Welcome back to the spring semester of 2013. We hope you have been keeping warm with the cold weather and high winds around New Brunswick for the past couple of weeks. The March edition of the Trail is finally here with tons of new insights on current environmental issues, amazing stories and many interesting articles that will get you thinking. In this edition, you will hear from several new writers with diverse backgrounds adding different perspectives to the mix. Hope you enjoy this edition and please let us know how we are doing and what you would like to see covered in the future.

Happy Trails!

Evangelina, Kimber & Holly
A Clash Between Italy and Mexico
By: Renee Leventon

Italy is one of the few nations able to claim that their delicacy, pizza, is a worldwide phenomenon. The word “pizza” comes from the Latin term pinsa, which means flatbread. The seasoned flatbread spread to the Mediterranean, and cultures such as the Greeks reproduced the flatbread, cooked it on a hot stone, and seasoned it with their own herbs. Originally, these cultures ate the early form of pizza with thick broths or stews. By the beginning of the early Middle Ages pizza took on the modern look and taste. The lower class used what they could to make the dough and flavor it with olive oil, fresh mozzarella, sauce, and herbs. Now that pizza has a long standing popularity it is sold by street vendors, shops, and restaurants throughout the United States.

Americans have also taken pleasure in tortillas from Mexico. The original origins of tortillas are a bit ambiguous but historians believe it has been around for thousands of years. The Aztecs ate tortillas at almost every meal because the corn tortilla provided starches and a little bit of healthy fat in their diets. When the Spanish went around conquering the Aztec territory for gold they stumbled upon the tortilla and sent it back to Spain. From there, the tortilla became famous in many dishes! Today, the dough of the tortilla is called, masa, and when the consistency is just right the masa is flattened out six or eight inches, placed on a hot griddle, and cooked on each side. Americans now eat tortillas with almost everything!

One creative American creation with the tortilla is to put pizza toppings in between two tortillas. Look below for the delicious recipe!

Pizza Tortillas Recipe

INGREDIENTS:
2 Mini Tortillas
2 tablespoon of your favorite pizza sauce
1 cup of shredded mozzarella cheese

DIRECTIONS:
1. Turn stove to highest flame
2. Spray a skillet with nonstick cooking spray
3. Spread 2 tablespoon of pizza sauce on one tortilla
4. Add shredded mozzarella cheese
5. Top with second tortilla
6. Cook pizza quesadilla with a lid for three minutes
7. Flip, and cook for another minute
8. Use pizza cutter to slice into quarters
9. Ta-da!

http://www.the-girl-who-ate-everything.com/2012/07/pizza-quesadillas.html
http://www.lifeinitaly.com/food/pizza-history.asp
The Paleolithic Diet: Is it Just a Fab or Is it Really Beneficial to Our Bodies?

By: Selen Altiok

The paleolithic diet, “paleo”, has been growing over the past few years with countless of people attempting this new, extreme way of eating. It can also be called the “caveman diet”. I decided to look into this diet when I started exercising more since people have raved about this diet to me before. The paleo diet consists of all kinds of meat, fruits, vegetables, eggs, dried nuts and fruit. That’s it. Other dairy products, all wheat and legumes are excluded from this diet. So, why do people eat this way? There are positives and negatives to this way of eating, but the positives have persuaded me to hop in the paleo boat.

The positive aspects become clear once you have started the paleo diet for a few days. How humans used to eat from the start of time is now what is called the paleolithic diet. What is important is to realize how humans used to eat and how humans eat now. All we could eat were things that we found in nature and animals that we hunted, and our bodies along with our digestive system, adapted to the hunting-gathering lifestyle. We never ate bread, chips, candy, pop tarts or any other junk food. This is why our bodies and our minds favor the paleo diet since this is our natural way of eating. Studies were done at the University of California regarding the paleolithic diet and patients with type 2 diabetes. UCSF physicians and their patients conducted an experiment where the patients with diabetes switched their diets to paleo. From the UC Health article it states, “Without losing weight, participants in a preliminary study improved blood sugar control, blood pressure control and blood vessel elasticity. They lowered levels of blood fats such as cholesterol. And most amazingly, participants achieved these results in less than three weeks — simply by switching to a Paleolithic diet”. These findings are truly amazing and people have said that this diet helps their performance in sports and in everyday life. With my own personal experience, I feel more awake, sharp and focused in classes and with exercising, I feel more motivated, healthy and stronger. It is difficult to stay on it at times, but the results and the way the body reacts and changes is exceptional.
This diet certainly has endless positivity but what are the potential harmful effects? One of the negatives to this diet is the amount of meat consumption. Some meats have hidden growth hormones, fats, antibiotics and germs that could potentially harm our health. As paleo eaters, we try to buy organic, grass-fed meat in order to avoid the additives, which also goes for some of the fruits and vegetables. High meat consumption is generally unhealthy, but if it is portioned well with vegetables and fruits, it should not be a problem. Also, another problem with the diet is the lack of calcium. Our bones need calcium and this diet excludes all dairy products. Some individuals feel that they need to take calcium tablets, but some vegetables do have calcium, it just takes a little research in understanding which foods are necessary to eat.

In general, the paleolithic “caveman” diet is fun and challenging. The foods treat the body well and helps being awake and active. This is something I wanted to try and challenge myself with and honestly, it is my favorite way of eating!

Here is a little recipe for “French fries” that I love to make:

**Sweet potato fries:**

1 sweet potato  
Cinnamon  
Salt  
Olive oil  
Optional spice: curry or turmeric

Peel the sweet potato and cut vertically into thin slices like fries. Put the slices into a plastic bag and pour a little bit of olive oil, salt and cinnamon. (I usually like more cinnamon than salt). Heat the oven to 350 and place the fries onto the tray. Leave the fries for at most 20 minutes. Check periodically just in case. The fries should end up being a little brown and soft enough to eat. Enjoy!
If you've ever been to the Great Lakes in the past 20 years, there is a good chance that you’ve seen a few clusters of these sneaky little bivalves along the lakeshore. Capable of producing five million eggs in a single lifetime, zebra mussel populations have exploded in the Great Lakes ever since introduced in the 1980s by hitching rides on ships from Eastern Europe. The problem is that once they colonize an area, they are impossible to get rid of, hence the term ‘invasive species’. They can also form clusters and attach to almost any surface, causing major problems for shoreline equipment.

Zebra mussels are filter-feeders and take in a great amount of plankton and algae. In turn, all this filtering of plankton and algae can make the water very clear. Sounds nice, right? Actually, many small fish rely on these organisms as a food source. Therefore, large amounts of zebra mussels can wipe out the base of the food chain, hurting many other marine species.

Many people eat mussels, so why not eat zebra mussels? These striped little guys usually are around ¼ - 1 inch long, having very little “meat” in them. Even if we tried to use them for consumption, their razor sharp shells make them dangerous to even handle. I know from experience that it’s extremely difficult to come back after a day of picking freshwater mussels without having any scars on your hands. Zebra mussels can completely take over beaches, ruining their recreational purpose. Imagine trying to take a walk on a beach covered in tons of razor-like creatures. Not so fun.

The larval stage of the zebra mussel is microscopic. This makes it easy for them to be transported in boats to new bodies of water. Today, boat inspections are required when entering new bodies of water to further prevent bringing new invasive species, including zebra mussels, into the area. However, there is no way of eliminating zebra mussels without hurting other organisms. Efficient solutions to control invasive species like this one and many more are currently in the making.

If you own a boat and like to explore new bodies of water, you can help minimize the spread of potential invasive species. Here’s how:

1 – Always drain excess water in your boat after use.
2 – Clean and remove any attached material from the motor and sides of your boat.
3 – Finally, give your boat a sun bath to dry off any persisting intruders.

By: Ryan Koch
FUTURE OF ENVIRONMENTALISM
By: Simon Galperin

Last month, Minnesota Public Radio reported that federal officials have approved a wind farm in southeastern Minnesota that, if built, would be the first to be given permission to invade the bald eagles’ environment, possibly reaching larger numbers of kills of species. The U.S. Fish and Wildlife Service says the deaths, which in worst case scenario would reach between 8 and 14 per year, would not harm the species’ overall population.

This is an example, though a minor one, of the future of the environmental movement in the United States. Environmentalists should rethink their philosophy and begin to understand the intricacies of the questions that lay ahead. President Obama's second term will lay the foundation for the environmental movement’s future.

In his State of the Union address, President Obama made the case for acknowledging “the overwhelming judgment of science” on global warming. He also recognized some things that make old-school environmentalists cringe because of the increase in domestic natural resources use for oil. “We produce more oil at home than we have in 15 years,” Obama said. Before the president’s second inauguration, CNBC reported domestic oil output at levels unseen in 20 years, even noting that domestic oil production is “nearly 20 percent above the amount produced at this time last year”. Increased domestic oil production would be, based on the old calculus, not a positive development. That formula would be concerned with the direct environmental impacts and risks of drilling, as well as the carbon emissions that will eventually come from its use.

Contextualizing this development makes it less undesirable. Increased domestic oil production leads to less oil importing. U.S. oil imports have fallen to a 25-year low, according to the Financial Times. That means less oil and petroleum products are shipped in tankers to American ports, lessening the chance of oil spills near American shores and decreasing emissions from those tankers.

