Upham Woods Outdoor Learning Center

UW Extension University of Wisconsin - Extension

DOTS Digital Observation Technology Skills

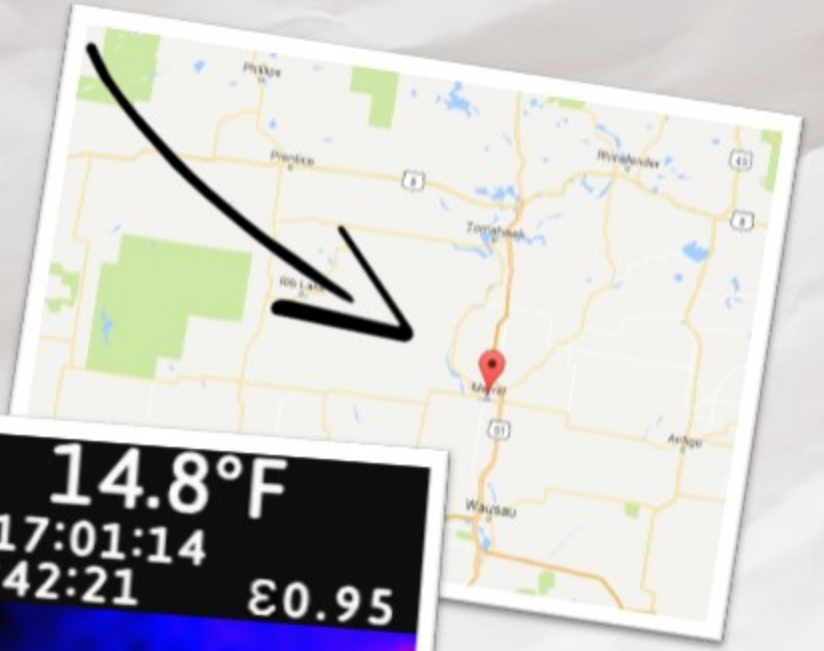
Date: January 28th, 2017

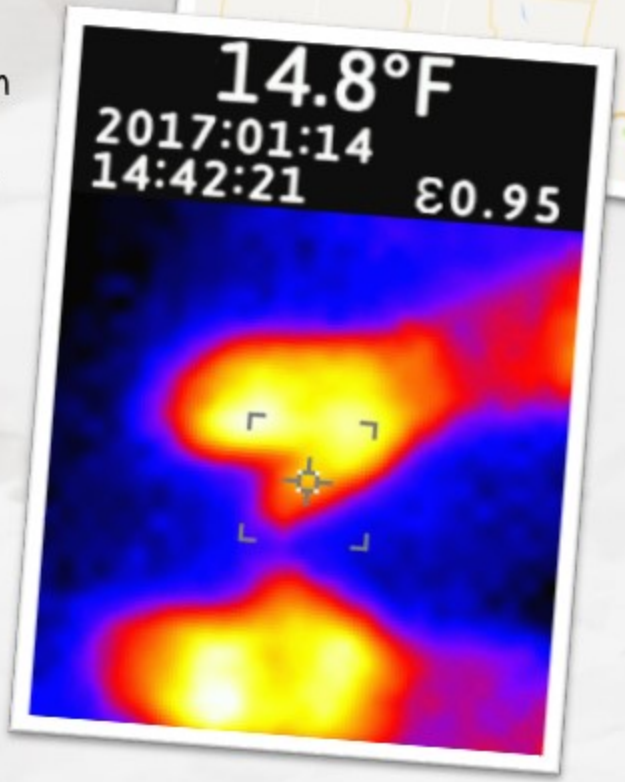
Team Members: Rich Twomey, Ben Reindl, Emily Fritz

Location: Merrill, Wisconsin

Scientific Story

We were interested in the relationship between wind speed and temperature, and how that impacts the human body. Our highest wind speed was about 8 mph with 27 degrees Fahrenheit, with a hand temp of 54.4F Our lowest speed was 4 mph, temp was 30 degrees Fahrenheit and hand temp was 76F. Decrease in hand temperature was recorded at each interval, except once our hands were warmed.





For more information, contact Justin Hougham, or check out our website:

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Upham Woods Outdoor Learning Center

UW Extension University of Wisconsin - Extension

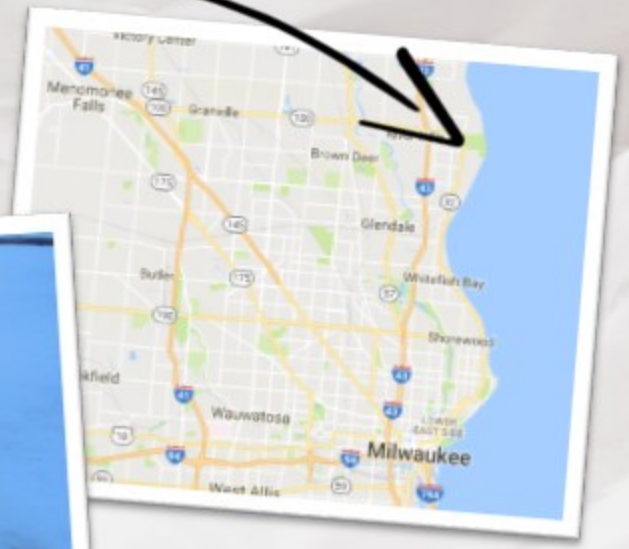
Team Members: AJ, Tom, Janet, Denise

Date: February 1st, 2017

DOTS Digital Observation Technology Skills

Location: Schlitz Audubon Nature Center

Schlitz Audubon Nature Center



Scientific Story

Found mouse tracks in and out of the cattail area. Followed and found evidence of food, shelter. Thermal imager helped spot a "hot spot". The Camera and iPad were used to document evidence. The recorded surface temperature was 12 degrees Fahrenheit.

