

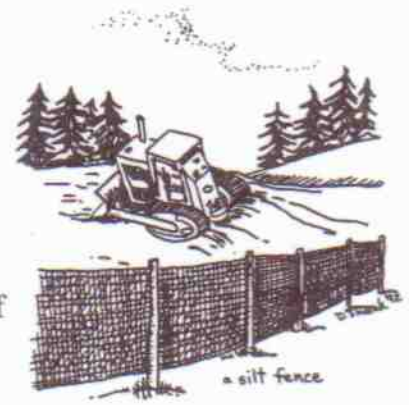
**We use land in many different ways.**

**Different land uses can sometimes cause water pollution.**

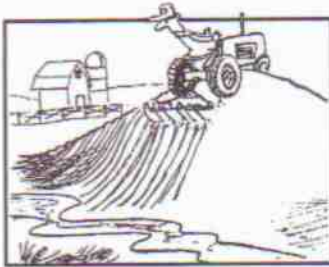
Here are some ways we use land. On the chart below, fill in what kinds of problems you think might come from each land use and what could be done to help.

<b>Land Use</b>	<b>Potential problem</b>	<b>Solution</b>
Construction - building		
Farming		
Roads, streets & parking lots		
Golf courses		
Lawns		
People & animals		
Forestry		
Other		

**Construction** - Whenever something is being built, the soil is disturbed in some way -- whether it's to build a new house or a shopping mall. The loose soil or **sediments** wash into streams. It clouds the water, chokes fish and other animals, blocks sunlight that aquatic animals need to grow and makes it harder to clean up our drinking water. Erosion and sediment control laws require builders to put up silt fences, stake hay bales and put in structures to slow down run off and keep loose soil out of streams and rivers.



**Farming** - Plowing to plant crops disturbs soil. Many farmers now use **conservation tillage** instead of the old way to plow to keep soil in place. Seeds are drilled into the soil and come up through the stubble of the old crops. Planting rows across the slope of the land (instead of up and down the hill as the illustration shows) helps keep soil from washing into the stream. Putting grass on areas that erode easily is another way farmers help protect waterways.



Fertilizers and pesticides that aren't used by the crops or pasture can also run off into waterways. By putting them on fields at the right time and in the right amounts, farmers can reduce what might run off. Farmers can check their fields to see if they need to spray for bugs instead of spraying automatically. They can also use other bugs that are the pests' natural enemies to destroy them. This is called **Integrated Pest Management**.

If you know a farmer, find out about other **Best Management Practices** he or she uses to save soil and protect water.



### **Roads, streets and parking lots**

Have you ever looked at a parking lot after it rained and seen little rainbows on the pavement? What is that? Cars leak oil and antifreeze on to the pavement. People litter in the parking lot. Have you ever noticed all the cigarette butts on the side of the road at a stoplight? What about the sand and chemicals that go on roads when it snows. When it rains, where does all that stuff go? That's right, down the street, into a ditch, storm drain and then into your river! Which moves faster — water running off of a grassy area, a wooded area or a parking lot? Why?

People who build parking lots and roads have to think about how the water is going to run off these surfaces. Look at the parking lot at your school or at a mall. Do you see anything that's there just to slow down the water? Are there any ponds nearby to catch the water from the parking lot? These structures and ponds may have been put on purpose to protect your river.



## People and animals.

Every living thing on Earth is mostly water. An  is 70 percent water. A  is about 65 percent water . . . and so are you! A typical person uses about 70 gallons of water a day. Factories use more water than any other material. It's important to conserve water and take care of it.

List some of the ways you have used water today. How many gallons do you think you used?

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_



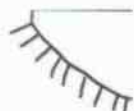
## Natural Resources Jeopardy

\$	water words	pay dirt (soils)	pollution & solutions	watersheds
\$10	Americans use more than 300 billion gallons of this a day.	Planting trees or plants and using silt fences on construction sites help prevent this.	Wise use of our natural resources.	Filter areas that provide habitat for waterfowl and help prevent flooding.
\$20	Inside the home, an average of 50 gallons of water is used for one of these.	It takes 100 to 1,000 years to make one inch of this.	Aluminum cans, glass, plastic and motor oil.	A stream of river that contributes its water to another stream, river or body of water.
\$30	Water is made up of these two elements.	Squiggly creatures that play an important part in mixing, breaking up and aerating soil.	Pollution from non-specific places. It's hard to "point" where it comes from.	Exhaust from this source is a major cause of air pollution and acid rain.
\$40	Jack & Jill and almost 40 million others rely on these for their drinking water.	The rate at which water passes or "perks" through the soil.	Industry, sewage and agriculture	The name of the watershed you live in plus where it goes from there.
\$50	Snow, rain and sleet are forms of this.	Bits of sand, soil, pebbles and other materials that wash into rivers, lakes and oceans.	Start a pile of grass clippings, leaves and vegetable waste and you'll be doing this.	The Potomac, Rappahannock, York and James Rivers all flow into this.

