From Your Editors...

As the snow from our most recent “Snowpocalypse” begins to dissipate amid warmer weather, our minds here at The Trail can’t help but think of spring. Though April is a long way off, a careful eye can spot the signs of changing seasons around campus. One can already feel the days lengthening, and large flocks of robins have been present on campus, feeding on the bitter berries of American Hollies. But no matter what weather the coming weeks have in store, we hope you’ll settle in and enjoy our latest issue. This month, our staff brings you a quirky bit of Dallas history, news of a methane leak crisis in California, a personal story on the journey of an EPIB student, and so much more. Enjoy!

Happy Trails!
James, Alex, and Brayden

EPIB Major Gets New Online Presence with Departmental Video

Our Head Graphic Designer, Brayden Donnelly, recently produced a video, ‘What is EPIB?’, meant to help define our Environmental Policy, Institutions, and Behavior major within the Department of Human Ecology and the School of Environmental and Biological Sciences (SEBS) here at Rutgers. Check it out in the link below!

https://www.youtube.com/watch?v=QWji-iS7g4Q&feature=youtu.be
A massive methane leak at a production facility in Southern California, releasing more than 73,000 tons of methane, has thus far thwarted any attempts at stemming it. The leak erupted at a storage well operated by the Southern California Gas Company (SoCal Gas) in Aliso Canyon, a neighborhood outside of Los Angeles, on October 23. This leak has alarmed both state officials and environmentalists, with the scale of the leak itself being the primary source of concern and confusion. A damning report by the Environmental Defense Fund (EDF) recently highlighted the spill, and in a separate document, the organization dubbed it “one of the largest U.S. natural gas leaks ever recorded”.

Since late October, the spill has released an estimated greater than 150 million pounds of methane, and thus far SoCal Gas has had little success in finding a solution to the crisis. The leak is responsible for a quarter of the state’s total methane emissions, and as of December 19, SoCal Gas has only completed two of the five phases of the drilling process to even reach the leaking well, located more than 8,000 feet underground. The company’s president, Dennis Arriola, released a letter on December 23, detailing the company’s progress in drilling a relief well and capping the leaking one.

The company, which services more than 20 million customers across Southern California, paid residents of nearby communities to relocate, as more than 1,700 homes and two schools were forced to evacuate from Porter Ranch, a neighborhood twenty miles from Los Angeles, due to noxious fumes caused by leaking gas. Methane, while normally odorless, has a chemical known as mercaptan added to it during production to aid in the detection of leaks, which gives it the odor of “rotten eggs”. EDF reported that their investigators found a leak every four miles in Pasadena, one every five miles in Inglewood, and one every five miles in Chino.

Methane (NH₃) is a potent greenhouse gas (GHG), and has twenty-five times more potent of an effect on the climate than the most abundant GHG, carbon dioxide (CO₂), over a 100-year period. More than 60% of global methane emissions are from human activities, with the majority of US methane emissions occurring during production stages of the Petroleum and Gas industries. EDF calculations put the CO₂ equivalent of the methane released at 6,136,666 metric tons of carbon dioxide since the leak started. In addition, the environmental advocacy group calculated that the effect of such a CO₂-equivalent over the course of a year is equivalent to the contribution nearly 7 million additional cars would create over the same period.

The Natural Gas Industry’s “Deepwater Horizon”

by Alex Toke

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With the recent agreement at COP21 setting out a new, though not legally-binding, global agenda for combating anthropogenic Climate Change, the vast number of methane leaks in the US from the production of natural gas and oil, largely underreported and under-regulated, are the next regulatory battleground in the struggle to redesign how our society obtains and consumes energy.

Works Referenced:

The New Era of Colonization:

A Big Wet Mess

By Mackenzie Pitt

At 172 miles in length, 32-yards deep, and spanning from the South Pacific Ocean into the Caribbean, the Interoceanic Nicaraguan Canal would be the largest and possibly the most expensive engineering project ever proposed in history. But why build a second canal through South America if one already exists? Built by the United States in 1914, the Panama Canal was originally planned to be built in Nicaragua. Cornelius Vanderbilt, a major benefactor of the canal, wanted to create a route for transporting passengers from the US east coast through Central America to California.

Now, as of last year, the proposal of a Nicaraguan canal has arisen again with a minimum price tag of $50 billion. The majority of the project is to be funded by the questionable Chinese billionaire, Wang Jing, who built his fortune as co-owner of Beijing Xinwei Telecom Technology Group, among other organizations. Jing collaborated with the Nicaraguan government to approve the canal and, as a result, established the Hong Kong Nicaragua Development Group (HKND) which has headed the project since its approval. The canal was set to begin construction in December 2015 and to be finished in a lofty five years. As for Jing, very little is known about him or his intentions, but he does have close ties with top Chinese government officials. Rumor has it that the goal is to create a Chinese-controlled canal to challenge the trade authority of the US in the Americas. Experts argue that this is part of a new era of colonization driven by the growth of the Chinese economy. Not unlike colonization of the past, this means major government corporations taking advantage of less developed countries and opening windows for corruption and environmental injustices.

However, China’s period of fiercely fast-paced growth may have reached its turning point this past summer. China’s stock market crashed from an investment bubble that finally
popped. The bubble was formed due to a steady supply of large investments flowing into Chinese stocks despite slowing growth and profits. The Shanghai index in the global market dropped by 40% despite the Chinese government doing all it could to control the crisis. Wang Jing was perhaps the hardest hit of all by the crash, suffering an 85% loss of his fortune. According to Forbes, Jing fell from number 12 on the ranking of the world’s billionaires to number 195. Consequently, the canal construction was postponed in September until at least the beginning of 2016.