Did you Know?

During the colder months, mice do not hibernate. When it is extremely cold they do fall into a torpor which is a decrease in physiological activity.

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Upham Woods Outdoor Learning Center

UW Extension University of Wisconsin - Extension

Team Members: Sharon, Deb, Tom, Janet, Jackie

Date: February 1st, 2017

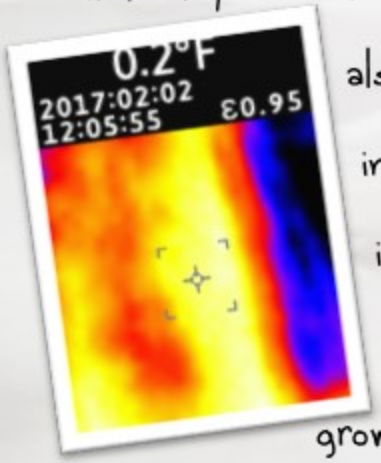
DOTS Digital Observation Technology Skills

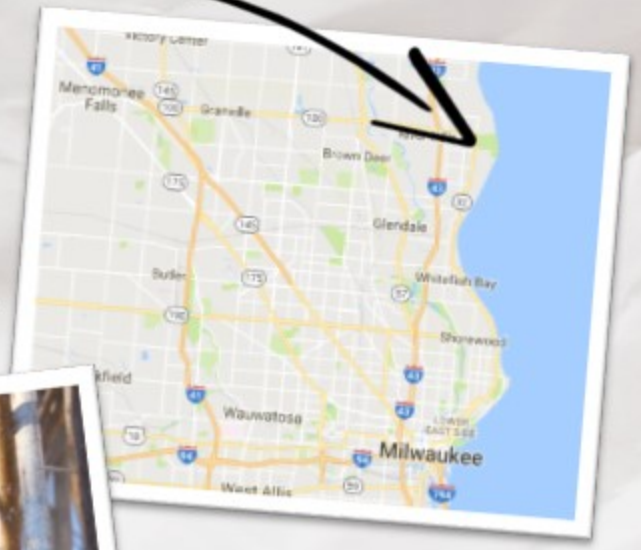
Location: Schlitz Audubon Nature Center

Schlitz Audubon Nature Center

Scientific Story

Our group noticed some of the trees had a twisted growth pattern, especially at the top. We looked closely at the ropey bark, alternate branch pattern, and pea-like seed pods of tree #1, which led us to think it's a locust tree. A second twisty tree had similar, but much deeper ridges in the bark. Since twisting of the branches didn't start until near the crown we think the wind may cause the twisting, but growing toward the light may also play a role. Further research should include measuring wind speed and direction, identification of species, height where twisting begins, and examination of actual trunk growth patterns.





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Upham Woods Outdoor Learning Center

UW Extension University of Wisconsin - Extension

Date: May 12th, 2017

DOTS Digital Observation Technology Skills

Team Members: Jason Petrella, Ben Schuurman, Dani Wagner

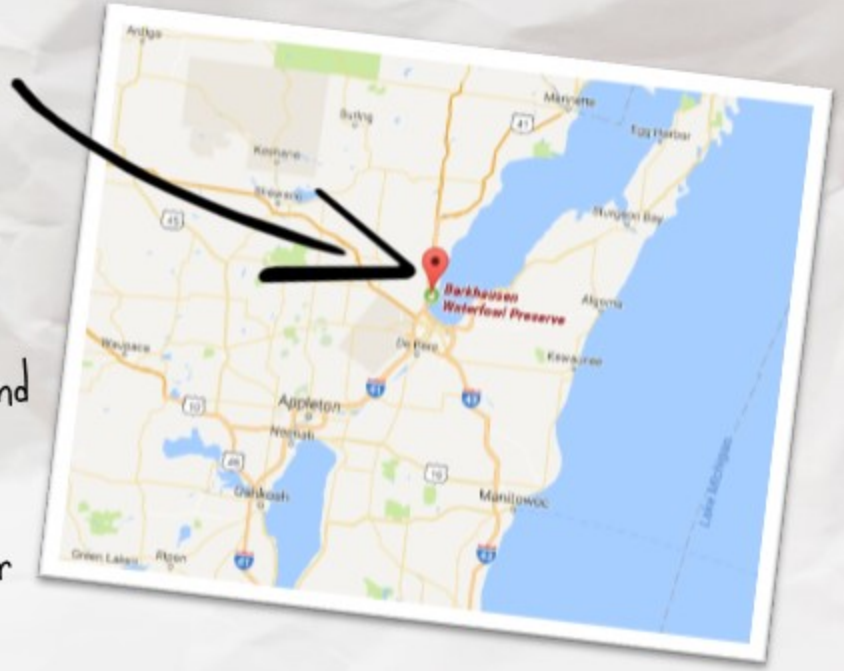
Location: Suamico, Wisconsin

Brown County Established 1818

Scientific Story

Once upon a time staff at Barkhausen wanted to know whether the tree swallow living in the bird house in the plants of the prairie garden was incubating their eggs.

