

Bringing Green To The City

A resource guide for the Wilmington, Delaware community.

unlocking the hidden treasures of a forgotten city...

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This guide is not meant to be read as a book, front to back.. But rather a **pick about**. Use this table to find the topic you're looking for and head there, look around, find something cool and return when you're ready.

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A Word From the Author

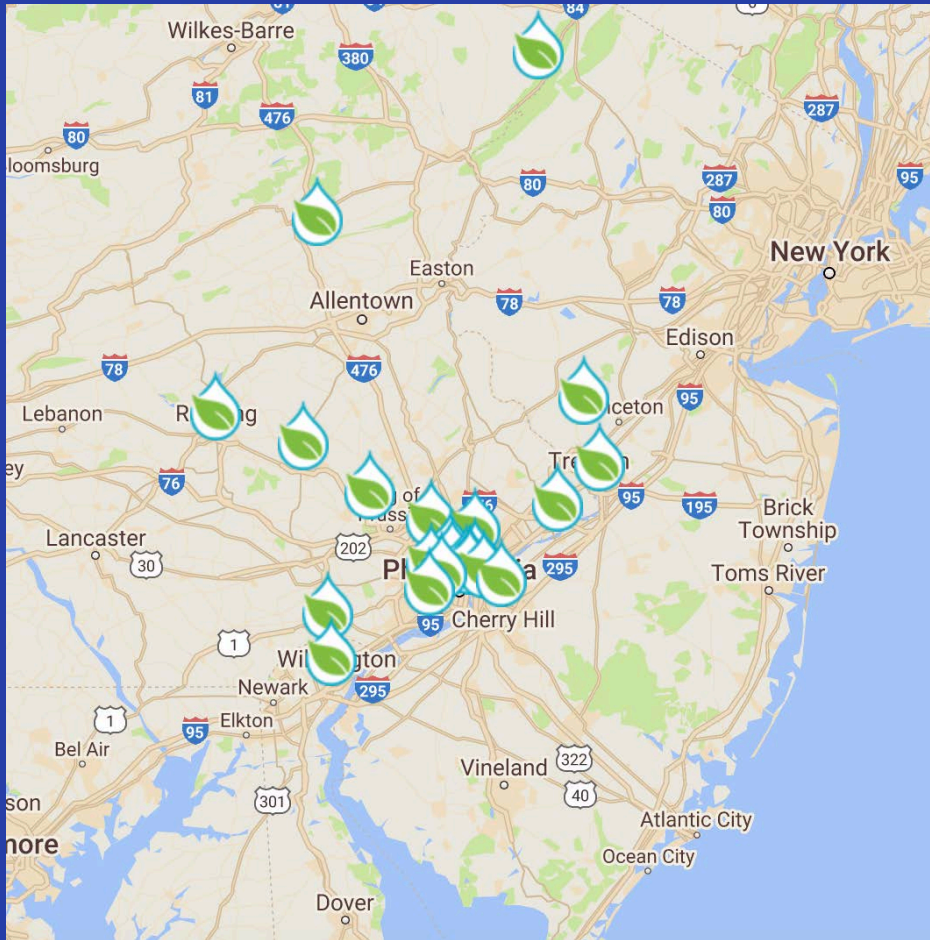
Bouncing around in town and back to the county, I have lived in Delaware for most of my life. I found my **love for nature** in riverside right on the corner of Heald street where my grandmother Gloria kept a garden full of herbs, cacti, and other beautiful plants. Each time I visited, we would get to pulling weeds and messing in the dirt. She always reminded me that **we had a duty to Ms. Earth** because she couldn't take care of herself. My great grandmother Mimi expanded this thinking by **stopping me from killing any bugs** on her premises. She'd say, "that bug wasn't bothering you so why'd you go bothering it". At first, I thought she was crazy but then I slowly began to realize that each and every being in this world has a purpose. No **purpose** more significant than the other.

The purpose of the plant is to **grow** and to feed the bug whose purpose is to grow and to **feed** a bigger bug or maybe an animal. In a way, we follow the same purpose and that we grow to feed the earth with our individual contributions **whether big or small**. I always felt that my purpose was to care for those who could not care for themselves and if my two hands could reach every plant, every bug, or every spec of dirt on the earth I would care for it all. Since I cannot, I hope that my words will **touch the ears** of the masses who will discover that they are not far removed from Ms. Earth than that of a plant or bug. I hope that I can inspire people to be **one with nature**.



Who Are We?

The Basics



Each summer, the Alliance for Watershed Education teams up with **23 centers** across the Pennsylvania tri-state area to hire a group of fellows. These fellows are given the task of educating and connecting the community with their local waterways through various **capstone projects**.

My name is **Charlye Stewart** and I am the Summer 2020 Watershed Fellow for The Nature Conservancy and First State National Historical Park. My capstone project is centered on the downtown Wilmington community and ways in which to **better engage people** with the natural world around them. To do so, I plan to spread awareness on the return of the Brandywine Shad and the activity surrounding the return, in hopes of bringing the community to their watershed.

