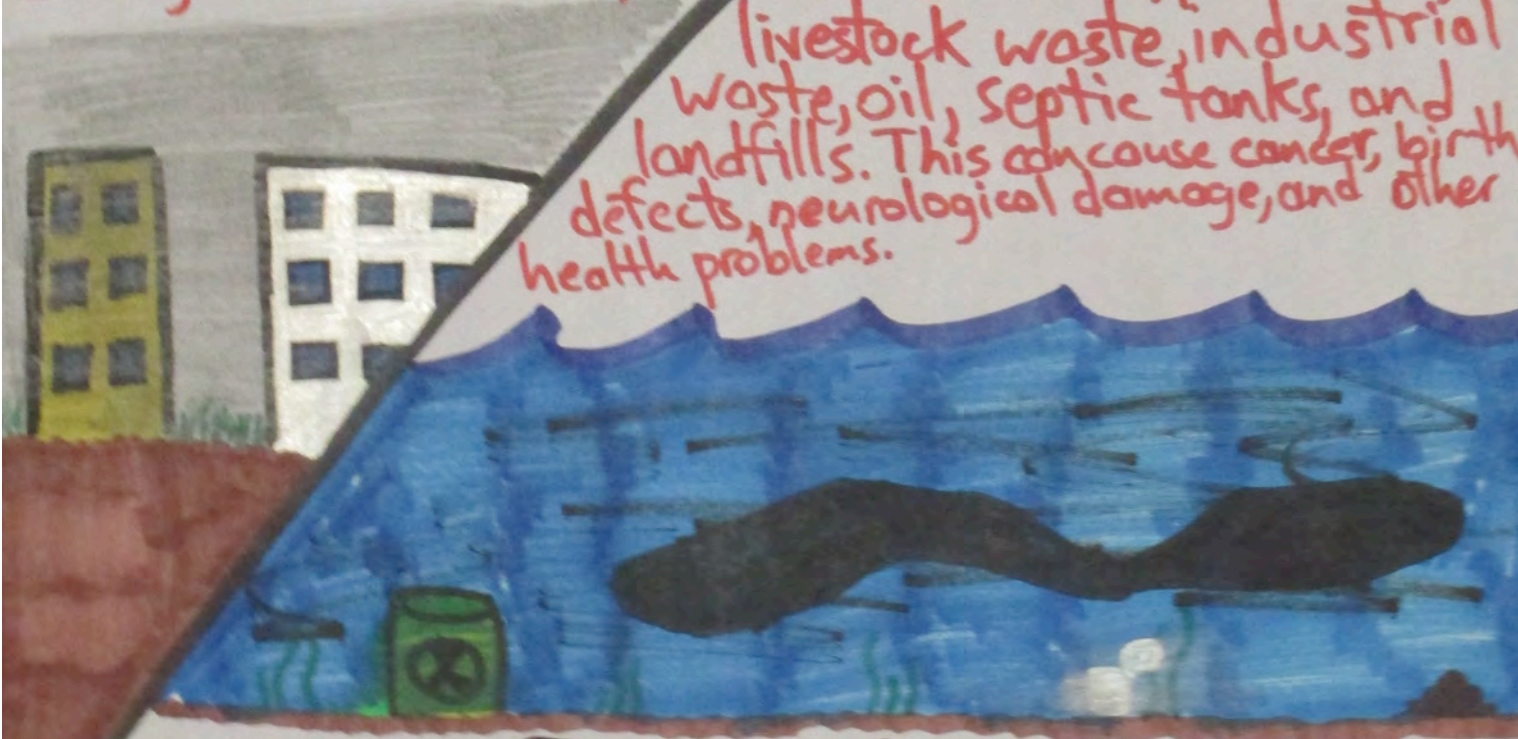


AIR Pollution

Most of the air pollution is caused by industry and vehicles. Burning fossil fuels releases carbon dioxide, sulfur dioxide, and nitrogen dioxide into the air. Air pollution causes respiratory problems, acid rain, and damages the ozone layer.

The average person uses 8 gallons of water per day. Water pollution can come from runoff of fertilizers, pesticides, livestock waste, industrial waste, oil, septic tanks, and landfills. This can cause cancer, birth defects, neurological damage, and other health problems.



WATER Pollution

Stop Pollution!

