

SPRING 2024

# THE RAPPAHANNOCK REPORT

*The Rappahannock Group Sierra Club Newsletter*



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## EARTH DAY

*by Linda Muller*

Celebrate Earth Day on April 20, 2024, at Old Mill Park from 11am-4pm

It's the 20th Anniversary of Earth Day in Fredericksburg and the Rappahannock Group Sierra Club (RGSC) as an annual sponsor will be there with educational displays, interactive children's displays and much more as it has participated over the past 20 years!



# EARTH DAY

by Linda Muller

A Brief History of Earth Day in Fredericksburg:

On April 24, 2004, Earth Day in Fredericksburg was held at the Alum Spring Park. It was organized by Fredericksburg Parks and Recreation, the Sierra Club Battlefield Group (former name of now RGSC) and Friends of Alum Spring Park. Additional support came from Bob Gramman, the Fredericksburg National Armory, and the Fredericksburg Regional Transit Authority. Organizations that tabled at the 2004 event included: Central Virginia BeeKeepers Association-East, Chesapeake Bay Foundation, Cooperative Extension: Tri-County/City SWCD, Friends of Alum Spring, Friends of the Rappahannock, Girl Scout Troop 871, Mary Washington College Ecology Club, Master Gardeners Association of the Central Rappahannock Area, Rappahannock West Nile Virus Task Force, Save Crows Nest, Sierra Club Battlefields Group, Sirenian International, Virginia Creeks Water Quality Monitoring Project, Stafford Creeks Water Quality Monitoring Project, and the Virginia Bluebird Society. Through the "magic" of Internet Archives, you can see the 2004 website of the Fredericksburg Earth Day listing!

<https://web.archive.org/web/20040504095616/http://www.localearthday.org/>

As the annual Earth Day Event grew with more community interest and participation, Earth Day in Fredericksburg was moved to a larger venue in 2010: Old Mill Park, Fredericksburg where we continue to celebrate. 2010 was the first year the Rappahannock Group introduced the "Living Green Award," a special recognition award presented to local businesses and/or organizations that have "taken steps and acted to help the earth and environment." The RGSC has awarded the Living Green every year at Earth Day since 2010. (2020 the exception due to the COVID-19 pandemic). Here is a link to the all the RGSC's Living Green Award Recipients:

<https://www.sierraclub.org/virginia/rappahannock/programs>

# EARTH DAY

## RGSC Booth: Themes & Educational Displays

Over the years, RGSC has selected special environmental issues and topics to highlight at the annual Earth Day Event. We have offered educational environmental displays on uranium mining, solar energy, conservation easements, hydraulic fracking, biosolids (a.k.a. sludge), climate change, recycling, plastics, pollinators, land conservation, backyard birds, water quality, phthalates to name a few. We've sponsored Earth Day student art contests and promote Sierra Club Outings. We also have included educational displays on civic engagement and participation. And yes, we have always included fun educational children's games and activities!

## Dedicated Volunteers Have Made the Difference

Over the years, RGSC's success is directly tied to the fantastic members & friends who volunteer their time and talent with RGSC on Earth Day. We have also enjoyed the creative energy and enthusiasm of student interns who have provided amazing support to RGSC throughout the years.

## JOIN US AT THE EARTH DAY IN FREDERICKSBURG APRIL 20, 2024

Be sure to stop by our display tents at this year's Earth Day. We enjoy meeting and greeting members, friends and supporters. We will have educational displays and information on a variety of environmental issues, information and sign up for RGSC's Outings, children's activities, and more. Dedicated to the Sierra Club's mission to Explore, Enjoy and Protect the Planet, and our own "Backyard."

Contact to volunteer/questions: RGSC Co-Chair Cynthia Hodges:

[grapesrgud10@gmail.com](mailto:grapesrgud10@gmail.com)

RGSC Program Chair: Paula Chow: [paulachow132@gmail.com](mailto:paulachow132@gmail.com)

Fredericksburg Parks and Recreation Earth Day website:

<https://earthdayfred.com>

# OUTINGS REPORT

by Geoff Johnson

Our first Outing of 2024 was held in February at Alum Spring Park in Fredericksburg. We toured the Virginia Central Railway (VCR) trail. Although the path is longer, reaching from downtown Fredericksburg to Idlewild Subdivision, we hiked 2.2 miles from Alum Spring Park to the trail end and returned. There are future plans to extend this trail across Interstate 95 into Spotsylvania County. After our hike, we met at Colonial Tavern, downtown Fredericksburg, for lunch.