The staff concluded that the eggs were not incubated and that the mom swallow was upset they were near her eggs.



Did you Know?

Tree Swallows are highly social and pairs often nest close together. They line their nests with feathers, and play with them during the early nesting season. To protect against predation, the swarm and dive-bomb predators while emitting alarm calls.

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Upham Woods Outdoor Learning Center

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DOTS Digital Observation Technology Skills

Date: June 10th, 2017

Team Members: Molly Porter, Leah Litz, Kylie Hudnall, Omaha Public Schools, Omaha, Nebraska

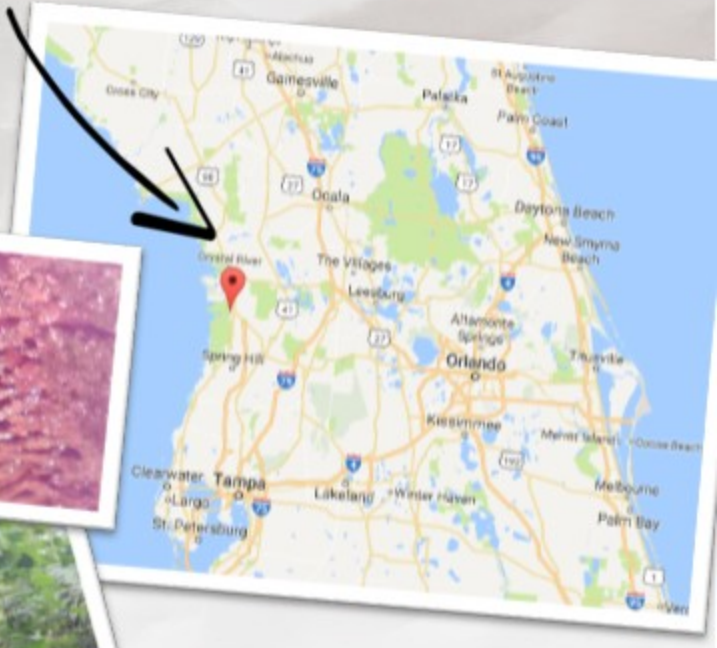
Role: Microbiologists

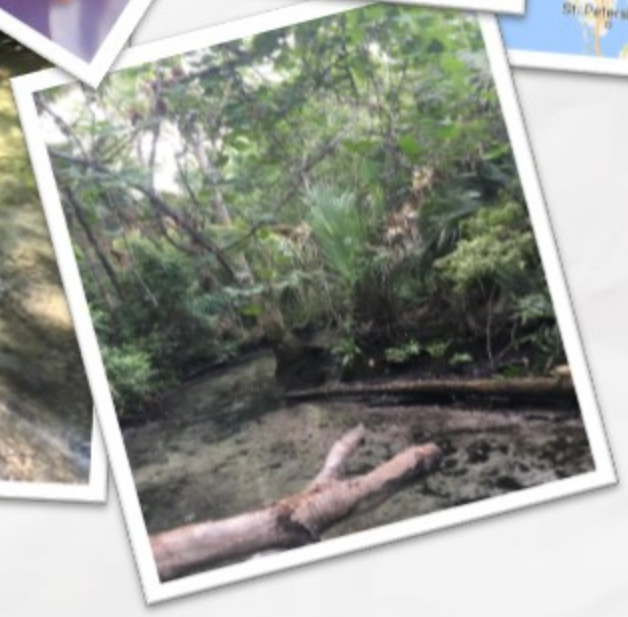
Location: Chassahowitzka River, Florida

OMAHA Public Schools

Scientific Story

On June 10, 2017 we collected data from Chassahowitzka River, Florida. Witnessing the scale of time was the most powerful experience for us. Standing in water that took 50 years to travel from the aquifer before reaching the surface. We photographed a flower that took moments to bloom, on a plant that took years to grow, in soil that took centuries to accumulate.





Did you know?

It takes 200-400 years to form 1 cm of soil. However it takes 3,000 years to make soil fertile.