![The Planned Nicaragua Canal](image)

While a stock market crash is never a good thing, some good appears to have come out of this one. The postponement of the canal has allowed the major questions on the ethics of the canal to be raised. Environmental whistleblowers have been very vocal in sharing the threats the canal proposes to the wildlife and indigenous populations of Nicaragua. The general path plan for the canal begins at the coast of Brito, cutting through isolated, dark sand beaches and through the Isthmus of Rivas. It would then traverse the Lake of Nicaragua, also known as the Lake Cocibolca. Next the canal is planned to cut a 172-mile route through dense wetlands and rainforests before reaching the east coast of Rio Punta Gorda. It is not hard to see why environmentalists are so against it. Lake Cocibolca also serves as a major source of revenue and resources for over 200,000 Nicaraguan citizens. The intensive dredging for the canal would most certainly harm the fishing market, and the pollution associated with ever-growing traffic would result in even more environmental harm.
One of the promises made by the HKND was to create 200,000 jobs by way of the canal, which will supposedly make up for the harm done to small local trading markets. In fact, the canal is expected to improve the overall economy of Nicaragua and, according to President Daniel Ortega, lift it from its standing as the second poorest country in the hemisphere. Government representatives have also promised to focus on hiring Nicaraguan laborers, although a portion will be defaulted to Chinese workers. However, one major red flag is the veiled secrecy behind China’s involvement in the hiring process and financing. The lack of transparency about the canal project has made it impossible to tell what influences and motives are fueling the decisions being made, leaving many to question what corruption may be had here.

Lastly, if not most importantly, is the issue of the constitutional violations that have come with the canal’s planning. The proposal was placed on a no-bid concession and fast tracked with no public debate, preventing any voting on the matter. This action has been found in violation not only with the Nicaraguan constitution, but over ten international treaties as well. Therefore, none of the 120,000 indigenous peoples being uprooted by this project are being represented.

All in all, an extensive investigation on the plans for the Nicaraguan canal seems warranted--one involving all those affected and all those benefiting.

Works Referenced:
The natural ecosystem is a complex mechanism, consisting of individuals and species working together to survive in an environment of finite resources. It is like a well-oiled machine, where natural selection and evolution have carefully crafted the most advantageous traits for survival. Sometimes, these traits are mutually beneficial between two species or individuals, which is referred to in the biological sciences as “symbiosis.” Humans are able to learn from these relationships in the natural environment, and Kalundborg, Denmark is leading the way in this breakthrough with their industrial symbiosis project, where companies of all different types work together harmoniously.

According the Kalundborg Symbiosis Project (KSP) website, the symbiotic relationship is a closed cycle. They explain their process as one where “the by-product residual product of one enterprise is used as a resource by another enterprise.” The website also creates a definition for an industrial symbiosis, which is a local collaboration where public and private enterprises buy and sell residual products. In turn, this results in mutual economic and environmental benefits. The KSP is the world’s first working industrial symbiosis.

The project was originated by a power and district heating plant, but has grown substantially to include some very large and powerful companies, including the biggest oil refinery in the Baltic Region, an insulin-producing plant with 2,700 employees, factories making enzymes for use in everything from bioenergy to textiles and gypsum for lightweight building materials, and the largest sewage treatment plant in northern Europe. An example of one of the working relationships is DONG Energy and Gyproc (a company that produces gypsum). The smoke being released from DONG Energy’s smokestack is captured, and the particulates are reused to produce gypsum for Gyproc ($\text{SO}_2 + \text{CaCO}_3 = \text{CaSO}_4$). The KSP website stated that, in 2010, the recycling of 150,000 tons of gypsum from desulphurization of flue gas ($\text{SO}_2$) replaced import of natural gypsum ($\text{CaSO}_4$).
This system has numerous benefits that reach far beyond the reduction of natural gypsum importation. Business consultancy Copenhagen Economics estimated cost savings at Kalundborg to be between 500 million and 600 million Danish crowns ($72 million to $87 million) a year. Although this may seem like a drop in the bucket to Novo Nordisk, which produces half of the world's insulin in Kalundborg and reaps annual revenue of $10 billion, it exemplifies the fact that waste reduction does not need to be financially taxing. The Kalundborg experience “shows that cooperation among different industries in the use of waste increases the viability of the industries…[while] the demands from society for resource conservation and environmental protection are met.”

More than 30 corporate and municipal delegations from 20 countries have visited Kalundborg this year alone, showing that the world is taking interest in this efficient process. Industrial symbiosis is a nearly zero-waste process that weaves economic and environmental benefit with community and industrial cooperation. The precedence for worldwide efficiency is being set, and Denmark proves that the international economy is the root of environmental sustainability.

Works Referenced:


Beautiful, vibrant and full of life, coral reefs are the tropical rainforests of the ocean. Although they only account for 1 percent of the entire ocean, they are home to an estimated 25 percent of all marine life. Thousands of marine species, including humans, rely on these diverse ecosystems. With an abundance of fish, there comes an abundance of food, and the fish on these reefs support millions of people worldwide. The commercial value to U.S. fisheries from coral reefs is estimated to be over $100 million. In addition to being a valuable food source, coral reefs generate billions of dollars through tourism and recreation, with Hawaii alone bringing in close to $11.4 billion. Coral reefs also provide resistance from storms along coastal areas by helping to dissipate wave energy to reduce the amount of wave run-up along the shoreline. But these strong, enthralling wonders of the ocean are being challenged now more than ever due to human interference.