Less oil from overseas also reduces American support for inadequately regulated drilling in other countries. According to Newsweek, in 2010, the U.S. imported 10 percent of their oil from Nigeria, where a spill the size of Exxon Valdez spill happens yearly. Similar context has to be given to natural gas. “We produce more natural gas than ever before...and over the last four years our emissions of dangerous carbon pollution that threatens our planet have actually fallen,” Obama said. At the same time addressing environmentalists' concern with some of natural gas’s externalities: “But I also want to work with this Congress to encourage the research and technology that helps natural gas burn even cleaner and protects our air and water.”

In October of 2012, Scientific American reported that the U.S. would be close to its greenhouse gas emission target in 2020 thanks, in part, to natural gas.

Meanwhile, the EPA and states across the country are conducting studies on the use of hydraulic-fracturing in order to mitigate, or prevent, its negative effects. Judith Enck, Regional EPA Administrator for New York, New Jersey, Puerto Rico, and the Virgin Islands said that the EPA would release its report on the issue sometime in 2014.

The environmental movement managed to grab the low hanging fruit of clean air and water – though those battles are far from over. Now, it must turn to the greatest challenge of our time – climate change – where, just like in climatology, nothing happens overnight.

Sources: http://minnesota.publicradio.org/display/web/2013/01/17/environment/goodhue-county-wind-project-eagles
During the mid-19\textsuperscript{th} century, America experienced an industrial revolution. Trains and steam engines made transportation more efficient, cities were popular and therefore growing, and the U.S. landscape was rapidly being transformed by development. This would strongly influence the way we live today. Technology is better, but the environment is hurt. Many of the artists of the mid-19\textsuperscript{th} century, such as Asher Durand, became concerned about the natural beauty of the nation at this time.

Without the comfort of National Parks, artists, writers, and others believed that much of the wilderness would soon be overrun by industry. The ideas of American art then evolved. Several artists began focusing on the land more than people. It was a chance to catch the most beautiful locations of America on a canvas, before industry encroached. This was a shift from the idealized romanticism to the very real: landscape art.

Asher B. Durand is considered one of the best landscape artists of this time. His paintings, such as \textit{Kindred Spirits} (1849), or \textit{Summer Afternoon} (1865), are well-known. He was part of the Hudson River School, the first fraternity for painters in the U.S.

Durand was born in New Jersey, where he began apprenticing for Peter Maverick as an engraver in Newark. He was then promoted to lead the firm’s branch in New York. There, he was asked to engrave one of the most well-known paintings in American history, John Trumbull’s \textit{The Declaration of Independence} (1786).

Soon after this opportunity, his standing went up in the New York art scene, and he joined the Hudson River School of Painting. It was here that Durand got interested in landscape art.

Thomas Cole guided Durand. He was the father of the school, and a popular landscape artist. The two men were close, and Durand took over Cole’s position as the dean when he died. His appreciation for Cole was depicted in \textit{Kindred Spirits}. In the painting, Cole and a friend are painted by Durand, in a glorified scene in the Catskill mountains.

In 1840, Durand traveled abroad to Europe. He was given the chance to see the oil sketches of John Constable in London, which strongly influenced his later work. Durand responded that these paintings displayed, ”more of simple truth and naturalness than any English landscape I have ever before met with.”

After returning home, inspired by Constable’s art, he began taking frequent trips to the hills along the Hudson River, and the Adirondacks in New England, which led to the production of his famous composition, \textit{In the Woods} (1855).

Durand went on to publish “Letters on Landscape Painting,” a series of periodicals in which he ardently suggests that landscape artists should learn from being in the wilderness, rather than being guided by colleagues. In this series, he also mentioned Cole’s contribution to American landscape art but emphasized the need to pursue it further.

Evidence from the later part of Cole and Durand’s relationship suggests that the two had evolving differences in aesthetic philosophy. Despite his zealous espousal of naturalism, Durand was unable to gain critical acclaim with further paintings, and other landscape artists grew popular among critics. In 1879, seven years before his death, he painted his last picture.

Artists like Durand and writers like Thoreau and Emerson were extremely important in the 19\textsuperscript{th} century. They depicted the beauty of the American wilderness at a time when industry was the boon to the economy, and therefore the main focus of the country. This paved the way for the introduction of National Parks, and an appreciation for nature, in a country now dedicated to development and technology.

Perhaps today we could use another influx of naturalism and transcendentalism in American literature and art. Much of it concerning nature is rather morbid, presenting the ideas of a planet on the brink of disaster. If we can glorify the beauty of nature once again, as Durand did, maybe society will be more willing to change. We will see what is truly beautiful.

By Cody Beltis

Profile of a landscape artist: Asher B. Durand (1796-1886)
WOLVERINES: "WEASELING" THEIR WAY ONTO THE ENDANGERED SPECIES LIST

By: Holly Berman

These little guys, that are part of the weasel family, weighing about twenty to sixty pounds and resembling small bears, live in the northern Rockies. Out of the United States, they can be found in Canada, Asia, and Eastern Europe in mountainous and forested areas. Unfortunately, there are only about three hundred wolverines still living in mountains of the Northwest. The decline in population is attributed to the effects of climate change, which is damaging their habitat and threatening the species’ livelihood.

Debates surrounding what actions to take have been going on for years, but the federal Fish and Wildlife Service recently proposed to protect the wolverine under the Endangered Species Act. This will be the third attempt to add the species to the act, as the most recent was denied, “citing a lack of information on distribution, habitat requirements, and threats” (IUCN Red List). If added to the list, wolverines would be protected from intentional trapping, but the rules would not restrict logging or winter sports in the wolverine’s habitat.

The interesting fact about the wolverine debate was stated perfectly by the New York Times: “If made final, the proposal to list the animal as threatened would put wolverines, like polar bears, elkhorn coral and staghorn coral, into a small but growing group of species whose survival is threatened by global warming, rather than traditional threats like predators or logging”. Endangered and threatened species can now be added to the ongoing list of climate change problems. This is by no means just an excuse, as wolverines raise their offspring in burrows deep beneath the snow, which usually does not melt until mid-May. With temperatures warming earlier and faster, wolverines are left with a serious problem.

Unfortunately, even if the proposal to add the wolverine to the Endangered Species List is made final, all of the species’ problems will not be solved. The government might be able to regulate poaching and hunting, but the climate change issue is complex and a slow process. Hopefully, the wolverine’s endangerment will help raise awareness about the serious issues of climate change and fossil fuel use. Polar bears might be the poster child of climate change, but wolverines are just as fuzzy and adorable, besides for the slightly intimidating fangs and claws.

Sources:
http://www.iucnredlist.org/details/9561/0
http://www.nytimes.com/2013/02/02/science/earth/us-proposes-protecting-the-wolverine.html?_r=0
Natural Remedies for a Sore Throat  By: Jinal Kansara

It’s that time again for the winter to steal your good health and leave you clutching your blankets in bed, drinking chamomile tea while watching every show available on Netflix. If you’re feeling a little under the weather, particularly with a sore throat, here are a few home remedies that can help soothe the pain.

1. SLIPPERY ELM
This herb is native to North America and was utilized by Native American herbalists to treat a variety of ailments. The tree contains mucilage. Mucilage will turn into a gel when combined with water that coats the throat and provides a soothing relief. It should be noted that there has not been a vast amount of research done; yet it is known that it is safe.

2. SAGE
Sage can be used to cure hoarseness, coughs, and sore throats. You can either use fresh or dried sage leaves. You can create a solution by pouring 1 cup of boiling water over 2 teaspoons of the sage leaves. Let it sit for a few minutes, then strain out the leaves as you would with tea, and add a tiny pinch of salt. Use this solution to gargle to help remedy and soothe your sore throat.

3. SALTWATER GARGLE
One of the most common—and effective—home remedies for a sore throat is to gargle saltwater 4 to 5 times a day to help relieve the pain. You can also alternatively use baking soda. Dissolve one-half of a teaspoon of the baking soda into a glass of warm water and gargle.

4. HUMIDIFIER
Adding a cool-mist vaporizer into your bedroom will moisturize the air and help prevent the air from drying out. Dry air can cause the lining of your throat to dry up. This is why when you sleep at night with your mouth open and you have a sore throat, you wake up with extreme scratchiness and pain. Alternatively, if you do not have a vaporizer, you can also place a bowl of water by the radiator at night.

5. HOREHOUND
This herb can reduce the swelling of the inflamed throat tissues. It also things out the mucus, helping you clear your throat more easily. In order to make this tea, you have to steep 2 teaspoons of chopped herb in 1 cup of boiling water. Let it boil for about 10 minutes and then strain and drink.

Culture & Community Health in Mexico

**Eligibility:** Sophomore/Junior/Senior & Good Academic Standing

**Subject Area:** Public health, Anthropology, Pre-medicine, Nursing, Pharmacy, Social Work

**Term:** Summer

**Language of Instruction:** English, Spanish

**Credits:** 6

**Housing:** Homestay with meals provided

The Community Health in Mexico program aims to expand awareness of health issues in Oaxaca, Mexico and among the Mexican immigrant community in New Jersey. Students will provide community service in a variety of public health centers in Oaxaca. In addition they will participate in a seminar on the medical anthropology of Mexico, a course in medical Spanish, an integrative seminar linking community service with course readings, group discussions, and cultural excursions.

*For more information contact Peter Guarnaccia, Ph.D.*

e-mail: guarnaccia@aesop.rutgers.edu

Where will your next class be?

studyabroad.rutgers.edu
Bill McKibben: 350 Movement

By: Arielle Wortzel

Monday, February 4th I was lucky enough to have Bill McKibben, a well-known environmental activist, speak at our University. For several years now, McKibben has been the main spokesperson for the climate change movement across the globe, and is responsible for organizing the largest demonstration against climate change to date. Aside from being an activist, Bill McKibben is also a journalist, author, scholar, and one of the most inspirational speakers I have ever come in contact with.

