

Deep Feet Footprint Home Inventory

Directions:

- Read the background information and activity list for each section below. Determine as best you can how often the people in your household do each activity on the list.
- This checklist shows actions that can reduce humans’ negative impact on groundwater quality.
- If the description of any item does not apply to your home situation, mark the “**does not apply**” column.
- Items checked in the “**sometimes**” or “**unsure**” columns provide an opportunity for better awareness, and a starting place to take steps to better protect groundwater quality.

Notes:

- This is not a scored checklist. Students will be graded solely on whether they complete the assignment. They will not be graded down if their checkmarks suggest that some home practices could be improved.
- This survey is for educational use only. Results will not be shared with the general public or with any outside organization. Individual student’s results will not be identified in class.

Sewage Management: Septic and Lagoon

Sewage systems are designed to process human organic wastes from toilets. If they are not maintained properly, then inadequately treated sewage can reach groundwater. Bacteria and viruses from human wastes can cause serious diseases (such as dysentery, hepatitis and typhoid fever). People who live in a city are connected to a city sewage treatment plant. People who live in rural areas usually have to install their own human waste management systems. The two general methods used in the Ozarks are septic systems and lagoons. Septic and sewage systems depend on bacteria to consume the waste. Household hazardous wastes and medications can harm bacteria and thus slow down waste decomposition processes.

Complete the sewage management section below if you are NOT connected to a city sewage treatment system.

#	Sewage Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	If on a septic system, the septic system is pumped out every 3 to 5 years					
2	If on a lagoon system, it is periodically checked for leaks below the embankment.					
3	Roof runoff is directed away from septic fields or lagoon.					
4	Household hazardous substances such as bleach, paints, solvents, waste oil, and pesticides are NOT put down drains.					
5	Left over or expired medications are NOT flushed down the toilet.					
6	Detergents with phosphates are avoided.					
7	Biodegradable soap products are used whenever possible. They break down into natural substances.					

Sewage Management: City System

People who live in a city are usually connected to a city sewage treatment plants. City systems, like septic and sewage systems, depend on bacteria to consume the waste. Household hazardous wastes and medications can harm bacteria and thus slow down these waste management processes.

Complete the sewage management section below if you ARE connected to a city sewage treatment system.

#	Sewage Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Household hazardous substances such as bleach, paints, solvents, waste oil, and pesticides are NOT put down drains.					
2	Left over or expired medications are NOT flushed down the toilet.					

Stormwater Runoff Management

Storm water runoff can cause flooding and can pollute surface water and groundwater. When rainwater runs off surface areas too quickly, the chances of flooding is increased. If sediments and chemicals are on the surface then both surface and groundwater quality is threatened. Decreasing runoff protects water quality and decreases the chances of flooding. If land is kept in vegetation and is kept free of hazardous substances, then unpolluted rainwater has an opportunity to soak into the ground. This enables groundwater to be replenished with clean water.

#	Stormwater Runoff Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Marshy or natural wetland areas remain intact (not filled in or destroyed).					
2	Rainwater garden is installed (a rainwater garden is designed to catch and store rain water so it soaks into the ground instead of running off).					
3	Landscaping is designed to slow down the flow of water runoff.					
4	Avoid dumping any type of oil, pesticides, fertilizer, or house-hold hazardous waste on the ground.					
5	Storm drains around your neighborhood (if in town) are clear of litter and labeled, "Dump no waste, drains to stream."					
6	Impervious surfaces such as pavement are reduced.					
7	Roof drainage leads to a rain barrel or garden.					

Household Hazardous Wastes Management

Our homes have a wide assortment of products for cleaning, home improvement, lawn and garden upkeep and automotive care. Many of these are considered to be household hazardous waste because they are either corrosive, toxic, ignitable, or contain reactive ingredients. When these substances are poured on the ground, flushed down toilets or placed in private dumps or sinkholes, then they become a potential hazard to the safety of our groundwater and surface water.

#	Household Hazardous Waste Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Avoid using pesticides and herbicides.					
2	Use any pesticides or herbicides according to instructions					
3	Dispose of household hazardous wastes as instructed on container label					
4	Participate in household hazardous waste collections					
5	Do not put any haz. wastes in sinkholes					
6	Do not have a dump trash on own property or that of others					
7	Electronic items are dropped off at a collection site.					
8	Use non-hazardous household cleaners.					
9	Avoid detergents with phosphates					

Drinking Water Management

In the Ozarks, most drinking water comes from wells, which draw from groundwater, and groundwater comes directly from the surface. Therefore, in a karst region it is difficult to drill a well in a safe place! Proper well placement and construction are important. Even if you use city water, in the rural Ozarks it comes from a deep well. In larger cities, however, drinking water often comes from surface sources that are fed by runoff and precipitation.

#	Drinking Water Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	If on city water, follow boil orders as directed.					
2	If on well water or cistern, water has been tested by health department.					
3	Well is cased according to state regulations.					
4	Any abandoned wells or cisterns have been properly sealed.					
5	Well located where it will not be contaminated by a septic or lagoon system.					
6	Top of well casing has been inspected for cracks					
7	Area around well house is landscaped to prevent runoff from sinking near well.					