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Upham Woods Outdoor Learning Center

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DOTS Digital Observation Technology Skills

Date: June 10th, 2017

Team Members: Elizabeth Seckman & Hailey Miloni, Omaha Public Schools, Omaha, Nebraska

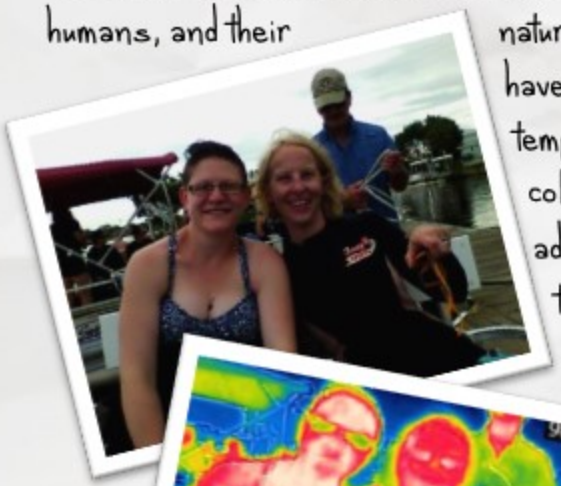
Role: Thermal Investigators

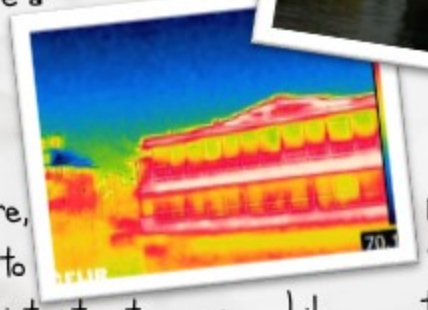
Location: Kings Bay, Crystal River, Florida

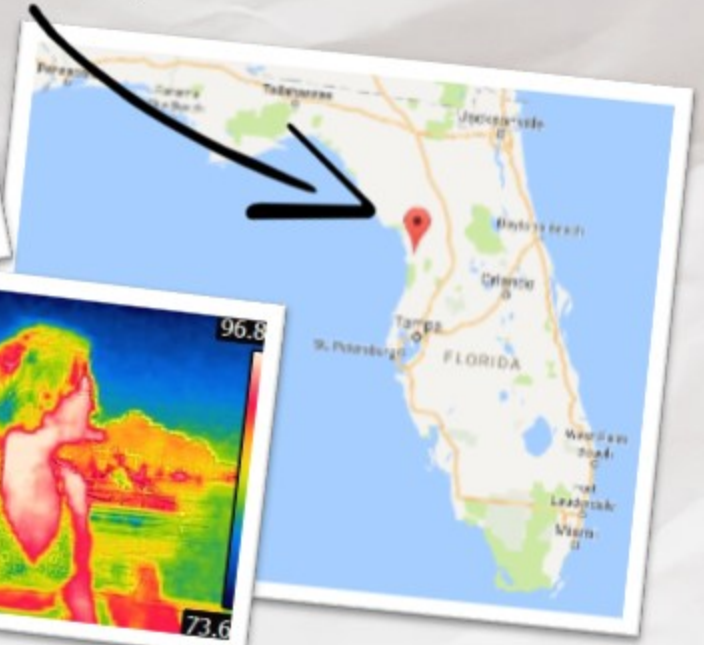
OMAHA Public Schools

Scientific Story

We started the day at King's Bay off the Homosassa River. This is a winter playground for manatees and so we were hoping to see some in their habitat. We started talking about how even though manatees look very different from humans, and their natural habitat is very different, both species have natural and artificial means of regulating temperature. Knowing that we are sensitive to cold, we suited up in wet suits to begin our adventure. Manatees have a thickened skin and fat layer, so they have their own built in wetsuits. Furthermore, the manatees travel to King's Bay in the winter to stay warm, while people also travel to Florida (and Arizona, or stay indoors) to stay warm in the winter.







Manatees sometimes also use the warm water produced by the nuclear power plants, and we use the power produced by those plants to heat our homes. In researching manatees a little further we found that they can increase and decrease their bloodflow to naturally regulate their temperature, while humans will shiver or sweat to do the same. Overall, both species have a very distinct range of temperatures in which they can survive, but we artificially alter that environment for our own comfort and to survive over hundreds of years. Manatees, on the other hand, have to rely on moving, where we can stay in the same place all year long if needed.

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Upham Woods Outdoor Learning Center

UW Extension University of Wisconsin - Extension

DOTS Digital Observation Technology Skills

Date: June 10th, 2017

Team Members: Amanda Fricke & Kristen Hughes, Omaha Public Schools, Omaha, Nebraska