On December 8, 2015, tragedy struck the Cayman Islands when a Zenith cruise ship dropped its anchor directly onto the coral reef. Video footage that was released showed the thick, heavy chain of the anchor draped across what was once a lively and vivacious ecosystem. As the video progresses, you can see the chain of the anchor swaying back and forth over the corals, breaking off pieces with its movement. The diver follows the long chain through its destruction and only a few corals still stand visible, and swimming around it was only a portion of the fish you would find in a healthy and thriving coral reef. The color and life, which was once abundant, was now gone. What took millions of year to grow and flourish was eradicated in less than a few short hours.

After the video was released, Cayman Island officials organized an investigation on Zenith cruise. They came to the ultimate conclusion that no wrongdoing was done on behalf of the Zenith cruise line, and no rules were violated when they dropped the anchor. The crew was directed to drop the anchor in a government approved anchorage zone. This is especially frustrating to the locals who are prohibited from fishing, catching lobsters, as well as removing a single shell. All of these restrictions were set in the name of conservation, yet hundreds of square feet of the reef were destroyed.
Coral reefs are fragile ecosystems but have proven resilient by not only surviving, but thriving for millions of years. Although it is proven that many have the capability to withstand climate change and ocean acidification, they do not, however, have the capability to hold their own against direct human destruction, such as damage done through tourism and pollution.

By destroying our reefs, we are destroying the home of millions of organisms, a buffer zone along the coast, and a main source of income through tourism as well as a source of food for millions. Humans are essentially taking out their first line of defense against storms and currents. In one area where a reef was destroyed, it cost close to $10 million per kilometer to build an artificial barrier. There is still time to turn this trend around to help support the growth and reconstruction of coral reefs. Some things to do as a consumer are to recycle and reduce pollution, if you own a boat, be cautious of where the anchor is dropped, and take the time to educate yourself and pass that information along with others.

Nature is strange, yet powerful and has the ability to persevere even when faced with the most challenging conditions. Coral reefs, although fragile, are a remarkable example of the strength of nature and the ability it has to adapt to its constantly changing environment. Hopefully, with the help of conservation efforts and a growing support system, coral reefs will be able to yet again persevere through human destruction.

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The Destruction of Corals retrieved from: http://plaza.ufl.edu/bettie/coralreef.html


HEAT STROKE IN PAKISTAN
by Humna Wajid

Summers are often marked by vacations and fun—however, last summer, this was not the case for much of Pakistan. The summer of 2015 became extremely difficult for many living in Pakistan due to a deadly heat wave which killed almost 2,000 people. A heat stroke, as defined by the Mayo Clinic, is a "condition caused by your body overheating, usually as a result of prolonged exposure to or physical exertion in high temperatures." This condition was frequently observed in Sindh, which is one of the four provinces of Pakistan. Heat waves began to take over southern Sindh in the middle of June right before the start of the much-awaited monsoon season. The temperatures reached around 120°F during this time period, which was further combined with humidity and power outages throughout the country. Coincidentally, the middle of June also marked the beginning of the holy month of Ramadan, when all Muslims fast an entire month from dawn-to-dusk to honor the blessings of Allah. This coincidence actually made the situation even worse, since the majority of Pakistan's population practices the religion of Islam and was still fasting regardless of the unbearable weather of the country.

Karachi, the business hub and the port city of Pakistan, was affected the most by these heat waves. Hospitals of Karachi saw many deaths, due to the people's lack of protection from the weather. Moreover, out of the 2,000 people who died in this incident, almost 1,400 belonged to the port city. Reportedly, the major causes of these deaths in Karachi were either dehydration or heat stroke. Direct exposure of people to the high temperatures led to failure of their bodies to resist the heat, eventually causing heat strokes. Additionally, these people were unable to keep themselves hydrated, as most of them were observing fast for the holy month of Ramadan.
Many of those who lost their lives due to heat stroke or dehydration belonged to extremely poor areas of Karachi, where power is supplied only for 10 hours or less per day. Lack of resources to fight against such deadly weather contributed to the high observed mortality. Despite knowing of the situation, governmental agencies were unable to provide significant aid to the heat wave’s victims. Rather, private non-profit organizations, such as the Edhi Foundation, provided much of the recovery efforts. Due to lack of support from the government, such non-profit organizations faced significant financial problems, even resorting to creating emergency clinics on footpaths and roads.

As the average temperature of the earth's surface has risen, Pakistan has been among the countries adversely affected. Many experts, such as Asif Shuja, the former director general of the Pakistan Environmental Protection Agency, blame global climate change, deforestation and urbanization as the key reasons behind such deadly weather events. He believes that such extreme weather conditions in the country are the result of the earth's changing climate.

In order to avoid similar tragedies in the future, educating people about climate change and its causes will be vital. If people are not aware of what is happening around them, they will never be able to take action. Hopefully, this major life-taking event helps Pakistan and the world acknowledge the importance of understanding climate change.

Works Referenced:


The World Has Enough Food

by Alexus Lizardi

Throwing away ‘expired’ food is a common occurrence in modern households and even more so in food establishments. These everyday occurrences add up to an atrocious amount of food being wasted each year. This is why organizations like The Real Junk Food Project are challenging the idea of expired food. Since December of 2013, The Real Junk Food Project (TRJFP) has taken food from companies, restaurants, supermarkets, and independent food suppliers that otherwise would have found its way to the dump. TRJFP salvages this food and creates an entire menu out of it. The founder of the organization, Adam Smith, started the first café in the city of Leeds. The café runs on a “pay as you feel” basis, which means that meals can be paid through volunteering, cash, or however the customer feels fit to repay the café. This café has salvaged over 20 tons of what would be waste and has fed over 10,000 people. In about a year, this café’s concept has spread across the world. So far, about 20 cafés have been opened in both Europe and Australia.