ALEX GODLEWSKI



Cadence

THE WONDERS OF WISCONSIN

There are three ecosystems in Wisconsin that are unique and wonderful. An ecosystem is an area of land that has a variety of different types of land, animals, and plants. While there are many different ecosystems that make up Wisconsin, the three that are most commonly found are the prairies, wetlands, and woodlands. A lot of the original ecosystems in Wisconsin have vanished. The prairie once took up 9% of the total land in southern Wisconsin, but only 0.5% remains. While the prairie has lost a lot of ground, the woodlands have made a comeback. Out of the 32 million acres that there used to be, 16 million have been recovered.

Wisconsin has a very unique climate. Wisconsin's temperature range is the most extreme in the world. It has reached up to 105°F in the summer, and -26°F in the winter. The average wind speed in Wisconsin is 10-12 mph, but there has been wind speeds of up to 75 mph reported. Throughout the year, Wisconsin usually gets 37 inches of rainfall and 47 inches of snow. The percentage of sunlight depends on what season it is and how much tree foliage is available.

The first of the ecosystems is the prairie. "The prairie, in all its expressions, is a massive, subtle place, with a long history of contradiction and misunderstanding. But it is worth the effort at comprehension. It is, after all, at the center of our national identity." The prairie gets around 22 inches of rain in a year, but manages to be a very dry place. There is no canopy to block any of the sunlight, and the lack of trees also means that there's nothing to block the wind. The soil in the prairie is also very fertile, and because of this, a lot of them were torn down for farms. The average soil temperature is around 20-23°C. The plants in the prairie have a 1/3-2/3 rule, which means that 1/3 of the plant is above ground and 2/3 are below the ground. The prairie needs fire to survive. Every once in a while, prairies will be lit on fire so that all of the plants can rejuvenate.

Prairie plants and animals have adapted to live in their ecosystems. For example, the plants have needed to adapt in order to survive the fires. Seventy five to eighty-percent of the plant grows underground. That way, the fire only burns the top of the plant and it can start to regrow immediately.

The Colors of the Wetlands

The water, a great blue mirror. Green lily pads dot the water. Brown barked trees swish back and forth through the air. The wetlands is like a massive painting.

The goal of life is living in agreement with nature.

-Zeno

Nature's recycling. When animals die in the forest, they help the rest of the forest by decomposing. Their bodies break apart and crumble into dust. The forest then uses the remains for nutrient. Photo by Alex Godlewski

The animals of the prairie are also suited to live there. One such adaptation is strong legs and claws. They need this in order to dig holes to live in. They are also camouflaged to match the color of the prairie plants in order to hide from predators.

Wetlands are another unique and amazing biome. Wetlands are defined by the amount of water they hold, when is the soil saturated and with how much water, the plants and animals that live there. There are four types of wetlands in Wisconsin, the swamp, marsh, peat bog, and wet meadow. The wetlands are home to many species of animals and plants, such as waterfowl, crawfish, cattails, and lily pads. Wetlands are almost always moist, however, some are seasonal. This means that they are wet for part of the year and dry the rest.

Just like the prairie, animals and plants in the wetlands have needed to adjust their bodies to their surroundings. For one, plants that grow in the wetlands are often surrounded by water or in the water itself, so they need to get oxygen somehow. They have pneumatophores (breathing roots) that go above any water and get oxygen for the plant. As said, animals also need to live in the wetlands. One animal that does this is the crayfish. Crayfish have gills like fish so that they can breath under water. They also have a strong exoskeleton to protect them and a powerful tail that can

The woodlands of Wisconsin are thriving with life and energy. Woodlands are stuffed with trees and plants. In fact, there are so many that the woodlands have a canopy. This means that the branches and leaves at the top of the tree create a layer that block out around 80% of the total sunlight. The woodlands usually get around 30-60 inches of precipitation annually. Just like the prairies, the woodlands have a 2/3-1/3. However, unlike the prairie, this rule is used in reverse. 2/3's of the plants are above the ground, while 1/3 is under the ground. They only need the roots to spread out near the top because the soil of the woodlands is very nutrient rich. The average wind speed in the woodlands is 5-7mph.



The Stamp Box. At Pringle our group found a box hidden inside of a tree. It contained stamps, some ink, and messages from different people who found the box dating back a couple of years. We wrote our own message and then hid the box once more.