During McKibben’s lecture, he spoke to faculty and students about his famous 350 Movement. He explained that currently, our planet’s atmospheric CO$_2$ level is at 392 parts per million (ppm) – and this number is rising by about 2 ppm every year. This substantial amount of CO$_2$ in our atmosphere is impacting our earth in a variety of catastrophic ways, including droughts, warmer temperatures, melting ice caps, floods, the spreading prevalence of malaria, and our most recent natural disasters. In order for there to be hope for our planet’s future, we must get our CO$_2$ levels below 350 ppm—FAST.

Once this hard science was made available, Bill McKibben and a group of his students from Middlebury College decided to do something about it by forming the 350 Movement. McKibben and a group of undergraduates organized 5,200 demonstrations simultaneously in a total of 181 countries on October 24th 2009— what CNN called “the most widespread day of political action in the planet’s history.” Climate change and the burden on our planet is a global problem, which means it will take effort from everyone around the world to help solve it—and McKibben is helping to catalyze this critical action.

Everyone who participated in the 350 Movement brought awareness to their country’s government and leadership on the pressing significance of this global fight to help combat climate change. Overall, McKibben’s story inspired his listeners to join him in this fight, and to take action for the safety and well-being of the planet. Remember, all it took was seven students, a professor, and an idea to start this movement. This goes to show that any one person can have an impact and is capable of making a difference at a global level!

Sources: www.350.org
**The Flu: Fact or Myth?**

**1. Myth!** Although most people know that vaccinations contain the virus, many are unaware that the virus is inactivated. However, one can still experience many of the symptoms to a lesser degree, including fatigue, fever, and headaches. The nasal spray form does contain a live virus, but it is extremely weakened and almost never results in transmission.

**2. Fact!** In most cases, the flu, like any common cold, will go away without medical care or antiviral drugs. Remember, the flu is a virus and antibiotics do not help viruses! In fact, taking antibiotics will just make bacteria in your body more resistant to the drugs, making them less likely to be effective in the case of bacterial infection. In young children or people over 65, medical care is still usually recommended.

**3. Myth!** People wrongly assume that once they have had the flu in a given season there is no need to get vaccinated. However, there are usually multiple strains of the flu virus “going around”, and it is quite possible to get infected with one, neither, or multiple. If you do have the flu virus, you should still get

**4. Fact!** Exercise is a great way to boost your immune system function, and a British study in 2010 found that regular exercise might even reduce the risk by up to 50%. Even if you get the flu, people who exercise regularly often experience less severe symptoms.

**5. Myth!** You might hear advice to eat less or more during sickness, but most of these sayings are just nonsense. Never “starve” yourself while sick, or you risk depriving your body of nutrients. Of course, you don’t want to overeat either, and it is perfectly fine to eat less than normal because your body will not have the same appetite. Most importantly, drink a lot of fluids!

**6. Hand washing is one of the best ways to prevent the flu.**

**Fact!** The flu often spreads as a result of contaminated hands, so never underestimate the power of a quick and simple washing of the hands, usually for a recommended 20 seconds. Clearly, this is not a sure fire way to keep yourself from getting the flu, but it is a very helpful preventative tool. The World Health Organization notes that washing hands lessens the chance of getting respiratory illness by 24% and the chances of a stomach bug by 50%.

This spring semester I have been learning a lot through my internship with the home energy consulting firm ReVireo. ReVireo conducts home energy ratings for homes under construction so that customers can get government rebates for having an energy efficient home. The Home Energy Rating System (HERS) is an energy rating tool that generates an analysis of how energy efficient your home is compared to other similar homes, and then gives your home a HERS index score. A standard new home is rated at 100, but in order to get government rebates HERS raters come into your home to help find potential insulation issues to address in order to receive a better score. The lower the score the better, and not only does it help the environment, but it also helps sell your home.

Having a more energy efficient home is a major benefit to homeowners, and in this economy, we need all the rebates we can get. With an Energy Star Certified home, home resale is much easier because these homes stand out from other houses that are not as energy efficient. Energy Star Certification not only means that your house has obtained certain energy efficiency standards, but also increases a home’s marketability by lowering utility costs. With all the leaks and drafts diminished in an Energy Star certified home, you can really feel the difference of controlled humidity levels and even outside noise reduction. Heating, ventilation, and cooling are engineered to efficiently deliver comfort, supply constant fresh air, and filter out indoor air pollutants, along with dust and other allergens. With a scarce amount of resources in this world, our future looks bright with an increase in homeowners building more sustainable homes to live in, while never sacrificing comfort. So get your Home Energy Rating today and see what you can do to improve your home’s overall condition, or just do it yourself and save some money.

**Do-It-Yourself Projects** are a great way to go green as well as saving some green in your pocket. It is a low cost alternative to hiring professionals to come in and complete a job that you could realistically do by yourself. The following are things that you can do to help improve your home’s energy efficiency, and still be just as effective as hiring a professional to come into your home.

**Attic Hatch** - You can insulate and air seal the attic hatch by yourself. For detailed instructions please visit: [http://www.diyhomeinsulation.com/atticcover.php](http://www.diyhomeinsulation.com/atticcover.php)

**Lighting** - Energy efficient lighting is more efficient than ever and has a significantly longer life than traditional light bulbs. Compact fluorescent light bulbs (CFLs) are the most common efficient light bulb; however there are many other options. This link is a resource for more information on the different types of bulbs: [http://eartheasy.com/live_energyeff_lighting.htm](http://eartheasy.com/live_energyeff_lighting.htm)

**Weather strip doors** - All doors that lead to the exterior, basement, or attic should have weather stripping. Below is a link to a list of different types of weather stripping so that you can find one that best fits your needs: [http://www.energysavers.gov/your_home/insulation_airsealing/index.cfm/mytopic=11280](http://www.energysavers.gov/your_home/insulation_airsealing/index.cfm/mytopic=11280)

**Caulk Windows** - This is most useful for homes with old windows. However, it can still increase efficiency as well as improve comfort in the house: [http://www.diynetwork.com/how-to/how-to-check-and-seal-windows/index.html](http://www.diynetwork.com/how-to/how-to-check-and-seal-windows/index.html)
Rebates and Incentives:

**Residential Energy Federal Tax Credit**- Save 30% on the cost of materials up to $1,500 on qualified water heaters, furnaces, boilers, heat pumps, air conditioners, insulation, windows, doors, roofs, and more. For more information please visit: [www.energystar.gov/taxcredits](http://www.energystar.gov/taxcredits).

**NJ Warm Advantage Program**- A state rebate program that gives $250 - $400 rebates for water heaters, furnaces, and boilers. For more information please visit: [www.njcleanenergy.com/warm](http://www.njcleanenergy.com/warm).

**NJ Cool Advantage Program**- A state rebate program that gives $300-$600 rebates for heater pumps and central air conditioners. For more information please visit: [www.njcleanenergy.com/cool](http://www.njcleanenergy.com/cool).


**Home Performance with Energy Star**- Rebates valued at up to $3,000 and loans up to $20,000 based off of projected savings: [http://www.njcleanenergy.com/](http://www.njcleanenergy.com/)

Above are thermal and normal Images of a house door to a garage. The dark areas in the thermal image show where there is air leakage that needs to be insulated to prevent air flow into the house.

Source: [http://www.resnet.us/energy-ratings](http://www.resnet.us/energy-ratings)
Salamander Crossing at Beekman Road in East Brunswick

By: Mary Ruffner

It is about that time of year again! The Spotted Salamanders are getting ready to make their migration to the vernal pools of East Brunswick. Every spring they migrate to these pools to mate and lay their eggs. The vernal pools are where their young will grow up until they are able to leave the water and travel up to the woodlands. This is a crucial part of their existence and without these vernal pools they would not be able to survive. Salamanders are very secretive creatures and it is hard to spot them because they are usually hidden under rocks, logs, leaves, etc. However, during this time of year people can get the unique opportunity to see the spotted salamander while they are migrating. This is a fascinating experience to anyone that has been lucky enough to catch a glimpse of their crossing of Beekman Road.

The East Brunswick Environmental Commission predicts that the Salamanders will be crossing Beekman Road sometime in late March or early April on a rainy night when temperatures are around 40 degrees. In order for the Salamanders to make it to the pools, they have to cross right over Beekman Road. Knowing how important this is to their survival East Brunswick closes the road for the crossing to help avoid road killings. This also allows people to go and try to spot this amazing migration. The difficult part is that no one knows exactly when the crossing will happen, so the road is closed whenever the conditions are right for a possible crossing.

Starting by April 1st the road blocks are kept at the site so that the road can be closed quickly and easily if the migration starts to happen. This adds to the excitement for people that are interested in going to try to see the salamanders. It takes a bit of luck and a lot of patience, but it is a very cool and unique experience that you can share with your friends and family. Hope to see you there on a rainy night in April! Happy Hunting!
Bill McKibben Spreads his Message at Rutgers

By: Denise Galianos

One of the most powerful leaders of the climate change movement, Bill McKibben, held an informational campaign here at Rutgers University on February 4th. As an environmentalist, writer, and the president and co-founder of 350.org, McKibben has brought universal awareness to the climate crisis.