Projects like these are incredibly important for both environmental and social reasons. Only two thirds of all the food produced worldwide is being consumed, while the rest is wasted or lost. This statistic is even more unsettling when followed by the fact that one out of nine people are hungry. Statistics like these are a stark reminder that there is enough food to feed the world; the problem is that food distribution is not nearly as efficient as one would hope. Furthermore, for every ton of food wasted there are 3.8 tons of greenhouse gas emissions released. Food waste therefore represents not only a social issue, but a very real environmental problem. This is why TRJFP says that their “design is made to put themselves out of business.” The cafés are not meant to be lucrative, so none of their earnings are for profit. The goal of the organization is to bring consumers’ and producers’ attention to the high nonmonetary value of food and how that value is currently being undermined. TRJFP’s creators hope that in twenty years, their cafés will not be needed, and that future generations will be more conscious of food waste.
Although there have not been any food waste cafés to open in the United States, A Better World Café in New Brunswick, NJ operates with similar goals. A Better World Café is located in Highland Park inside the Reformed Church of Highland Park. This café has a suggested price for all the food on the menu, although food can also be paid for through volunteering. Anyone who decides to pay more than the recommended price will help pay for someone else’s meal. The café also offers complimentary meals for anyone who cannot provide service or financial payment. The foods served at A Better World Café are seasonal and are taken from local farms and markets as often as possible. The work of this establishment is much needed in New Jersey, as shown by a 2014 study finding that approximately 14,000 people were homeless in New Jersey at that time. This figure likely underestimates the number of homeless in New Jersey, due to the difficulty of conducting a thorough census of the homeless population.

Organizations like The Real Junk Food Project and A Better World Café challenge the idea of who has the right to have a meal. These organizations show that regardless of financial status, people deserve to be fed, and that the resources to do so are available. These efforts save the lives of the hungry while respecting food that the earth has already produced.

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A flood of thick mud spread itself across 800 kilometers of land last month in Minas Gerais, Brazil’s southeastern state. Fundão, a mining dam located in the city of Mariana, had sprung a leak on the afternoon of November 5th and less than an hour later, ruptured. The dam held 55 million cubic meters of tailings, or byproducts of mining processes consisting of iron ore extraction, that made its way down Mariana’s mountainside, throughout the sub-district of Bento Rodrigues, and into the Atlantic Ocean via the Rio Doce. All of this was viewable by NASA satellite images.

Said to be one of Brazil’s worst environmental disasters, the dam rupture covered the entire sub-district of Bento Rodrigues, displaced about 600 individuals, killed at least 17 people, and created a source of pollution whose resulting impacts have yet to be determined. That is also not the only thing that has yet to be determined. Not only is the cause of the rupture still unknown, but so too is the exact content of the muddy concoction.

There have been some disturbing results found in the search for the mud’s makeup. There are two contradicting opinions on the subject. The owners of joint venture company Samarco, which owned and operated Fundão, have stated that the material released by the rupture was not toxic and argued that its content was of clay and silt material, which is already naturally abundant in the region. However, The Institute for Water Management in Minas Gerais (IGAM) has “found unacceptable levels of arsenic on one or more days between Nov. 7 and Nov. 12 at seven places on the Rio Doce”, as well as slightly above-permitted levels of mercury in one area. The United Nations agency also found new evidence that the mud has “high levels of toxic heavy metals and other chemicals,” though evidence for such claims have yet to be released.

The one thing that seems to be very clear though, is that many of the citizens of Brazil are angry. The muddy mess that has snaked its way down the Rio Doce has killed thousands of fish, a very prominent part of the economy along the river, potentially contaminated a large proportion of local peoples’ drinking water supply, and displaced hundreds of individuals. On November 16th, environmental activists took to the front of Brazil’s mining company Vale SA’s headquarters (one of the joint companies) and performed an elaborate protest, smearing mud across buildings and bodies.

Hopefully, in the upcoming weeks, more information on the content of the mud and the environmental impacts of the rupture will be released. For now we, like the people of Minas Gerais and the communities affected down the Rio Doce, must patiently wait.
Works Referenced:


If you’re not into personal pieces, I suggest jumping to the next article. If you’d like to read about my journey into EPIB, enjoy.

A year ago, I didn’t even know that SEBS existed. A couple months later, when I was accepted into Rutgers, I still didn’t know what SEBS was. I was “that student”; the kid that wanted to transfer into SAS before even starting my classes at SEBS. My thought process was that there were so many more options for an undecided student like myself in the School of Arts and Sciences. I had no idea what I wanted to do, and it’s not because I have no interests in anything—it’s because I am interested in absolutely everything. Except dancing. I am an awful dancer.

Not to toot my own horn, but I could have gone pre-med, as I have an above average memory and strong work ethic. Or, I could have done an art major, because I can paint almost exact replicas of art pieces and have great attention to detail. But, the only career that I knew would make me happy was one that is based on helping other people and improving their lives in any way that I can. Instantly, I figured my go-to major would be psychology. My therapist got me through my high school and home-life drama, and I could do that for other kids as well. I didn’t know much about psychology--and then I came to college and learned about the unlimited types of psychology I could study, as well as the intricacies of the career. When I really thought over it, psychology wasn’t for me, so I was lost again.