The Green Masses The leaf has a lobed margin. Each leaf has veins that travel through the inside of the leaf. Leaves also have to be pointed at the end so that rain will run off instead of staying on the leaf and growing moss. Photo by Alex Godlewski

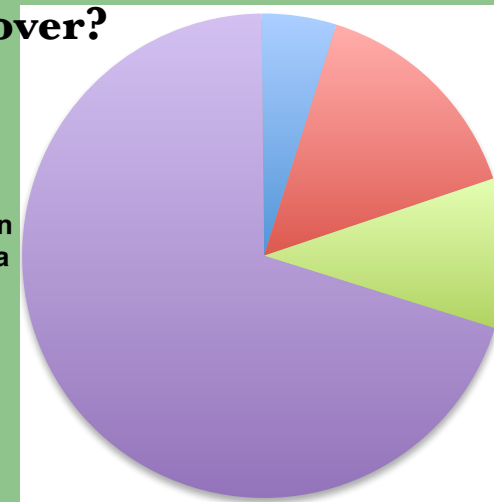
There are always flowers for those who want to see them. -Henri Matisse

Bibliography

-Biology Class Notes
 -"ImportanceOfFungi"CountrySideInfo.n.d. Web. 17October2013.countrysideinfo.co.uk

What's the cover?

The woodlands floor is coated in many different living and non-living objects. Just like many other sets of data, we can roughly measure this in a percentage.



Flowering Plants-5%
Mosses and Lichens-15%
Fungi-10%
Bare Ground/ Litter-70%

**Did you Know...
Prairies!**

Prairie plants have thin leaves to make sure that they use as little water as possible.



The soil in prairies is very nutrient rich. Many prairies were torn down to make farmland.

The tall grass prairie can have grasses that are 6-10 feet tall!

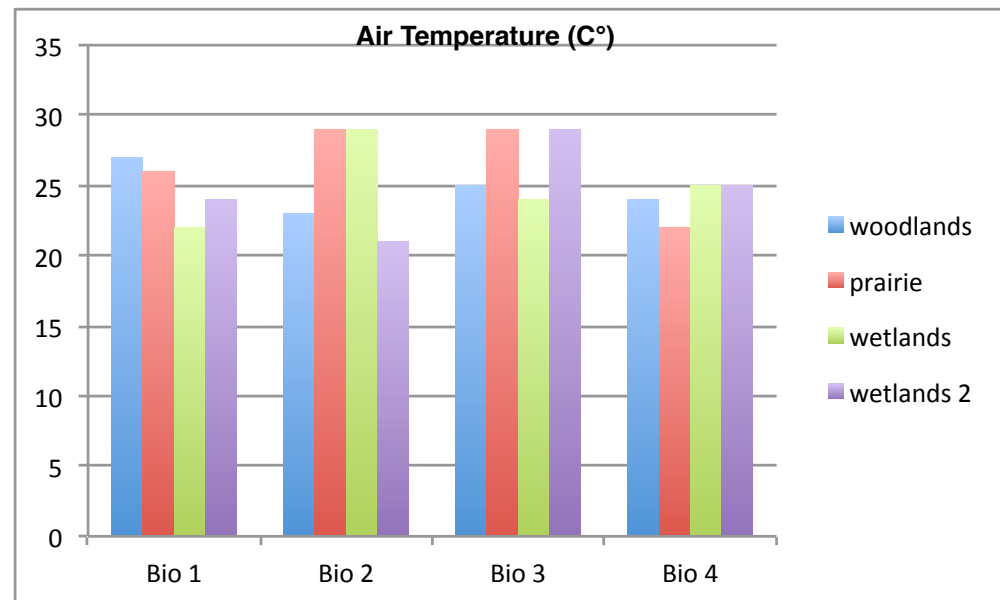


In the past, prairies covered 40% of the United States. Unfortunately, since then, nearly 99% of ALL the prairies in America have been destroyed.

Nature is an infinite sphere of which the center is everywhere and the circumference nowhere. -Blaise Pascal



The Yellow Hordes The plants on the prairie need different adaptations to survive. They have a 2/3-1/3 rule, 1/3 of the plant is above the ground, while 2/3 is roots below the ground. They also have small thin leaves so that they don't need to waste as much water on them compared to other plants. The prairie plants also have to withstand wind, so they are very bendable. Photo by Mrs. Renaud



Air Temperature. The graph above compares the air temperatures of three different ecosystems. Overall the prairie had the highest average temperature with 26.5°C. The woodlands and wetlands 2 were tied for lowest average temperature with 24.75°C.

The Woodlands
The birds flying high
The trees reaching at the sky,
In the great forest

Just like with the prairies and wetlands, the animals and plants that live in the woodlands have adapted over time to live comfortably in their ecosystem. For example, the trees have grown to live there. For one, they grow very tall so they can reach the top of the canopy and collect sunlight. The leaves are big and broad to collect as much sunlight as possible, and pointed to let the water from rain runoff. Animals can also change to fit their surroundings. In example, coyotes have fur that keep them warm in the winter and shed off in the spring/summer to keep cool.