The Partners

Alliance for Watershed Education

- Funded by the William Penn Foundation and with the help of the Circuit Trail centers, the Alliance puts an emphasis on the connection between the people and their watershed through **education**.

The Nature Conservancy

- With a strong focus on climate change, land & water protection, food & water sustainability, and **healthy cities**, this global non-profit seeks a world where nature and its people can live as one.

First State National Historical Park

- Gaining its National park rank in 2013, this historic Lenape village now serves as a green space for the public as a means of **recreation and research**.



Watershed and The Community

A watershed is all the land that drains into common bodies of water like the ocean or a stream.

Shown on the right is the Brandywine Creek, the local watershed for the Wilmington community.

Here you can often find people swimming, fishing, and congregating for recreation.



What you may not know is that this creek serves as the main water source for surrounding neighborhoods.

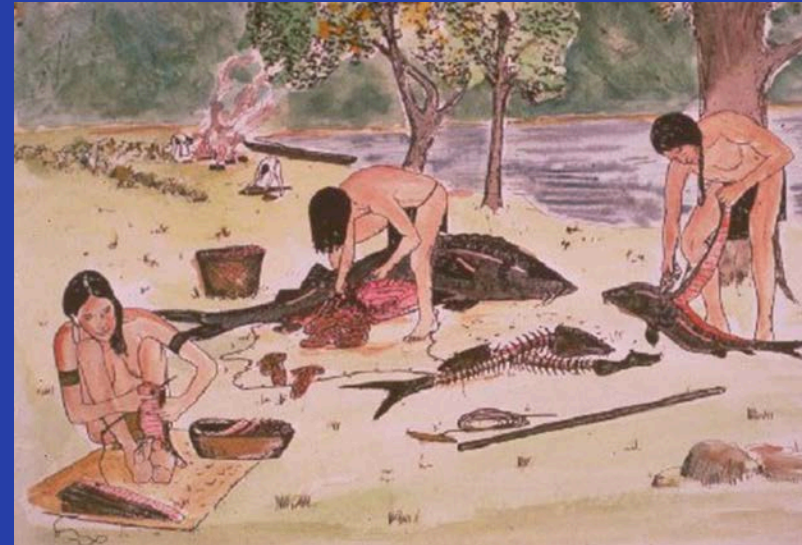
Oddly enough, most of the people who live in Wilmington have no idea this creek exists.

Dating back to the ancient times, this waterway continues to play a monumental role in history.

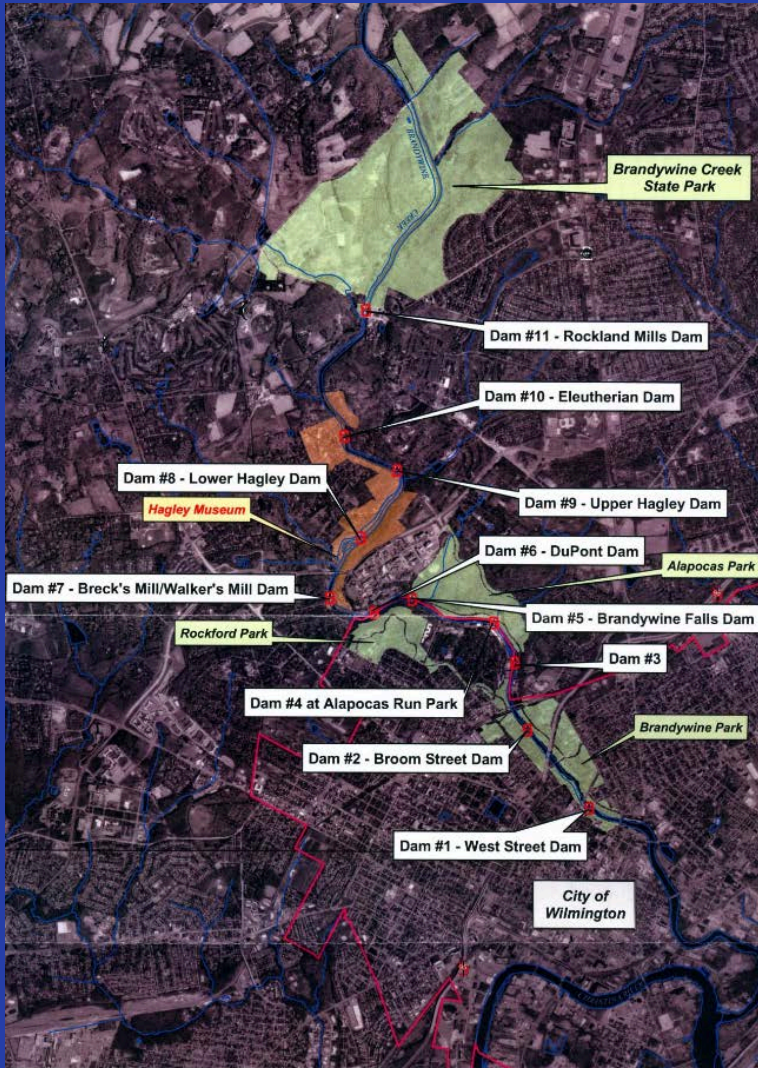
The Happenings

BREAKING NEWS: THE AMERICAN SHAD HAVE RETURNED TO THE BRANDYWINE

The American Shad was a prominent food source to the Lenape tribe for centuries in that it could be saved through harsh winters. Over time with colonization, the Lenape were moved out and the waterways in which the shad swam were filled with industrial dams. From there, the population of shad in the Brandywine slowly dwindled to an unrecoverable state... or at least we thought...



