Environmental Justice

at Augustana

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Front and back cover by Alyssa Duckett / Observer Staff

Solar panels provide clean energy

By Charlie Roiland
Observer Staff

Since 2019, Augustana has turned to solar panels for a more environmentally friendly source of energy. With four buildings (Carver, Westerlin, Centennial and PepsiCo) currently operating solar panels and a fifth (Lindberg) waiting to be put on the grid, one would hope that the environmental benefit would be noticeable.

However, the purpose of implementing solar panels across campus was to decrease overall energy costs, according to Director of Facilities Bob Lanzerotti. With decreased energy costs from solar energy come decreased greenhouse gas emissions.

"What [the installation company] did was they took calculations for our energy costs campuswide again minus Lindberg," Lanzerotti said. "The goal, I want to say, was an 8-10 percent reduction in energy costs."

As of Dec. 2022, the solar panels on the roof of Lindberg had not yet been put online. When they are, an 8-10 percent reduction in energy costs may no longer be as likely. In general, it would seem to make sense for more solar panels to equal a larger reduction in energy costs, however, this is not necessarily the case.

"Once Lindberg [is] added, that's another 58,000 square feet, and then they put 'x' amount of panels on top of that, will we really get to that 8 or 10 percent? Because now our square footage is higher," Lanzerotti said.

It is possible that once Lindberg is added to the mix, energy savings could fluctuate, but that information is not predictable and will not be available until the solar panels on Lindberg goes online.

According to the Office of Energy Efficiency & Renewable Energy in the United States, solar energy has a positive impact on the reduction of greenhouse gas emissions which in turn protects humans, wildlife and ecosystems.

Across the United States, many colleges and universities are making the transition to renewable energy sources such as solar and wind power. Although the majority of these colleges, like Augustana, are not committed to a 100 percent renewable energy goal, the few that are have made a great impact.

According to the Stanford Report, Stanford University successfully made the transition to 100 percent renewable energy in March 2022. This poses the question: why doesn't Augustana attempt to make the transition to 100 percent renewable energy like Stanford? How much do Augustana's soon-to-be five solar powered buildings really help the environment?

In Oct. 2019, Augustana announced the Augustana College Presidential Green Initiatives Fund. According to the Augustana website, this fund will help students initiate projects on campus that help with "energy use, food management, facilities, transportation, and academic and business practices" and also decrease the college's environmental impact.

This fund can be seen as an attempt to improve the college's greenhouse gas emissions, but a greater effort could be taken on even the most basic level. However, the addition of solar panels to the campus may have a decent impact on Augustana's greenhouse gas emissions as a whole.

The U.S. Energy Information Administration says that "using solar energy can have a positive, indirect effect on the environment when solar energy replaces or reduces the use of other energy sources that have larger effects on the environment."

Basically, this means that in order for solar energy to make an impact on the issues of climate change and greenhouse gas emissions, it would need to replace or greatly reduce the use of fossil fuel energy. Although solar energy has not completely replaced the use of fossil fuel energy on campus, the implementation of solar panels across campus will allow at least a little bit less fossil fuel usage overall.

Even though a larger number of solar panels would increase the environmental benefits and green energy on campus, Augustana does not plan to install more after those on top of Lindberg. This decision has to do with the number of buildings that are suitable for solar panels, and the lack of ground space that would be required for ground-level panels to be installed.

"Let's just say for sake of argument, we build another building," Lanzerotti said. "We would definitely look at that particular facility, again with its flat roof surfaces, and see if the money would help us in that situation. But right now, no, there's nothing left. We're not looking to put any on the ground."

The decision of which buildings were suitable to house solar panels was made based on multiple factors. Building age, structure and shape all have a part in the overall impact and cost effectiveness of the solar panels, and these were taken into consideration when decisions were being made.

Even if other buildings had the flat roofs that would allow for a successful solar panel installation, the age of these buildings would need to be taken into consideration. If a roof is too old at the time of installation, the solar panel may end up costing Augustana more in the long run.

"The contractors take into consideration the age of your roof," Lanzerotti said. "Anything over 10 years of age, they do not want to put panels on."

The balance of cost effectiveness and energy efficiency is one that needs to be carefully considered when choosing whether or not to install solar panels. Although solar energy helps to reduce greenhouse gas emissions, these panels need to be functional for a number of years in order to counteract the energy used in their construction. While Augustana's number of solar panels is limited, the areas they have been installed will hopefully allow them to have a positive environmental impact in the years to come.

Background photo by Linh Tran / Observer Staff

Biodiversity is under threat

By Molly Sweeney
Observer Staff

Invasive plants and animals have changed the biological diversity within Augustana College and the Quad Cities area in the last several years, according to Dr. Tierney Brosius, associate professor of biology.

10 years ago, ash trees could be seen across campus, especially near the lacrosse fields. Today, they are gone due to the emerald ash borer, an invasive beetle that feeds on ash trees.

Since Augustana's beginning, the college maintained a count of different ladybug species, with roughly 20 ladybugs in the collection. However, in a recent count only 12 species were found, with two invasive species contributing to the decline of six of the native species.

Junior Jack Huges worked with Brosius over the summer of 2021 and conducted research in the QC area on population counts of Coccinellid beetles, better known as ladybugs.

"The Coleomegilla maculata… looks like it's covered in hearts. And it's like half the size of the Harmonia axyridis," Hughes said. "Now you have species like Harmonia axyridis outcompeting these native species… they're just a more successful predator."

To many, the disappearance of ash trees and ladybugs around campus may not seem alarming, but Brosius says this has been an emerging pattern for several different species around the world.

"People are saying these are kind of warning bells. We've seen this huge decline in insects that provide basic ecological services," Brosius said.

There is also a growing population of non-native plants by the Slough.

Dr. Jason Koontz, professor of biology, says the main invasive plants on the Slough are bush honeysuckle, garlic mustard and tree of heaven.

"In this part of Illinois and our forests, the diversity of plants is actually in the herbaceous ground layer," Koontz said. "So all the spring wildflowers... that come up, do their thing and then go dormant, it impacts them because they no longer have access to the sun early in the season, when all the trees haven't leafed out yet."

To combat invasive species growth, and encourage native species takes continuous time and money, so Augustana's grounds crew has had to be creative with maintaining a natural ecosystem.

Chris Woods mows the lawn through the quad.
Photo by Chris Ferman / Observer Staff

"Pollinator Pockets was started by a student," Brosius said. "The student worked closely with grounds and I think that was important because she was aware of what systems we had at the college, knew what the financial realities were but they were able to find a middle ground where it was saving grounds man hours in order to not have to mow."

Despite the work Augustana does to maintain native species, there are several different ways that more could be done.

A way to ensure the growth of native species is to strategically plan for what species are introduced to campus.

"It's important to prioritize native species or showy species that don't have any risk of spreading," Brosius said.

Unlike some of the local native species, the Harmonia axyridis is more likely to thrive in uncertain conditions. According to Hughes, this is a problem when farmers introduce them to their crops to defend against other insects.

