“Wetlands and the Water Cycle”

Like many things on our planet, water is constantly changing. As it goes through its cycle water can change from a solid, to a liquid, or even into a gas. This constant change helps our rivers to run, lakes to stay full, and supplies our homes with water. Without this cycle, our water supplies would be in trouble.

So how does this water cycle work?

The water cycle, or “hydrologic cycle” as our scientist friends call it, can be broken up into three major stages.

The first stage in the water cycle is “evaporation”. As the sun’s energy heats the surface of our lakes, rivers, plants and soil, the water begins to turn to “water vapor”. Steam coming off hot liquid is one way we can see water vapor.

This water vapor is a gas that can rise up into the sky. Winds and air currents push the water vapor through the atmosphere until…it forms into the next stage – clouds.

Have you ever looked at the sky and wondered “where do all those clouds come from?” Well, they are an important part of the water cycle.

As wind and air currents push the water vapor through the atmosphere, it joins with other water molecules and dust particles. And when the air cools, they all begin to condense together into clouds.

So for clouds to form, water vapor must be present in the atmosphere. That’s one reason why you won’t see many clouds over a desert but will see many clouds above oceans and lakes.

Now that we have all those clouds, what happens to make it rain?

As the water vapor combines in the clouds, they make water droplets or ice particles. Once the droplets or ice particles get too big, gravity takes over and the water trapped in the cloud begins to fall as precipitation.

The water that falls as precipitation takes many paths on its way back to evaporation. The water may flow into a nearby stream or lake, be taken up by plant roots, or infiltrate the soil and turn into ground water.

Water in storage on the surface, such as lakes, rivers, and wetlands, can begin to return to the atmosphere quickly through evaporation. But water that seeps into the ground may not return to the surface for years or even decades.

Ground water is the water that soaks into the ground. It seeps downward in the pore spaces within the soil or rock until the soil is “saturated” or filled with water. This is called the “water table”. Many people get their drinking water from wells drilled into the water table. The water table can return water to the surface by feeding wells, springs, creeks, rivers and lakes. Irrigation wells using ground water return ground water to the surface. Once ground water reaches the surface, it can evaporate and return to the active water cycle.

Plants also play a role in the water cycle. They absorb moisture through their roots from soil and transport it to their leaves for photosynthesis. There, it leaves the surface of the leaves as water vapor back into the air.

This constantly changing water cycle plays a crucial role in creating and maintaining our wetlands. Wetlands can be created from rain or melting snow runoff. They can also be created from rivers flooding or fluctuations in lake water levels. Many wetlands however, form when ground water in the soil is at or very near the surface.

Wetlands are not only a product of the water cycle; they also play their own important roles within the water cycle.

First, the soils and plants in wetlands filter and clean impurities out of the water. That helps remove pollution from the water cycle.

Wetlands also provide flood control. With the ability to hold millions of gallons of water, wetlands act as buffers between surface runoff and rivers, which can reduce flooding peaks by as much as 60 percent. That helps protect property and save lives.

Wetlands also protect against erosion by acting as shallow water buffers with vegetation between deeper waters and shorelines.

And finally, wetlands often link ground waters with the surface where sunlight and evaporation can return water vapor to the atmosphere.

So wetlands play a very important role in our water cycle. That’s one reason why protecting and preserving wetlands is essential to the one thing that makes our planet come alive and stay live… water.

So next time you see a cloud or wade through a wetland, consider how the water cycle is happening all around you all the time through evaporation, condensation, precipitation, and within wetlands.