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RUTGERS GREEN PRINT

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EDITOR'S NOTE

Dear Green Print Readers,

It appears we've made it to the end of another school year. I'm for all of us this has been of ups and downs between the strike and ninety degree weather in April, it's been a wild ride. In crazy times like these, I have found the best way to stay grounded through community.

Luckily at Rutgers there is so much opportunity for community whether it be through religious organizations, clubs, academic groups, greek life, and more there's a place for everyone here it just takes time to find it. At Green Print, we hope to be a place where people can express themselves openly and find a community of like minded environmental connoisseurs who have the audacity to challenge the status quo.

Thank you to all who contributed to our final issue this year. To the writers who devote their time and energy to research and educating our community, to the photographers who capture the beauty of our world and to the entire eboard who support this creative process. Finally thank you reader for taking the time to read our publication and we hope you enjoy it and maybe even learn something.

Best,
Liora Picker
Editor In Chief

GREENPRINT'S

EVENT RECAP:

Thank you to all who attended our "Painting and Potting" event two weeks ago. We had a great time meeting everyone in person and exercising our creative sides. Together we painted ceramic pots, planted succulents and enjoyed dinner. We are looking forward to having more events like this and curating an active community of Green Printers on campus.





THE ANCIENT FERNS THAT ARE AS TALL AS TREES

LAILA BOZOROTH

Within the endless diversity of the plant world, there is an order of plants that is particularly unique. Cyatheales is known as the “tree fern” order because unlike the typical ground dwelling fern, these ferns can grow to be up to 60 ft tall. The stems of tree ferns are tall and wide enough to resemble trees, and perform similar functions to tree trunks. They support the plant and bring water and nutrients to the fronds as a tree would to leaves.

The fronds can be especially large, sometimes reaching up to 4 meters in length, while also being covered in hair and scales. Found in the tropical and subtropical zones, tree fern species are found as close as Florida and as far away as New Zealand. Tree ferns are also ancient, with the first evidence of such morphology seen in fossils dating back to the Triassic Period, which means they were likely snacks for dinosaurs and other now extinct species.





There is quite the competition for height within the tropical environments that Cyatheales grows. The taller a fern can grow the better chance that fern has at reaching sunlight. This order grows quickly to take advantage of open spaces in the canopy, and some species have evolved to specifically grow the base of its fern fronds, called the stipe or petiole, to push the frond further into the canopy and better compete for the limited light available in tropical rainforest ecosystems. Spines can also be found on certain species, and since there doesn't seem to be a clear purpose for them today, it is likely that it evolved as a defense mechanism against predators that no longer exist.

The most well known species of tree fern is the Silver Fern. It is a national symbol for Aotearoa (the indigenous name of New Zealand). There it is used as the emblem for their world famous Rugby team, logos throughout the country for common items such as butter, and as the symbol for Air New Zealand. What makes it so iconic is its singular silver-white coloration on the undersides of its fronds. This coloration is quite stark and unlike any other species of fern. It has been said to reflect moonlight and be used almost like a flashlight on dark trails. I hope that one day I can see one in its natural habitat and see for myself the immense diversity of our planet.



Misleading Arrows:

Not Everything You Recycle is Actually Being Converted Into New Products

SAMANTHA GARCIA

It turns out that we can't always trust the chasing arrows on a product when we go to throw it in the recycling bin. As of the end of 2022, items composed of or packaged with polypropylene—also known as Plastic No. 5—are being marked with the 'widely recyclable' label, despite the most recent data from the Environmental Protection Agency finding that polypropylene only has a recycling rate of 2.7%¹.

This change was launched by How2Recycle, an organization founded by large producers and consumers in the plastic industry such as Exxon Mobil Corporation and Nestle¹. Seeing as a product's recyclability is not determined by a federal program or office², How2Recycle entered the market to make these determinations.