"Farmers could buy another ladybug, and that ladybug would still eat their aphids but this one reproduces a lot quicker, and is more predatory," Hughes said.

According to Brosius, invasive species are one of the main reasons for habitat destruction and extinction of species, yet there might come a day when invasive species are necessary to live with.

"Some people talk about climate change happening, and that these invasive species seem like they're awful... But maybe we need these generalists to keep some functioning ecosystems available," Brosius said.

Currently, Augustana seems to be moving towards a path of both accepting the invasive species in the environment as well as working towards embracing a culture of leaving native species as they are.

"Native species aren't... in some people's minds as beautiful, but I think that we're undergoing a bit of a cultural shift, that people are starting to understand why we're leaving native species," Brosius said.

Overall, Hughes said it is important for people to be educated on this topic.

"I think that it allows for a lot of people who wouldn't have that understanding of the environment around them, to make those distinctions that can inevitably enable educated decisions to be made about how to manage species assemblages in people's communities," Hughes said.

Climate positivity remains crucial

By Chloe Baxter
Observer Staff
Opinion Column

When considering the issue of global warming, it's easy to be a cynic.

The ice caps are melting, killing polar bears and penguins.

Sea levels are rising, pushing whole nations underwater.

It's true, climate change is not preventable. We can't backtrack the rising temperatures or save what we have already lost. However, what we can do is save our future and act as environmental optimists.

Senior Matthew Straus, who is majoring in Environmental Studies, credits his time fishing with his father as the origin of his passion for the environment.

"So, I initially went fishing with my dad a lot, ever since I was really little, like four years old. We would go out at like four in the morning, and then we would go to Lake Michigan. So that initially drew me to the environment. [It's] the only thing that I can see myself doing and being happy with for the rest of my life, something related to the environment."

Similarly, Dr. Michael Reisner, Assistant Professor of Environmental Studies and Director of the Upper Mississippi Studies Center, found his passion in his experiences with nature.

"Initially as I was growing up, we did multiple long summer vacations to add some of the iconic national parks. So, Yellowstone, Rocky Mountain National Park, and the Grand Teton glacier. Then, in my junior year of high school, we went all the way up to Banff in Jasper National Park. I would say that's what drew me and then I got hooked," Reisner said.

It's critical to look at what we have lost, the connections we have had with nature, and use this to fuel our fight to save what we haven't.

Look at the glass half full: we may currently be facing these environmental issues, but we should consider the steps we can take to prevent more and be willing to take these steps.

Again, it is easy to regard global warming and climate change as the end, but viewing this as a doomsday scenario holds no benefit for us or the planet, as it characterizes such an event as inevitable and is the opposite of motivational.

There are environmental issues that we cannot take back, but the key to preventing further environmental damage is to mobilize and take the necessary steps rather than abiding by a 'doomsday' narrative.

"I think there's plenty of evidence to show that doomsday scenarios do not mobilize people. You have to have a hopeful approach [and] a realistic assessment of the challenge before you," Reisner said. "So I think you have to understand the scale and the scope of the problem. And once you know that, I think a hopeful approach is to deploy the collective strategies that have the best chance of succeeding, and if we do it, we can minimize the damage."

The key word here is "collective," with multiple strategies being deployed at once to address the environmental problem.

As a singular party, an individual is limited in the difference they can make on the environment. Some even argue that when an individual makes a change, the result is not worth the effort.

This is a similar story for most things, such as voting in the age-old argument that one vote doesn't matter.

However, if one person makes a change, whether that be shopping sustainably or becoming vegetarian, they still have an impact even if it is limited. Not making that change negates any potential impact.

There is also the fact that taking action works as a motivator, with individual action escalating into collective action, which can in turn have a much greater positive environmental impact.

"It's all about inspiring people to make changes in their lives because then they will teach their kids, and they'll teach their friends. Although it's just like something small and local, inspiring someone can change how they think," Straus said. "And I think that's the hardest part of sustainability is trying to take your thought process and help spread that to other people because people have their own opinions and their passions."

Developing a positive, motivated mindset at this point is critical, because every day we act indifferent and take limited strides to prevent climate change, it gets worse.

This highlights the importance of taking action in conjunction with maintaining a positive worldview and educating yourself on the pros and cons of what is causing climate change.

The next few years will indeed be tough, as the havoc we have wrecked on the planet continues to take its toll, and the population continues to grow, but this only reinforces the importance of recognizing that it's not all bad - we still have a chance to implement positive change, to make a difference.

"It's going to happen and be tough in the coming year. We'll need to [make these changes] and it'll be an urgent thing. And I already see a lot more people thinking more sustainably, changing their diets, encouraging other people to change, and stuff," Straus said.

Straus went on to explain that technology has been helpful to spread climate change awareness.

"There are a lot of movements too in the media, like climate change movements, and I think that's all helpful to just spread awareness and stuff. That's the whole part of it. It's not just all doom and gloom," Straus said.

While they are difficult to seek out, there have been steps made toward sustainability.

Given this, it is critical to remain positive, despite all that occurs and the surplus of negative 'doomsday' ideas.

As time is of the essence, taking action now, spreading awareness, and educating yourself, are key steps we can take in combating the continued effects of climate change on our planet.

This means reinforcing these same ideas in others, whether it be through activism and awareness or simply leading by example on campus.

Food waste piles up quickly

By Emmeline Kenealy & Chloe Baxter
Observer Staff

An example of common meal offerings at Gus's Snack Bar.
Photo by Chris Ferman / Observer Staff

In the Gerber Center dining hall, students are able to grab as much as they'd like from any of the food stations. This buffet style is great for college students because it provides a wide variety of foods and is cost-effective. Unfortunately, this structure leads to the school wasting their food supply and unnecessary costs.

Brianna Ebenroth, junior, works in the dining hall and has noticed a lot of food waste.

"Students can go up if they need more, but a lot of the time people will just load up their plate and then throw out more than half of the food that they got," Ebenroth said.

Ebenroth believes many students take away more food than is needed either because their eyes are bigger than their stomachs or because they're trying to get the most out of their meal swipe.

"Sometimes people just grab everything that looks good at first glance," Ebenroth said.

While students may be wasteful with food, Fred Kurt, the director of dining services at Augustana says that the dining facilities on campus work to be sustainable.

"We are very mindful of waste. In starting with our production of foods, we forecast. It's guessing how many people are going to come through the door and how much of every item we are going to produce," Kurt said.

This forecasting takes into account the number of students that generally come into the dining hall on any given day, as well as how much food is being taken.

If students are taking a lot of food on any given day, that signals dining services to keep putting out more.

"Customer waste is about four to five times higher than what is produced in the kitchen," Kurt said, regarding recent audits of dining services.

This means that while sometimes forecasts can be wrong and food that is already cooked can be wasted, the blame for food waste generally lies with the students who are taking the food.

"[I understand] it's all you care to eat and you want to get your money's worth, but hopefully, whatever you're taking, you're eating," Kurt said. "If our costs are not in line, we'll really review what our increases have to be in our board rates for the meal plans."

Food waste is an issue and there are ways that Augustana can become more sustainable in this respect. This could include donating food to shelters and churches, creating compost piles or continue to educate the campus about food consumption habits.