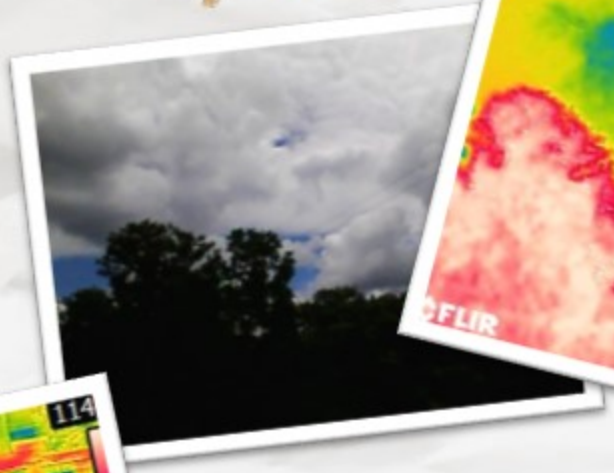
Role: Thermal Investigators

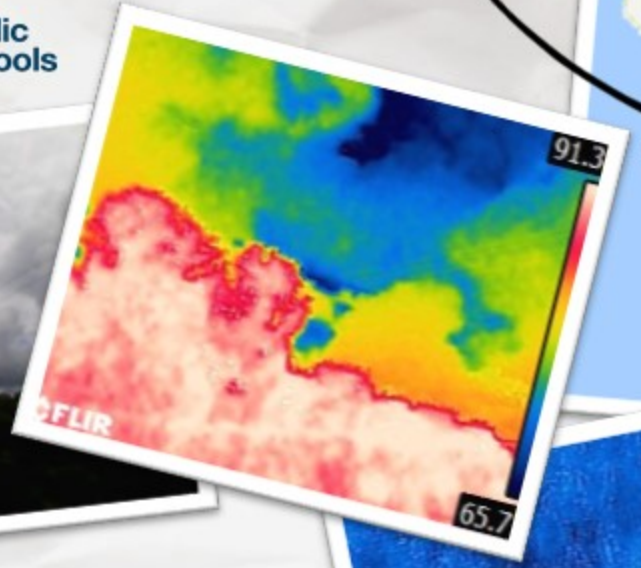
Location: Chassahowitzka River, Florida

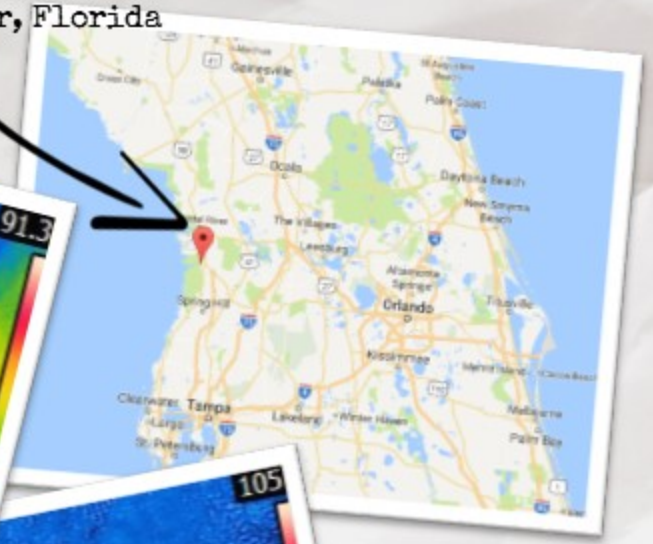
OMAHA Public Schools

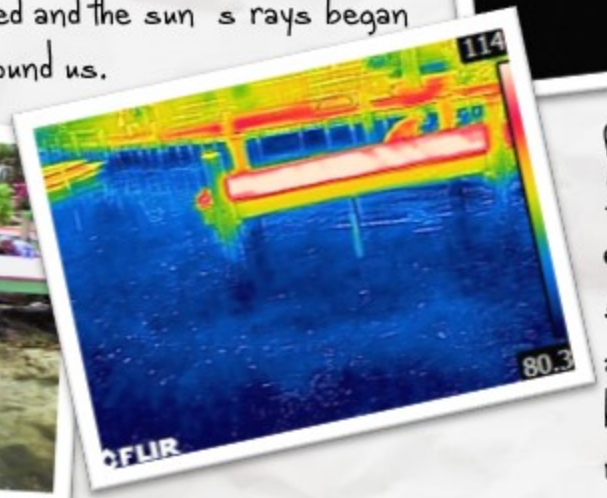
Scientific Story

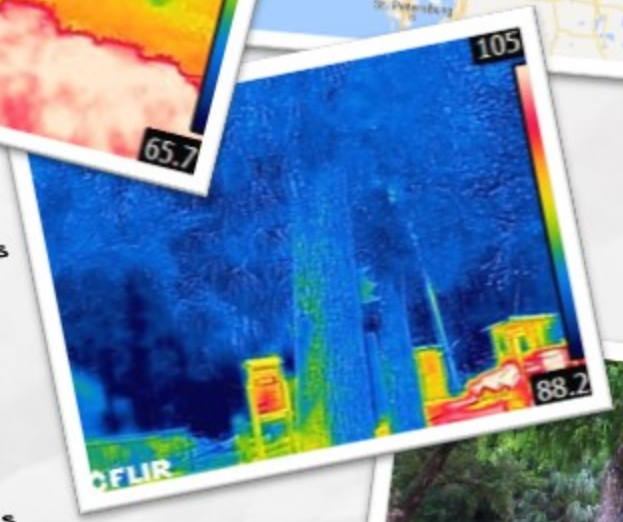
We noticed that as the day began, we were comfortable on our journey at the Chassahowitzka River because of the cloud cover. We stopped at The Crack and observed our first spring for the day and our group members were curious about the spring, but only two of the fifteen participants entered the water to explore it completely. As the day went on, the clouds dissipated and the sun's rays began to warm us and the surfaces around us.











As we moved on to the Seven Sisters Springs, over half of the participants entered the water to explore the springs. As we discussed our day and reviewed our data and photos, it became clear that as the temperatures rose, we were drawn to the areas that showed the lowest areas on our FLIR, the water and the shade of the tall, protective trees.