Academic advising day came around and the majority of classes I was choosing from said “environment” in the title. I can’t even remember what classes I chose because I was so out of my element and confused as to what they were, but by default (or by luck that Kristen Goodrich was in my meeting), all of my classes fell under the EPIB major. I could not have been luckier, and I’ll never stop saying that. I declared my EPIB major halfway through my first semester of college with a minor in sustainability and biochemistry.

When my family and friends ask “What’s an EPIB?”, I’m not the best at explaining it yet, but there are a few things that I tell them.

I start off with the classes I’ve taken. This semester I was in Introduction to Human Ecology, Careers in EPIB, Politics of Environmental Issues, and a month and into school, I joined the Introduction to Sustainability class. These can be just as difficult to explain as the EPIB major, but it’s as simple as saying “I found a way where I can study improving not only people’s quality of life, but also the environment in which we all live in.” In Careers in EPIB, Dr. Van Abs told us in our last class that we can’t just be the people who go out and tell others how they need to live. Rather, we have to be the example which they follow--and I want to be that example. I’ve realized I want to interact with society in an influential way that improves people’s health, happiness, and overall lifestyle.

While trying to explain myself and what I’m learning in class, I have to talk about the people I’ve met as well. The only reason I’ve survived my first semester of college is because I’ve had bright and caring professors, and the Human Ecology Department to retreat to in my time of need. In only a page of explanation, I found myself this semester. I found things I care about passionately, and with some help I found a voice to stand up for those things. There are so many classes I want to take and so many things I hope to learn that I would never have known about without the guidance of the Human Ecology Department at Rutgers.

Here’s a tip: when people ask me what I major in, and I don’t feel like explaining Environmental Policy, Institutions & Behavior, I just say I’m majoring in saving the world. Because that’s what us EPIB-ers are learning to do.
The Port of Dallas

by Finn Gorman

Mankind, for better or for worse, has always possessed a keen fascination of testing the limits of the impossible. Countless stories have been told of pioneers throughout history who prevailed against great odds. As technology advances, dreams for expeditions into the great unknown became realized; Magellan circumnavigating the globe and Neil Armstrong landing on the moon prove that physical and social boundaries have always been pushed, and broken. We all know the success stories that have passed through the annals of history, but what about the untold stories when the boundary did not give way or just slipped out of grasp?

In 1892, plans to transform Dallas, Texas into a Port City were set in motion. The fact that the city is connected to the Gulf of Mexico by more than 700 miles of the Trinity River, did not dissuade any ambitions. To put this distance into perspective, the farthest inland port in the United States besides those on the Great Lakes is the Port of Lewiston in Idaho. From Lewiston to its tributary at the Pacific Ocean is only 465 miles. With this information minus the advances in technology and you’re left with a monumental feat of engineering.

The “Snag Boat Dallas of Dallas” embarked on its maiden voyage in 1892 to clear debris and obstructions from the length of the Trinity. Following the clearing, a steamboat by the name of “H. A. Harvey Jr.” arrived in Dallas to a cacophony of celebration and hype. The arrival of the ship was momentous enough to deem it a red-letter day on the front pages of local newspapers. Such public celebration gave Dallas leverage to persuade Congress to aid in furthering the navigability of the river. With federal monetary support, the US Corps of Engineers surveyed the length of the waterway to determine optimal locations for the installation of lock and dams to make it more accessible to larger ships. Despite the overwhelming public support and initial construction of the first few locks and dams, Congress decided to pull funding from the project. The Trinity River has gone through a series of bad floods but in 1908 a disastrous one rolled through Dallas. Significant damages caused a shift of thinking, from the future of the “Port of Dallas” to the potential dangers that the Trinity River possesses.
The next big project was that of the so-called “Kessler Plan”, an initiative mainly designed to reroute the flow of the Trinity’s path to alleviate flooding issues. Lead landscape architect George E. Kessler supervised the installation of levees to feed a canal around downtown Dallas and leaving the original route as a flood plain. While the plan worked in so far as adding security to the city, it pushed the river out of the public's eye and behind a wall on the outskirts of town. Still trudging on, the next 55 years saw incremental advances toward acquiring capital and political support. As fate would see it, by the time the realization of Dallas the Port City came in to grasp, the Dallas/Fort Worth Airport and commercial air travel had been thriving for years.

Dallas the Port City fell victim to very poor planning and unfortunate circumstances. It is important to remember the cases when human ingenuity falls short of success. Learning from mistakes of luxury are how we learn and prepare for situations of need. The cost of this failure was only monetary, but if a similar situation were to arise with greater risks we may be able to overcome.

Works Referenced:
In 2005, Japan broke the 29 year-long whaling moratorium by announcing its plans to conduct scientific research through the means of whaling. The plan, unfortunately, detailed the slaughter of roughly 333 minke whales per year. As a result of the program, the death toll has reached roughly 3,600 whales since the studies began. In December, Japan released its first whaling fleet into the Antarctic Ocean.

The International Whaling Commission (IWC) placed a moratorium on the act of whaling in 1986. The IWC prohibits commercial whaling and restricts any country within the commission to commit these illegal acts. Some countries, such as Norway and Iceland, simply refuse to follow the moratorium and continue to whale. However, Japan, a member of the commission, avoided the strict regulations of the moratorium by announcing a research project that enables the country to continue whaling.