Previously, How2Recycle designated polypropylene products with the label “check locally”, meaning that consumers were expected to check if their location's recycling facilities accept Plastic No. 5. How2Recycle claims that their most recent analysis shows that over 60% of Americans have access to a recycling program that accepts this plastic. But a nonprofit called Last Beach Cleanup has found that only 28% of Americans have access to recycling facilities that accept polypropylene¹—suggesting that this new designation fails to accurately represent the plastic's level of recyclability.

What Items Consist of Polypropylene?

- Yogurt containers
- butter/margarine containers
- Syrup bottles
- Bottle caps
- Straws
- Tupperware
- Takeout containers
- Single-use plastic plates and cups
- Toothbrushes

Why Does This Matter?

Labeling items as widely recyclable when over 70% of Americans would not have their trash recycled after disposing it in recycling bins is very misleading.

Many consumers assume with complete certainty that recycled plastic with chasing arrows is repurposed to create new products. Consequently, some consumers may feel comfortable purchasing and using certain plastic products because they have been led to believe that its use will not harm the environment, due to its recyclability.

People should have the right to choose the relationship their consumption has with the environment, and mislabeling plastic products takes this choice away from consumers, as they are led to believe that the polypropylene products that they purchase are widely recyclable, when this is not entirely true.

Another reason that this lack of transparency with labeling is problematic is that it can lead to more consumption of products using plastic No. 5, which inevitably leads to more of these plastics

ending up in landfills, as so few are actually recycled. Polypropylene takes between 20 to 30 years to decompose³, leaving plenty of time for its chemicals and microplastics to diffuse into the surrounding environment.

These components can be toxic to the soil and groundwater that landfills rests upon, harming the neighboring ecosystem and those that live within them for years after the plastic decomposes⁵. If labels for polypropylene products reflected their true level of recyclability, there is a possibility that some of this harm could be prevented through the reduced consumption of these products.

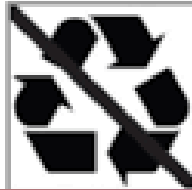
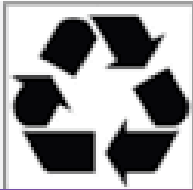
What Should Be Done?

One way to mitigate the mislabeling of plastic products is to have the federal government take over the responsibility of determining the status of plastic labels.

As mentioned above, this is currently led by How2Recycle, an organization founded by big actors in the plastics industry—who therefore have the incentive to make more plastic products appear environmentally friendly to increase consumer interest in these products.

How2Recycle

Information and locational instructions let you know if an item can be recycled traditionally or by other means.



To ensure that recycling label instructions reflect reality, the Environmental Protection Agency could take over label assignment so consumers can recycle items with the “widely recyclable” label with full confidence.

Another option is to continue allowing How2Recycle to distribute recycling labels after passing federal legislation that better regulates the recycling label system. For example, policymakers in California passed legislation in 2021 that bans companies from using the chasing arrows recycling symbol on any plastic that is not regularly recycled within the state or turned into new products⁷.

To implement this ban, the state has become responsible for determining which labels are assigned to certain plastics, by assessing the plastic's true recycling rates. Congress should consider passing similar legislation so that these bans are implemented nationwide, making recycling labels reflect true recyclability in all states.

No matter what strategy America chooses to eliminate misleading recycling labels, action must be taken because consumers deserve to know the true weight of their consumption by clearly understanding how their purchases interact with the environment.

where does all the suffering go?

OLIVIA MCARTNEY

a closed eye and turned away head is a swallowed wince from a loud wack. or gunshot. or explosion of evil elements, we put umbrellas over ourselves made from your skin and spines. and tell ourselves this is fine, the cycle is natural.



but **vaquita dolphins** and their dark, glossing eyes have seen the bottled-up-human hatred and felt it bubble into suffocating plastic. they squirm for help, their squeals drowned out by reverberating echoes. they are just fish, their pain doesn't show, but once they have been shoved off their black and blue home, where does all the suffering go?



the **monarch butterfly** flaps its wings into an orange swarm of its kin and looks just like wildfire. it's almost breathtaking, the spreading and burning that happens so quick before the eyes that we don't even budge.