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UW Extension University of Wisconsin - Extension

DOTS Digital Observation Technology Skills

Date: June 11th, 2017

Team Members: Amanda Fricke & Kristen Hughes, Omaha Public Schools, Omaha, Nebraska

Role: Microbiologists

Location: Homosassa River, Citrus County, Florida

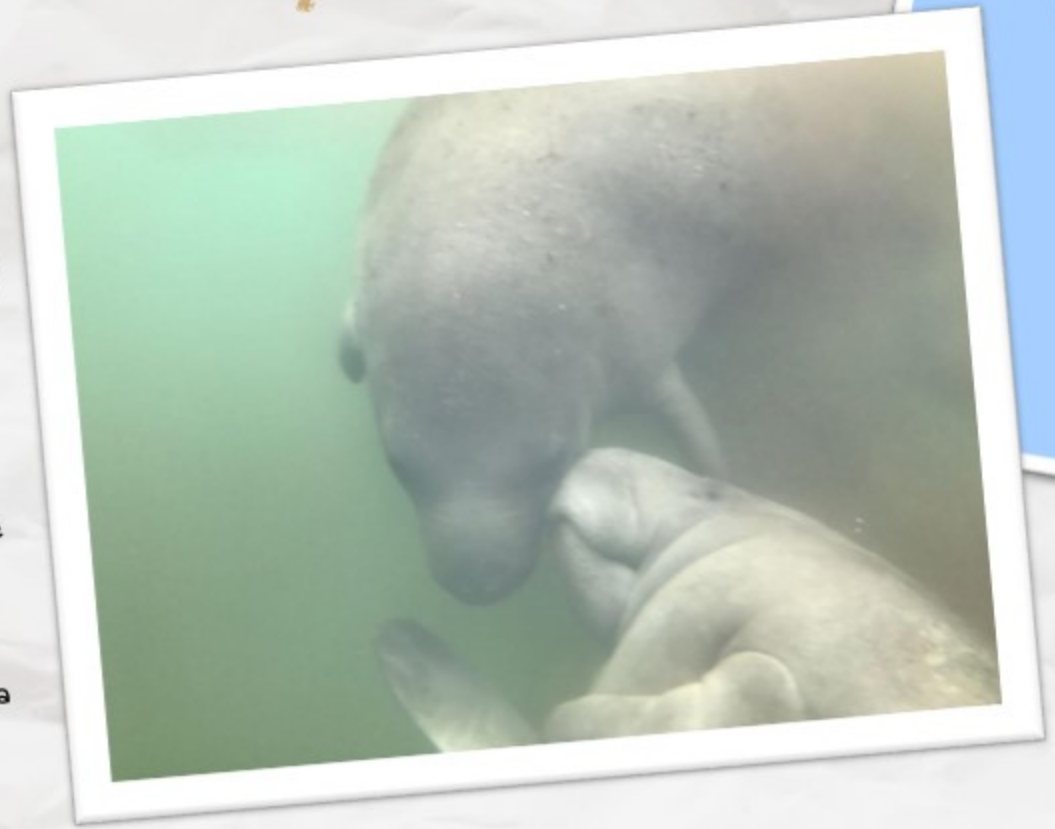
OMAHA Public Schools

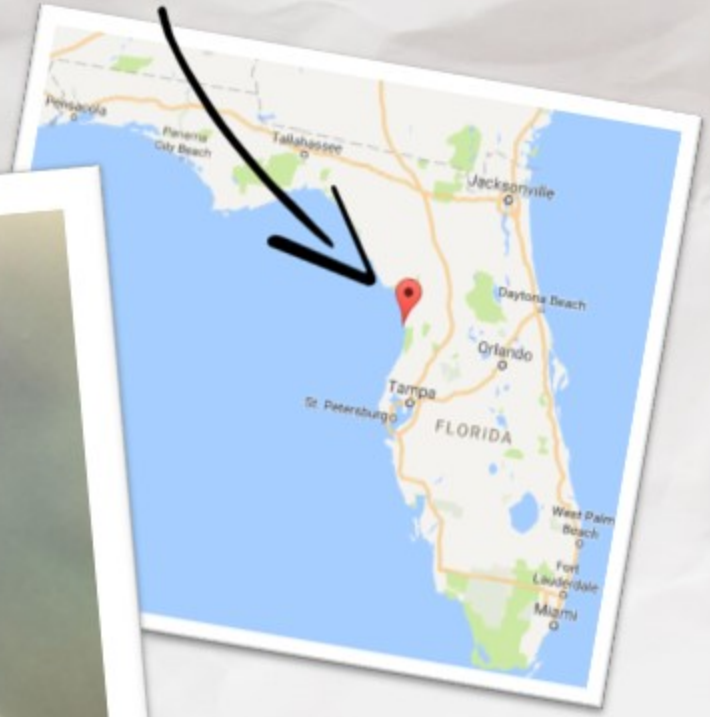
Scientific Story

We noticed that manatees have the ability to move between bodies of water with different concentrations of salt.

I wonder more about the osmoregulation process that they may use to balance their physiological needs.

I want to learn more about the manatees' physiological adaptations that allow them to thrive in these different environments. Not only do they thrive, they are welcoming to all guests that enter their homes and have a sense of curiosity and wonder that is admirable.





Did you know?

Research suggests manatees use the hormones Aldostrone and Vasopressin to osmoregulate or regulate salt balance.