In order to address food waste concerns, a lot is already being done by dining services to repurpose foods. Ebenroth said that in comparison to other schools, Augustana may actually be more sustainable.

"For the repurposing of food, if you compare Augustana to other colleges, we do a really great job of utilizing food and being smart to not waste it," Ebenroth said. "A lot of the soups that are made, we really utilize some things that didn't go out. We are able to repurpose it."

Ebenroth also said that there is also another route used to utilize food that would otherwise go to waste.

"When workers are done for the night if there's stuff that's going to be thrown away, they are asked if they want it," Ebenroth said.

> "Customer waste is about four to five times higher than what is produced in the kitchen."
>
> -Fred Kurt

Graphic by Elise Brenner / Observer Staff

Climate protests call for change

By Feven Zewdu
Observer Staff

Several years ago, a protest on climate change led to lasting impacts at Augustana College. On Sept. 20, 2019, students of Augustana College gathered to speak on the issues that they saw and the changes they wanted to make at their school.

As a collective, students decided that it would be best that they display their desire to make an impact by making the topic of climate change more personal and relatable. Since then, there have been changes done on campus to address the issues of sustainability.

Dr. Jennifer Burnham, a geology professor at Augustana, was the faculty advisor for the demonstration at the time. During the protest she was able to see how much students cared about the issue.

"Students were just really pumped and excited to do something a little bit challenging but doing it in a respectful way to get attention from others on campus, that we weren't paying as much attention to environmental concerns," Burnham said.

During the event, different people spoke, from faculty members to children, with all of them highlighting the significance of taking action toward a more sustainable college campus that is actively trying to reduce its carbon footprint.

"The students were really optimistic about it," Burnham said. "They wanted to draw importance and invite the campus to hear about the importance of the environment and what we could do about it."

Robert Burke, a former student at Augustana that graduated in 2020, was one of the organizers of this event. Burke and his colleagues found that it was important to address the issues on campus regarding climate change and decided to take a stand by organizing a demonstration.

"We had a couple of goals with that," Burke said. "One was just to highlight societal inaction on climate change. But then the other was to highlight Augustana's role in that institutional action that was needed to do something about climate change that wasn't being done."

The demonstration on campus happened around the same time as the global climate strike that occurred on Sept. 20 and 27 in 2019 organized by Greta Thunberg.

According to Burke, this inspired students to take action and use their platform.

"It was just kind of a whirlwind of having that platform of the global climate strike plus, knowing and studying these issues, a lot of the students who are involved with the climate strike were students who have an interest in solving problems related to climate change," Burke said.

One of the speakers during the demonstration was former President Steve Bahls. Bahls said there were changes that were planned for the coming years prior to the pandemic.

One of the main plans was the organization of the Environmental Action Task Force.

Since its establishment in 2019, the task force has been working on making changes that are not only sustainable but also impactful in regards to the overall appearance of the campus.

Some of the members of the committee include Dr. Michael Reisner, Dr. Olivia Melton, Dr. José Boquin, Dr. Adam Kaul, junior Jack Hughes, Kirk Anderson, Chris Beyer and Kai Swanson.

Jack Hughes is the student representative in the task force and sees how much work has been done by this committee. Because he is majoring in geology and minoring in environmental studies he has a deeper knowledge about the effects of climate change.

He is also the vice president of Sierra Club and part of the Udden Geology Club which are both student groups on campus who work with topics related to the environment.

"The two biggest, most recent impacts of the committee that you can visibly see on campus [are] the solar panels that went up on top of Westie, our freshman year, so that was 2020 to 2021," Hughes said. "And then the Sorensen remodel, which you wouldn't think would actually be related to the sustainability committee. But the goal of that remodel was not only aesthetic, but also to conserve heat and heating costs."

In addition to the major renovations there are also more detail oriented changes happening to make the campus more sustainable.

According to the sustainability committee report for March 2022 published on the Augustana website, all campus lighting has been upgraded to LED, there is an increase in the the composting of food waste and the Lindberg center has completed LEED silver standards certification. LEED silver standards certifications are given to buildings that are constructed to achieve sustainability by reducing carbon footprint.

> "Students were just really pumped and excited to do something a little bit challenging but doing it in a respectful way to get attention from others on campus."
>
> -Dr. Jennifer Burnham

Even though there are changes being done to the campus that can make it more sustainable, there is still more to do and Dr. Burnham thinks it's everybody's responsibility to try and make a difference.

"I think there's always things that can be done, whether it's the school that starting these things, whether it's students, faculty, like everybody together, is really what we need to be looking at," Burnham said.

The black squirrel: Augustana

By Allie Rial & Caitlin Campbell
Observer Staff

When first touring Augustana as a prospective student, one of the most striking things noticed around campus are the black squirrels.

Before coming to Augustana, many people are unaware of the existence of black squirrels. They then often find themselves taking photo upon photo of the little creatures to send back home.

The campus-wide fascination with these creatures raises the question of where they came from. The answer to that question is ultimately unknown by those on campus, but there are a few interesting theories.

In discussing the animals with Brian Leech, associate professor of history, he said that these squirrels can be found outside of Augustana. Although a lot of people encounter them for the first time when they arrive on campus, they are not necessarily unique to the area.

"You can find Eastern gray squirrel populations that have a lot of black members if you go all around the Great Lakes Basin," Leech said.

With their presence distributed around the Great Lakes, why do so many of them call Augustana home? There's not an answer specifically for the college campus, but there are stories for how they reached the area in general.

"I would say that the kind of fun to them as a story is that in the Quad Cities especially, I've run across all sorts of fun myths and mythos about them in terms of how they show up, like when they're introduced," Leech said.

There are a couple of tales describing how the squirrels reached the Quad Cities, neither of which necessarily have truth or accuracy to them, according to Leech.

"One is something pretty weird," Leech said. "A prince came to visit the area sometime in the 19th century and dropped off squirrels."

This story is mostly tied up in legend, and is the most common legend people come across when they go to research the squirrels themselves, according to Leech.

Graphic by Elise Brenner / Observer Staff

However, that is not the only tale to be told about them.

The second story isn't about a prince, but it does involve the squirrels being let loose in the surrounding area. This version has some more credibility, Dr. Leech says, but it's still undetermined if it's fact.

"There's a story connected to Palmer College of Chiropractic across the river," Leech said. "That story comes from one of the Palmer family, David Palmer, [and] you can find this in his book."

The written account of this story makes it seem more believable than the other one and it being written also makes it heard (or read) more often.

"The story is essentially [that] he treated someone, the person then gave him a gift of black squirrels to give to the Quad Cities, [and] they were released on Arsenal Island," Leech said.

Releasing the squirrels on an island doesn't explain their presence elsewhere though.

If populations of black squirrels are seen all around the Great Lakes, then they had to have moved from the island.

This is where an additional story furthers the squirrels' journeys. It explains their island escape.

"One winter when it iced over between the island and Rock Island, they all jumped over," Leech said.