As McKibben explained, 350.org is a website that he and his team created in order to foster a global grassroots movement and help to address this pressing issue. The website’s name stems from calculations of where the levels of carbon ought to be—350 parts per million—versus where they are now, 392ppm. By pointing to the prevailing disparity between the two numbers, the name of the site is symbolic of the urgent need to create solutions for the environment. In order to take on the climate crisis on a macro scale, the website provides universal campaign and projects information. Ultimately, the mission of 350.org is to reduce the amount of CO2 in the atmosphere to a level that is considered more sustainably safe, support divestment in fossil fuel energy, and aid in preventing further environmental disasters. The group has already held rallies and demonstrations in a total of 181 countries to spread its message.

After discussing his mission and universal demonstration activities, McKibben brought attention to the Keystone XL tar sands pipeline. The Keystone Pipeline System is a proposed pipeline to transport synthetic crude oil from regions in Canada to the United States. Implementing plans for the pipeline extension will have a tremendous negative environmental impact, and affects the severity of climate change in the United States. The rejection of this pipeline is the first step towards serious action in the fight against climate change. McKibben planned a large climate rally on February 17 in Washington D.C. to put public pressure on the president to reject the pipeline and show leadership in this crisis. Students, faculty, and alumni of Rutgers University were all asked to be a part of the movement and take action for the safety of the planet.
CHEERS TO AUSTRALIA!

By: Wendy Chiapaiko

Imagine stepping off a small motorboat onto a white beach covered with bits and pieces of coral sand. Several reef bommies just a short swim away from the island are abundant with various species of colorful corals and fish. At low tide, they are completely exposed to view during a pleasant reef walk. The island’s unique vegetation is predominantly composed of coastal Banksias and Pisonia trees for Noddy Terns, Shearwaters, and other seabirds to nest or burrow in.

Lady Musgrave is a small coral cay island located off of the coast of Queensland, Australia. It is one out of more than 600 islands located on the Great Barrier Reef. It is also a marine protected area, maintained and conserved by the Great Barrier Reef Marine Park Authority (GBRMPA), a division of the Australian Commonwealth Government.

National parks are well known and recognized as reserved areas of land, set aside for conservation, recreational use, and sustained for their ecological importance. On the ocean, this protection exists as well. Marine protected areas (MPA) or simply, marine parks, are bodies of water that are managed and protected for conservation and preservation. However, management of the ocean can be more complicated than that of land. An example of this difficulty is that water has no definite boundaries, whereas land can be divided and parameters can be clearly established. While imaginary lines are set and five major oceans on the planet are labeled, in actuality these separate oceans are all a part of one major world ocean. Strong ocean currents can transport and disperse sewage dumped off of the coast of New Jersey throughout the world ocean. The ocean is interconnected; what occurs in one place have consequences in various areas.

The GBRMPA is responsible for
managing, supervising, and improving the condition the Great Barrier Reef. Although building a hotel or souvenir shop for the numerous tourists who come to visit would be greatly profitable, the only facility present on the island is a compost toilet. In aims to preserve Lady Musgrave and keep it as pristine as possible, the GBRMPA has set tight restrictions that limit the number of people allowed to camp on the island at a maximum of 40. Each person is required to register with the government and purchase a camping permit. Garbage produced along with anything unnatural to the island must be taken off the island as well. With Australia’s reputation of invasive species and pests, even foreign ants could result in severe negative impacts. Collecting shells is illegal and certain areas are off limit to not disturb normal wildlife activity. There are several restrictions on fishing, such as designated fishing zones, size minimums, bag limits, and off limit species. Educational signs display information on the flora and fauna, how to avoid harming them, and reminders of MPA rules.

Spending a week camping on Lady Musgrave Island was a very memorable experience unlike anything I had ever done before. Besides the toilets, all supplies had to be brought along, which included: seven days’ worth of food and water, hiking and diving gear, camping equipment, and personal toiletries. Walking around the entire island took less than 30 minutes. Shoes were essential because the sand was largely composed of shells and small chunks of corals that were painful to step on.

On opposite sides of the island, sunrise and sunset could be viewed. Daytime was spent preparing and cooking food, snorkeling and free diving along inshore reefs, hiking through the forest, or relaxing on the beach and watching the clouds. Not being able to charge any electronics restricted from telling what the time was. Once the night fell, the stars lit up the sky and small waves could be heard sliding up the shore.

The minimized human footprint was clearly evident. Setting tight regulations and limiting the number of people allowed on the island has proven to be very beneficial to preserve the island and the Great Barrier Reef. Overall, this camping trip was the perfect ending to my journey in Australia. I had amazing adventures spent immersed in Australia’s outdoors, rather than crowded in big cities. Being surrounded by the serene beauty of nature’s wonders is an incredible feeling that heartens the soul.

Thanks for following me to Australia!
Let’s first start out by saying that Mother Nature is absolutely full of cuddly creatures. There are dogs and cats of course and things like the Slow Loris, that look so much like a Doctor Seuss character. You can even watch one eating a ball of rice on YouTube; it’s actually got more than 3 million views! But there are animals that are so adorable off screen you can’t help but wonder “why aren’t there more pictures of gibbons snuggling”? Well, since Valentine’s Day just passed, I’m sharing a story that my mother told me when I used to live in Arizona. I was too young to remember, but she recalls this one day when a bird hit the front window. She saw it happen and immediately ran outside (my mother is such a softy for animals) to see if the bird was still alive. It was, but it didn’t look very good so she came inside to call the local veterinarian and ask them what to do. When she came back outside, there were now two birds there, one of them just sitting by the hurt one.

It was then she realized that they were lovebirds and these animals mate for life. They were sometimes even known to commit suicide if their partner passed by refusing to eat. She waited until the vet came and took the birds in a cardboard box, and then she came inside. That’s the whole story. Apparently, the vet fixed the one’s wings and released them together and they flew off. In a way, I picture it to be dramatic and scenic, and almost reminiscent of the movie “Fly Away Home”. But it also goes to show how that tiny little detail in life got retold over and over again because it was simply such a precious show of loyalty. While this is one story of many heartwarming stories, it shows that there are many cute critters out there loyal to love. Other animals that mate for life include Swans, French angelfish, albatrosses, wolves, bald eagles, ospreys, and even termites. So if there’s any proof you need that love exists outside of the sphere of the Mr. Right who just dumped you, or the Ms. Right who put your heart out in the cold, remember that even the animal kingdom knows how to love just as much as we do. Sometimes we need to see images of lovebirds snuggling or Slow Lorises eating rice balls to remember that there are cute things in the world, and shhhh, I found a picture of otters holding hands.
It is said over and again that dogs are a man’s best friend, but how and when did wolves evolve into our most treasured animal companions? The search for the answers to these questions is an ongoing, decades-old debate in the scientific community because of genetic and archeological evidence pointing in different directions. Both sides can agree that dogs were the first domesticated animals and that the human-dog relationship predates agricultural development. Other than that, the when and the how of wolves’ evolution into our furry companions are up for debate.

One popular theory is that humans and wolves began their interaction because wolves were attracted to scraps food left behind by early humans. Issues arise with this theory due to lack of evidence. Also, early humans did not waste as much as we do today and leftovers were unlikely. Early humans hunting and gathering also migrated, making it more difficult for the wolves to consistently come to them for scraps.

Early humans capturing wolves, taming them and eventually taking care of their puppies is another theory. This idea also lacks the evidence necessary to make the argument substantial. However, that doesn’t necessarily mean that humans didn’t take wolves in and tame them, eventually leading them to evolve into what we might call dogs. There simply is little scientific backing for this theory.
A study done at the University of Massachussets Amherst by Kathryn Lord, an evolutionary biologist, looked at wolf puppy and dog puppy behavior and sensory development and how they affected socialization. The study found that wolves develop their senses sooner than dogs do and are fearful and suspicious at a younger age. Socializing a puppy takes a mere 90 minutes with another human, dog, cat, or horse and the puppy turned dog will be comfortable with that animal for life (Sciencedaily 2013).

Fear reduction in wolves, however, is not quite as simple. Before they reach three weeks of age, wolf pups require 24 hours of contact and even then the lack of fear will not be the same as it is in dogs (ScienceDaily 2013). This study points out a fundamental development in the domestication of dogs. For a wolf to become develop into a dog it must have had a trait that encouraged human-wolf interaction and minimized fear of humans. A wolf born with this genetic trait would have the advantage of living with humans. A theory with some significant backing in the scientific community is that, at some point, wolves and humans worked together to hunt. At first, both humans and wolves would be suspicious of each other because they were both omnivores competing for the same game. Eventually, humans and wolves began tolerating each other because of the benefit they each received. The benefits for humans were that wolves were better trackers and wolves benefited from humans’ hunting abilities. Humans began leaving scraps for the wolves, leading to mutually beneficial relationship.

Furthermore, additional theories suggest that humans didn’t originally domesticate wolves. Wolves began domesticating themselves by tolerating humans and using humans to attain food more easily. Humans began to settle down in villages and some wolves would choose to be near those people, live with them, or simply hunt with them. As humans and wolves began to live and work together, physical features began to change in the wolves that chose to stay with humans. Wolves that interacted well with humans would travel with them and stay with them, leading to the passing on of genes that encouraged trust in humans.

Dogs and humans have been working and living together for so long that there is evidence of parallel evolution between the two species. Erik Axelson, an evolutionary geneticist from Uppsala University in Sweden, looked for genetic differences between dogs and wolves and he found ‘three key genes involved in the digestion of starch that look differently in dogs and wolves’ (LaCapra 2013). Axelson also found differences in the nervous system, which is expected because dogs and wolves behaviors are completely different, but finding genes that code starch digestion was odd. Yet, it simultaneously made sense. If humans and wolves first began to interact a few thousand years before agriculture, our wolf companions would have to adjust to the new diet agricultural encouraged. Any wolves that could digest starch would have had an advantage and domesticated dogs today likely descended from these wolves (LaCapra 2013).