Erosion Management

By 1982 Missouri had the second highest erosion rate in the nation. Since then, Missouri has reduced soil erosion more than any other state. Soil is considered to be a nonrenewable resource because it takes about 1000 years for one inch to form. When soil washes into surface waters it is a pollutant. Stream water with high amounts of sediment will absorb more sunlight, and thus cannot hold as much dissolved oxygen. As a result, aquatic life depending on dissolved oxygen is stressed or even killed. Sediment washed into caves from above will muddy groundwater and can kill cave organisms. Preventing erosion at homes, farms, and businesses helps improve surface water and groundwater quality.

#	Erosion Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Plant trees or ground cover to prevent erosion.					
2	Keep four-wheelers on designated paths and avoid crossing creeks.					
3	Most of the property is covered in vegetation; little bare ground is showing					
4	Efforts are made to keep property from developing gullies					

Water Conservation Management

Less than one percent of all the Earth's waters is available for human use. The rest is either frozen in glaciers and ice caps or is salt water. Of this one percent, 1/6 is underground. Over half of the people in the U.S. depend on groundwater as a source of drinking water. In the Ozarks, most people depend on groundwater. Presently, groundwater is being taken out faster than it is being replenished by infiltration. Therefore, water conservation is an important part of water management.

#	Water Conservation Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Water outdoor plants in evening rather than daylight					
2	Fill up clothes / dishwasher before using					
3	Catch water in rain barrel or rain garden					
4	Use water saving appliances, such as specially-designed clothes washers, dish washers, and low flush toilets					
5	Check indoor faucets for leaks and replace washers as needed.					
6	If toilet runs excessively, check float and adjust or replace as needed.					
7	Check outdoor faucets and hoses for leaks, and fix if needed.					
8	If well pump runs excessively, seek out cause and eliminate if possible.					

Solid Waste Management

The average American produces several pounds of trash a day from their own household and this figure does not include the waste created during the production of the original goods. By diverting waste from landfills, people are indirectly protecting their ground water. By participating in any of the solid waste management activities below, not only is less landfill space used, but natural resource consumption and energy usage are also decreased.

#	Solid Waste Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Recycle aluminum cans					
2	Recycle paper					
3	Recycle cardboard					
4	Recycle plastics (Numbers 1 and 2)					
5	Recycle tin cans or any other metals					
6	Buy used items					
7	Avoids using plastic bottles (or reuses them repeatedly)					
8	Reuse grocery bags or bring own cloth bags					
9	Avoid using disposal place settings (throw away items)					
10	Restore or fix broken things					
11	Pick up litter					
12	Do not litter					
13	Tires disposal fees are paid rather than dumping them.					

Organic Waste Management

Food waste and yard waste are made up of plant and animal materials that can be easily broken down into soil, which can be used to enhance soil in yards. Composting organic waste saves space in landfills.

#	Organic Waste Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Grass clippings are mulched or composted.					
2	Kitchen food wastes are composted.					

Timber Management

Water that flows off of undisturbed forest land is basically unpolluted. However, wood products are an important part of Missouri's economy. Therefore, using "best management practices" during timber harvesting is a way to protect water resources while benefiting from the wealth that timber provides.

#	Timber Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Before timber harvesting a management plan is done.					
2	Roads, skid trails and landing areas are away from streams, drainage areas and springs					
3	Stream crossing are minimized					
4	Disturbed areas are stabilized with seed immediately after a harvest.					
5	Waste wood debris is not placed in sinkholes or caves					

Pasture and Grassland Management

Many rural Ozark residents raise livestock for income or home use. Cattle in particular are an important part of the economy. Proper management of pasture and grassland is a vital component of protecting groundwater.

#	Grassland Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Animal herds are kept within the carrying capacity of the soil (not overgrazed)					
2	Salt licks are moved frequently					
3	Animals do not have loafing areas near bodies of water					
4	Animals are not fed hay or grain next to or within losing streams or sinkholes.					
5	High trafficked areas are protected by erosion prevention techniques or devices					
6	Soil is tested before being fertilized					

Sinkhole Management

Sinkholes are a direct line to the groundwater in the Ozarks. Managing sinkholes properly can protect groundwater for present and future use. In past years, many Ozark residents dumped trash into the sinkholes and unknowingly created groundwater pollution problems. Today after much research, scientists have demonstrated with dye tracing that sinkholes lead directly to ground water.

	Sinkhole Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	Trash is not dumped into sinkholes					
2	A vegetative barrier or fencing is maintained around sinkholes					
3	When fertilizer or pesticides are used on land adjacent to a sinkhole, a buffer of at least 100 feet is used.					
4	Dead animals or debris (tree limbs, grass clipping, leaves) are not dumped into a sinkhole.					

Recreation Management

The Ozarks are great place to play outdoors! The rivers and woods are so inviting for outdoor activities. However, many times people can impact the outdoors in a negative way if they do not understand the connection between the surface land use practices and ground water in the Ozarks. The following outdoor recreation practices are ways to enjoy the Ozarks outdoors and protect groundwater.

	Recreation Management	Always	Usually	Sometimes	Unsure	Does not Apply
1	When doing any outdoor activity all litter produced is collected and disposed of in trash cans.					
2	When doing any outdoor activity attempts are made to pick up litter left behind by others and disposed of properly.					
3	Hiking, four-wheeling, and horseback riding are done only on designated trails.					
4	Four wheelers are not driven along dry or wet stream beds.					
5	Crossing a stream on a horse is done as little as possible and only at designated crossings.					
6	When using the rest room in "nature" efforts are made to bury human solid wastes upland.					