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SPOTLIGHT ON... WATER CONSERVATION

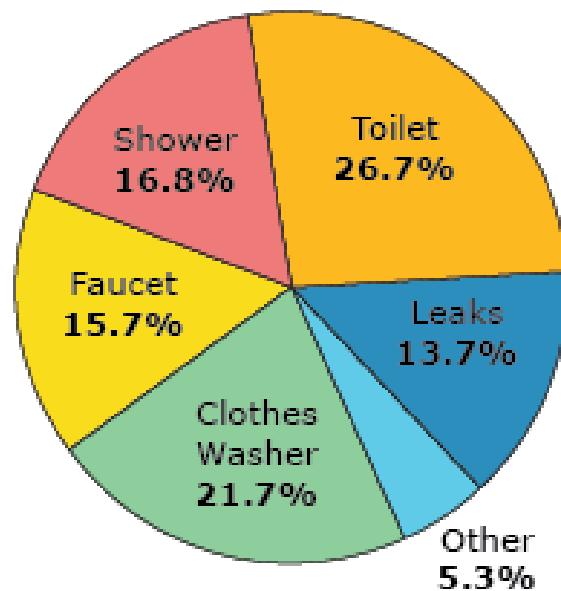
Water Conservation in the Home

The average water use for an American family exceeds 300 gallons per day, with about 70% of that for indoor use. Outdoor use averages about 30%, but that figure can be higher in drier areas of our country and for homes with more water-intensive landscaping. This issue of the Shore Stewards News will focus on water conservation inside the home, including information on newer, more water efficient home features and appliances. You will find out how much water and energy you currently use, and how much you can save in water and energy through use of more efficient features.

How Much Water Do We Use?

The pie chart to the right, from the U.S. Environmental Protection Agency website, illustrates how much water the typical household uses indoors. Your own household, however, may have a significantly different amount of water usage, depending on a variety of factors. These could include how many people live in your home, how many showers or baths they take, how efficient your dishwasher, washing machine, toilet and faucets are, and how many leaks you might have in your water system. The Alliance of Water Efficiency offers an online calculator you can use to create a pie chart for your own home, which you can compare to a water efficient home, and recommendations on how you can make your home more efficient. This calculator will also show you how much energy you likely use, and your carbon footprint based on that usage. Energy is used not only to heat your water, but also to extract water from its source and deliver it to your home. To use this water calculator and create your own pie chart, go to their website at <http://www.home-water-works.org/calculator>

How Much Water Do We Use?



Source: American Water Works Association Research Foundation, "Residential End Uses of Water," 1999

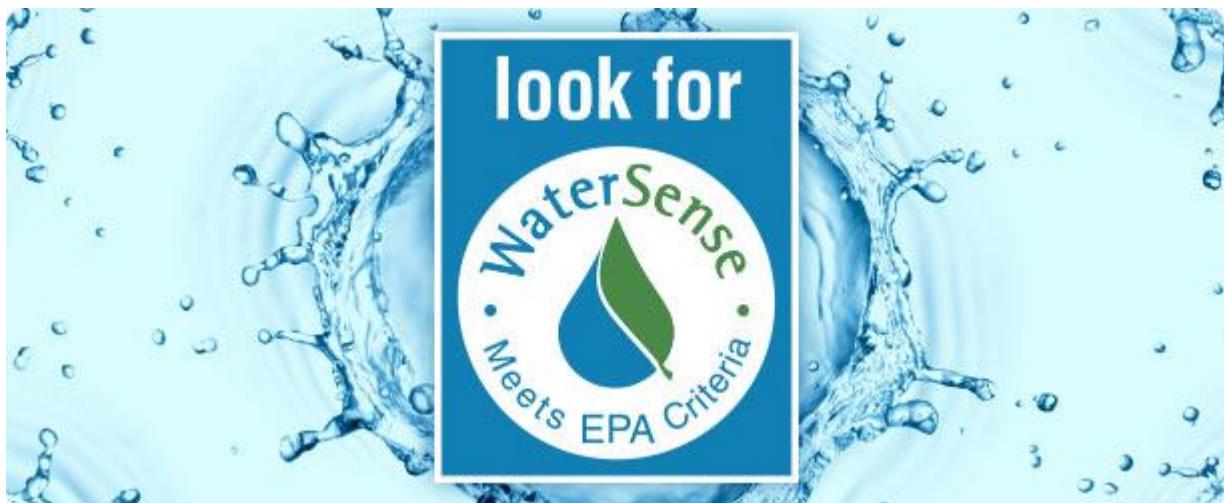
Look for the WaterSense Label

In 2007, the Environmental Protection Agency (EPA) began a partnership program with the goal of protecting the future of the U.S. water supply by promoting water efficient products and services, under a new program called WaterSense. The WaterSense logo or label is similar to the Energy Star rating for energy-efficient product, which was developed by the EPA and Department of Energy in the U.S. in 1992 and has since been adopted by several countries and the European Union. Rather than being a regulatory program, WaterSense is a voluntary program adopted by key utilities, manufacturers and retailers across the U.S. The EPA develops specifications for water efficient products, and manufacturers who feel that their products meet those specifications can submit those products for third-party testing, to make sure that the performance and stated efficiency criteria meet those specifications. If they succeed, the manufacturer gains the right to put the WaterSense label on the product, making it easier for consumers to identify the product as using at least 20 percent less water than the EPA's water use baseline for each type of fixture.