NFTS AND THE ENVIRONMENT

SOFIA ALEEMUDDIN

If you spend time on the internet, you've probably heard of NFTs. NFTs, or non-fungible tokens, are a form of cryptocurrency that are marketed to be one-of-a-kind. Anything that can be uploaded digitally can become an NFT, such as art, videos, and even pieces of writing (like this one!).

NFTs are connected to a blockchain, which contains all the information and a record of the transactions associated with it. The idea behind NFTs is to have ownership of whatever it is that is being sold. However, since these are digital, other people who do not pay for the NFT can still download it. There are mixed opinions on whether NFTs will create a tangible market and if they are really worth the high prices they are typically sold for. But beyond the discourse of interest and cost, NFTs have a concerning impact on our climate.

The environmental impact of NFTs comes from their use of blockchains. Blockchains work by creating 'blocks' of information related to it. For NFTs, each block is a different transaction that becomes recorded into the blockchain network. Additionally, each transaction of an NFT needs to be validated to ensure its legitimacy. This requires a network of computers that verify all the information before the block is recorded. Most NFTs use the Ethereum blockchain, which uses large amounts of power for validating and computing transactions. Each time an NFT is sold, the blockchain has to go through the process again and again. As a result of this, NFTs end up having large carbon footprints, and people who sell or buy NFTs contribute to it.

There are alternatives for NFT blockchains to have reduced carbon emissions, however there have been no changes to the Ethereum blockchain as of now. Artists and buyers concerned with the environmental impacts have been advocating for the use of blockchains that use different methods to verify transactions that do not require so much energy. Many others choose to avoid getting involved with NFTs at all. As their popularity and usage grows, it is important to stay informed about NFTs and their environmental impacts.

10 Places to Hike and Appreciate the Beauty of Nature in New Jersey

ASHLEY ECHEVERRIA

Now that spring is here, summer is soon approaching, and the weather is getting nicer, there is no better time than now to go outdoors and explore the places around you. As a nature lover, I love taking a good hike to appreciate the beauty of nature around us. It reminds me of the importance of protecting our environment for the sake of animals, plants, other living organisms, habitats, and even our own health. Forests, rivers, oceans and soils all over our planet provide us with the food we eat, air we breathe, the water we use to drink and irrigate our crops with, and much more.

We overall depend on them for our health, happiness and prosperity. Not only is nature beautiful, but it also allows us to clear our minds and escape from the stressors of our daily lives. With that being said, here are 10 places to hike that will make you appreciate the beauty of nature in New Jersey:

1

Stairway to Heaven

Located in Vernon, NJ within the Wawayanda State Park, the Stairway to Heaven hiking trail is an unforgettable hiking experience. One of its most prominent features is the Pochuck Boardwalk, which provides breathtaking and unique views as you hike through the forest. The boardwalk goes through a marshy area, which allows you to get close and personal with nature's surroundings. This is also a perfect place to go hiking if you would like to see the sunrise or sunset. This trail is perfect for all hiking experience levels. There is also a beautiful farm nearby, where you can see animals and take a rest at the market after a good hike!



2

The Giant Stairs

A challenging 4.3 mile loop, the Giant Stairs offers beautiful views of the Hudson River. This trail takes you down the Palisades at the Hudson River shore, passing through a cascade, ruins of historic estates, a boulder field, and a steep ascent down a stone staircase. This hike is definitely not recommended when rocks are wet or covered in snow/ice, which is why spring or summer is the perfect time to explore this trail. This trail is located at the Palisades Interstate Park State Line Lookout in Closter, NJ and has other trails that extend all the way up to upstate New York. At the top of the lookout, there is an amazing panoramic view of the Hudson and a cute little cafe where you can take a break and also shop for souvenirs or books on the history of the Palisades cliffs.

3

Mt. Tammany

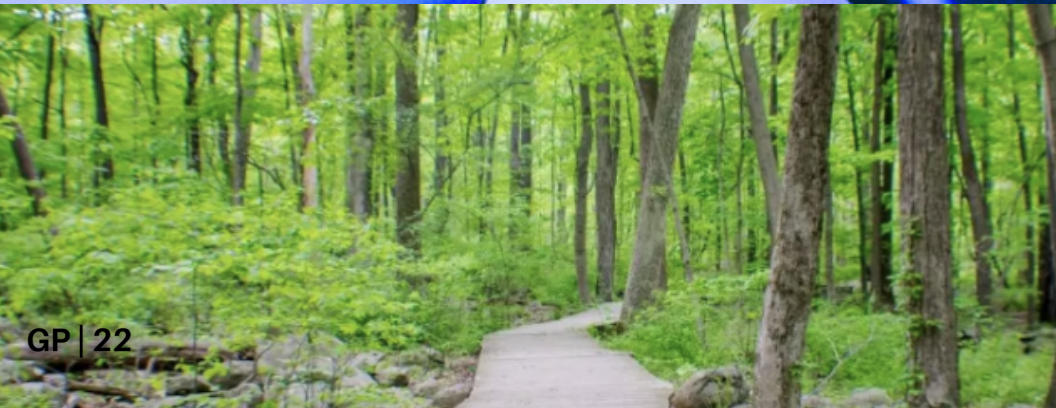
Though a short 3.5 mile hike, this path can be a little strenuous due to its steepness and Rockiness, however, it is absolutely worth it because of its breathtaking overlook of the Delaware Water Gap and Mt. Minsi. You pass by mini cascades and bridges and may even be able to spot a couple of vultures enjoying a meal, hawks, wild turkeys, and possibly other creatures and critters. Located in Knowlton Township, NJ at the southernmost peak of the Kittatinny Mountains, this place has a lot of different trails that lead you to the top of Mt. Tammany—some more difficult than others— and each one offers unique and different experiences.



4

Sourland Mountain Preserve

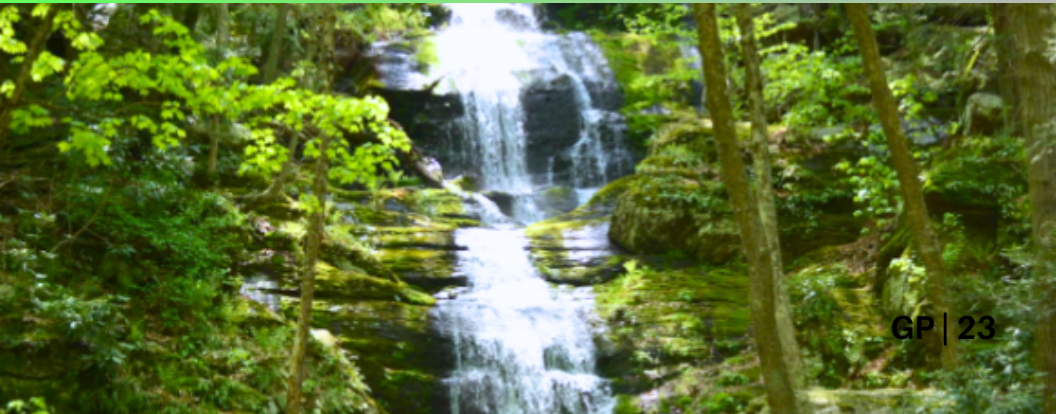
This very rocky trail with minor elevation is perfect for when you just want to take a stroll and enjoy nature's beauty. It is a bit more lengthy at 5.7 miles, however mountain biking, horseback riding, and bouldering are also allowed. Located within Hillsborough Township and Montgomery Township on Sourland Mountain, in the Sourlands region of New Jersey, you'll hike over boardwalks, through boulders and rocks. There are also different trail paths here, each varying in difficulty and experiences.



5

Buttermilk Falls

Located at Walpack Township, NJ, Buttermilk Falls has various trails of moderate difficulty. There are steep areas, but all worth it for seeing a beautiful waterfall, Crater Lake and Hemlock Pond. This not only is a popular place for hiking, but is also popular for camping if you want the real nature experience.