The United Nation’s International Court of Justice saw a blatant contradiction within Japan’s concept of “scientific whaling.” It had placed a temporary halt on Japan’s whaling activities, holding that the country had very little scientific justification for its whaling. Critics of Japan’s actions have stated that there is very little proof that its special permits for the killing, taking, and treating of whales are for the purposes of scientific research. Japan disagreed with the court’s rulings, but abided by the temporary injunction of whaling. However, the court did not cover the Japanese Northern Pacific whaling program that took place during the same time. The courts also left the door open for the continuation of scientific whaling if Japan was able to redesign its program.

In times of pressure, Japan's previous whaling efforts have not lacked a purpose. During World War II, Japan became a major international whaling power, harvesting mass amounts of whales due to whale meat being a cheap source of protein. Thus, through whaling, the country was able to sustain itself through times of war. However, today's drive to continue whaling has much less to do with whale meat. As international institutions place stricter bans on whaling, the Japanese government worries about future bans that could be placed on other marine animals. For example, these institutions could restrict fishing on bluefin tuna – a major commodity within the Japanese fishing industry.

Japan may have little to gain from its whaling projects as it faces major opposition on the international front. Organizations such as Greenpeace have publicly stated that they will attempt to disrupt the actions of Japanese whalers. However, problems may arise should whalers decide to respond to activists by showing further aggression towards the whales.

Another argument against Japan’s program is that whale meat is no longer in high demand in most markets, which means the meat must be kept in cold storage that can be costly and unprofitable. These reasons, and possibly more, should be formidable enough to steer Japan away from the idea of whaling. Whatever decision Japan makes in regards to whaling, the International Whaling Commission and other international institutions will surely continue to advocate for the livelihood of these animals.

Works Referenced:


Racing Extinction is a documentary written by Mark Monroe and directed by Academy award winner Louie Psihoyos. The film premiered at the Sundance Festival, which took place from January 22nd to February 2015 in Park City, Utah, and it is currently streaming on Amazon Prime. On December 2nd, Discovery Channel had a “Prime Time Premiere” of Racing Extinction, and the documentary became the most-watched cable documentary film in more than three years, with an audience of about 11.5 million people in the United States alone. Discovery Channel also included the documentary in its “Discovery Education’s Virtual Field Trip”, allowing over 200,000 students across the United States to watch the film. So what is it about the documentary that draws so much attention? What exactly does the movie address, and why are so many people inclined to watch it? The answers to the aforementioned questions seem pretty obvious, but there is more to the story than simply discussing extinction.

The documentary tackles an issue with irreversible consequences, and creates an all-encompassing narrative through the perspective of several activists, scientists, wildlife photographers, and inventors. Racing Extinction discusses the course humans have taken over time which will ultimately – and very quickly – lead to a sixth mass extinction. This sixth mass extinction will result in the disappearances of half of the world’s species, and it may all be due to human activity. Despite this dark subject matter, the film is not meant to chastise all humans currently roaming the earth; the film is a tool for social awakening. We may be causing this mass extinction, but that also means that we hold the power to stop it. Racing Extinction attempts to take the proverbial blinders off of our eyes and force us to take responsibility for our actions, or lack thereof. The documentary gives a behind-the-scenes look at the black markets in Asia, where several endangered species are sold. It also discusses an issue we can all be held responsible for (some more than others), which is the effects of greenhouse gas emissions on the ani-
mals that also call this planet home.

Jane Goodall gave an introduction before the showing of the movie, in which she stated, “In 200 years, people will look back on this particular period and say to themselves ‘how did those people at that time just allow all those amazing creatures to vanish?’ But it would be very little use in me or anybody else exerting all this energy to save these wild places if people are not being educated into better stewards than we’ve been. If we all lose hope, there is no hope. Without hope, people fall into apathy. There’s still a lot left that’s worth fighting for.”

Jane Goodall’s introduction parallels the heart of the film. Racing Extinction is not a work born of anger, or hatred, it is simply a documentary which hopes to put into perspective how important every single person is in combatting global human-linked extinctions. It is a wakeup call - it is a call to action. To quote a Chinese proverb used in the film, “it is better to light a candle than curse the darkness.” It is time we stand up as an entire species, and help our fellow living beings enjoy the earth that is shared by all of us.

Works Referenced:
In the midst of record-breaking global temperatures, a true symptom of global warming, the public is now more aware than ever that climate change is taking place. There have been repeated warnings about the overall impact anthropogenic climate change will have, such as rising sea levels and loss of biodiversity, among others. Polar bears have even become the poster-children for this detrimental phenomenon. Although polar bears are thought of as adorable and the idea of major coastal cities underwater strikes fear in many, the effects of climate change may seem distant to the general public. We are warned about the most-frightening effects, but often the little daily luxuries that will be lost along the way are ignored. However, artists Miriam Simun and Miriam Songster have created an exhibit, GhostFood truck, which brings a few of these luxuries to light.

GhostFood truck, a mobile art installation, provides literal food for thought about climate change. It allows the public to experience futuristic dining with foods that will no longer be available due to global warming. Simun explains: “the situations we face are a really complex web of many different emotional, physical, personal, cultural, and ecological ideas and forces all woven together, and the way we deal with them is never going to be wholly positive or wholly negative. Coming to terms with that somehow is quite important.”

