

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 and surface water quality.
- If any item does not apply to your home situation, mark the "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 water.
- Students will be graded solely on whether they complete the assignment.
- This activity is for educational use only. *Individual student's results will not be shared in class or with anyone.*

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 flushed 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.**

#	Sewage Treatment	Most of the Time	Sometimes	Unsure	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 lagoons.				
4	Household hazardous substances such as bleach, paints, solvents, waste oil, and pesticides are NOT put down drains.				
5	Leftover 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 plant. 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, otherwise mark the “Does Not Apply” column.

#	Sewage Management	Most of the Time	Sometimes	Unsure	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. Note: Some pharmacies and police departments have medicine disposal boxes.				

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 cleaner water.

#	Stormwater Runoff Management	Most of the Time	Sometimes	Unsure	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 household hazardous waste on the ground.				

Erosion Management

By 1982 Missouri had the second highest erosion rate in the nation. Since then, Missouri has reduced soil erosion from farming areas using wiser conservation measures. Soil is considered to be a non-renewable resource because it takes about 1000 years for one inch to form. When excessive soil washes into surface waters it becomes sediment pollution. Stream water that darkens 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. Excessive sediments cover fish spawning beds and enter fish gills. Excessive sediments that are 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 Prevention Management	Most of the Time	Sometimes	Unsure	Not Apply
1	Plant trees or ground cover to prevent erosion.				
2	Keep four-wheelers on designated paths and avoid riding in creeks dry or wet.				
3	Most of the property is covered in vegetation; little bare ground is showing.				
4	Efforts are made to keep property from developing gullies.				

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, flammable, 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 potential hazards to the safety of our groundwater and surface water.

#	Household Hazardous Waste Management	Most of the Time	Sometimes	Unsure	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	Don't put any hazardous wastes in sinkholes.				
6	Don't pile trash in dumps.				
7	Electronic wastes items are dropped off at a collection site.				
8	Use non-hazardous household cleaners.				
9	Avoid detergents with phosphates which add to excessive nutrient pollution.				

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.

#	Sinkhole Management	Most of the Time	Sometimes	Unsure	Not Apply
1	Trash is not dumped into sinkholes.				
2	A vegetative barrier or fencing is maintained around sinkholes.				
3	Dead animals or debris (tree limbs, grass clipping, leaves) are not dumped into sinkholes.				

Drinking Water Management

In the Missouri Ozarks, most drinking water comes from wells, which draw from groundwater. The groundwater is replenished from precipitation that infiltrates into the ground. In the Ozarks, losing streams and sinkholes funnel precipitation underground quickly and directly.

#	Drinking Water Management	Most of the Time	Sometimes	Unsure	Not Apply
1	If on city water boil advisories are followed as directed.				
2	If on well water or cistern, the water is periodically tested for harmful bacteria.				
3	Your well is cased according to state regulations for your area.				
4	Any abandoned wells or cisterns have been properly sealed.				
5	Your well is located where it will not be contaminated by a septic or lagoon system.				
6	Top of the well casing has been inspected for cracks.				
7	Area around well house is landscaped to prevent runoff from sinking in near the well.				

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. Therefore, water conservation is an important part of water management.

#	Water Conservation	Most of the Time	Sometimes	Unsure	Not Apply
1	Avoid using the sprinkler on outdoor garden or lawns in the middle of the day (10 am to 4 pm) when the water is likely to be evaporated.				
2	Run full load of laundry or set the water level accordingly. Don’t run a dishwasher that is not full.				
3	Catch water in rain barrel from a gutter for garden use or create a raingarden to facilitate infiltration rather than have it run off.				
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	Check outdoor faucets for leaks and replace washers as needed.				
7	If a toilet runs excessively, check float and adjust or replace as needed.				

Timber Management

Water that flows off and infiltrates in the ground from undisturbed healthy 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. Forest lands across our nation in national forests and elsewhere play an important part in helping to preserve and protect groundwater in our nation. They are significant recharge areas.

#	Timber Management	Most of the Time	Sometimes	Unsure	Not Apply
1	Before timber harvesting, a management plan is done by a trained forester.				
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.				

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	Most of the Time	Sometimes	Unsure	Not Apply
1	Recycle paper.				
2	Recycle cardboard.				
3	Recycle plastics (Numbers 1 & 2)				
4	Recycle tin cans.				
5	Recycle aluminum cans.				
6	Buy used items.				
7	Avoid using one time use plastic bottles.				
8	Reuse grocery bags or bring own bags.				
9	Avoid using disposable tableware or plates.				
10	Restore or fix broken things.				
11	Pick up litter.				
12	Do not litter.				
13	Tire disposal fees are paid rather than dumping them.				
14	Recycle scrap metal.				
15	Participant in E-waste (electronic) collections for recycling.				

Organic Waste Management

Food waste and yard waste are made up of plant and animal materials that can be easily broken down into soil when composted. Composting organic waste saves space in landfills.

#	Organic Waste Management	Most of the Time	Sometimes	Unsure	Not Apply
1	Grass clippings are left as mulch, used as mulch or composted.				
2	Make conscious effort to avoid food waste.				
3	Kitchen food wastes are composted or fed to animals.				

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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 in the rural Ozarks. Proper management of pasture and grassland is a vital component of protecting groundwater and surface water.

#	Pasture Managements	Most of the Time	Sometimes	Unsure	Not Apply
1	Animal herds are kept within the carrying capacity of the soil (not overgrazed).				
2	Native grasses are used that can withstand times of drought.				
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.				

Recreation Management

The Ozarks are great place to play outdoors! The rivers and woods are so inviting for many outdoor activities. However, 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 water above and below the ground.

#	Recreational Management	Most of the Time	Sometimes	Unsure	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 restroom in "nature," efforts are made to bury human solid wastes upland.				