Now this story also isn't proven, it's just more commonly believed as it's written in a book. However, it's interesting that ultimately the origins of these creatures in the Quad Cities remains a mystery.

"I don't understand why they would take them to the Arsenal Island of all places to release them, there's not a lot of explanation for that," Leech said, "Which is one reason why I'm not sure it's anything more than apocryphal but I think that's a fun story to recount."

Besides the stories of how the squirrels came to the area, it's interesting to consider the fascination with these creatures. Squirrels are active, fast, and this constant energy makes them fun to watch as they're running around

College's unofficial mascot

campus.

Squirrels actually used to be household pets. While they shouldn't be anymore, they were once thought of to be a "training pet" of sorts and that's what Dr. Leech finds most interesting about squirrels.

"My favorite thing about squirrels is that there was a long period in the 18th and 19th centuries, when they were one of the major household pets," Leech said. "And of course, the problem with them as pets is that…no one ever figured out how to truly domesticate a squirrel."

> "I've run across all sorts of fun myths and mythos about them."
>
> -Brian Leech

It's fun to imagine a squirrel taking the place of a cat or dog in today's household as they would be an energetic companion, but then again, they'd likely be in a lot of trouble.

Squirrels are not meant to be inside creatures and that's likely what led to the abandonment of them as a common pet.

"Increasingly, by the end of the 19th, early 20th centuries, they just became seen more as pests than they were pets," Leech said.

Beyond the history of how the squirrels came to be in the area, there's a history of the students of Augustana being curious about the creatures. The Observer featured them in writing multiple times, special collections librarian Micaela Terronez said.

"Through some of the research I saw, especially like in the 90s and early 2000s, the black squirrels were talked a lot about [and] it was usually very sarcastic, satire stories," Terronez said. "Then there were a couple talking about how they would take over the world one day."

These animals have been fascinating the student body for a while, apparently accompanied with a dramatic flare.

The squirrels have their own sort of superhero (or villain) origin story in past Observer articles it seems.

"One of the articles included a cartoon of your average squirrel sitting in the tree, and then they jump into the Slough," Terronez said, "And then once they're in the Slough and come out of it, they're like, contaminated and it's like now they're the black squirrel."

This provides another fun story for the squirrels on campus, and this one has a direct connection to the squirrels seen running around campus.

To go more into the ecological aspects of the black squirrels, the squirrels are exactly the same as their eastern gray counterparts, just with different pigmentation in their fur.

Despite this being the only difference between the two, the darker fur color has given black squirrels unique challenges and advantages over their gray counterparts.

For example, the black squirrels are easier to spot by predators during the daytime.

This can lead to the population decreasing more than their gray counterparts, who more easily blend into the foliage of the leaves.

One advantage that they hold over their gray squirrels however is their capacity to hold heat. As shown in a 2009 research paper concerning antelopes, black fur allows animals to absorb more heat.

Therefore, due to the pigment change, black squirrels are more adept at surviving cold winters, since their fur enables them to absorb more heat, especially when compared to eastern gray squirrels.

This is also the reason why it is rarer to see black squirrels the further south you travel.

Their ability to absorb heat in the winter means that they also absorb more heat in the summer, which could lead to heat stress.

This doesn't mean that there are no black squirrels down south, however.

In a research paper published by Current Zoology, two researchers from the University of Georgia found that on average, the width of the black squirrel hairs were smaller in order to compensate for the fact that they hold more heat.

Other than those two differing characteristics, very little differences between the two groups of squirrels have been found.

A gray squirrel enjoys the campus scenery.
Photo by Giang Do / Observer Staff

Although some online sources have proposed that black squirrels are more aggressive than other color variations of eastern grays, all other research conducted has shown that there is no correlation between pigmentation and aggressiveness.

While the differences between eastern gray squirrels and black squirrels are almost purely cosmetic, the black squirrels have become, at least in my opinion, an important part of the identity of the Quad Cities.

Protecting the Mississippi River

By Aubrey Lathrop
Observer Staff

For Quad Cities native Kai Swanson, the river has had a presence in many aspects of life. He has many stories of hiking around Sylvan Island and riding bikes alongside the riverbanks. However, one of the memories that stuck out most was his time spent fishing on the Mississippi River.

"If [you] got catfish that was great, or even some shad, shiners or striped bass and you could sell them to these guys and make just enough to go over to the 44th Street bait shop," Swanson said.

Swanson and his friends saved the money they collected from selling fish to buy Country Time lemonade. The river provided Swanson and his friends an economic outlet that funded their trips to the local bait shop. This is just one example of how the Mississippi River provides for the Quad Cities and the United States as a whole. Barges, for example, rely on the waters for transport and are constantly sliding under bridges to go to their destination.

However, the Mississippi River currently ranks as the second most polluted waterway in the United States. The economic benefits reaped from the river are now a double-edged sword. According to the National Park Service, parts of the Mississippi River, "exceed water quality standards for mercury, bacteria, sediment, PCBs (polychlorinated biphenyl), and nutrients." This can lead to an unsafe environment for water activities such as fishing or swimming.

The National Park Service partnered with a group called Friends of the Mississippi River to release a State of the River Report, a play on the President's yearly address to the country. The most recent report, released in 2016, breaks down the main types of environments that the Mississippi River runs through and what sources of bacteria are present. The environments are agricultural, rural/exurban mix and urban/suburban.

The QC fits into the last category of an urban/suburban environment. The most common sources of bacteria in these climates are estimated to be about 32 percent waterfowl, 24 percent wildlife and 13 percent pets. That means 69 percent of bacteria in the water in urban areas comes from animals.

Along with bacteria in the water, plastic pollutants are also a cause for concern. Dr. Jenny Arkle is an assistant professor of environmental studies, geology, and geography at Augustana College and also serves as a program manager for the Upper Mississippi Center (UMC). In one of her Geology 101 classes, her students had a lab to quantify the number of microplastics in the river and the amount that her students found was high.

These findings in the Quad Cities are also backed up by studies conducted by the Environmental Protection Agency (EPA). In a study from 2015, it was discovered that the Mississippi River basin in Louisiana had some of the highest concentrations of microplastics in the world. This can be detrimental because the surrounding wildlife may be exposed to the toxins in the plastics. The ingestion of microplastics can make an animal feel permanently full and eventually lead to starvation.

Humans have also had several other impacts on the condition of the Mississippi River. Dr. Kevin Geedey is currently an environmental studies professor at Augustana College.

"What can happen is you can actually end up with water that is pretty low in oxygen. Low enough to be problematic for aquatic life," Geedey said.

This phenomenon is called hypoxia. According to the Pontchartrain Conservancy, a group that studies the water at the mouth of the Mississippi River in Louisiana, this depletion of oxygen in bodies of water occurs when high amounts of chemicals and nutrients from agriculture and other human processes run into the water. The excess nutrients in the water allows for the growth of microorganisms who consume most of the oxygen before it can sink to the larger organisms in the water.

Despite the current state of the Mississippi River that could be cause for concern, there are still many reasons to hold out hope for the Quad Cities environment and beyond.

