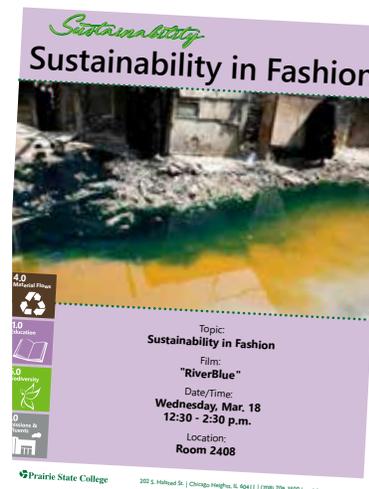


HIGHLIGHTS

The second round of applications for the Revolving Sustainability Fund (RSF) were due at the end of February, and **in March, the Sustainability Committee approved one new RSF project.**

This project will purchase new reusable tablecloths for Student Affairs to eliminate their need for single-use plastic tablecloths for student events. This is projected to save about 140 tablecloths and \$250 from going to waste each year.

The Sustainability Film Series kicked off on February 19 with the "Frozen Worlds" episode of the *Our Planet* series, followed by a discussion about climate change. About 40 students attended and contributed to a lively discussion about human impacts on the climate and the natural world. The next film in the Sustainability Film Series was going to be, *RiverBlue*, which highlights environmental and social issues in the fashion/textile industry. This screening was canceled due to the COVID-19 campus closure, but the film can still be viewed through Kanopy, a streaming service that can be accessed by PSC students and employees through the [Library website](#).



UPCOMING

Many of the events we were looking forward to this spring have been canceled to keep folks safe and allow for social distancing, but...



Apr. 20-
Apr. 24

Earth Week will go on! Due to the COVID-19 campus closure, the Sustainability Committee is shifting online to deliver Earth Week programming this year. Each day during the week of April 20, you'll see a digital packet in your inbox with information, activities, and resources all about keeping our planet healthy!

WORDS: Embodied [insert resource here]

What does it mean for a product to have embodied carbon, water, energy, etc.? The word "embodied" in this case basically means "unseen." The water we use to bathe in the morning is very apparent to us as we directly experience it in the shower. The water used in the production, manufacturing, and transportation processes of the things we buy, on the other hand, is much further removed from our lives.

After using maybe [20 gallons of very visible water](#) in your morning shower, you drink a cup of coffee. While you only see 8 ounces in the cup, that coffee "cost" almost [100 gallons of water to produce](#). A classic 43-gram Hershey's chocolate bar - one of my personal vices - "costs" about 190 gallons of water. At lunch, your 1/3-pound hamburger "costs" about [621 gallons of water](#). Compare that to the same size soy-based burger, which would only have about [42 gallons of embodied water](#). [This site shows](#) the embodied water of many everyday consumables. [And this one allows](#) you to calculate your water footprint (both direct and embodied). It also breaks down the results into steps you can take to reduce your impact.

The same idea can be extended to embodied carbon emissions, embodied energy, and other important resources. We need to get a grasp of our impacts on finite resources so we can make decisions that will help ensure they remain available to future generations.

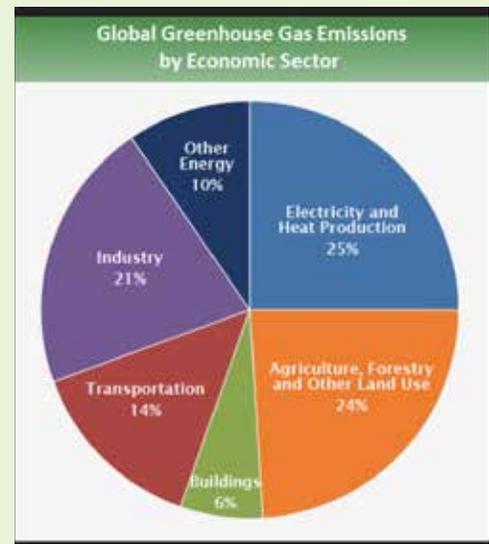
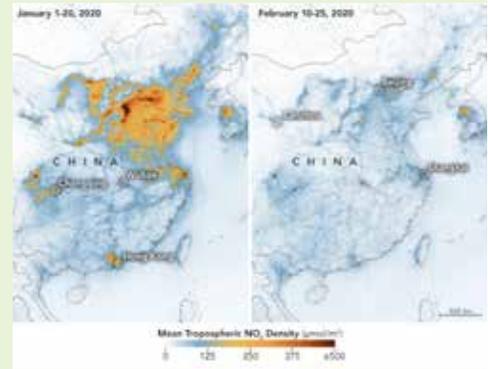
IN THE NEWS

