

NSCS

Ms. Jackson's Class

By Tor Skadberg

May 29, 2025

مقال السعي النهر

River Quest Essay

I recently visited the DECC to go on my River Quest. All of the stations were informational yet also interactive which is one of my favorite ways to learn new things. My only complaint is that it didn't take up the whole school day because of all of the interesting topics that I could learn more about. I think everyone who has the opportunity to go should go to learn about everything from how to escape rip currents by swimming parallel to them to learning all about erosion or even getting to go inside of the William A. Irvin's engine room; there are topics for everyone.

One topic I found fascinating was how the Sappi paper mill in Cloquet cleans their water before sending it back into Lake Superior. They return about 97% of the water they use. The water starts as a thick, almost cream looking substance. They use a coagulant chemical that they rapidly mix in and works almost as a magnet for the solids which when they slowly keep churning the water it turns into a larger magnet to collect even more solids until the coagulant finally collects most of the solids so they stop mixing and all of the solids fall to the bottom. Once that process is complete they send the water to WLSSD or also known as Western Lake Superior Sanitary District (Resource Renew), to finish the cleaning process and send it back into Lake Superior.

While we are talking about the WLSSD (Resource Renew) let's talk about how they clean their water. First they run the water through filters to get rid of the larger solids and bacteria. The next step is to add bacteria to eat the dissolved solids. The final step is to heat the water so the bacteria dies and falls to the bottom of the water leaving you with clean water on the top. Which by then it is safe to put back in the lake.

The stream table taught us that there are three major watersheds that intersect in northern Minnesota. Those watersheds are Lake Superior, Hudson Bay, and the Mississippi River watersheds. A watershed is an area where all of the water in that area all flows into the same spot so in the Lake Superior watershed all of the water in that area will end up in Lake Superior. The next thing we learned at this station was that rivers pick up sediment either when it slowly breaks off of rocks from the sides or that it picks up from the bottom of the river. When the river slows down it drops that sediment which creates a sandbar that makes the river tighter which will speed up the edges making it erode the sides. They described erosion like a bad driver that runs into the walls and removes dirt and sediment which makes the river wider which can affect natural plants and wildlife. This makes areas near wildfires perfect areas for erosion due to the fact that the roots of plants have been burned so there's nothing to hold the dirt together. So one thing you and I can do to help this cause is to get outside and plant more trees in places that need them.

Now that we're on the topic of erosion let's talk about the disappearing beach on the Minnesota Point Forest SNA. SNA stands for scientific and natural areas. The reason the forest is an SNA is because the beach is eroding from waves that crash onto the shore bringing sand out into the lake which is perfectly normal, except on Minnesota Point it is happening at a very fast pace which is starting to harm some of the trees that make Minnesota Point so famous. The main reason this is happening is due to the beach grass or lack thereof. See the roots of the beach grass are what help hold the beach together because of their long roots that can extend up to 20 feet into the ground. The reason there is a lack of beach grass is because people are walking on it. So one thing that anyone can do to help Minnesota Point is to stay on the paths and not run around destroying the beach grass. If you stay on the paths and leave the beach grass alone it can start to thrive and therefore start to prevent erosion on Minnesota Point.

A rip current is like a river of water that flows from shore back into the lake or ocean because in most spots when there are waves there is no room for the water to escape back into the lake or ocean. Because the water is moving back into the body of water if you get stuck in one you will get stuck. If you are trying to swim against a rip current, DON'T because you won't be able to. The forces of the rip current are so strong that you will get very tired which could lead to drowning. Instead what you should do is relax and swim parallel to the rip current because they aren't very wide it shouldn't be too challenging to escape. Once you escape the rip current you will just have to swim back to shore. One thing to take into consideration are the flags on the beach if you see a green flag that means it should be safe to swim and if it is yellow you should be cautious of rip currents but you can still swim. However if the flag is red do not swim because that means the danger is very high. Also if you see someone get stuck in a rip current here is what you can do. First of all don't go in the water and try to be a hero by saving them because if you do you could also get stuck. One thing you can do is call first responders to help. Another thing you can do is throw a PFD or personal flotation device to your friend if he is in reach.

Speaking of PFDs, I learned all about buoyancy. We learned that buoyancy means if it floats or not. We also learned about density which is essentially the amount of air inside of the object. In this station we did an experiment where we dropped different objects into a bin of water to see if they float. We dropped objects like carrots which sank oranges with the peel on which floated but with the peel off it sank. We also dropped a sponge which floated. You might be starting to see the pattern here which is if an object is less dense than the water it will float but if it is more dense than the water it will sink. That is the glory of a life jacket it floats you don't but when you wear a life jacket you float to. That is why it is always important to wear a life jacket when you go boating, kayaking, canoeing, or really anytime you're on a lake or a river.

An estuary is a body of water that flows into a larger body of water like how the St. Louis River flows into Lake Superior so part of the St. Louis River is an estuary. We also learned here that the water in Lake Superior is cleaner than the St. Louis River primarily because there is more mud to be picked up in the river because lake superior is mostly rocks and sand which is cleaner.

The SS William A. Irvin engine room station where we learned all about the Irvin. The Irvin played a crucial role in the shipping industry and was the flagship of the Great Lakes shipping industry for a few years until ships like the Michipicoten and Edmund Fitzgerald were built a few years later. It was built in Lorain, Ohio in 1937 and was first put on the water in 1938. The Irvin featured both electric and mechanical steering due to the sailors not fully trusting the new technology fully. Another new piece of equipment was the conveyor belt that fed the coal into the Irvin's boiler which powered a large steam engine. Sailors used to need to sit in the intense heat that got well above 100 degrees shoveling coal into the boiler which made this quite a helpful invention. One thing this ship did not have was an auto cargo loading system which lowered efficiency a bit but didn't prevent this from being a state of the art ship for a few years. The man it was named after William Irvin dropped out of school in eighth grade. He later became the fourth president of US Steel. After forty years of service for US Steel the Irvin was finally retired in the year 1978 where it was going to be used for scrap metal but was acquired by Duluth where it is now being used as a museum to take tours of the ship and in the fall as a haunted ship. One interesting thing when it was about to be scrapped is that when the sailors went through the ship to take any stuff they wanted as souvenirs none of them took the ship's plaque so it is still there to this day.

This experience taught me many lessons on helping the environment. It also taught me about many things that are currently happening in nature that I didn't know about before River Quest. I thank everyone at River Quest for providing students with helpful information and also making it a great experience for everyone. One of the main things River Quest emphasizes is protecting the watersheds because clean cold and clear water is important and with pollutants it becomes a great habitat for AISs or aquatic invasive species which not only harms the natural plants and animals it could even harm humans eventually.