"The city of Davenport has partnered with Augustana, the UMC (Upper Mississippi Center) and has asked the whole earth science faculty for help understanding the health of our urban watersheds, which directly lead into the Mississippi River," Arkle said. "We are carrying out studies to try and help the health of not only our urban watersheds, but with the Mississippi River."

There are also improvements that people can make in their lives. Dr. Kevin Geedey explained that avoiding flushing pills and drugs down the toilet will make a positive difference in the environment. Instead, it would be more beneficial to throw the drugs away or participate in Drug Take Back days.

"Most of our sewage treatment plants can't filter that stuff out, so it's just going to end up in the river," Geedey said.

Another way that people can help is to be conscious of the water runoff that their roofs create. Dr. Geedey recommends incorporating a rain garden or even just adding a rain barrel into a backyard. This will allow the rain to seep into the ground more slowly rather than pour out of gutters. This slow absorption can limit the amount of runoff created from yards and residential housing areas.

The Mississippi River can be seen in advertisements for the Quad Cities area. It can be read in the names of restaurants and small businesses.

It can be felt in the floods and rains that raise the water levels. This is not just true for the QC, but for the entire stretch of the river as it cuts through the country. The river stretches 2,340 miles and will require work from the government and people to improve the water quality.

"We get visitors here from Sweden and other places in Europe and Asia, and they just want to see the Mississippi River because it is majestic. It's our Rocky Mountains. It's a precious resource. We should never turn our backs on the river," Swanson said.

Recycling prominent on campus

By Priyanjana Chaudhary
Observer Staff

A sustainability report released by Augustana College in 2021 reports the work that has been and continues to be done with recycling. According to the report, the goals were to increase the number of recycling pickups, add two yard-sized dumpsters, and to create new recycling locations.

Kai Swanson, special assistant to the president, handles environmental protocols on campus. He says recycling is a great way to deal with waste.

"There are macro-level things that can be done at the institutional level. However, there are also individual things and the fact of the matter is a campus community like ours, the people who make it up change every single year," Swanson said.

One such "macro-level" way to deal with recycling includes the use of second-hand electronics.

"In the spring of 2020 when we had to go on COVID separation, some students did not have adequate laptops or devices. So giving laptops and devices to students was a way to recycle some of that stuff and get it into the hands of people who could use it," Swanson said. "Nothing is simply thrown away. As new devices are added the old ones have to be discarded in a proper way."

The Gerber Center is an area of the college that produces both degradable and biodegradable waste. The waste includes lots of big containers, cans, tins, cardboard, plastic papers, spoons and leftover food.

There are around 4,000 transactions a day going on in the different dining locations, which create a lot of opportunities to recycle.

Director of Dining Services Fred Kurt said that dining services work to be as sustainable as possible. One way is by making recycled materials more compact and easy to transport.

"We specifically have a cardboard baler, which compacts the cardboard as tight as possible. We get about four of those in a week," Kurt said.

Augustana is currently making strides to improve how it recycles. This is partially because President Andrea Talentino is concerned about this issue.

"President Talentino would like to restart a campus conversation. So not just any one department but the entire campus community needs to work on how we can do a better job at it as a community," Swanson said.

According to the Environmental Protection Agency (EPA), recycling reduces the amount of waste that is sent to landfills and incinerators, and is helpful in preserving natural resources like timber, water, and minerals.

Despite its importance, some workers at the college believe there is more work to do with waste management.

"I will say recycling gets a little disappointing when we go outside of dining. And I don't think people take recycling to heart and they cross-contaminate the product. Our facilities people end up just throwing it in the garbage because it's contaminated," Kurt said.

While the system isn't perfect, efforts are still being made in the Gerber Center. Assistant Manager of the dining center Brian Stone said the department is still recycling high amounts of products.

"I do feel pretty confident that within the Dining Center, we're capturing probably 95 percent of our possible recycled product," Stone said.

The college is also making an effort to offer more sustainable dining ware. Rather than throwing away plastic that doesn't decompose, alternatives are being offered.

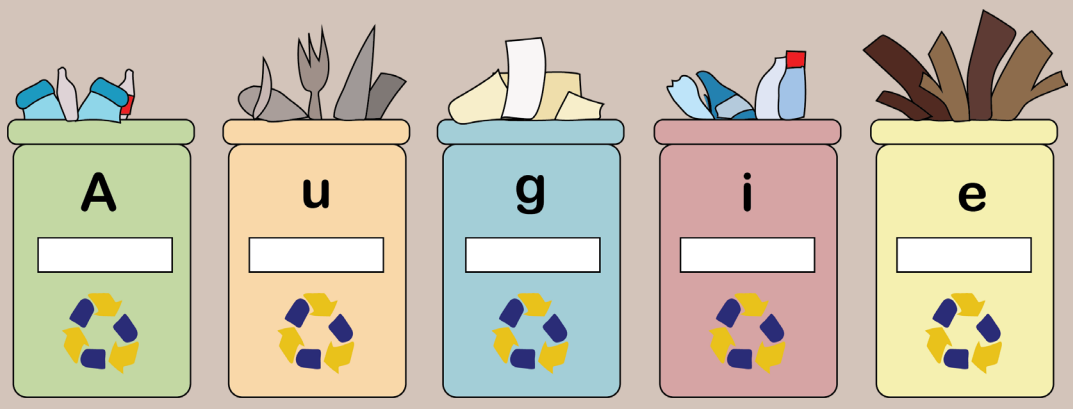
"The silverware spoons, forks and knives we use are not plastic, it's made out of potato starch," Swanson said.

Students take a lot more food in the dining hall than they need. This can prove frustrating to consumption and sustainability for food waste.

"I still get a little bit concerned when I see students piling up a plate overflowing and then having two nibbles and then putting it down to the aisle," Swanson said. "Who does that help? I don't get it."

Students should also contribute to making Augustana a healthy, clean, and environmentally friendly zone. It's our responsibility and a small act can change a huge difference in society, according to Swanson.

"We have to be careful about what we consume and what we dispose of, if we don't consume as much, then we don't have as much to dispose of in the first place," Swanson said.



Graphic by Elise Brenner / Observer Staff

Native American conservation

By Chloe Baxter
Observer Staff
Opinion column

It has long been argued that Native Americans are the first environmentalists. The coexistence between the natural world and the spirit world, and the interconnectedness between the two resulted in a deep respect for nature and a long-lasting journey to maintain it.

Native Americans, such as the Wisconsin-based Ho-Chunk nation, have made tremendous strides in land conservation over the years, solidifying its importance and strengthening their cultural ties to the environment.

Despite this, they have not remained outside of modernist developmental activities, with urban expansion, vehicles and individual decisions having an impact on lands under their domain.

Tina Brown, the executive director of the Department of Natural Resources of the Ho-Chunk tribe, said "Our homes, vehicles, enterprises, and our individual decisions on a daily basis impact our environment. We are not immune to progress, modernization, and capitalist activities that influence our environment."

Yet, compared to others, their conservation efforts still offer much for us to learn, with a clear focus on lessening their negative ecological footprint, rooted in a belief that harming those in systems they are interdependent with, the land, water, and air, harms themselves as well.