The next Outing for RGSC will support Spotsylvania's 5th Annual Spring Community Cleanup Day on Saturday, April 6th. This is the second year RGSC has supported Spotsylvania Parks & Rec Cleanup Day. We will meet near the Spotsylvania Courthouse to begin our roadside cleanup. Afterwards, we plan to have lunch at Itavie New York Grill & Bakery near the courthouse. Further details will be provided in late March via the Outings Email list.

As always, these Outings are free and open to the public. If you would like to be on the email list for future RGSC Outings, please email Geoff Johnson [geoffwithrgsc@gmail.com](mailto:geoffwithrgsc@gmail.com)



# DATA CENTER ISSUES- POWER AND WATER

by Bill Johnson

At his “Jobs Event” in Fredericksburg earlier this month, Governor Youngkin was a giddy cheerleader for the data center industry. There is no doubt that this industry is transforming Virginia and it’s not just about industrial “hyperscale” buildings. It is true that more data flows through more Virginia counties to serve companies and their national and international clients. And that is quickly expanding, as he proudly cheered. Unfortunately, the governor didn’t give us the entire story.

Here’s what the Governor did not say:

- Amazon Web Services (AWS) is obligated to bring only 1,000 jobs to Virginia, not “thousands” of jobs.
- AWS and eligible companies are highly subsidized, to well over \$1 Billion, which will increase rapidly. Residents pay for the tax breaks that this industry commands.
- Data Centers in Virginia could require 25,000 Megawatts of power in the coming years. That alone is already reversing the planned closure of polluting fossil fuel plants, while undermining state requirements to clean the grid. With the current build out under way, we will need the equivalent of more than 28 new coal plants, and will have to live with significantly worsened air pollution because of that.
- The governor required no environmental commitments from AWS, such as requiring companies to procure clean energy to service their buildings or to meet aggressive energy efficiency standards. We will have to live with local, extremely polluting energy sources to support rapidly expanding world-wide technologies.
- The increased power needs do not include greatly expanded Artificial Intelligence applications. So, the amount of energy needed may require 10 times the current projections.
- There is no state plan to protect drinking water resources that will be needed to cool data center servers. So, local aquifers, rivers and streams will be depleted to cool the computer equipment, leaving the region short of drinking water from wells, lakes, and rivers.

## DATA CENTER ISSUES- POWER AND WATER

- Counties with large numbers of data centers show increased carbon emissions, while all other sectors report decreased emissions. And the thousands of diesel generators used as backup energy sources will significantly increase the air, light, and noise pollution for those living near data centers.
- Residents have not seen a reduction in local taxes due to data centers, but often County Board of Supervisors revel in the increased tax dollars received. We don't seem to benefit from those, however, although the industry benefits greatly from their tax savings.

The Governor also ignored this: The data center industry defeated every bill introduced in the General Assembly this year that would have protected ratepayers from the cost of new infrastructure to power data centers, preserved water resources needed for cooling, protected parks from encroaching development, and instituted reporting requirements for energy demand, water usage, and pollution.

The Governor is right that the data center industry is having a “ripple effect.” He just didn't tell you that the ripples will affect your health, your pocketbook, your water, and your air.

One last question: Where will the additional power come from for the data centers? Add more nuclear reactors onto a site that is on an earthquake fault line? Even more nuclear waste will need to be stored on that site? The site prone to earthquakes will have to store more nuclear waste, forever.

In 2011, an earthquake's epicenter was 12 miles away from the North Anna site. That earthquake exceeded the design specs for those nuclear power plants. Could the plants withstand another such earthquake? Or one slightly larger?

# VIRGINIA JOINS OTHER GREEN "BANK" STATES

by Natalie Loeffler

As of March 4th, 2024, Virginia legislation voted to establish the VA Clean Energy Innovation Bank (or Green Bank) in an effort to finance the state's clean energy plans and reduce greenhouse gas emissions. This bill places an emphasis on benefitting everyone, especially people in low-income areas. This means it will make sure that projects like solar panels or flood defenses are affordable and accessible to everyone. It is currently awaiting Gov. Youngkin's signature.

What is a Green Bank?

The goal of the Green Bank is to leverage relationships, innovative ventures, and private capital to promote the development of a clean energy economy and access to clean energy technology for everyone.

The Green "Bank" uses government funds as seed money, but aims to sustain itself long-term through public funds like grants or loans. It will be supervised by a board of nine directors, five citizen members appointed by the Governor, and four ex officio members (individuals who become members through their role in a related organization or agency).



Fairfax County Green Bank Ordinance Framework

## VIRGINIA JOINS OTHER GREEN "BANK" STATES

The bank, as outlined by SB 720, will need to appoint a president and hiring staff, conduct public outreach, come up with a strategic plan, find investment opportunities, and meet reporting requirements to fulfill tax exempt status of a 501(c)(3) entity.

Taking the lead:

Fairfax County is the first VA county to publish plans to establish a Green Bank in effort to meet their carbon goals by 2050. Outside of VA, 15 other states and Washington D.C. have been implementing this project since 2011.

Take action!

On top of supporting sustainable practices and reducing greenhouse gas emissions, these banks are set to create hundreds of jobs, support businesses, and build resilient infrastructure. The time to start fighting the climate crisis was yesterday. Take action! Write to your local representatives and Board of Supervisors to see how a Green Bank will fit into your community.



# VANGUARD AND THE MOUNTAIN VALLEY PIPELINE

*by Nathan Ferm*

There are a handful of issues surrounding the construction and impending completion of the Mountain Valley Pipeline (MVP). These include environmental repercussions, with the primary concerns being deforestation and water pollution. Picture vast swaths of cleared land and water muddied with contamination. This pipeline has the potential to have a concerning impact on the natural landscape.

One particularly alarming aspect is the pipeline's route over particularly steep and landslide-prone terrain, a characteristic unique to the MVP. This geographical challenge can potentially worsen the difficulties already associated with pipeline construction and maintenance. Erosion and weathering on such steep slopes pose significant threats, potentially leading to disruptions in the pipeline's operation and maintenance.

Moreover, the historical context of the land traversed by the pipeline is significant. The MVP encroaches upon territories historically belonging to indigenous communities. Of particular concern is the disruption of native burial grounds, which have been dismissively labeled as mere "piles of rocks" by officials associated with the project. This disregard for indigenous heritage highlights broader issues of environmental injustice and the exploitation of marginalized communities.

There is also the imminent threat posed to water sources by the pipeline's construction and operation. The MVP was discovered to intersect with lakes, aquifers, and various other critical water bodies, threatening not only local ecosystems but also the water quality essential for nearby communities. There is a vast potential for leaks, spills, and contamination, raising grave concerns about the long-term viability of these water sources.

## VANGUARD AND THE MOUNTAIN VALLEY PIPELINE

A particularly striking revelation for environmental groups was the apparent overstatement of the demand for gas that the MVP aims to transport. This calls into question the necessity of the pipeline itself, casting doubt on the justification for its construction. With the project already 63% complete, urgent calls were made to halt further progress to mitigate the potential for irreversible harm.

Overall, this information can act as a rallying cry for increased awareness and action to address the challenges posed by the development of the Mountain Valley Pipeline. To address such a complex problem, we need collective action in confronting environmental degradation and upholding justice in the face of corporate interests.

Check out these links aimed at mobilizing efforts to stop funding for the pipeline:

<https://vanguard-sos.com>

<https://vanguard-sos.com/vanguard-is-threatening-my-farm-in-appalachia/>

<https://vanguard-sos.com/vanguard-stop-funding-the-mountain-valley-pipeline/>



# HAIR CARE: DANGEROUS TREATMENTS & SAFER OPTIONS

by Linda Muller

Many assume that if a personal care product is found on the shelf of a favorite store, it must be safe and o.k. to use. Unfortunately, that is not the case. Hair care products are classified under FDA rules as "cosmetics" and there is limited regulation related to these products such as hair dye additives or if there are medical claims (such as dandruff applications). Cosmetics do not require pre-approval or testing by the FDA and leave it up to the manufacturers to attest to the product safety and ingredient integrity.

Reading ingredients on a bottle of shampoo or hair treatment product often requires a degree in chemistry to understand what may or may not be safe to use.

However recent medical research studies have revealed that frequent users of hair straighteners (and relaxer products) are at a higher risk of developing uterine and ovarian cancer.

STUDIES BY THE NATIONAL INSTITUTE OF HEALTH (NIH) 2022 & 2021

The NIH's National Institute of Environmental Health Sciences examined the hair care habits of more than 33,000 women and found that those who used chemical hair straightening products at least 4x a year were more than twice as likely to develop uterine cancer. "Uterine cancer accounts for about 3% of all new cancer cases but is the most common cancer of the female reproductive system, with 65,950 estimated new cases in 2022. Studies show that incidence rates of uterine cancer have been rising in the United States, particularly among Black women." These results are alarming.

<https://www.nih.gov/news-events/news-releases/hair-straightening-chemicals-associated-higher-uterine-cancer-risk>

Researchers said chemicals like parabens, phthalates and fragrances in hair products disrupt the endocrine system (a.k.a. endocrine disrupters) and can ultimately impact endocrine hormone sensitive organ systems including breast, uterine and ovarian tissues. Additionally a NIH study in October 2021, suggested that "frequent use of hair straighteners/relaxers or pressing products, which are primarily used by African American/Black women, and possibly permanent hair dye, may be associated with the occurrence of ovarian cancers.

<https://pubmed.ncbi.nlm.nih.gov/34173819/>

# HAIR CARE: DANGEROUS TREATMENTS & SAFER OPTIONS

## EASIER TRANSMISSION THROUGH THE SCALP

As discussed in the NIH studies, the scalp provides a potent pathway for chemical absorption:

"Chemical exposure through the pathway of hair product use, especially straighteners, could be more concerning than other personal care products. Higher percutaneous absorption of chemicals has been observed in the scalp compared with other skin such as on the forearm, palm, and abdomen. Straightener use may cause scalp lesions and burns, which facilitates the permeability of chemicals through the scalp."

The study then describes the potential for more chemical exposure via the ironing or blow drying "after treatment."

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9949582/>

Heating processes such as flat ironing or blow drying during straightening treatments could release or thermally decompose chemicals from the products, leading to potential higher exposures to hazardous chemicals among the users."

It has long been suspected that the chemical cocktails in certain personal care products had potential negative impacts on human health. It's only been within the past 5 years that results from longer-term scientific epidemical studies have uncovered the evidence.

## SOLUTIONS: DEMAND SAFER PRODUCTS-FIND SAFER PRODUCTS-GO NATURAL

One research scientist involved in the 2022 NIH study who has used hair straightener products said that she just stopped using them altogether, and will go natural. And more recently manufacturers of the toxic hair straighteners have faced mass tort and product liability lawsuits.

<https://www.forbes.com/advisor/legal/product-liability/hair-straightener-lawsuit/>

## HAIR CARE: DANGEROUS TREATMENTS & SAFER OPTIONS

Chemicals are found in every category of personal care products used by women, men and children. Fortunately, there are some resources that can help assist consumers in finding personal care products that contain safer and less toxic ingredients. Environmental Working Group (EWG) has long been recognized as a leader in providing ratings for tested brand-name personal care products. EWG has developed its own "healthy living" app (for iPhones and Android) that can be easily accessed during your next shopping trip. <https://www.ewg.org/skindeep/>

The Campaign For Safe Cosmetics offers a large selection of educational materials related to beauty product chemicals and safety. [www.safecosmetics.org](http://www.safecosmetics.org)

The organization also offers its own searchable database "Non Toxic Black Beauty Project" that assists with smarter, safer product choices. <https://www.safecosmetics.org/black-beauty-project/>

Knowing and understanding that some personal hair care products contain toxic chemicals can motivate consumers to make better choices. It may require an extra step on the part of the consumer to dig a little deeper to find the product that works best or even to forego straighteners all together. In some cases it takes legal action to demand safer personal care products. We all deserve to live healthier lives.



## VIRGINIA SHARED SOLAR PROGRAM

*by Cara Romaine, Senior Project Development Associate, ESA-Solar*

In a recent win for the environment, the General Assembly has approved a 150 MW expansion of the Virginia Shared Solar (VSSP) Program. VSSP, also referred to as Community Solar, is an energy policy focused on enabling fixed-income retirees and low-income households to purchase discounted electricity from 10 – 50-acre projects (the program rules limit single projects to 5 MW or under).

Through participation in a community solar subscription, households can enjoy the advantages of renewable energy without the initial investment required for installing solar panels themselves.