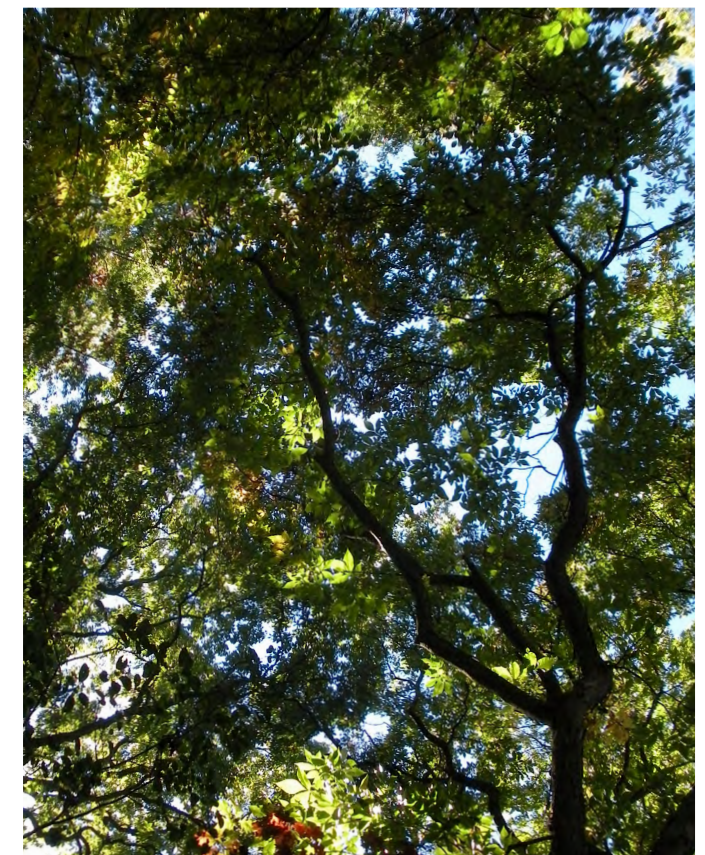
The prairies, woodlands, and wetlands have many uses. The wetlands are a home to thousands of species of flora and fauna. The wetlands also act as a filter. The wetlands capture little bits of dirt and other stuff out of the water as it runs through the wetland, thus making it cleaner than when it entered. They can also help to stop floods. Prairies have soil that is very nutrient rich. Because of that a lot of them were plowed over and turned into farms. They also have lots of plants that can be used for items such as food, medicine, and habitats for animals. Woodlands can be used to produce paper and wood, the trees can make air, and holds thousands of plants and



The Noises of the Praire. Many insects live on the prairie. Crickets, grasshoppers, praying mantis, and more live on the prairie. Some creatures that live on the prairie blend in with their surroundings using camouflage, meaning that the color, texture, etc. match their surroundings.

THE SILENCE OF NATURE IS
VERY REAL. IT SURROUNDS
YOU... YOU CAN FEEL IT. -
TED TRUEBLOOD

Morticians of the Forest Fungi are the number one decomposers in the forest. Without them the forest wouldn't be able to get rid of the dead plant and animal remains. Mushrooms grow in dark and moist places. Photo taken by Alex Godlewski



↑ **The Lords of the Forest** Trees need to adapt in order to survive just as much as other lifeforms. They need thick bark to protect them from bugs. Their leaves also have to be large to suck up as much sun as possible. They drop their leaves in the weather to conserve energy.

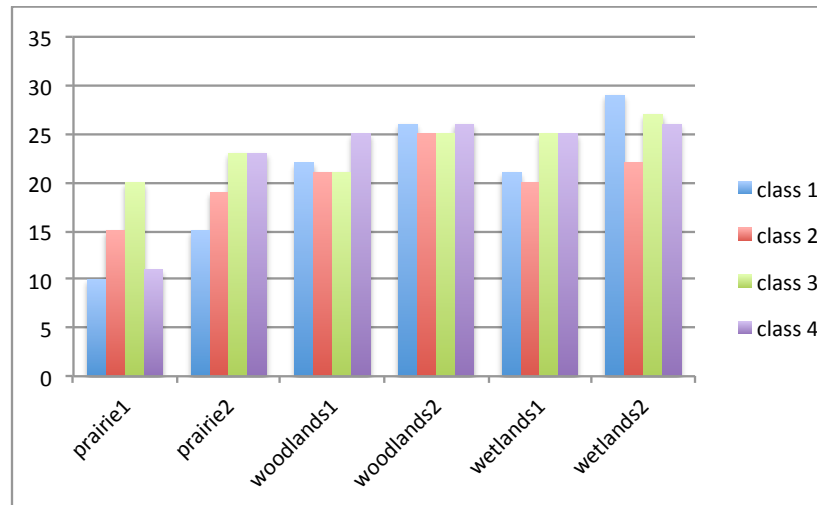




Going With the Flow. Lily pads are lacking in one resource, oxygen, so they must compete for it. Lily pads are attached to the bottom of the body of water by roots. Photo by Alex Godlewski



