goods stores also suffer when degraded water quality affects fish populations. There is also a definite, but difficult to quantify, loss of tourism dollars in areas of poor water quality.



Because of these and other sources of contamination to Louisiana's waters, sportsmen, business people, and tourists must now comply with legal restrictions to waste disposal. Wastewater management at land camps comes under the regulatory authority of the Louisiana Department of Health and Hospitals (DHH). The U.S. Coast Guard (USCG) has jurisdiction over wastewater management on vessels.

People have basically two choices — put human waste in a container for proper disposal later (many marinas now have pump-out facilities) or have a proper treatment system on site or aboard. The correct system for a particular application depends not only on the site but also on how the site is used. Waste disposal to avoid contamination depends upon knowing details about the site's intended use and characteristics. Most parish sanitarians are prepared to help determine the best system to fit the situation. Personnel from the Louisiana Sea Grant Extension, Louisiana Department of Wildlife and Fisheries, and the U.S. Coast Guard can provide information about disposal of human wastes from boats.

Operation and Maintenance of Most Waste Disposal Systems

With the exception of composting or incineration to dispose of human waste, most systems rely on physical separation, retention and biological treatment. Because waste treatment systems rely on the same basic processes, they have similar operation and maintenance requirements. Every outdoorsman can optimize operations of these systems by:

- **Minimizing the load on the system**, particularly oil and grease. Fats and oils are difficult for any system to break down. Even cooking oil is detrimental to long-term, trouble free operation. Put food scraps into the compost pile or the trash, not down the drain. Avoid the use of garbage disposals. Waste from the garbage disposal will not only fill your treatment system faster and require more frequent pumping, but it will also increase the scum blanket thickness. Do not dispose of items such as disposable diapers or feminine hygiene products in the system.

- **Disposing of petroleum products separately**. Motor oil, gasoline, diesel fuel or other petroleum products will add to the oil and grease problem, and they can be toxic to bacteria necessary in the treatment system to break down human waste. Petroleum products may also present a safety hazard.

- **Avoiding use and disposal of strong chemicals**. Pesticides, concentrated cleaners, drain cleaners and large amounts of bleach can kill the bacteria that are work for the waste treatment system. Bacteria will tolerate small amounts or low concentrations of cleaning and sanitizing products typical of normal household usage.

- **Limiting both the total volume of water and the rate of disposal of water.** High rate of flow will reduce retention and treatment time, and can resuspend previously separated material. Try to spread out water using activities throughout the day rather than doing them all at the same time. Use water saving appliances, take shorter showers, don't overfill the tub or flush the toilet unnecessarily. Don't do all the laundry on the same day or let the water run while doing dishes, brushing teeth or shaving. Don't empty roof drains into the sewage system and be sure the piping to the treatment system does not leak.

- **Covering leach fields only with grass**. Do not drive or store heavy objects over the field. Nonporous coatings such as concrete will hinder the proper exchange of gasses and slow the biological processes. Plants with large roots such as trees may disturb the flow pattern of the wastewater in the field by causing stoppages or by providing a direct path through the field that allows no treatment. Heavy objects or traffic can compact the field and reduce its ability to absorb waste water.

The life and effectiveness of a waste treatment system can be increased through regular maintenance. Camp owners should:

- **Be aware of signs of system failure and take prompt, corrective action**. Signs include sinks or toilets backing up, foul smells, water or mud around the septic tank and in drain fields that can't be explained by a recent rain. Mechanical systems should be checked periodically to be sure that power has not been cut off (by breaker or fuse) and that the system motor works.

- **Check level of accumulated solids and periodically have system pumped out.** Regular pumping can help prevent overloading the system and system failure. Regular pumping helps prevent solids from escaping into the drain field and clogging soil pores. Frequency of pumping depends on the size of the tank and the load. Small tanks and large loading require more frequent pumping. For example, a 1,000-gallon tank serving 5 people will typically need pumping at 2-year intervals, while the same tank serving 1 person typically needs pumping only every 12 years. In contrast, a 1,500-gallon tank serving 5 people typically needs pumping every 3.3 years. Because mechanical systems are typically smaller, they will require pumping more frequently, depending on use. Biological and chemical tank additives have not been proven either necessary for proper operation or capable of extending the interval between pumpouts.

The bottom line is this: Sewage ruins everyone's paradise. No one can have fun amid muck and bad smells. The Golden Rule applies!

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