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Upham Woods Outdoor Learning Center

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DOTS Digital Observation Technology Skills

Team Members: Brandon, David, Tim

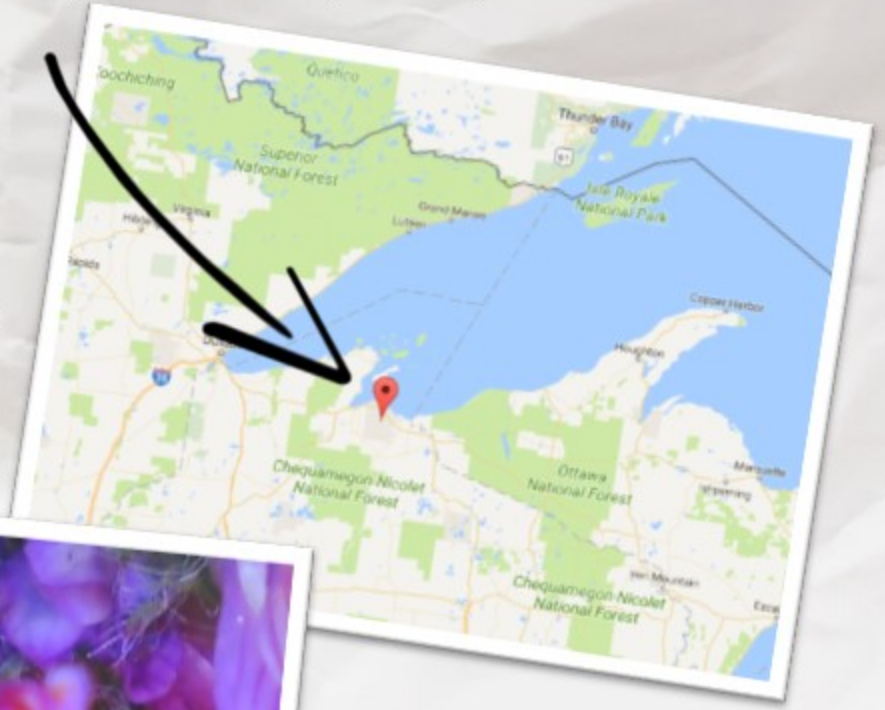
Date: June 20th, 2017

Bad River Band of Lake Superior Chippewa Indians

Location: Bad River, Bad River Res., Sanborn, Wisconsin

Scientific Story

The murky water was 65.7 degrees Fahrenheit, the mosquitoes were bad. The water was next to a bank with flowers that smelled like perfume.



Did you know?

Flower fragrance comes from essential oils in the petals. The scent a flower gives off depends on the different chemicals in the oil.

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Upham Woods Outdoor Learning Center

UW Extension University of Wisconsin - Extension

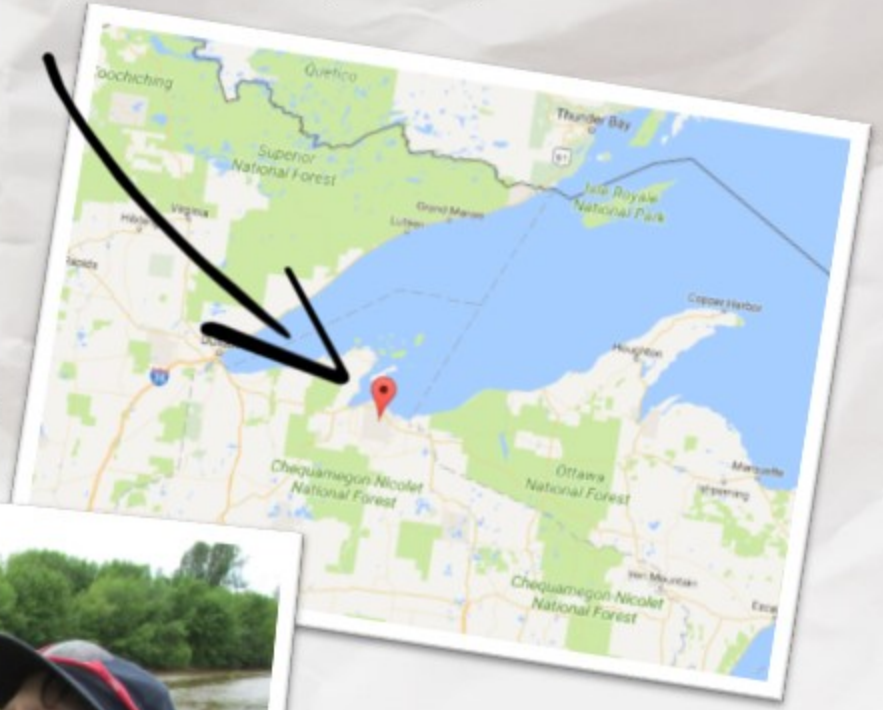
Team Members: Jace, Brett, Madelyn

Bad River Band of Lake Superior Chippewa Indians

Date: June 20th, 2017

DOTS Digital Observation Technology Skills

Location: Bad River, Bad River Res., Sanborn, Wisconsin



Scientific Story

Brown water, green vegetation on the shore. Boat landing, some fishing, viewing, going fishing. Water stage high. Shore has eroded, water structure changed after flood.