Through the use of texture and scent, the GhostFood truck customer will feel as if they are ingesting the actual food item. The three items offered, “Atlantic Cod, beer battered and fried”, “Amazon peanut butter served with grape jelly on white bread”, and “chocolate milk with delicious cocoa from West Africa,” are all meant to represent three ecosystems heavily-impacted by global warming. Rising temperatures are contributing to ocean desalinization and acidification, causing cod eggs to drown rather than float. Peanuts are at risk due to rising temperatures drying out the soil in which they grow. Chocolate, a food loved and cherished by many, is at risk due to drought resulting in poor topsoil. To further educate the public, Songster and Simun include these effects on their napkins.
The food substitutes were brought about through experimenting with different climate change-resilient foods paired with different scents. The scent of each food is administered through a headgear device designed by Miriam Simun. The actual scents were formulated by Miriam Songster, who has done projects in the past on how scent influences our interpretation of the world around us. With the use of the olfactory headgear and a texture similar to the food being mimicked, the simulation is accomplished. Each food item’s texture is administered through different means. For cod, vegetable protein and algae is used to imitate the flesh. For chocolate milk, milk and sugar is used. Lastly, for peanut butter, a soy substitute is used.

The two artists hope that the exhibit will make the public think twice about the way our daily lives may change and how we will have to adapt as global warming’s effects become more and more evident. Simun explains, “We’re not interested in scaremongering, and making people panic and tear their hair out about the end of chocolate. We don’t have a climate change education agenda, although inevitably we’ll end up raising awareness. Rather, we’re extrapolating a possible future, given current trends, and then exploring how we might respond it and what that might mean.”

The truck made its rounds throughout Baltimore, Philadelphia, Newark, and New York City between October and November. We can only hope that one day the two artists will bring back this extraordinary exhibit for more of the public to experience.

Works Referenced:
Species protection has been a topic of importance ever since the industrialization of our world began—that is, when humans began to destroy the environment around them in irreversible ways. For example, in the early 1920s, people developed organizations for the protection of birds and other animals; in the late 1940s, the International Union for Conservation of Nature (IUCN) was created to protect the whole spectrum of organisms worldwide; and in the early 1970s, the Endangered Species Act in the United States was created as legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). There are numerous organizations and programs today dedicated to the protection of species. Despite these protections, which spread over various governmental, nongovernmental, international, and local platforms, many species are still becoming endangered and extinct. Species that are iconic figures to people and necessary components of ecosystems may be gone in the near future. The northern white rhinoceros has been listed as endangered for decades, but has not been able to recover. It is now facing the serious possibility of extinction.

Many were struck by the recent headlines in November about the death of the northern white rhino at the San Diego Zoo, as it means that there are now only three left in the world. These consist of two females and one male, all of which live at the Ol Pejeta Conservancy in Kenya. The last wild northern white rhino was killed in 2006 in the Democratic Republic of Congo for its horn. Rhinoceros horns are extremely valuable today, priced at about $60,000 per pound in 2014. That estimate means that rhinoceros horn is more valuable than gold, diamonds or cocaine by weight. This provides a very substantial incentive for poaching.

Rhinoceros horn is important in many cultures for cultural, medicinal and religious purposes. The demand for it is extremely high, especially since it is banned in international trade. For many centuries, the wealthy members of Asian societies, where rhino horn today is in greatest demand, used it for decorative purposes as a way of showing their affluence. It is also used in traditional medicine and is believed to treat fever, rheumatism, gout, snakebites,
hallucinations, typhoid, headaches, vomiting and even “devil possession.” However, research from scientists at the Chinese University of Hong Kong refuted these claims in 1990 (although it did not test the success of rhinoceros horn for devil possession.) The horns are made up of mostly keratin, calcium and melanin. Research done at Ohio University says that the horns are comparable to horses’ hooves, turtle beaks and cockatoo bills. It has been scientifically proven that rhinoceros horn does not have the medicinal benefits it was once claimed to have. The declining rhinoceros population will require strict enforcement and punishment of rhino horn trade on the international black market. Otherwise, it is estimated that we may see a world without wild rhinoceroses within 20 years.

There are five species of rhino alive today in Africa and Asia, which include the black rhino, the white rhino, the Javan rhino, the greater one-horned rhino and the Sumatran rhino. The black rhino, Sumatran rhino and the Javan rhino are listed as critically endangered, with estimates for the black rhino being around 5,000 individuals, the Sumatran rhino less than 100, and the Javan rhino around 60. The greater one-horned is considered vulnerable and the white rhino near threatened, though the northern population of white rhino faces likely extinction. Aside from poaching and trade, the rhinoceroses face other threats brought on by their small, isolated populations. Natural disasters could wipe out entire populations of rhino, given their small size and their concentration in small geographic areas. The small size of rhino populations also leads to decreased genetic diversity, which weakens chances for survival in the changing conditions associated with habitat loss.

These large animals are vital to their ecosystems. In Africa and Asia, they are a key source of food for predators and scavengers. As large herbivories, they have an important influence on how and where vegetation grows. In many areas where rhinos currently live, they coexist with other valuable and endangered species. The survival of each of these species is often dependent on the others’.

Rhinos are important not just ecologically, but culturally and economically as well. They are an important part of the culture of many peoples, and are an important source of local income from the tourists who come to see them. The possible extinction of rhinoceros species should be of great concern, due to their importance in some of the most fragile parts of our world. As we establish priorities in issues of international importance, rhinoceros conservation should be included.