6

Castle Loop at Ramapo Mountain

This 3.1 mile trail located at the Ramapo Mountain State Forest, varies between rugged flat wood roads to steep uphill. There are also other variations of this trail that are more difficult. You can explore the ruins of the Van Slyke Castle on this hike with multiple viewpoints. This is a perfect hike if you are looking for a walk with no difficulty whilst taking in the nature around you and exploring a historic place!



7

Monument Trail Loop

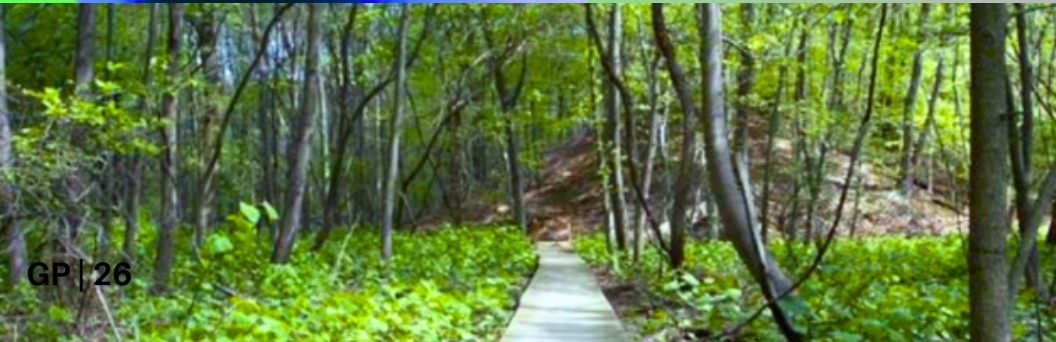
Located at High Point State Park, this is a popular destination for camping and hiking and overall exploring nature. This 3.5 mile hike varies between rocky and smooth terrain and offers expansive views over the tri-state area from the highest point in New Jersey. This hike goes through a beautiful forest with a lot of different viewpoints and crosses a cedar bog on a long boardwalk. The monument you'll see is a memorial for New Jersey veterans and also marks the highest elevation in the state.



8

Cheesequake Green Trail

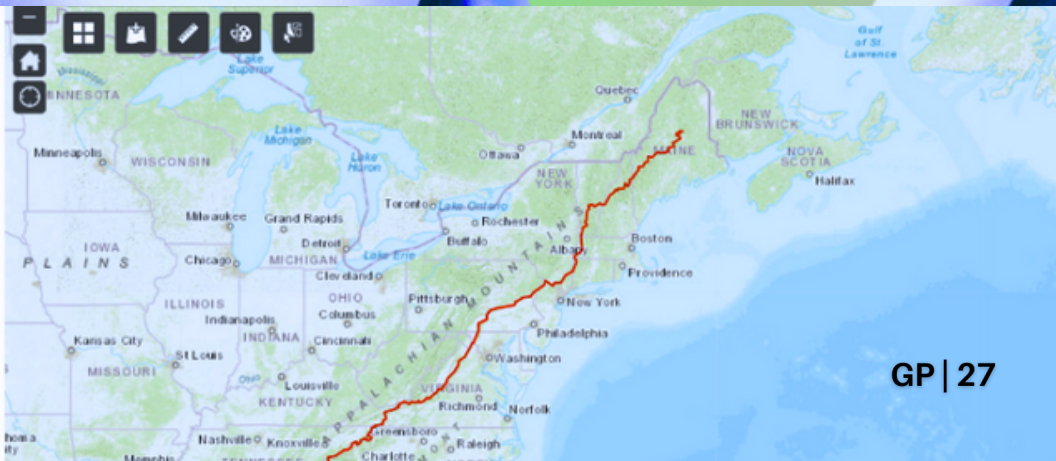
At 3.1 miles long, this loop located near Matawan, NJ at Cheesequake State Park, is an easy yet beautiful route to walk through to enjoy the presence of nature around you. It is a super pleasant hike over rolling hills and beautiful marshlands along numerous boardwalks. There is a great variety of trees, boardwalks, lakes, and small bridges. It also has a nice nature center and campground if you want a more intense nature experience.