Fishing spots changed, river is higher and wider.

Did you know?

Fish have adaptation to help them during flooding conditions. In many cases, floods provide new areas and structures to live in.

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DOTS Digital Observation Technology Skills

Date: June 20th, 2017

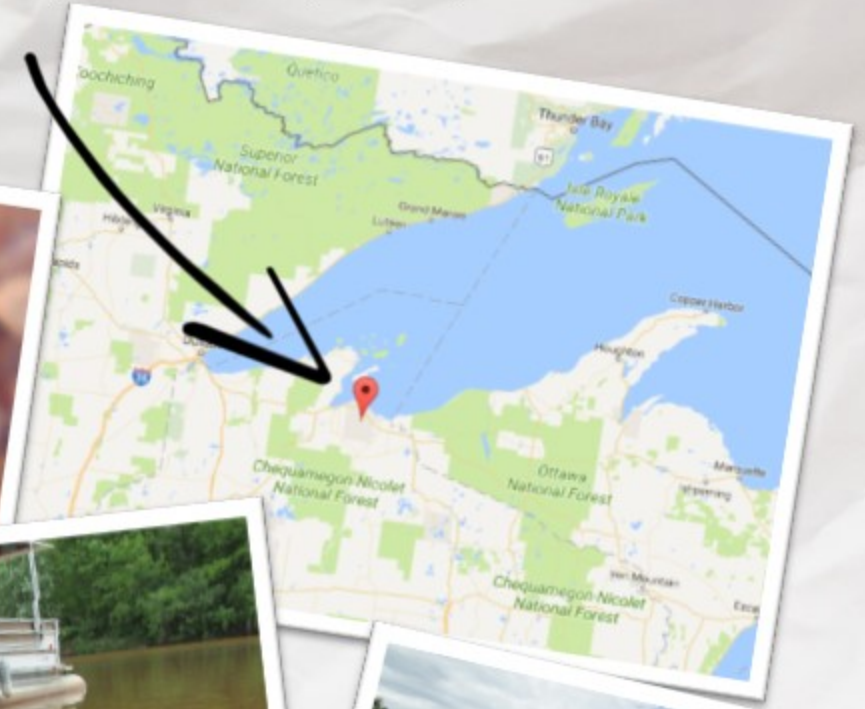
Team Members: Jason, Aarica, Willy, Justin, Sam

Bad River Band of Lake Superior Chippewa Indians

Location: Bad River, Bad River Res., Sanborn, Wisconsin

Scientific Story

We noticed that the stones were hotter than the vegetation on top of the stones. The variables that contributed to this is the amount of sunlight that is hiking both objects. The lux on the rock is around 1300lx, while the vegetation only has a lux of 50lx. This may be the result of there being more vegetation than stones. With temperatures of the rocks being 93.7 °F while the plants' temperature is 65.3 °F.



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Upham Woods Outdoor Learning Center

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DOTS Digital Observation Technology Skills

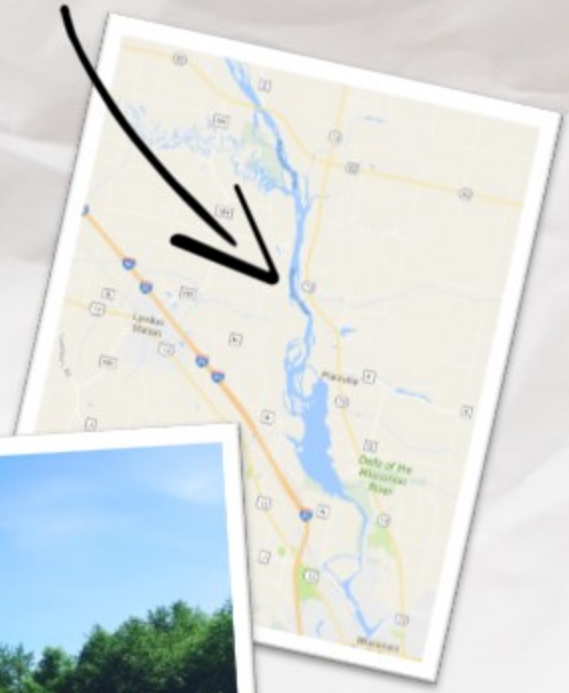
Date: July 3rd, 2017

Team Members: Quinn Bukouricz, Quentin Cauffman, Valenka Kosick, Drew Dettmann, Erik Rosholt, Caleb Jenks, Alex Duda, Hayley Trzinkski, Max Myers, Marc Nutter

Location: Lemonweir and Wisconsin Rivers, Wisconsin

Scientific Story

Five canoes strong we set off on our 13 mile trip through the Wisconsin and Lemonweir Rivers at 6:30 am. The spooky haze and mosquitos filled the spaces around us. As we ducked under fallen trees and skirted sand spits we were alerted to the company of a rarely seen green heron. After stopping for lunch on a tucked away beach, we still had a long, choppy way to go. Being the 3rd of July, the broads were bustling but we made it through unscathed. Once we made it on land, we were greeted by a curious painted turtle who appeared to need some help finding his home.



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