The COVID-19 pandemic puts those with pre-existing respiratory issues at higher risk of death than the healthier population. [This article](#) outlines how the socioeconomic and racial inequities in American society are playing out with the effects of the novel coronavirus. Our reaction to this crisis is having a widespread impact on our daily lives and the economy, including a sharp decrease in vehicle traffic and other air-polluting activities. A Stanford environmental economist has [outlined this grim comparison](#) of coronavirus deaths with the [lives likely saved due to improved air quality](#) in China.

A 2019 report in The Lancet, an independent, international medical journal, outlines the ways **climate action or inaction will affect children** born today and in the future. It warns of long-lasting developmental, psychological, and health impacts of climate change that will affect our children throughout their lives if meaningful action is not taken. Read [more here](#), or see the [full report here](#).

Transportation accounts [for 14 to 15 percent](#) of global greenhouse gases (GHGs) emitted, but reducing the carbon footprint of this sector represents a real challenge because of the convenience of portable and energy dense fossil fuels. Despite this, the industry is showing signs of movement in the right direction. The aviation industry in the United Kingdom announced [plans to become fully carbon neutral](#) by the year 2030 ([though not without criticism of their approach](#)). The maritime shipping industry plans to [cut emissions in half by 2050](#), in part by [testing alternative fuels](#) that produce fewer GHGs and other pollutants. And, [UPS](#) and [Amazon](#) have both placed significant orders to electrify their delivery fleets.

Antarctica doesn't strike most people as a destination for escaping Chicagoland winters, but the **continent broke its record high temperatures on February 6** (65 degrees Fahrenheit), and then [again on February 9](#) (70 degrees). These new records replace the previous highs of 63.5 and 63.3 degrees set on consecutive days in March 2015. The highest temperature recorded prior to those [was in April 1961](#) (62.8 degrees). This, just after **Earth experienced its hottest January in recorded history**, which also was the "421st consecutive month with temperatures above the 20th century average."



What can I do to help?

You're already doing great! With countless, and many unquantifiable, negative outcomes of the COVID-19 pandemic, one silver lining is reduced greenhouse gas emissions. You can easily calculate the carbon emissions you're saving each week by not commuting. Just plug info from your commute into this equation:

Weekly commute carbon emissions (kg) =

$$\begin{array}{ccccc} \text{Round-trip} & & \text{Number} & & \text{0.404 kg} \\ \text{commute} & & \text{of commutes} & & \text{CO}_2 \\ \text{distance} & \times & \text{per week} & \times & \text{per mile} \end{array}$$

So when frustration about e-learning, canceled events, or telecommuting gets you down, take a minute to breathe and think about how much cleaner the air is without our cars spewing greenhouse gases and particulate matter into it.

Got Ideas?

If you have ideas for helping our campus run more efficiently, produce less waste, offer sustainability-related courses or programs or generally be more sustainable, contact PSC's Sustainability Coordinator Joel Nightingale at jnightingale@prairiestate.edu or extension 3727.

SPOTLIGHT

As a commuter college in a suburban setting, single-passenger vehicles are by far the most common method used by PSC students, staff, and faculty to get to and from campus. With the availability of public transit and biking/pedestrian infrastructure largely out of their hands, a small but growing portion of the PSC community has made the switch to driving on electricity.

In 2012, PSC installed its first electric vehicle (EV) charging station on the west side of the Tech Wing. Now, there are three charging ports and the chargers are getting more and more use all the time. In 2019, these chargers helped our community keep over 3.3 metric tons of CO₂e from being emitted! That's 75 percent higher than the year before and translates to almost 1000 gallons of gasoline saved.

If you have questions about PSC's EV chargers or making the switch to a plug-in vehicle, contact [Joel](#) and look out for more information during Earth Week!



FORWARD THINKING: Why "biodiversity" matters

If you've read the news about recent [bushfires in Australia](#), [deforestation in the Amazon](#), [declines in pollinator species across North America](#), or the effects of climate change more generally around the world, you may have come across the term "biodiversity." This term is pretty self-explanatory on the surface - the variety (-diversity) of life forms (bio-) - but the importance of this diversity is not always clear.