9

Appalachian Trails

These trails all vary in difficulty and length but offer breathtaking panoramic views and scenery. The trail travels through the Wallkill National Wildlife Reserve, camping grounds, waterfalls, creeks, rocky roads, and much more. The Appalachian Trail stretches over two thousand miles from Georgia to Maine and enters New Jersey at the Delaware Water Gap. It heads north along the Kittatinny Ridge to High Point and then east through the Pochuck Valley. It is super lengthy, but definitely worth the hike!



1

0

Stonetown Circular Trail

This lengthy and challenging 10.6 mile hike will have you climb and descend five mountains—Little Windbeam, Windbeam, Bear, Board, and Harrison— while enjoying panoramic views of the Wanaque and Monksville Reservoirs at the same time. This hike is one of the hardest in New Jersey, from rocky roads to steep elevations, but is worth all the effort for the unique nature experiences.

CITATIONS

The Ancient Ferns that are as Tall as Trees

Images:

- [Black Tree Fern](#) © Katja Schulz, (CC BY 2.0)
- [Silver Fern](#) © Alan Levine, (CC BY 2.0)

Sources:

- [Arens, N. C., & Baracaldo, P. S., 2000, Variation in Tree Fern Stipe Length with Canopy Height: Tracking Preferred Habitat through Morphological Change, American Fern Journal, 1, 1.](#)
<https://doi.org/10.2307/1547257>
- [The significance of the silver fern. June 6, 2017. Museum of New Zealand Te Papa Tongarewa, Wellington, NZ.](#)
<https://www.tepapa.govt.nz/discover-collections/read-watch-play/ferns-new-zealand-and-pacific/significance-silver-fern>. April 10, 2023
- [Tree Fern. San Diego Zoo Animals & Plants.](#)
<https://animals.sandiegozoo.org/plants/tree-fern>. April 10, 2023

NFTs and the Environment

- <https://www.theverge.com/2021/3/15/22328203/nft-cryptoart-ethereum-blockchain-climate-chan>

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Images:

- The How2Recycle Guide to recyclability. How2Recycle. (n.d.). Retrieved April 3, 2023, from <https://how2recycle.info/guide>

References:

- Chauduri, S. (2022, August 17). Your 'widely recyclable' plastic yogurt container is rarely recycled. The Wall Street Journal. Retrieved April 3, 2023, from <https://www.wsj.com/articles/your-yogurt-tub-says-widely-recyclable-but-is-it-being-recycled-11660729184>
- Winters, J. (2022, October 17). Inside the industry push to label your yogurt cup 'recyclable'. Grist. Retrieved April 3, 2023, from <https://grist.org/accountability/inside-the-industry-push-to-label-your-yogurt-cup-recyclable/>
- Everyday Recycler. (2023, March 21). Plastic numbers guide – what is plastic no 5 (PP - polypropylene) and can you recycle it? Everyday Recycler. Retrieved April 3, 2023, from <https://everydayrecycler.com/plastic-number-5-pp/>
- Knoblauch, J. (2022, February 16). The environmental toll of plastics. Environmental Health News. Retrieved April 3, 2023, from <https://www.ehn.org/plastic-environmental-impact-2501923191.html>
- United Nations Environment Programme. (2018, April). Plastic planet: How tiny plastic particles are polluting our soil. UNEP. Retrieved April 3, 2023, from <https://www.unep.org/news-and-stories/story/plastic-planet-how-tiny-plastic-particles-are-polluting-our-soil>
- Meiffren-Swango, C. (2023, February 10). The label says 'widely recyclable.' is it true? Environment New Jersey. Retrieved April 3, 2023, from <https://environmentamerica.org/newjersey/articles/the-label-says-widely-recyclable-is-it-true/>
- Winters, J. (2021, September 16). California wants to ban misleading recycling labels. plastic companies don't. Grist. Retrieved April 3, 2023, from <https://grist.org/politics/california-bill-bans-recycling-label-on-products-that-arent-recyclable/>

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