It wasn’t just wolves adapting to a starch-filled diet. Human beings also moved from the hunter-gather diet, rich in meat, to a diet filled with carbohydrates. Dogs and early humans would have gone through similar evolutionary changes at the same time, which makes scientists like Axelson wonder what other examples there might be of parallel evolution in dogs and humans. It is possible that studying dog genetics could provide additional insights into human genetics and disease.

Sources:
Love Chain Sea Hares

By: Evangelina Pena

Sea hares are very interesting marine organisms—a type of sea slug that glides through the water with very smooth and swing-like movements. These organisms are toxic, which allows them to flow peacefully through the water while showing off their colors.

One of the most fascinating features of the sea hare is how they reproduce. As hermaphrodites, they contain both female and male reproductive organs; typically, hermaphroditic animals can change their sex according to the needs of their environment. This is especially beneficial for creatures with low population densities, because then when they find any organism within the same species they can have sexual reproduction. The difference between typical hermaphrodites and sea hares is that these animals not only mate with one partner, but often with many at the same time, making a “love chain”.

When they are ready to mate, they find a few other sea hares. They act as a female or a male (or both) depending on their respective position relative to the others. The first sea hare acts only as a female, while the second acts both as a male to the first and as a female to the third. This chain continues with multiple sea hares, but the last one only acts as a male. Each sea hare breeds internally with two other ones at the same time! Once the eggs are fertilized, they are laid into huge masses in protected structures. One species named Aplysia californica can lay up to 86 million eggs in one mating session!

Another interesting behavior of the sea hare is that they release ink when they are disturbed just as octopi do. Octopi use this mechanism to confuse and distract the predator while the octopus makes an escape. However, the sea hares are very slow animals, and so the reason behind shooting ink out of their bodies is unknown. Finally, sea hares die shortly after they mate, with an average life span of only one year. About a dozen of them all die at the same time, which has been noticed since they wash ashore in great numbers. This behavior is worldwide and occurs on an annual basis.

If you are interested in watching an incredible video about these interesting organisms check out:

http://video.nationalgeographic.com/video/animals/invertebrates

http://creationwiki.org/Sea_hare

http://www.seaslugforum.net/find/seahatac
2013 Global Warming: Melting Ice Caps, Displaced Peoples, and the Pizzly Threat

By Chloe’ Lewis

All around the world, places that were once freezing cold are warming up faster than ever. The polar ice caps are currently melting at staggering levels, and the sea level continues to creep higher along our shores. While this may not be news to us, it’s not the fact that the ice caps are melting that has scientists and researchers so astounded. After all, the caps have been melting for about 20,000 years—since our last ice age. Change is a defining feature in the natural order of things. However, there is a key aspect of our current environmental plight that is not a part of the natural order of things—and that has scientists and researchers frantically trying to find a plausible solution.

What these climate scientists have found is that greenhouse gases such as CO2 are causing the planet to warm significantly faster than the natural rate of change would have predicted. Sufficient evidence has yet to be formally introduced, but we all know the truth. It was only a matter of time before our western culture of luxury and carelessness would set this beautiful green and blue planet on a topsy-turvy collision course, setting up a domino effect that could mean the end of life on earth as we know it…in due time of course.

Here are some things that are not being televised on your local news: not only is mother earth taking a huge blow from the melting of the ‘everlasting ice’, but soon people are going to be displaced just as some animals already have been. The ice throughout Antarctica (not to be confused with the Arctic) and Greenland are the two biggest players in the race against time for the polar ice-capped world. Greenland alone accounts for about two-thirds of the world’s ice loss thus far—five times the rate of loss in the mid-90s! There is currently enough ice sitting on shelves, waiting to collapse, that could potentially raise sea levels around the world by 200 feet. Experts agree that by the end of this century sea levels will rise two to three feet.

Doesn’t sound like much does it? We get more rain than that in a year. Here’s the kicker: what today is a once-in-a-century storm surge event, like Hurricane Sandy, would likely happen every three years if you had a 1-meter rise in sea level. Do the math. A two to three foot rise is a huge deal, especially for the New Jersey area. This is just one impact sea level changes would have on the human population. And it’s not just those in coastal areas that will be adversely impacted—the inhabitants of the icy regions of Alaska, Canada, and Greenland could be completely displaced, with their ways of life forever uprooted.

Wildlife will be devastated as well-- far more wildlife inhabits these freezing regions than humans. In 2010 alone, thirty-four animals were named as species expected to suffer major effects from the melting ice. One that has managed to most potently capture the sympathies of the public is the beloved polar bear. Recently listed as a threatened species by the U.S and a “species of concern” by Canada and Russia, polar bear populations have been in rapid decline since 2008. Losing more and more of their homes and means of survival every year, with chunks of ice breaking away and being forever lost to the sea, polar bears are being displaced. If you were suddenly displaced from your home what would you do? In efforts to survive, polar bears are roaming far beyond their traditional lands and meeting distant relatives with open claws.

Although polar bears encountering grizzly bears is not in itself a shock—they live relatively close to one another, after all—the number of bloody feuds has been increasing at an alarming rate. In recent years, they have been viciously competing for shrinking resources—prey and territory. There have even been programs aired on channels like National Geographic that show live footage of these two beasts battling it out for the right to land. As if this
wasn’t enough to concern researchers and scientists, Mother Nature has added another unexpected twist: the pizzly.

This polar bear-grizzly hybrid has taken the natural science world by storm, and driven speculations over whether the emergence of this hybrid is influenced by global warming. Polar bears broke away from the lineage of brown bears over 600,000 years ago, so the two have long been considered two separate species. A species, by definition, is categorized according to an ability to interbreed and produce viable and fertile offspring. So far, five pizzlies have been reported, one of which was in fact a second-generation pizzly, meaning that the hybrids are successfully breeding as well. As the fading ice forces polar bears to move south onto drier land, and as road construction and mining force grizzly bears to move north, scientists predict we should expect to see more of these hybrids roaming around.

But what’s the big deal? Hybrids aren’t unheard of. Some have even been known to thrive in the wild. However, the frequency of this particular hybridization is disconcerting. It is like having two wild animals separated in a room for thousands of years, and then man comes along and shoves them both into one room to make room for himself. The result: blood baths and breeding. Eventually, the hybrids will compete, battle, and overcome both of the original species, leaving them utterly extinct. Can you imagine a world without the beautiful polar bears or the fuzzy, cuddly grizzlies? This is what is likely to happen in our lifetime if this trend persists. In fact, global warming is causing the same hybridization situation to occur in other animals like the wolves and coyotes in North America.

There are some measures humans can take to slow, halt, or perhaps even reverse the current warming trend. But even if we were to convince everyone to stop cutting down trees, start re-foresting the planet, switch to eco-friendly lifestyles, and reduce greenhouse gas emissions, the Earth’s temperature will still continue to climb. It could take as long as 1,000 years after a complete halt of greenhouse gas emissions for environmental measures like sea level rise and ocean surface temperatures to return to pre-industrial levels. That is how bad the damage is that we humans have caused. All we can do now is push for more energy-efficient means of living and work together to help out the environment. But first a major step must be taken—quite possibly the most difficult step aside from national and international cooperation—and that is that we must care. If we do not, this collision course will continue, the domino effect will persist, and before you know it... no more polar bears, no more Greenlanders. Sooner than you think, life as we know it may change forever.

Sources:
http://www.dw.de/polar-ice-sheets-melting-faster-than-ever/a-16432199
http://www.planetextinction.com/planet_extinction_greenland.htm
http://www.npr.org/2012/11/29/166176294/icesmeltingfaster
http://www.polarbearsinternational.org/about-polar-bears/essentials/current-status
http://science.howstuffworks.com/environmental/green-science/reverse-global-warming.htm
Using Brown to Go Green

By Daniel Pelligra

If there is any industry that is severely feeling the impacts of climate change— and warmer winters— the winter sports industry in this country is one of them. As a 12.2 billion dollar industry in the United States, skiing and snowboarding generates a real impact on this country’s economy. With warmer and shorter winters in years past, many resorts all over the country—not only on the east coast—are feeling the impact. For example, east coast downhill skiing and snowboarding would no longer be possible without the advent of snow guns and machine-made snow. These guns can create a snow-like substance using a mist of water in combination with either a high speed fan or compressed air. These machines, in coordination with acceptable temperatures and humidities, make this industry possible in this area.

This, however, can be seen as a double edged sword. One of the main contributors to climate change is the fossil fuels that are burned to create the energy that we use everyday – from the gasoline that powers our cars, to the coal that is used to generate a vast majority of electricity in this country. At these resorts, electricity is used in vast quantities. From lifts, to heating buildings, to running the pumps and compressors that are used to operate the same snow guns that are necessary due to the burning of fossil fuels. In this way, these resorts are part of the very problem that is hurting their industry.