The first WaterSense specifications were written for toilets in 2007, and have since included flushing urinals, bathroom sink faucets, showerheads, and many other products. Even new single family homes can earn that certification. To spread the word about WaterSense, the EPA has worked to partner with utilities, state and local governments, communities, manufacturers, retailers and distributors, certified professionals, non-profit organizations, trade associations, and others. Landscape irrigation professionals can also become certified and become partners. Partners agree to promote WaterSense and water efficiency, adhere to partner logo guidelines, provide annual data, and allow the EPA to use their name on the EPA website.

How much has been saved by adoption of the WaterSense program? The EPA estimates that by the end of 2013, they have helped consumers save 757 billion gallons of water and over 14.2 billion dollars in energy and water bills. Reductions have also included 101 billion kilowatt hours of electricity and 37 million metric tons of carbon dioxide.

To determine which products qualify for WaterSense certification, you can search the EPA's website by type of product, manufacturer, product name, etc. You can locate these at <http://www.epa.gov/WaterSense/products/index.html>



Conserving Water in the Kitchen

The first thing to do is to replace the aerators on your faucets with new water efficient ones. Aerators are the screw-on tips at the end of most modern faucets. Kitchen and bathroom faucets account for almost 16% of the water used in an average home. Federal plumbing standards specify that kitchen faucets use no more than 2.5 gallons of water per minute, and bathroom faucets use no more than 2.2 gallons per minute. Many newer aerators use less than this and are quite effective, and by replacing your aerator you can save up to 40% of the water used by sink faucets. This can be one of the most cost-effective ways of conserving water in the home, since many utilities will give you new aerators for free, or you can buy them at most hardware or home improvement stores for a few dollars. If your faucet is an older model, and a new aerator will not screw onto the end, you may be using 5 or more gallons of water per minute, so you may consider replacing it with a WaterSense faucet. You may also want to repair or replace your faucet if it drips water; this may be repaired by just replacing an inexpensive rubber washer. A faucet that leaks at the rate of one drip per second can waste up to 3,000 gallons of water per year, or enough water to flush a WaterSense toilet for six months!

If you hand wash your dishes by hand in the kitchen sink, fill the sink or tub with soapy water, only turning on your faucet to rinse your dishes. Running the average kitchen sink faucet for just four minutes can use the same amount of water as a dishwasher. If you use a dishwasher, wash only full loads. Dish and clothes washers use about 22% of the household's water, and just one partially full load can waste five to ten gallons of water. Be sure to scrape food off the dishes instead of rinsing it off; most new dishwashers don't require rinsing, which can waste 2.5 gallons per minute. If you have an older dishwasher, replacing it with a new Energy Star-approved model can save you about 5 gallons per load. Collect food waste with sink sieves or strainers: using a garbage disposal not only uses a lot of water, but can raise costs for those who have septic systems by increasing frequency of tank pumping.

Water Savings in the Bathroom

More than 45% of water use in most American homes occurs in the bathroom, with toilets accounting for almost 27% of total household use. This amount can vary significantly, however, since older toilets can use 3.5, 5, or even 7 gallons with each flush. Federal standards now require that new toilets only use 1.6 gallons or less. When these low water-usage toilets were first available on the market, they were not well accepted by the public, as they often required two or three flushes to complete their task, erasing any water savings. Today's toilets are much more efficient and work well with just one flush. New WaterSense High Efficiency Toilets (HETs) have to meet rigorous criteria for performance, using no more than 1.28 gallons per flush, or 20% less than a 1.6 gallon model. (Some dual flush models can use even less water when you are flushing just liquids.) High Efficiency Toilets can save you over 8,000 gallons of water per year. You should also refrain from using your toilet to flush anything other than human waste and toilet paper. Throw facial tissues and other bathroom waste in the trash can, which doesn't require gallons of water.

Toilet leaks are usually silent, and account for the majority of water leaks in a home. A leaky faucet is obvious, but a leaking toilet can be a silent waster of water. Checking for a leak is quite simple. Carefully remove the tank lid and lay it flat on the floor or a bath mat to prevent it from breaking. Flush the toilet and let it reach its normal level. Drop five or six drops of food coloring into the tank. A dark color like red or blue is better than yellow. After half an hour, check the water in the toilet bowl for color. If there is any color, you have a water leak that needs to be repaired. You can hire a professional or purchase a toilet repair kit for your toilet's make and model from a hardware or home improvement store. If you have not done this before, you can find many instructional videos online.