Fallen Giant. Trees have a 2/3-1/3 rule, that means that two-thirds of the tree are above ground and one-third is below the ground. Trees in the forest do not need deep roots because the top of the soil is very nutrient rich. Photo by Alex Godlewski

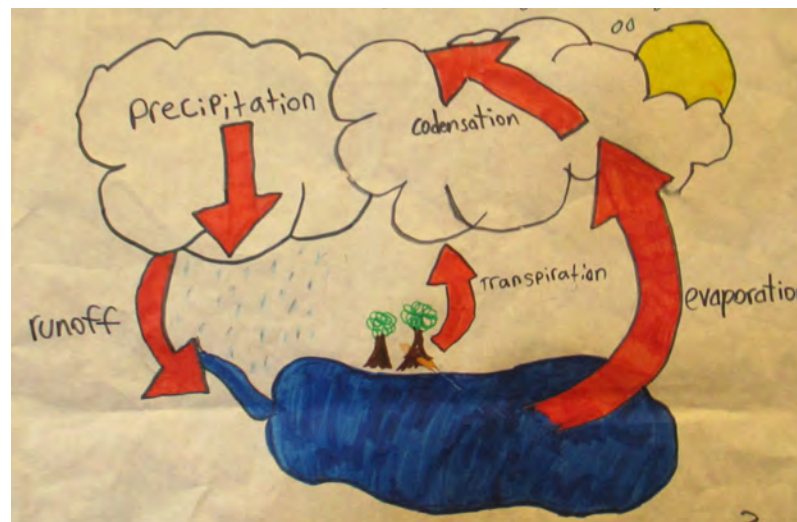


THE WETLANDS QUIZ!

How well do you know your wetlands? take this quiz to find out.

- Around how many acres of wetlands have been lost?
 A- 100
 B- 100,000
 C- 100,000,000
 D- 100,000,000,000
- Which one of these is NOT a true about a wetland?
 A- They help to clean water.
 B- Their plants are 2/3 above the ground and 1/3 below.
 C- They provide homes to animals and plants.
 D- They help to prevent flooding.
- What is the science dealing with the properties, circulation, and distribution of water?
 A- Ecology
 B- Biology
 C- Hydrology
 D- Watershed
- What is an aquifer?
 A- A layer of rock that absorbs water.
 B- Roots that go above ground and collect oxygen.
 C- An area that holds all of the rivers/streams that flow into a body of water.
 D- Something that supports/strengthens.

ANSWERS
 1-C
 2-B
 3-C
 4-A



The Water Cycle. The water cycle is how water is moved around the world. The body of water gets heated up by the sun, and evaporates. Water is also transported out of plants into the sky as well. Once the water is in the sky, it condenses with little bits of dust to create clouds. The clouds then precipitates through rain, snow, etc. and the water falls back to earth. Any water that cannot be absorbed by the ground runs off into the body of water once more. Drawn by Kinsey Anderson



The Spread of the Cattails. Cattails spread their seeds by releasing fluffy, light seeds that are being encased in the brown narrow spike. Seeds are then able to be carried off by the wind and can grow somewhere else. Photo by Alex Godlewski

The Loss of the Praire

The vast grasslands reel,
 Houses are claiming the
 land, Treasures being
 lost.

Adopt the pace of nature: her
 secret is patience. -Ralph
 Waldo Emerson

Soil Temperatures. At Freshman Camp, we measured the temperature in celcius in two different spots in the woodlands and wetlands. At Pringle we measured the temperature of the prairie in two different spots. In the end the woodlands had the warmest overall temperature because it's full of roots, leaf litter, and bugs. The prairie had the coolest soil temperature because there is no trees that block the wind and it can get cold.

There are many paths to the
 top of the mountain, but
 only one view. -Harry



The Circle of Life Energy flows through nature like a web. The arrows here point towards where the energy is going. It starts when the sun gives energy to the producers (i.e. grass, trees, etc.). It then goes towards the consumers that eat those plants, and keeps on going up through the consumers whenever they eat the consumer below them. However, all energy goes towards the decomposers that break down all of the dead matter.