To contextualize the impact, 150 MW of solar in Virginia can support about 30,000 households. At an average savings of 10% per year per household (~\$200), we are looking at well over \$100 million in savings during the lifetime of the program.

In addition to the consumer savings, these community solar facilities contribute to the local economy through county taxes, including Machine & Tools Tax and Property Taxes. These developments upgrade local energy infrastructure making them more resilient and efficient.

on the 13-acre Enon Road Solar Project for example, it is slated to generate power for 600 households, create \$400,000 in new tax revenue, and invest \$1.25 million into the local energy infrastructure. And all of this will be achieved while preserving 23-acres of open space, farmland, wetlands, forests, and historic barn structures. These important environmental attributes are at-risk from single-family or industrial development patterns throughout the Hartwood District.

Another positive aspect of community solar is the ability for projects to incorporate solar grazing, or agrivoltaics. These practices bridge the gap between agriculture and ground mounted solar. By incorporating sheep and cattle grazing into sites, projects can achieve a dual-use purpose and avoiding the classic Food vs. Fuel debate which plagued the ethanol industry.

Altogether, community solar is a win-win for Stafford County. The County should embrace the new tax revenue and diversify the development patterns to avoid further strain public schools and local water, energy, and traffic infrastructure.

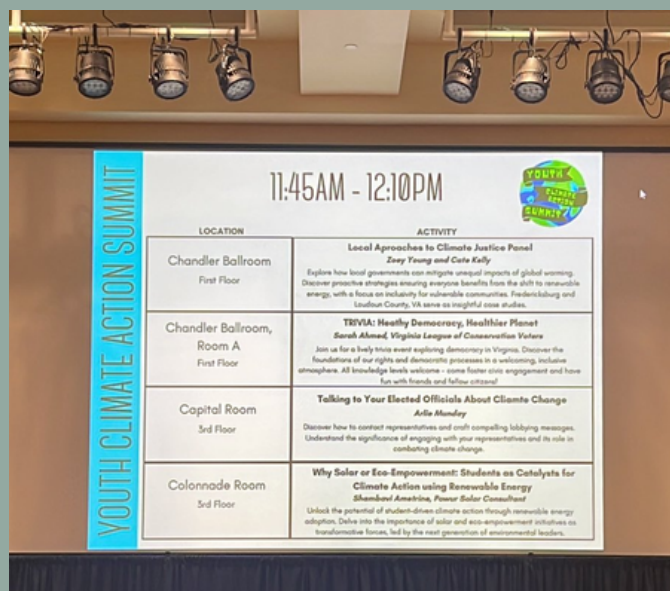
# RECAP: YOUTH CLIMATE ACTION SUMMIT

by Victoria Gallaway

Last month, environmentalists congregated at the University of Mary Washington for the Youth Climate Action Summit where students presented on environmental topics they are passionate about. Among these topics were the unsustainable nature of fast fashion, the importance of protecting reptiles, and the upcoming influx of data centers into the region. Many young activists spoke about their interests and the issues that they will likely follow for the rest of their lives.

The Rappahannock Group Sierra Club tabled at the event and provided a wide array of reusable bags to anybody who would pledge to never use a plastic bag again. Each person can make the choice to cut down on their own use of plastic, and this can start with simply bringing a reusable bag to the grocery store to avoid needing a plastic one.

SODEXO, the University caterer, used no single use plastic while serving lunch to the hundreds in attendance. The Sierra Club had been in discussions with SODEXO on how to make this event as environmentally friendly as possible.



LOCATION	ACTIVITY
Chandler Ballroom First Floor	<b>Local Approaches to Climate Justice Panel</b> <i>Zoe Young and Cole Kelly</i> Explore how local governments can mitigate unequal impacts of global warming. Discover proactive strategies ensuring everyone benefits from the shift to renewable energy, with a focus on industry for sustainable communities. Fredericksburg and Loudoun County, VA serve as insightful case studies.
Chandler Ballroom, Room A First Floor	<b>TRIVIA: Healthy Democracy, Healthier Planet!</b> <i>Sarah Ahmad, Virginia League of Conservation Voters</i> Join us for a lively trivia event exploring democracy in Virginia. Discover the foundations of our rights and democratic processes in a welcoming, inclusive atmosphere. All knowledge levels welcome - come foster civic engagement and have fun with friends and fellow citizens!
Capital Room 3rd Floor	<b>Talking to Your Elected Officials About Climate Change</b> <i>Allie Munday</i> Discover how to contact representatives and craft compelling lobbying messages. Understand the significance of engaging with your representatives and its role in combating climate change.
Colonnade Room 3rd Floor	<b>Why Solar or Eco-Empowerment: Students as Catalysts for Climate Action using Renewable Energy</b> <i>Shambodh Amshin, Power Solar Consultant</i> Unlock the potential of student-driven climate action through renewable energy adoption. Delve into the importance of solar and eco-empowerment initiatives as transformation forces, led by the next generation of environmental leaders.