Replace the aerator on your bathroom sink faucet with a water efficient one. When brushing your teeth, turn off the water instead of letting the faucet continue running. When shaving, fill the sink with a few inches of warm water, and rinse your razor in the sink. This will work just as well as running water. If you consider how many minutes the faucet will run if you don't turn it off, you're letting a lot of water go down the drain. If your faucet is leaking, repair or replace it. You can lose more than 20 gallons of water per day from one drippy faucet.

Showering accounts for almost 17% of an average family's indoor water use, nearly 40 gallons per day. The United States annually uses about 1.2 trillion gallons of water just for showering! A standard showerhead uses 2.5 gallons per minute. WaterSense showerheads must show they use no more than 2.0 gallons per minute, and that they provide a shower just as satisfactory as or better than a conventional showerhead. The EPA worked with consumers and manufacturers to test various showerheads and develop criteria for spray intensity and water coverage, and they need to be independently certified to ensure they meet these criteria. Installing such a highly efficient showerhead can save an average family 2,900 gallons of water a year. The energy demand on your water heater will also decrease, saving more than 370 kilowatt hours of electricity each year, enough to power a typical house for 13 days. Before buying a new showerhead, check with your power or water utility. Many offer rebates, special instant discounts at selected retailers, online sale prices, or even giveaways of free showerheads.



Photo courtesy U.S. EPA

Over the years, the American bathtub has decreased in size, and the modern (non-jetted) bathtub usually holds 25 to 45 gallons. Filling this tub half-way uses about 20 gallons of water, and bathers who fill the tub up to the overflow valve or allow the water to drain into the valve will use 40 to 50 gallons per use. To avoid using too much water, one suggestion is to fill the tub only to the depth of your belly button, which should be ample for your needs. If you are bathing babies, small children or pets, use a small tub insert or baby bathtub to cut down on unnecessary water use. If you have more than one small child, bathing them together can be both fun and save water at the same time.

Reduce Water Usage in the Laundry

Although you can reduce water use by installing an efficient aerator on your laundry tub, the biggest savings will be in the type of washing machine you have and how you use it. The washing machine in the average American home accounts for almost 22% of the total water usage. A conventional washing machine built prior to 2011 typically uses about 40 gallons per load. An efficient modern washer may use as little as 15 gallons per load.

There are no WaterSense labeled washers; water efficiency rankings are expressed as a washing machine's water factor (WF), which is an Energy Star rating. When it's time to replace your clothes washer, consider buying a high-efficiency washer with a low water factor. WF measures water efficiency in gallons of water used per cubic foot of capacity. The smaller the water factor, the more efficient the washer. The maximum Energy Star rating is 6.0, but you should look for the lowest water factor available to achieve the best water savings. Energy Star rated washers also have a Modified Energy Factor (MEF), which measures energy efficiency by considering the energy used to run the washer and heat the water. The higher the MEF, the more energy-efficient the clothes washer. It may be difficult to determine the WF and MEF by looking at the label on some washers. You can check these factors on the EPA's website at <http://www.energystar.gov/products/certified-products/detail/clothes-washers>. There are new efficiency standards for washing machines, which take effect in two stages: the first taking effect in March 2015 and the second in January 2018. Manufacturers have already taken steps to meet these standards. According to the EPA, by 2011 over 60% of the new washers met 2018 standards. When buying a new washing machine, check first with your electric utility to see if they are offering a rebate on energy efficient models. They may have a requirement that you buy specific models; not all Energy Star rated washers provide the same amount of efficiency. The rebate may also apply during a certain time period, so make sure you are within those guidelines. Your utility's website should have details on any rebates that they offer.

The least expensive and top-selling machines in the U.S. are traditional top-loading washers, which have a pole in the center of the tub, called a center post agitator. These can clean a load in half an hour, and newer models clean better than ever. They are not water efficient, can be rough on laundry and leave the laundry wetter than high-efficiency machines. The new high-efficiency top-loading machines use less energy and use sensors to manage water usage. Instead of a center post agitator, they have a wash plate and drum that rotates back and forth, tossing and lifting the laundry around the tub. They can wash larger loads and use up to 50% less water and 50% less energy than traditional top-loading machines, as well as saving energy used to heat the water. They use less detergent, and wring out more water, reducing drying time. The wash cycle is longer, 60 to 90 minutes average, and the shorter drying time means more wrinkling and tangling of the clothes.



High-efficiency top loading washing machine. Note absence of center post agitator

Front-loading washers are best at cleaning and the most energy efficient. These washers rotate the laundry back and forth while gravity pulls the water through the laundry. They can wash larger loads than traditional top-loaders, use less water and less energy than top-loaders, and are relatively gentle

on laundry. They are also more expensive than top-loaders, and a wash cycle can take 75 to 100 minutes. They can also require lots of bending to load and unload laundry.

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