This interdependence is something that we should recognize ourselves. Our transportation, what we eat and drink, it all ultimately originates in the same place, our planet, and we do depend on it to an extent, so we should value and act to conserve all that it has to offer.

"What differentiates us from non-indigenous peoples is our traditional ecological knowledge that is passed down from our ancestors, which taught us we are part of the natural world. And it is here for us to use and care for responsibly because we are interdependent with all of the living systems here: water, land, creatures of the air, creatures on the earth, and creatures in the water. We cannot harm them without harming ourselves," Brown said.

Again, this interconnectedness between beings and respect for the planet is striking when compared to efforts taken at the state, or even federal level, which arguably tend to favor capitalization and economic gain over environmental preservation.

As strides to develop alternatives to fossil fuel are slow and non-recyclable materials continue to build up in landfills, questions are raised as to what we aim for in the future of our environment - with issues on our economy, and our economic benefits taking precedence over environmental damage and loss, but soon there will be nothing more to lose.

A focus on individualism, in the emphasis on an individual's intrinsic needs and wants, is a stark contrast from the ideologies relating to ecology and interconnectedness, and consideration for nature resources abided by in Native American land conservation.

Similarly within their consideration is the future, as knowledge of land preservation is passed down, and actions are taken to ensure the land is there for generations to come.

These issues did not develop overnight. They were the result of damage we inflicted over time, making the selfless mission of the Ho-Chunk tribe to preserve the environment all the more important. This sentiment was echoed by Brown.

"For many Indigenous nations, we are not taking care of the earth and the life upon it for ourselves; we are taking care of it for our children, their children, and the future generations to come," Brown said.

As we note the sacrifices of those before us and prepare for those soon to come, it's important to consider if what we have lost is worth the reward. We are relatively economically stable and have access to a myriad of resources, but what of our environmental future?

I think it is clear that the values of the Ho-Chunk that extend beyond multiple generations are something we can learn from.

Responsibility, in particular, is a key component that should be addressed in the environmental steps taken outside of indigenous lands.

The steps taken now will impact future generations, reinforcing environmental accountability and the need for action, particularly in the realm of land conservation.

While this is a change that should occur within our non-indigenous environmental landscape, Brown says that she would like to reform tribal laws to ensure that they coincide with pre-existing ecological knowledge.

"We need to push forward in exercising our tribal sovereignty and make necessary changes to our Ho-Chunk Nation Constitution," Brown said.

Including language that speaks to the 'Rights of Nature' language provides those within the Ho-Chunk nation with an emotional connection to the natural world, as they consider not only their rights as people, but how these rights relate to nature as a whole.

"We too need to put down our cell phones, turn off the TV and computers long enough to devise our individual and tribal paths of accountability, and make our sacrifices for the sake of all humanity, walking the environmentally dutiful footsteps of our ancestors," Brown said.

The urgency to blend the modern with the traditional falls in line with the multigenerational environmental preservation that characterizes not just the Ho-Chunk, but many other indigenous tribes, as they adapt their prior knowledge and long-lasting beliefs to coincide with the evolution of environmentalism.

Considering the environment, not as a stagnant, voiceless entity from which we can reap benefits without any regard for its well-being and effects, is something that we need to move beyond, following in the footsteps of the first environmentalists and bridging our generational gaps in environmental preservation.

GIS discussions with Hannah Weber

By Carly Davis
Observer Staff

Staff member Carly Davis spoke with senior geography major Hannah Weber about grass types, GIS programs and groundskeeper services.

CD: Did you come to Augie to do GIS?

HW: I didn't have any idea what GIS was before I came to Augie. I had never heard of it. And then, it wasn't even a minor. I came here to study geology and environmental studies. Then I took one geography class and realized that I really loved the human element of things, and in geology, there wasn't enough of that. And I really love the geography department.

CD: So, how did you get into GIS?

HW: You're required to take it for the geography major. All you're required to take is an introduction to GIS class. I thought I was going to hate doing a computer program, but it was actually so much more fun than I thought it was going to be. When [Dr. Heine] told us he was making it a minor, I really wanted to jump on that opportunity because it's a really employable skill and asset to have.

CD: Is geospatial data like a landscape or topographical map?

HW: It can definitely do the more physical element of things. You can have your topography or elevation, but you can also map different kinds of data–they call it raster and vector data—and you map the human element of things. Population dynamics, or if there's a blue state or a red state, so it's not just physical elements.

CD: Are you capturing our campus?

HW: I'm mapping the turf areas on campus. This is a small independent project that we have to do for class. We're mapping the turf on campus, and I don't mean synthetic turf, just grass, basically. I worked closely with Josh Becker this past summer doing the Augie Acres internship, and he's the ground services manager. When Dr. Heine was telling us we had to do a project with GIS, I knew Josh was familiar with GIS and interested in the ways we could apply it to Augie and to ground services to help them out. And then

Josh told me that it would be helpful to map the turf on campus because he's trying to look for new contractors for spraying chemicals, so it helps to get a better idea of the square footage on campus. If he knows the square footage of turf he'll have to spray…he can know how many gallons of fertilizer or chemicals, whatever he has to use, and tell contractors to get estimates.

Josh…knows campus like the back of his hand. We have an aerial image that was taken with drone footage that Dr. Heine and the GIS class did last year. We're zooming in on these parts to select which areas are grass and make our little shapes on that grass area, and then Josh can select it. We ultimately had to go in by hand and trace the shapes, drawing them, outlining them.

CD: Augie is a very tree-covered campus, has that been an impediment?

HW: It's an impediment. For sure. We had to have Josh come in and show us some trouble areas and he already knew off the top of his head — what tree coverage is there, and specific areas that he knew. Some trees have mulch at the bottom by their trunk, so we don't need to trace that, but then other trees don't, so we can just cover them in the polygon. Sometimes you have to work around them, sometimes you don't. It's kind of a case-by-case thing.

CD: So, you're just doing the math?

HW: Literally just here to do the STEM girl stuff. But there's plenty of ways [Becker] could probably apply it.

It's also just knowing how many square feet of turf there is on campus, which I think could be useful no matter what. He can also select certain polygons or all of them, whatever he wants to do, and then write what he's sprayed or when he doesn't. He can use that to have this repository of information. Maybe he'll try other chemicals, he can keep that information in there.

CD: What was your Augie Acres project over the summer?

HW: They have one intern over the summer to run the garden… Then also having to figure out what to plant. They just got raised beds in the garden this summer, so what's the best thing to plant there?

What will look good for the future? Mostly this year it's just focused on fixing up the garden, cleaning it up because there was a huge area that had been untouched by could be utilized. It was a lot of physical labor.

CD: Do you feel like your GIS work has equipped you for the future? Do you know what you want to do after college because of it?

HW: It's probably one of the most useful skills I'll leave Augie with. It's super employable, it's in high demand, and as our worlds become more connected, there's a bigger need for it.

I don't know what I want to do with my life — that is not GIS's fault, that's mine— but it's opened up a lot of doors and opportunities because a lot of jobs now will require or prefer that you have some experience with GIS.