Thankfully, many of these resorts are realizing this, and are taking great initiatives to be greener and reduce their impact on the environment. One of these resorts is Killington, located in central Vermont in the Green Mountains. Being one of the largest resorts on the east coast, they have begun to set the standard for many other resorts. One of their initiatives is what they like to call “Cow Power.” One of their main gondola lifts is run solely on “cow power,” which equates to almost 300,000 kilowatt hours of electricity. Methane produced by the local cattle industry is captured, processed, and converted into electricity, which eventually runs the lift. While this offsets electricity use from non-renewable sources, it also lessens the amount of greenhouse gas that is released into the atmosphere. This is a great example of industries that are part of the problem becoming part of the solution, and is an initiative that hopefully will spread throughout resorts across the country. As Killington likes to say, “Let’s use brown to keep Vermont green!” — or, even better, white!

Sources:
http://www.killington.com/winter/mountain/environment/cow_power
One of the most pervasive themes in any environmental class at Rutgers would have to be sustainability. We hear about it constantly and it is usually discussed in readings or by guest speakers. When sustainability is mentioned, it is usually coupled with the need for new sources of clean energy. But we overlook or forget about the easily attained goal of urban planning to create practical living situations that maximize efficiency, and promote sustainable lifestyles.

The way a city is planned makes a great impact in the difference in whether or not people walk, ride their bikes, or use another sort of transportation that eventually releases carbon into the atmosphere. In Amsterdam, for example, there is a huge migration of cyclists every morning and evening, because it is practical for people to get to work that way. If we can make all cities more accessible to bicycles and walking, they will become a little more eco-friendly as well. This is why it is just as important that we make sure rural areas are also planned intelligently. When a new development is planned, it should include incentives to walk or take a bike instead of force people the get in the car for almost all travel.

Planning well will impact other activities as well, which should reduce emissions and disruption of natural ecosystems. Things such as our weak infrastructure will be less of a concern, especially if there isn’t as much of a demand on public roads. We would not have to put tons of money and resources into roads and bridges that may not be necessary. Cutting down on things that are not necessities should be our priority; therefore, planning can really be focused on development with such goal in mind.

This is very ideal model though, because to obtain this goal would require a change in our culture. We would have to accept the fact that how we live now is foolish, and that improvements can be made to ensure a secure and sustainable future. Students that will be living on their own soon should look to live in places that clearly have eco-friendly planning. The general population needs to show more interest in smart development as well so it can be clear if smart development has a higher value through demand. If cities throughout the United States can restructure successfully, they should become sustainable enough so that future generations can reach a desirable goals for eco-friendly planning and development.
The other day, I was driving down the highway when I found myself coming up next to a truck that was spreading road salt for the imminent snow storm. As I passed the truck, I took notice to the large quantities of salt that the truck was dropping in a single spot. The United States dumps approximately 15 million tons of road salt every single winter. I watched as the road salt aimed right for my car. I have heard for years how detrimental road salt can be to cars. Corrosion prevention in automobiles costs the auto manufacturing industry around 4 billion dollars per year, according to Stormwater. This all made me wonder what other implications road salt can have.

We live in a region of snow ridden winters. The road salt that is spread by trucks is very beneficial to our safety. According to Mother Nature Network (MNN), salt raises the freezing temperature of water to prevent ice from forming and it also provides car tires a better grip on patches where ice has formed. Research shows that 85% of accidents are prevented each storm due to road salt.

It seems as though with every good comes some evil. Unfortunately, the spreading of road salt can wreak havoc on the environment and on our health.

Wild animals are widely impacted by road salt. According to MNN, road salt runoff ends up in streams, ponds, aquifers, and even sometimes lakes and rivers. This results in an increase in the salinity of the water and a decrease of oxygen levels. The native wildlife, such as fish and amphibians, will either flee or die due to the toxic conditions. Road salt runoff is not the only way wildlife is affected, though. Salty puddles form next to roadways and, according to Stormwater, attracts moose, deer, and other mammals to drink from the puddles which can cause vehicle-animal accidents. Birds are also greatly impacted. Seed-eating birds cannot differentiate between seeds and road salt crystals and often wind up ingesting the road salt. For smaller birds, just one salt crystal can impair behavior and two can result in death.

Road salt run off can be lethal to plants. MNN explains how salt absorbs water. When the runoff ends up in the soil where plants are growing, it absorbs all of the moisture before the plants, creating drought-like conditions for the plant, even in a place where moisture is abundant. If run off gets into farmland, it can cause the soil to become infertile.

There is also a relationship between road salt and human health. Road salt runoff increases sodium in the water supply which can have serious health impacts for individuals who are already at risk from hypertension. City water supplies can sometimes become so contaminated that they have to temporarily shut down; this has been seen in New Jersey. There are impurities that are often added to road salt, of those is sodium ferrocyanide. It is not toxic on its own, but if exposed to heat or acidity, it can produce a toxic cyanide compound, such as hydrogen cyanide, which is also found in cigarette smoke. According to MNN, “chronic cyanide exposure has been linked to liver and kidney problems.”

Road salt can have some frightening impacts for something we use every winter. Luckily, there are some alternatives. Here is a look at the pros and cons of each.
Pros and Cons of Alternative Sources

**Calcium Chloride:**
Pro – Reduces freezing point of water at lower temperatures than road salt and is less harmful to plants and soil.
Con – Costs three times more than road salt, can damage roadside evergreen trees, keeps pavement wet (still slick), and is corrosive to concrete and metal.

**Beet or Corn Solution:**
Pro – No threat to wildlife or people, works at lower temperatures than road salt, and is leftover mash from alcohol distilleries and beet juice.
Con – Strong Odor

**Sand:**
Pro – Cheaper than all major de-icing chemicals.
Con – Does not actually melt the ice, only provides traction. It can clog storm drains and cloud water ways which blocks sun from aquatic plants.

**Calcium Magnesium Acetate:**
Pro – One of the most eco-friendly de-icers available.
Con – Costs more than road salt and requires two times as much product to achieve the same results.

**Potassium Acetate:**
Pro – Biodegradable, works at extremely cold temperatures, is non-corrosive, and requires few applications.
Con – Costs 8 times more than road salt and can lower oxygen levels in water.

**Magnesium Chloride:**
Pro – Works at temperatures lower than road salt and is less harmful to wildlife, water, and soil.
Con – Costs two times more than road salt and it attracts moisture keeping pavements wet and still slick.

There are many different de-icers available, but one solution to rid them all together has been proposed. Solar roads are still in their infancy stage, but they involve having solar panels on the roads which would either heat up the road surfaces or heat up water filled tubes inside the road. They are more expensive to build than a traditional highway, but would pay themselves off by providing extra electricity to nearby homes, businesses, and charging stations for electric cars.

So, what is the solution in this good versus evil battle? It is clear we can’t simply just replace every road with a solar road, but municipalities can use better efficiency with road salt to minimize the environmental impacts and still protect our safety. By substituting some road salt with less harsh chemicals and by using road-weather information systems, less salt would be required. Road-weather information systems use sensors to collect data on air and surface temperatures, precipitation levels, and the amount of de-icing chemicals that are already on the road. MNN wrote, “According to the Federal Highway Administration, the Massachusetts Highway Authority saved $53,000 on salt and sand costs the first year alone after employing RWIS (Road weather Information systems).” By having better management of the de-icing process, we can protect our environment, our health and safety, and our wallets.

Sources:
http://www.newyorkwater.org/downloadedarticles/environmentanimpact.cfm
From January 15th to the 17th I had the amazing opportunity to travel to Washington DC to attend the 13th National Conference on Science, Policy and the Environment: Disasters and Environment: Science, Preparedness, and Resilience! Hurricane Sandy, climate change adaptation and environmental governance were the primary topics of the conference. The keynote speakers were representatives from the United Nations, FEMA, Homeland Security and Toyota Motor Corporation. Other stakeholders who served as panelists during plenary sessions represented government agencies, private sector businesses, NGOs, international financial institutions, think tanks and academia. Having taken the EPIB courses Population, Resources, and the Environment, International Environmental Policy, Global Environmental Change and Environmental Health Communication, I felt very prepared to understand the plenary discourses.

The plenary session I found most interesting was led by a representative from NOAA with panelists representing real estate agencies, insurance companies and US armed forces. To my surprise, a large portion of climate change research is conducted by real estate agencies and insurance companies. Both have a lot at stake in the face of natural disasters such as droughts, floods, earthquakes, melting permafrost, sea level rise and hurricanes. The constant advice panelists gave was, “If you plan on buying a house someday, read your homeowner’s contract! It is your responsibility to know if your house is built in a vulnerable area”. “Jobs and growth” largely influence decisions to migrate to urban areas. The rapid increase of urbanization has caused overdevelopment in climate vulnerable areas, inherently causing a multitude of flood insurance perplexities. For example, individuals living in affordable housing in a flood zone often do not have a strong tax base/revenue generated to offset the cleanup and reconstruction costs.

One of the panelists was a US Pacific Commander who compared the aftershock of Hurricane Sandy to that of Fukushima, a nuclear explosion in Japan. He discussed the difficulties of lower socio economic classes to rebuild and the inability of birds, insects, microbes and plants to regenerate due to nuclear contamination. At the sum of the plenary session, each panelist had to give a policy suggestion that would better equip a community to adapt to future impacts of climate disasters. Each panelist prioritized local governance and a bottom up approach to climate policy. One panelist remarked “efficiency is the enemy of resiliency”. He stressed the importance of making decisions that guarantee long term resiliency rather than short term profit. The US Commander advocated diversification of food suppliers in grocery chains to avoid food insecurity. Another panelist suggested local governments to set aside a climate change fund so communities can rebuild sooner instead of waiting on grants from the national level. Lastly, replacing current power systems with solar and wind energy could guarantee greater access to power during climate disasters.