by Megan



## Lawns

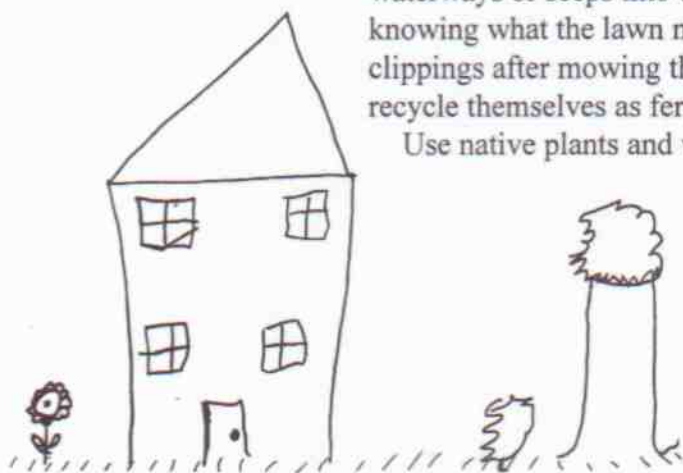


If you took all the fertilizer used on people's lawns and golf courses it would add up to much more than what farmers use on all their fields combined! It's nice to see pretty green grass. But, lots of home owners think if a little fertilizer is good, then a lot would be better. It's not.

The nutrients that grass, trees and flowers don't use runs off into waterways or seeps into the groundwater. Taking a soil sample and knowing what the lawn needs is a good idea. Instead of raking up grass clippings after mowing the grass, leave them on the lawn where they can recycle themselves as fertilizer.

Use native plants and wildflowers to landscape the yard. You won't have to mow them and birds and butterflies love them.

Decks and brick-on-sand patios make great places to have fun outdoors and let water go through to soak into the soil.



## Forestry

We use trees for lots of things — paper, furniture, and wood to build houses. Even chewing gum and some plastics are made from trees. We can plant trees and grow them to use for these things. It takes a lot longer to grow a tree than it does a tomato. Trees are a renewable resources.

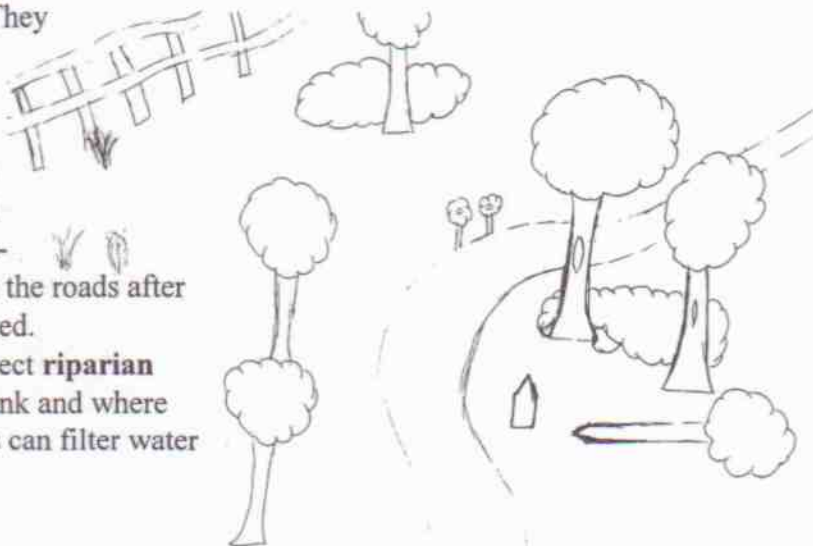
Trees provide shade. Birds and animals use them for homes and shelter.

When trees are harvested, loggers are careful to do things to protect our waterways. They

put in **Best Management Practices** just like farmers and builders.

Roads made to get the trees out of the woods and onto trucks are where problems can occur. Loggers can put in *water bars* to keep rain from washing down a road. They plant grass on the roads after all the trees have been cut and removed.

Foresters and farmers work to protect **riparian zones** or areas between the stream bank and where forests or fields begin. Riparian areas can filter water on its way to the stream.



Megan Petland