It goes beyond the field of geography, like environmental, geology, even health. You know, it can come in handy for sociology.

It's just a really interdisciplinary and useful tool to have. It's nice knowing that I have GIS where a lot of options are open.

Background graphic by Carly Davis / Observer Staff

Slough water ebbs and flows

By Kayla Palliser
Observer Staff

It's hard to imagine a day at Augustana without the Slough. Students walk along the pathway, watch the colors change out their windows, joke about how it smells and race in boats down the water during Homecoming. But few know the depths of the Slough's history and all that lurks beneath the water.

The Slough's history is caught up in the long, continuous process of campus construction projects, which shaped and adjusted the waters to how it is now. The origin of the Slough goes back to a campus that would be unrecognizable now.

Much of campus was once covered by water, either by streams or by Lake Sylvia, which no longer exists.

"There are streams that naturally came down through the campus and went to the Mississippi," Kai Swanson, special assistant to the president, said. "But starting in the early 1900s, the city started pushing that stream back, because it wanted to smooth out 7th Avenue and make it easier for commercial traffic. And then the college just continued that."

Two students walk side-by-side on the slough.
Courtesy of Augustana College Special Collections.

As academic buildings were constructed, water was put into underground pipes or pushed back across campus. And when Westerlin and Erickson were constructed, the Slough and its pathway offered a connection between the residential and academic areas of campus.

The name Slough is a testament to students and alumni. In the 1990s, a marketing consultant wanted the name changed to The Ravine, The Ravine Pond and The Ravine Walkway. But students and alumni never gave up the name Slough.

"If you look back far enough, I can find you these campus maps that say 'Ravine,' but no student ever called it that," Swanson said. "A slough is off the main channel, which I think is poetic because if you walk the Slough Path, you're stepping off the main channel."

The current Slough appearance is due in part to the Tredway Library construction project, when the Slough pathway was paved and the waters were extended further out in the quad. According to Swanson, the change to the Slough's limits was partially for aesthetic and partially for flood-control.

"The top of the downspout may have been lowered a bit to make it a little shallower, but by adding the surface area, it can accommodate more severe weather events," Swanson said.

Underneath the ever-changing waters is an ecosystem of fish, invertebrates, turtles, frogs, algae and more. However, the top area of the Slough, by Naeseth, is very different from the bottom pond by Tredway in terms of creatures and water quality.

Dr. Kevin Geedey, professor of biology, has collected and analyzed Slough water quality patterns with his students for years. Geedey last tested the waters in fall of 2021.

According to Geedey, the top part of the Slough has poor water quality and is populated by pollution-tolerant creatures who can survive the low oxygen and high chemical levels.

"The water all the way upstream at the top of the Slough path is usually pretty gnarly. It's often high in ammonia, and it's often low in oxygen, and it's often high in nitrate and phosphate," Geedey said. "All of those are indicators of excessive fertilizers or excessive runoff from leaky sewage infrastructure or leaky septic tanks."

Biology class members taking samples from the slough, circa 1970.
Courtesy of Augustana College Special Collections.

As the water flows across campus, the ecosystem processes improve the water quality significantly. Geedey estimates that by the time the water hits the drain headed for the Mississippi, it is about 25-30% cleaner than when it entered campus.

Senior Paige Lundborg, who looked at the water quality data in Geedey's class, said the analysis caused her to view the Slough differently.

"I think knowing some of the chemistry behind it has slightly altered my view, because I just get a weird feeling when I see people jump in it," Lundborg said. "In terms of a healthy water system it's not the best, and there is room for improvement."

According to Swanson, the college doesn't test water as an institution

Aftermath of a pipe collapse beneath the Slough's waters in June 2017.
Photo courtesy of Augustana College.

through history at Augustana

because it isn't used for any human purposes. However, the data collected in classes like Geedey's has been shared with the college for decades.

One thing the Slough is famous for on campus is its smell, which comes from decomposition within the Slough's ecosystem. This smell is worsened in the fall, as leaves break down in the water. However, as bad as the smell can get at times, it used to be much worse. Swanson said when he was a student in the 1980s, the sewage line running underneath the water would leak, adding to the odor.

According to Geedey, the smell is strongest where the water quality is poorest. The higher levels of ammonia and nitrate in the upper areas fuel more bacteria, which decomposes more and produces a greater smell. Low oxygen levels also worsen the odor, as well as make it impossible for fish to survive in the upper part of the Slough.

One way Augustana has worked to improve the Slough's quality is by placing aerators, also called bubblers, in the water to increase oxygenation.

"What the bubblers do is take water from the bottom that may have low oxygen conditions and push it back up to the surface, where it's going to get exposed to atmospheric oxygen and kind of recharge," Geedey said. "Those bubblers, which the college is maintaining and paying for, are a well-established and effective strategy of trying to improve water quality and maintain fish populations."

Maintaining fish populations is important not only to the Slough ecosystem but also for students and faculty, because the fish keep the mosquito population on campus low.

Not all fish are beneficial within the Slough's ecosystem, though. For instance, goldfish are an invasive species in the Slough. What likely started as students adding their pets to the Slough at the end of the school year has caused larger problems for the water quality, because goldfish stir up sediment at the bottom of the Slough.

The goldfish population was reduced in 2017, when a pipe beneath the Slough collapsed, which flooded the lower campus and drained the waters from its bed. In the aftermath, goldfish were replaced with more native fish and the campus community saw how Augustana looks without the Slough's waters.

The city's sewer pipe underneath the water is accessible through the cement square block in the middle of the Slough.

According to Swanson, the city is currently looking to improve the pipes so there isn't another collapse and flood like in 2017.

"The city just made a decision to invest more in that system so that it won't happen again," Swanson said. "I don't know when the work is going to begin on that, but they're going to either reinforce, bypass or both, those sewer lines."

Certain issues can be addressed by students, such as not littering or donating goldfish to the water. Other issues need to be addressed through community involvement, because the water comes into the Slough from the surrounding neighborhoods.

Aging infrastructure and pipes, litter and road salt usage all contribute to poor water quality. Even how storm drains collect water, running across asphalt instead of being processed by soil first, impacts what is in the water.

Although the Slough is beautiful, it is also an environment similar to a typical forested pond.

Three cross country runners in uniform running along the slough path surrounded by the fall foliage, circa 1990.
Courtesy of Augustana College Special Collections.

"To us, it may just be a little stream that gurgles past or a pond we walk past on the way to class, but there's this whole drama of ecosystem processes and life and death that's going on in that water all the time," Geedey said

Understanding the Slough is important for the campus community to fully appreciate it.

Its shape, color and smell are different from an artificial water feature, because the Slough is a complex piece of nature and of Augustana's ever-changing history.

View of the Slough and the Swanson bridge in the fall, 2011.
Courtesy of Augustana College Special Collections.

GIS leads Lead Service Line Project

By Sarah Villani
Observer Staff

Working to map the lead water service lines in Rock Island, Augustana College is collaborating with the city to work on the Lead Service Line Project. Announced last July by President Andrea Talentino, this project aims to help replace all of the Lead Service Lines (LSLs) along with creating strategies to fund the project which Augustana College will work on later next year.