The workshop I attended was drought and famine. Representatives from agribusinesses and biotech companies talked about genetically engineering (GE) a drought resistant seed, durable in dry soils. Such a seed would be extremely valuable to regions of the world suffering from desertification and famine. During a policy-making activity, I suggested giving indigenous women farmers land rights and a political voice to decide how crops should be grown, processed and distributed. I also brought up the correlation between GE crops and malnutrition in developing countries. The discussant responded by saying, “what are you, an eco-feminist?” and dismissed my suggestions. Although I was taken aback, such remarks prove “knowledge is power” and increase my drive to be an agent of social and environmental justice.

After the final day of the conference, I stayed with a friend at American University, explored the city, and ate awesome ethnic foods! The last day of my stay, I had the amazing opportunity to see Barack Obama’s inauguration. I am extremely grateful to Dean Turpin and Dean Goodman for providing me with this amazing opportunity.
Flower’s Galore or Flower’s No More?
By: Alya Dukhan

Valentine’s Day is one of the most celebrated holidays in the United States. It is a day many use to declare their love to their significant others, and most follow the tradition of gifting a card, a box of chocolates, or flowers. On February 14th of every year, an average of 141 million cards are exchanged, 2.2 million marriages occur, and $397 million dollars worth of flowers are purchased by Americans (History). Needless to say, the day of love is an expensive one and flowers play a key role in the ceremony and the cost. Gifting flowers is a way for people to express love and adoration, a ceremony that has survived the test of time. What would happen if flowers were to stop blooming?

Recent studies suggest that in 2010 and 2012, plants in the Eastern U.S. produced flowers earlier than any years prior, according to historical records. As temperatures have been getting warmer earlier, flowers have been blooming and keeping up with the change by budding earlier in the season. Every flower that blooms needs a signal—like a long winter frost—that tells it to bud. The flower is the plant’s method of reproduction, and with winters getting warmer, fewer flowers will bud because they will not have the signal, or the change in temperature from winter to spring, that they need to bloom. Another worry is that flowers that do bloom earlier may then be killed off if a late winter frost occurs, which is a reasonable fear when considering the sudden early frost that killed off a significant percentage of the apple crop during the fall season of 2012. “Arctic plants are not responding to warmer temperatures in the same way as they used to [and] as northern climates warm, more southern species are marching northward where they may outcompete native species” (National Geographic).

Many may say that there are plenty of greenhouses to produce flowers for every occasion, and flowers, though they may potentially disappear in nature, will live on artificially. But are we ready to lose all the colors of spring? Valentine’s Day may not be affected but the planet will be. “Plants soak up and evaporate water, as well as take in carbon dioxide during photosynthesis, [therefore] they can influence our planet's water cycle and atmosphere” (National Geographic). This Valentine’s Day, show love not only to your significant other but to the planet as well and go green. Instead of spending those few dollars on flowers, make a donation to an organization that is working towards stopping global warming!

Organizations:
The Conservation Fund; Earthjustice; EcoTrust; The Nature Conservancy; Environmental Defense Fund; The Sierra Club; Greenpeace

Sources:
http://www.history.com/topics/valentines-day-facts
PRESERVING OPEN SPACES

By: Paige Buzard

Most of the environmental community is on-board to dedicate $200 million a year in New Jersey state sales tax revenue to preserve open space and farmland. At the Senate Environmental Energy Committee on February 4, this idea was the most heavily endorsed on how to finance the nearly-broke open-space and farmland preservation program.

In the past, New Jersey voters have consistently been in favor of open-space bond issues, even those in the hundreds of millions of dollars; however, a stable source for funding these programs has yet to be established.

The new plan would set aside $200 million annually for 30 years. The time span of the plan was debated by many conservation groups, with the issue of time needed to preserve undeveloped lands and agricultural property.

Governor Chris Christie will address the issue in his annual budget message later in February. The sales tax initiative won the endorsement of former Assemblywoman Maureen Ogden (Republican) who has been a long-time proponent for open-space preservation and also effective in collaborating with Democrats.

Eileen Swann, policy director of the New Jersey Conservation Foundation and a former executive director of the New Jersey Highlands Council, supports the plan saying, "It does it all. It does it long-term."

Other supporters include Bob Martin, New Jersey Department of Environmental Protection Commissioner, who has discussed a source of funding based on sales tax revenue with various conservation groups. A spokesman for the DEP said, "Governor Christie is well aware of the issue and is considering options for open-space funding." Open space in New Brunswick provides recreation opportunities, wildlife habitat, and has positive effects on human health and community well-being. The City of New Brunswick Parks, Recreation, and Open Space Plan was enacted in 1995 to identify a significant lack in the amount of parks and open-spaces to help manage and maintain water and air quality in comparison to the state and federal standards.

Since that time the Alice Jennings Archibald Park (10.5 acres) was opened, an expansion to Boyd Park was made, a 14 acre Youth Sports Complex was created, improvements to Buccleuch Park was made and the Raritan River conservation area was expanded upon.

To maintain such facilities and continue to preserve the open-spaces that exist in New Jersey, the tax revenue funding plan will alleviate the financial pressures on environmental groups and the state to protect the ‘beautiful places.’

Resource:

Scheme to Dedicate Sales Tax Revenue to Preserve Open Land Seems to Be Early Favorite

Tom Johnson
ENN.com
www.nj.gov/dep/greenacres
Return of the Deadly Dozen by Wajeeha Ansari

With all the talk about climate change, most of us are pretty aware about its links to extreme weather patterns, pollution, and our depleting natural resources. But did you ever think that climate change could affect our personal health too? A lot of diseases, once thought to be eradicated and wiped away, have now threatened resurgence due to global warming.

Health experts have created a list of the most ominous diseases called “the deadly dozen” which includes: tuberculosis, Lyme disease, yellow fever, avian influenza, plague, Rift alley fever, cholera, Ebola, intestinal and external parasites, red tide, Babesia, and sleeping sickness. They have noted that one of the best indicators of when something is going wrong with nature is by looking at when certain diseases increase in prevalence. Unfortunately, this is exactly what has been noticed with a few of these diseases. For example, the avian influenza – or bird flu – is thought to have been spreading more to domesticated birds because wild birds are now being forced to feed in the same waters as the domesticated birds due to drought.

Furthermore, rising global temperatures are allowing certain parasites and insects to come into contact with even more organisms and spread their diseases. It turns out that the disease-bearing insects that we had not encountered in a while have now made a return due to a more favorable environment for them such as warmer temperatures throughout higher latitudes.

While there is no immediate threat of a sudden tuberculosis breakout in the near future, it is important to look at these spikes as warning signs of some of the less-talked about effects of global warming.

“Deadly Dozen” Diseases Could Stem from Global Warming by Christine Dell’Amore on October 7, 2008 in the National Geographic News

Synergetic Colonies: Wisdom of the Leaf-cutter Ants
By: Kimber Ray

It was over one hundred million years ago when this crafty species first began roaming the planet, forming complex social communities. Fifty million years later, through an innovative twist of evolution, this would be the first species to discover agriculture, antibiotics, and a prehistoric rendition of green energy. With six triple-jointed legs and serrated mandibles that can vibrate up to one thousand times a second, Atta cephalotes—commonly known as leaf-cutter ants—are truly dexterous pioneers, having engaged in agriculture millions of years before humans would make the same discovery around 8,000 BCE.

Within the vast depths of the rainforest, the evolutionary arms race takes on a surprising intensity. While most tropical leaves are toxic in order to discourage browsers, the leaf-cutter ants found an ingenious method to circumvent this deterrent. In colonies that extend as far as 18 feet below the ground, these ants have been fastidiously cultivating a fungus that breaks down the toxins in the leaves and produces proteins and sugars that the ants eat.

These ancient farmers have a highly structured caste system designed to most effectively nourish their fungal gardens. Larva are fed a special diet that determines into which of five categories they will mature: queen, soldier, workers, minima, or males. The workers are further divided into three distinctive size categories. The largest of the worker ants forage for leaves on highways that are hundreds of feet long, harvesting as much as 15-20% of all vegetation in the Neotropics. The middling of the worker ants remains in the nest to process the leaves, chewing them up to create a pulpy mixture of cellulose and digestive secretions. Meanwhile, the smallest of the worker ants delivers this pulp to the fungal garden, which is then cultivated by the minima ants. Males, on the other hand, are only produced once or twice a year to fill the queen with millions of sperm before she kills them. This is a species that firmly operates on the blunt principles of efficiency.

It is this very efficiency that has allowed the ants to so successfully grow a monocrop—a feat that humans have attempted with devastating consequences, including the infamous Irish Potato Famine. While it was once believed that the ants prevented infestations by meticulously removing any sign of pests, bacteriologist Cameron Currie thought this sounded like a highly inefficient solution for such an efficient species. In 1999, he examined the waxy secretion coating the body of the ants and made an extraordinary discovery—the secretion was composed of a tangled knot of Streptomyces bacterium, the largest of the antibiotic-producing genus. By prudently applying this bacterium to the fungal crop, the ants have been able to prevent aggressive and parasitic molds from destroying their source of food.

Image 1 source: http://24.media.tumblr.com/tumblr_mcqb1ff7OQ1rk14ao1_500.jpg
Yet it was only 65 years ago when humans first discovered Streptomyces and our microscopic adversaries have already worked out how to resist our defenses—what is it that makes the leaf-cutter ants so much more successful in the field on antibiotics? Recent studies led by Cameron Currie and Garret Suen suggest that the answer may lie in the magnificent complexities of symbiosis—a field where we are only just beginning to scratch the surface. Fascinated by the elaborate relationship between leaf-cutter ants and their environment, he next set out to examine their genome.