## TRAVELOGUE NEW ZEALAND

by Paula Chow

New Zealand is an island nation, North Island and South Island and both have great and different biodiversity from the very north to the very south. The current population is 5,257,399, three-fourths living on the north island.

80% of NZ energy is hydroelectric, geothermal and wind. Currently, there are 14 - 15 wind farms. NZ declared themselves to be nuclear free in 1987, the only one in the Pacific while their neighboring continent and country, Australia, is not. All but one coal plant has been shuttered. The sole coal plant is available as a backup, turning on only for an emergency.

The kiwi bird was endangered but NZ has been successful in increasing their numbers. The status is "under predator control." Kiwis are nocturnal, flightless and live solitary lives. I was able to see two in separate conservation cages but they were difficult to spot due to their camouflage with the terrain and dull glass enclosure. I was able to really enjoy the third as it foraged for food alongside the open glass enclosure of its conservation cage at Pūkaha National Wildlife Centre ([pukaha.org.nz](http://pukaha.org.nz)) three hours north of Wellington.



Photos were not allowed in the kiwi conservation centers. This is a museum example.



## TRAVELOGUE NEW ZEALAND

The captive breeding program at Pūkaha is also a breed and release program. Their aviary success is with the kiwi, kākā, kōkako, whio and orange fronted kākārīki (all birds).

Predators of the kiwi are sloat, possum, dogs and cats. There are no snakes in NZ.

Of interest at Pūkaha was the tuatara, a living dinosaur. The tuatara has been around for 9 million years. They are considered to be living fossils as they are the only survivors of a distinct group of reptiles that roamed the land the same time as dinosaurs.

Tuatara escaped extinction by being cut off from predators when New Zealand separated from Gondwana about 90 million years ago. They lived successfully throughout mainland New Zealand until humans arrived and introduced harmful predators.



Tutuara - a living dinosaur

## TRAVELOGUE NEW ZEALAND

Tuatara look like lizards, but their skeletons show many differences. They are slow movers, so they are ideal prey to the many mammalian predators that humans brought with them when they arrived in NZ, such as cats, dogs and rats to name a few.

Tuatara do everything at a slow pace. They are cold-blooded so they don't need much food as everything is processed much slower. They love to eat small animals and insects, especially weta (insect). Adult tuatara have been known to be cannibals, so young tuatara stay out of their way preferring to be active during the day.

Adult tuatara are nocturnal and prefer cool weather. However, they will often be found basking in the sun to warm their bodies.

Female tuatara lay up to 19 eggs every three or four years. The eggs are laid in a shallow hole in the ground and are not cared for in any way by the parents. The young hatch after 11- 16 months. Their gender is determined by the incubation temperature of the egg - warmer incubation produces males, cooler produces females.

Generally tuatara mature around 13 years of age. They can live long lives in predator free or captive environments, sometimes up to 100 years or more.

Bird sightings were infrequent during my trip, although the lakes were populated with black ducks, a couple of black swans and geese. My travel companions did experience the NZ fantail bird flitting about their feet trying to find food after people walked the ground.

## TRAVELOGUE NEW ZEALAND

Some data from Te Papa Museum in Wellington: (rough estimates)

- 55% of marine invertebrates are found only in NZ
- 35% of native seaweeds are found only in NZ
- 30% of native spore plants and fungi are found only in NZ
- 85% of native seed plants are found only in NZ
- 73% of native birds are found only in NZ
- 80% of native land invertebrates are found only in NZ
- 100% of native frogs, reptiles and bats are found only in NZ

The *Entoloma Hochstetteri*, the sky blue mushroom, is endemic to NZ. It is found on the back of the NZ \$50 banknote, the only banknote to feature a mushroom.

The north island's volcanic soil made for poor growing conditions. They figured out that planting forests of pine and Douglas fir worked which is about 80% of the volcanic forests.