For those who cry at nature documentaries showing polar bears or orangutans losing habitat or starving due to other human-induced pressures, kudos to you for caring! But we humans (taken as a whole) are a naturally selfish bunch, so for the "what's in it for me" types, let's look at biodiversity in terms of its benefits to people.

The most obvious benefits of the "natural world" to humans may come in the form of what are called "ecosystem services," or "[the direct and indirect contributions of ecosystems to human well-being](#)." In a 2014 inventory of the value of these "ecosystem services," a global group of scientists found that humans owe nature [between \\$42 and \\$125 trillion annually](#) (in 2007 dollars). These benefits come in the form of provisions (food, raw materials, water, etc.), regulating services (local climate, air quality, carbon storage, waste-water treatment, erosion prevention, etc.), habitat/

supporting services (maintenance of genetic diversity, habitat for species), and cultural services (recreation and mental/physical health, tourism, aesthetic appreciation/art, and spiritual experience). In purely economic terms, these services rival and likely surpass the value "created" by the formal world economy, which logged about \$68 trillion (2007 dollars) in value in the same period.

At the macro level, nature is a very good business partner, giving us for free what we need to survive and thrive. But why do we need diversity in the global biosphere? And what benefits do we draw from the massive variety of shapes, sizes, structures, and processes of Earth's biome? Well, many "human inventions" should really be credited to nature.



FORWARD THINKING: Why “biodiversity” matters (cont’d.)

The [mechanism used by Velcro, long before it was patented by George de Mestral in 1955](#), was used in nature as a way for plants to use animals as unwitting distributors of their burrs. This “hook-and-loop” system is now a ubiquitous and profitable product, and I’d venture to guess that no royalties are being paid to the lowly burr-producing plants that inspired it.

And this process of “biomimetic” (or nature-copying) design isn’t limited to your kid’s sneakers. The miracle that is human flight, often attributed to the Wright brothers, is another example of plagiarism. Early human-made flying machines were [based on bird or bat wings](#), animals that beat us to flight by [tens, if not hundreds, of millions of years](#). The commercial airlines alone (not including air freight) [brought in over \\$800 billion in 2018](#), not to mention the slew of other applications for wing-like airfoils (propellers, wind turbines, fans, etc.). Solar panels likely wouldn’t exist if not for the observation of photosynthesis in plant leaves. Turning sunlight into energy now fuels one of the [hottest job markets in the U.S. in terms of annual growth](#). In 2019 alone, roughly [\\$20 billion of new solar capacity](#) was installed in the country.

While flight and Velcro may seem a bit old hat, relatively recent scientific discoveries are showing promise in new inventions. A lowly beetle in the deserts of southern Africa uses a combination of hydrophilic bumps and hydrophobic troughs on its back to [suck water directly out of the air](#) and channel it into its mouth. This technique is now being studied as a passive solution to avoid crisis in drought-prone areas. Another discovery - that [the microstructure of shark skin makes it naturally antimicrobial](#) - has opened up potential applications in the healthcare industry that involve more safe and less chemical-intensive hospitals.

The [exact quantification of the biodiversity loss is a difficult exercise](#) (estimates range widely from [about 900 extinctions per year](#) to [more than 200 per day](#)) since it necessarily relies on extrapolation from the tiny part of the natural world that we directly observe. But two things are very clear. (1) Human impacts are making life for other species increasingly difficult. And (2) many of “our” inventions ([penicillin](#), airplanes, [passive building ventilation](#), [high speed rail](#), to add a few to the list) have not come from our own short period of scientific innovation, but from the 3.8 billion-year research and development head-start that nature has had on us. Even with the valuable knowledge we have already gained from nature, what we know is far outweighed by what we still have to learn. And for that reason, the next obscure species to go extinct silently in some far flung forest could have held the key to curing cancer, efficiently storing renewable energy, or feeding the 10 billion people that will soon call Earth home without destroying our life support system.

If you want to get involved in exploring and protecting the natural world here at PSC, stay tuned for digital Earth Week information for more details:

- Join Professor Erica Lannan and others in the PSC community (virtually, of course) as they take an inventory of the life around their homes in the first - and hopefully only - socially-distant edition of PSC’s annual BioBlitz.
- Look out for information from Professors Angela Hung and Michael Massengill about native pollinator-friendly plants and PSC’s beehive.
- Explore how indigenous people in this area have learned to live in harmony with the native biome in a video with Professor Ezekiel Flannery and a live Q&A session to follow.

Thanks to Professor Angela Hung for her contributions to this article.