LSLs were put in by the city of Rock Island when the city was originally built.

On Jan. 1 of last year, the Lead Service Line Replacement Notification Act required that any lead materials be put in inventory, switch all lines to copper instead of lead and implement financing strategies to fund the switch from lead to copper pipes.

Now that the Environmental Protection Agency (EPA) has also put in new regulations to switch the lead to copper pipes, the city of Rock Island has begun to address this issue.

Dr. Michael Reisner, environmental studies professor and director of the Upper Mississippi Center, said the LSLs need to be replaced due to safety concerns.

"A law passed last year in the state of Illinois that requires inventory, financing and replacement of all remaining lead service lines for drinking water, which is a big problem nationwide. Illinois is one of the 5 states with the most lead service lines remaining," Reisner said.

According to Reisner, both Augustana College and the city of Rock Island believed a partnership was needed to complete this project.

"Rock Island needed help with expertise and resources so we partnered with them along with Dr. Murphy, the [director of] advancement of community health and wellness, as it's an environmental justice/health intersection," Reisner said.

This April, a comprehensive inventory was completed for the lead service lines. There are about 15,000 lead service lines in Rock Island.

According to senior Peyton Heisch, a student researcher on the project, 4,000 pipelines have been inventoried out of the 15,000 in Rock Island. This was done by going through city paperwork of previous pipeline replacements.

"We spent time with the water department inspector reports going back to the turn of the century, sitting in the filing cabinets, digitizing them based on what the current pipe was and what it was replaced with to help eliminate the unknown," Reisner said.

The Geographic Information System (GIS) computer program is aiding the beginning stages of this project by getting the inventory of any lead service lines in the area of Rock Island.

> "An important part about seeking funds is to do it equitably for the community."
>
> -Peyton Heisch

The software is able to show which pipes are made out of lead, helping to show who needs their pipes replaced.

"We then had one team go through the data and put it into a spreadsheet, then the GIS team worked on putting the data into GIS to create an interactive map," Heisch said.

Rock Island GIS specialist Megan Baker is working on the project. A community engagement team at Augustana is helping the project by creating a digitalized survey so the local people of Rock Island can put information in the database.

"The data they are collecting to further the project along is location data, which is points that are connected to the parcels within the city and putting the information we know about them," Baker said. "We are also putting in the information that we get from testing the lead lines to see where they are geographically by putting them into a GIS system."

Baker says that before the city can begin to remove the lead pipes, they need to know who is being impacted.

"GIS is important for the project because although the city of Rock Island has a database for the city owned infrastructure the information in the database is incomplete," Baker said.

After the city completes digitizing and mapping the records, the project will focus on getting the information out there and marketing the survey.

Homeowners will be able to verify what kind of pipes they have through the GIS software which will help decrease the amount of unknown information the city has.

This also makes it easier for the city to collect the data without disrupting the environment by digging the pipes, which would also be expensive.

Getting the location data can help pinpoint large areas where the city needs to change the pipes. In January, all of the information was imported into the GIS system to help figure how many unknowns are left. Then GIS will be used to create a predictive model of the lead pipe patterns in neighborhoods.

"The next steps are to educate the public without scaring them too much, which is a fine line. We need to get the information out to the public in a format for them to engage with the project more," Reisner said.

The homeowners will be able to do it in a non-disruptive way to the environment, right in their homes to help the city. Involving the public and community groups will also help with financing the project.

"An important part about seeking funds is to do it equitably for the community. Which is why it is so important for people to do this [the survey] so that when their pipes need to be changed for their health the community knows what needs changed, it will help everything for the future," Heisch said.

Letter to the Editor: The Sierra Club

Dear Editor,

In these last few weeks as we wander campus smelling the fresh blooms and taking in the leaves, I'm reminded of people's ability to appreciate their environment. As I was leaving Swenson Hall of Geoscience where I spend most of my time, I noticed flocks of people in every corner of the lower quad. People wrapped up in their hammocks. People rocking in the composite wooden chairs. People resting under the trees. Every person was in their own world yet they were all participating in the same act of celebrating nature.

Very often people find themselves in their own world. At the beginning of the semester one incident that excluded the awareness of our shared interconnectedness was the East Palestine, Ohio Norfolk train derailment. On February 23rd a southern outbound train carrying hazardous material derailed in the community of East Palestine. Most coverage of the event sought to place blame in whatever political direction that confirmed their bias. But we forget such incidents are only symptoms of the problem.

Ralph Waldo Emerson justified his littering by assuming the college graduates of the future would need something to do. And it's believable to assume some environmental consulting firm will have a long profitable contract written out to manage the damage done in East Palestine.

We have a nasty habit of commodifying even the most tragic of things. Through Aldo Leapolds writing I have skimmed the surface of what it means to treat the land ethically and I believe that if we are ever to find ourselves in a less dire circumstance then we must affirm our land ethic.

This is one such service the Augie Sierra Club strives to provide its members. In late spring just before the weather was nice for shoes to not get muddy, Augie Sierra Club hosted an excursion for Augie students inviting them to attend a small day trip to the Maquoketa Caves State park where we spend two and half hours letting students relish in the bliss of not having their phone scream away at the incoming emails.

Students on this trip were able to explore the caves and experience nature not regularly available to them. I find students leave this trip feeling grateful for having had the opportunity to get away from the anxiety that can sometimes be found on campus.

It's incredible the healing power that our environment provides.

As summer nears I would encourage everyone to find themselves outside. Find yourself investing in nature because that really is the only way we can safeguard the future of our home.

Jack Hughes
2022-2023 Augie Sierra Club Vice President
Please reach out to me if you would like to join the Augie Sierra Club
JackHughes20@augustana.edu

Photos courtsey of the Sierra Club

Quad Cities area protects

against flood devastation

Nearly every spring the Mississippi River floods parts of the Quad Cities due to a mix of snowmelt further north and rainfall. From left to right, top to bottom: Nicole Gleason, the public works director in Davenport, reassures the public that the temporary floodwall will protect the city on April 24, 2023; construction workers in Davenport continue work on the floodwall along River Drive on April 24, 2023; the Mississippi River partially floods downtown Davenport from Iowa to Perry Streets along River Drive on April 30, 2023; an overhead view of the Mississippi River flooding in Davenport on April 30, 2023; construction workers use a crane to move large blocks of cement to add to the temporary floodwall in Davenport along River Drive on April 24, 2023; an American flag placed on the east end of Davenport's temporarily constructed floodwall waves in the wind on April 24, 2023.

Photos by Molly Sweeney and Aubrey Lathrop / Observer Staff

The work continues on.

Environmental justice requires action.
Environmental justice requires community.
Environmental justice requires listening.
And we are not going to stop listening to you.

Thank you to our staff that worked to create this issue:

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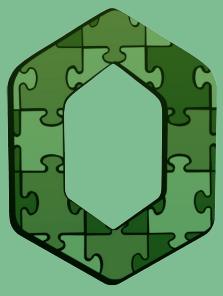

The Augustana Observer