He found that the leaf-cutter ants had long ago lost the proteins necessary for numerous essential metabolic pathways; since the fungus already broke down many nutrients, the ants lost the genes to do so themselves, making the two critically dependent on one another.

“The study… illustrates how lifestyle can remake an animal's genetic blueprint over the course of evolutionary history… The leafcutter, which cannot survive without its fungus food, has apparently slimmed its genome to get rid of genes it no longer needs due to its symbiotic lifestyle.”

Thus, the very evolution of the ants, fungus, and bacteria is transforming in tandem in order to further advance their mutually beneficial relationship. And just as the genome of the ants has evolved within this relationship, researchers believe that the bacteria coating the ants are also evolving in order to prevent antibiotic resistance.

There is so much yet to be discovered in our world, and so much that has surprisingly already been discovered. Humans and leaf-cutter ants may live in drastically different realms of ecological scale, but studying our similarities holds exciting promises for future global developments. The leaf-cutter ants have been surviving from a monocrop for millions of years—understanding how they overcome pathogenic threats could lead to major advancements in agriculture and pharmaceuticals. On top of that, some researchers hope that studying how the ants and fungus break down cellulose will allow us to create more viable biofuels.

As the effects of our interactions with the environment continue swinging back to us with alarming voracity, we increasingly need to reconsider the awesome power of synergy. The boundless links that form the web of life are proving to be far more complex than we could ever have imagined. Leaf-cutter ants offer us an opportunity not only to observe the incredible wonders of ecology, but also to grow in our mindfulness of how we too are inescapably linked to the natural world.


Dilley, C. “Agriculture of leafcutter ants, comparison of large and small colonies.” Miami University. Available online: http://jrscience.wcp.muohio.edu/fieldcourses02/PapersCostaRicaArticles/AgricultureofLeafcutterAnt.html

Ancient farmers of the Amazon.

Dilley, C. Ancient farmers of the Amazon.


Ancient farmers of the Amazon.

Ancient farmers of the Amazon.
Kyoto Protocol: Then and Now
By Tami Segal

On December 11, 1997 the Kyoto Protocol was signed by 84 countries in Kyoto, Japan. Among these countries was the United States, who signed the treaty, but did not ratify it in congress. The amendment was placed into action eight years later, on February 16, 2005, due to the diverse ratification process of every participating country.

The protocol was meant to bring firmer restrictions on greenhouse gas emissions to those industrialized nations that believed the standards set by that of the United Nations Framework Convention on Climate Change (UNFCCC) would not be sufficient to make a change. The treaty places a heavier emphasis on developed nations than those developing, which was a major reason the United States was cited for its lack of participation.

The Kyoto Protocol was set to bring a 5% decrease in emissions by 2012, but many countries, including Canada, had announced that they would not meet their targets. Participating countries and many other developing nations came together in Durban, South Africa in December 2011, to discuss the future of the Kyoto Protocol and further options.

A second commitment period to the Kyoto Protocol has been formalized by more than 30 countries including the European Union (EU), Australia, Norway, and Switzerland. The commitment period will begin in 2013 and members are still discussing when the period will end; either 2015 or 2020. Committed nations are also discussing whether to carry over surplus emission rights.

However the UNFCCC’s Durban Platform shows a more promising outlook. Like in the Kyoto Protocol regulations on greenhouse emissions, it will be subject to those participating. A major difference between the Kyoto Protocol and the Durban Platform is that it includes developed nations as well as developing ones, setting greenhouse gas regulations for China, India, and Brazil, which the Kyoto Protocol excludes. The agreement is to be formalized in 2015 and will take effect in 2020.

Citations


A longtime high school teacher of French and Spanish is suing the Mariemont, Ohio, school district for having pressured her to resign in the face of what she calls her phobia, a "fear of kids" disorder, which she says should be protected by disability-discrimination law.

Maria Waltherr-Willard, 61, had been reassigned to teach some junior high students, but doctors said she suffered hypertension, nightmares, chest pains and vomiting when around the younger-age children.

After a 400-pound woman broke both arms accidentally falling through a sidewalk in New York City in January, doctors told her that a thinner woman might have died from the same fall. "Thank God, they said that my size was the only thing that saved me."

A 61-year-old man in southern Sweden beat a DUI charge in February even though his blood-alcohol was five times over the legal limit. The man told the judge he is a hearty drinker and normally starts in even before work every day, with "no effect" on his performance. According to the Skanskan newspaper, that must have impressed the judge, who was so awed that he tossed out the charge.

---

Don't judge each day by the harvest your reap but by the seeds that you plant.

-Robert Louis Stevenson
# Meet Our Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Major/Options</th>
<th>Grade</th>
<th>Fun Fact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evangelina Pena</td>
<td>Coordinator/Editor</td>
<td>Major: Biological Oceanography, minor EPIB</td>
<td>Senior</td>
<td>Born and raised in Uruguay</td>
</tr>
<tr>
<td>Kimber Ray</td>
<td>Editor</td>
<td>Major: EPIB Environmental and Health Policy option</td>
<td>5th (and final!) year</td>
<td>Admire Majora Carter and had the chance to hear her speak at a conference!</td>
</tr>
<tr>
<td>Holly Berman</td>
<td>Editor</td>
<td>Major: EPIB</td>
<td>Sophomore</td>
<td>Loves life music</td>
</tr>
<tr>
<td>Tami Segal</td>
<td>Staff Writer</td>
<td>Major: EPIB, Business</td>
<td>Sophomore</td>
<td>Born in Israel</td>
</tr>
<tr>
<td>Arielle Wortzel</td>
<td>Graphic Designer</td>
<td>Major: EPIB</td>
<td>Junior</td>
<td>Want to be a sign language interpreter</td>
</tr>
<tr>
<td>Rachel Alm</td>
<td>Graphic Designer</td>
<td>Major: EPIB and History</td>
<td>Junior</td>
<td>Adopted a manatee in Florida and love running</td>
</tr>
<tr>
<td>Jinal Kansara</td>
<td>Graphic Designer</td>
<td>Major: Psychology</td>
<td>Senior</td>
<td>Gone sky diving</td>
</tr>
<tr>
<td>Julia Harenberg</td>
<td>Staff Writer</td>
<td>Major: EPIB, U.S. Policy option</td>
<td>Senior</td>
<td>Been a vegetarian for 16 years</td>
</tr>
</tbody>
</table>
Meet Our Staff

Wendy Chiapaikeo  
Staff Writer  
Major: EPIB– Health Option  
Grade: Junior  
Fun Fact: I’m a chocoholic!

Selen Altıok  
Staff Writer  
Major: EPIB  
Grade: Junior  
Fun Fact: I don’t like to waste apple cores so I eat them

Katherine Fudacz  
Staff Writer  
Major: International Environmental Policy  
Grade: Junior  
Fun Fact: I adore jazz apples, Will Farrell and the ocean

Daniel Pelligra  
Staff Writer  
Major: Food Science Research & Nutritional Science  
Grade: Senior  
Fun Fact: I love to cook, fish and race snowboard giant salmon for the Rutgers club team

Denise Galianos  
Staff Writer  
Major: Psychology  
Grade: Senior  
Fun Fact: I’m trilingual

Renee Leventon  
Staff Writer  
Major: Environmental & Business Economics  
Grade: Freshman  
Fun Fact: I like to run 5K races that donate to a cause

Mary Ruffner  
Staff Writer  
Major: Sociology and Human Resource Management  
Grade: Senior  
Fun Fact: I love the beach, volleyball, and whales

Andrew Holloway  
Staff Writer  
Major: EPIB  
Grade: Senior  
Fun Fact: My nickname is Sunshine!
# Meet Our Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Major</th>
<th>Grade</th>
<th>Fun Fact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luke Dougherty</td>
<td>Staff Writer</td>
<td>Junior</td>
<td>Studied abroad in Greece</td>
</tr>
<tr>
<td>Paige Buzzard</td>
<td>Staff Writer</td>
<td>Freshman</td>
<td>I have horses and ride Dressage</td>
</tr>
<tr>
<td>Alya Dukhan</td>
<td>Staff Writer</td>
<td>Senior</td>
<td>Was born in Moscow, Russia</td>
</tr>
<tr>
<td>Wajeeha Ansari</td>
<td>Staff Writer</td>
<td>Senior</td>
<td>I have 23 cousins on my mom’s side and we’re all close!</td>
</tr>
<tr>
<td>Will Shinn</td>
<td>Staff Writer</td>
<td>Junior</td>
<td>I love to play paintball</td>
</tr>
<tr>
<td>Simon Galprin</td>
<td>Staff Writer</td>
<td>Senior</td>
<td>I plan on climbing the highest mountain on each of the seven continents</td>
</tr>
<tr>
<td>Chloe’ Lewis</td>
<td>Staff Writer</td>
<td>Sophomore</td>
<td>Addicted to True Blood</td>
</tr>
<tr>
<td>Rebecca Noah</td>
<td>Staff Writer</td>
<td>Senior</td>
<td>I’m SCUBA dive certified</td>
</tr>
</tbody>
</table>
Ryan Koch
Staff Writer
Major: Ecology, Evolution and Natural Resources
Grade: Sophomore
Fun Fact: I enjoy playing the guitar, swimming and camping

Cody Beltis
Staff Writer
Major: Environmental Science
Grade: Freshman
Fun Fact: I am from Cape Cod, MA, I love pugs and folk music