Works Referenced:
On December 28, 2015, the Microbead-Free Waters Act of 2015—a law aimed at the tiny plastic exfoliating bits commonly found in face washes, bar soaps, and other hygiene products—was signed into law by President Obama. The law was introduced by House Representative Frank Pallone Jr., a New Jersey Democrat, and subsequently passed in the House, then unanimously passed in the Senate. The Act is simple in its aim and substance: it prohibits both the manufacturing and sale of “rinse off cosmetics” (which includes all non-prescription cosmetics and drugs) that include microbeads. Manufacturing of cosmetics with microbeads must cease by July 1, 2017 and sale of such products must cease by July 1, 2018, giving companies a year to sell their existing stock.

The Federal government is taking impressive action, but they are not the first to do so. Eight US states have enacted microbead laws in recent years. Illinois was the first state to do so in 2014, followed in 2015 by Maine, New Jersey, Colorado, Indiana, Maryland, Illinois, Connecticut, Wisconsin, and California. While the federal ban followed state bans, the state bans do not go into effect until 2018, one year after the US law.

The microbead bans were enacted after pressure from environmental lobbying groups. Scientists discovered that these tiny plastic balls have an enormous impact on the marine environment. Microbeads, after being washed down the drain by the billions, are ingested by fish, to which they are toxic. Unlike larger pieces of plastic, microbeads can be swallowed by the smallest of fish, often carrying other toxins such as...
PCB’s along with them, and these plastic and toxins then bioaccumulate up the food chain. The effect of microbeads are not just hazardous to the health of marine ecosystems, but can also be potentially dangerous to those that consume seafood.

The issue of plastic microbeads in the nation's waterways became especially pressing when the Great Lakes, one of the United States’ greatest water resource, was found to have especially high levels of plastic pollution from microbeads, perhaps even higher than America’s surrounding oceans. Microbeads and the pollutants which it carries were found in fish gills--signaling danger for marine wildlife. The microbead pollution of the Great Lakes mainly comes from sewage treatment plants, which filter out larger plastic pieces, but do not have the capacity to filter miniscule balls of plastic.

Microbeads are easily replaceable as a hygiene product. Many organic beauty companies have chosen other options such as ground rice and salt, rather than microbeads, in their exfoliating scrubs, so as to not damage the surrounding marine ecosystems. Despite alternatives, major drug companies have worked to keep microbeads in their products. Drug giants Johnson & Johnson and Procter and Gamble have publicly promised to phase out microbeads in their products in favor of “natural” solutions, but have privately worked to undermine legislation banning microbeads. The “natural” and “biodegradable” options touted by these companies have been criticized for being insufficiently tested and not truly biodegradable in a typical marine ecosystem. Unsurprisingly, then, both companies lobbied heavily against the California bill--the first state ban to also attack so-called biodegradable microbeads. The drug companies’ lobbying resulted in amendments removing required state testing of biodegradable microbeads and positive references to natural alternatives, such as the aforementioned rice and salt. The Federal ban does not discriminate between types of microbeads--as long as they are smaller than five millimeters and plastic--they are illegal to produce or sell.

The Microbead-Free Waters Act marks a very big victory over a very tiny product; a victory won for the health of our nation’s waterways.

Works Referenced:


Bring The Stars Back Home
by Brayden Donnelly

There is a commonly forgotten source of pollution in our world that kills millions of birds each year, disrupts the seasonal cycle of trees, and directly affects our health: light pollution. Light Pollution is not generally picked up on the general public’s “radar” because it is not as visually-striking as an oil spill, the mounds of trash in landfills, or the fumes coming out of an automobile. To bring the stars of the night sky back to our neighborhoods we must begin to understand how light pollution works.

Light Pollution is a by-product of the lighting we use at night in both urban and rural settings. Most of the light pollution around the globe is due to inefficient designs of the lighting fixtures themselves. Most street lamps have open ranges that send light outwards at nearly every angle below their horizontal plane, even when the only necessary area to illuminate is directly beneath the structure. When this excess light reaches homes, people, and drivers, it can actually be classified as trespassing.

When all of the individual street lamps, road fixtures and spotlights around buildings are added up, one can see why many urban centers have a glow to them at night. This phenomenon, called sky glow, is the actual brightening of the sky from the combination of natural and man-made factors. It refers to the yellow-orange tint of the sky near urban centers, especially on cloudy nights when the trespassing light hits the low-lying cloud cover.

Trespassing light pollution not only has the chance to create sky glow, but it also creates a disruptive glare. The glare from over-powerful lighting or inappropriately directed fixtures can be physically debilitating to humans and other animals. Along with that is discomfort glare, which is less severe but just as inconveniencing. One of the most common discomfort glares is when a car with its high-beams on comes around a bend and shines right into a car’s and the driver’s eyes. “Streetlights, parking lot lights, floodlights, signs, sport field lighting, decorative, and landscape lighting” all become part of the issue of light pollution. Where can one begin to solve this less-tangible sort of pollution?
To begin to lessen the effects of light pollution as an individual, it starts at home. Along with the help of darksky.org you can inspect the lighting around your home. The designers of the website break it down in this step-by-step guide at http://darksky.org/lighting/residentialbusiness-lighting/ where the main theme is “necessary” versus “unnecessary”. They point out whether a fixture is needed or not, if it needs to have “x” amount of wattage or not, and whether it should really be on all night, or should be turned off.

Academic sources on light pollution stress the importance of communicating these facts to your neighbors and your community. This is key because the simple change of streetlights and residential fixtures will begin to lessen the effects of sky glow, glare, and light trespassing.

The State of New Jersey has one prime example of this neighborhood action in Eatontown, Monmouth County. The town has successfully passed an ordinance that declares misdirected or unnecessary light to be considered a public nuisance. Check with darksky.org and find out if your town needs community action to help bring the stars back home!

Works Referenced: