2015

Watershed Newsletter
What is a Watershed?
Issue 1

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SWCD
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The Watershed

What is a watershed? A watershed is an area of land where all the precipitation collects into one common area, usually a river, lake, or ocean.

One way to visualize a watershed is by picturing a huge funnel. The rim of the funnel represents the edge of the watershed and everything inside the rim represents inside the watershed. Let's pretend a storm is moving across the funnel. Water will travel to the opening of the funnel, which represents the main channel of the river exiting the watershed.

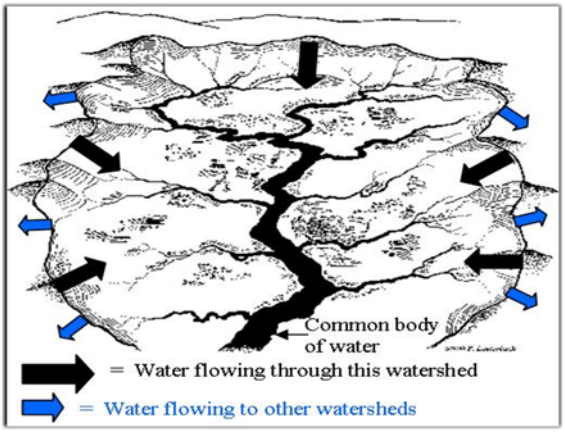

Figure 1: This is a diagram of a watershed. The black arrows indicate water going into the watershed. The blue arrows indicate water going into the neighboring watersheds.

How to determine the edge of a watershed?

We identify the edge of the watershed by using elevation data from a topographic map, to see the likely route water will travel. Using this information, we can model how water will flow through the environment and then be able to interpret the boundaries of the watersheds.

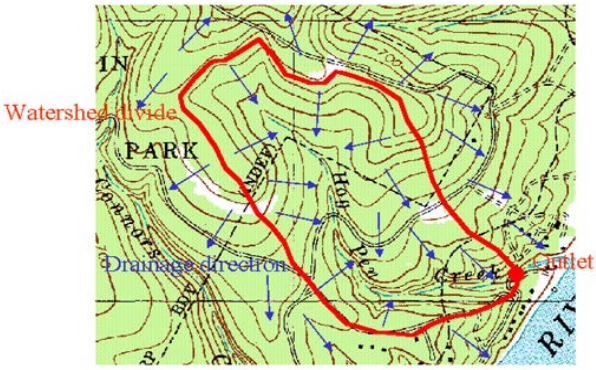

Figure 2: This is a topographic map displaying how hydrologist determine the edge of the watershed. The blue arrows indicate water movement, the red line indicates the watershed divide or border, the red dot indicates the outlet of the watershed.

How are Rivers Born?

How does a single drop of water from a watershed become a river? Depending on where a raindrop falls it can have a long journey before it becomes a part of a river. First, the rain drop forms when water vapor attaches itself to a dust particle due to gravity and starts to fall towards the surface. It has to avoid a variety of obstacles from leaves, plants, animals and evaporation and will either flow as surface run-off or ground water. Surface run-off occurs when the top soil becomes full of water and starts to flow. The water picks up any contaminates present such as chemicals, nutrients, and sediment. Most of the water will be absorbed through the surface and be filtered out by the soil.

How does the water go from the soil to the river? Most people get their drinking water from groundwater or from a reservoir. A drop of water will travel further down into the soil until it hits the water table. The groundwater flows like a really slow underground river, flowing from a higher elevation to a lower elevation. When it reaches the lowest elevation, it will likely run into a river, ditch, or in some cases a lake

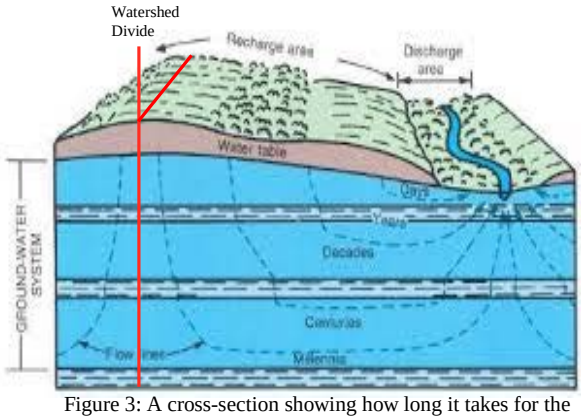

Figure 3: A cross-section showing how long it takes for the water to move out of the soil and into a river.

ultimately reaching the ocean. Rain drops that evaporate will go through the same process again.

Conclusion

Watersheds are very important places because it is the birthplace of rivers and streams. Protecting our water resources from contamination will not only make an impact in our area, but will also make an impact downstream. Making changes in our watershed will produce better water quality and an overall better ecosystem. You can make a difference by becoming more involved with the Whitewater River Initiative and the Friends of the Middle Fork. If you have any questions or concerns about the watershed, call Zach Lee, Watershed Coordinator, at 765-966-0191 Ext. 3.

Figure 4- This is a map of all the major watersheds. Each one of these watersheds can be broken down into smaller and smaller watersheds.

“How could drops of water know themselves to be a river? Yet the river flows on”- Antoine de Saint Exupéry