Dam Removals



Brandywine Shad 2020 is an interdisciplinary team of research professionals, organizations, and citizens aiming to restore the historic fish across the watershed.



This team has worked to remove dam #1 and is currently in the process of having dams #3, #4, and #6 removed. With the removal of the first dam, the team has already reported multiple shad sightings.

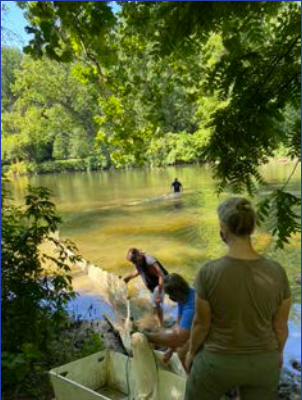
An anadromous fish, the shad typically swims up stream to spawn before returning to the sea. Because of this, the team has conducted a series of juvenile fish surveys where we hope to observe fluctuations in the species population.



The Process & The Purpose



#1: Map out the **perfect** spots, quiet and deep enough for the net. We would complete one survey above and one below the **dam** pictured on the left.



#2: The materials are then checked and prepared for entering the **water**. Once in the water, the **team** ensured that the net was anchored at the bottom of the creek for the fish to **swim** into.



#3: After a short while, the net is pulled from the water and the **species** captured are observed and recorded for research purposes. The species are then **released**.

Biodiversity, Recreation, Community

Free flowing waters open the door for a variety of species to travel to the Brandywine. In fact, we have spotted American eels which are often vectors for mussels that improve water quality!

Fewer dams means more fish for recreational fishing, and greater opportunity for activities like tubing and kayaking!

The Brandywine is an important resource that provides drinking water and a sense of cultural and historic pride to Wilmington residents!

*See the Juvenile Fish Survey in resources.

World Fish Migration Day

In celebration of fish like that of the shad who swim a distance to complete a **life cycle**, we have World Fish Migration Day.

The purpose of this day is to connect the people with the fish and the rivers around them. In doing so, we promote **healthy rivers** and increased fish populations.



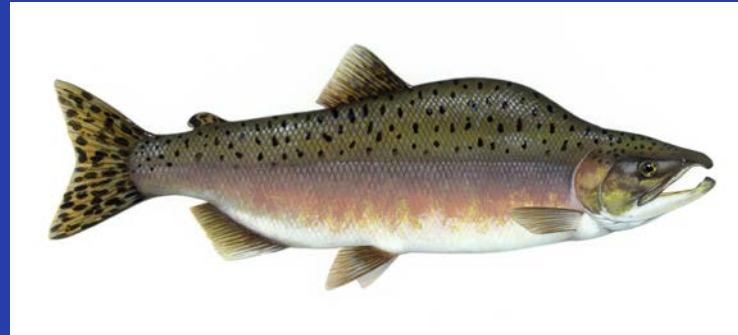
Originally held on May 16th, this year's celebration has been extended to **October 24th**. On this day, people around the world will pay homage to this group of fish through **community events**, fundraisers, and competitions.

Familiar Migratory Species:

Featured top to bottom are the **anadromous species** Blueback Herring, Alewife, and American Eel. All of which can be seen in and around the Brandywine.



The Atlantic species of Salmon is **potamodromous** in that it only migrates in fresh water.



Your Role

Many people think that the task of environmental change is **too big** to conquer, others are simply **unaware** of the issue. Here are some ways in which you can help protect your community that will ultimately lead to **healthier waterways**.

One of the easiest things to do is to **pick up your trash!**

Trash that is left on the street often ends up in our watersheds making it **unsafe** for us to swim & drink. For fish, this pollutes the waters sometimes causing **illness and death**.



A thought to **ponder**:

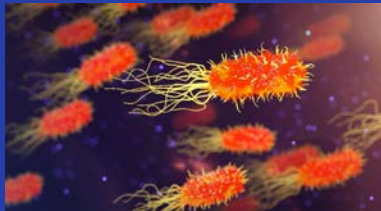
When **venturing** out, take a plastic bag with you and collect trash along the way.

Revisit the bag and take **note**, at the end of the day.

After weeks and weeks of collection, I would love to hear you say... I have made a **difference** in my community, some how some way.

You Are Much More **Connected** Than You Realize: Where Does Your Water Come **From**?

- There are **500+** miles of streams that all drain into the watershed.
- The city uses **filtration** systems and other **quality** analysis efforts to attempt to keep the waters clean.
- Some potential water **contaminants** include (most often caused by humans):



Viruses and bacteria



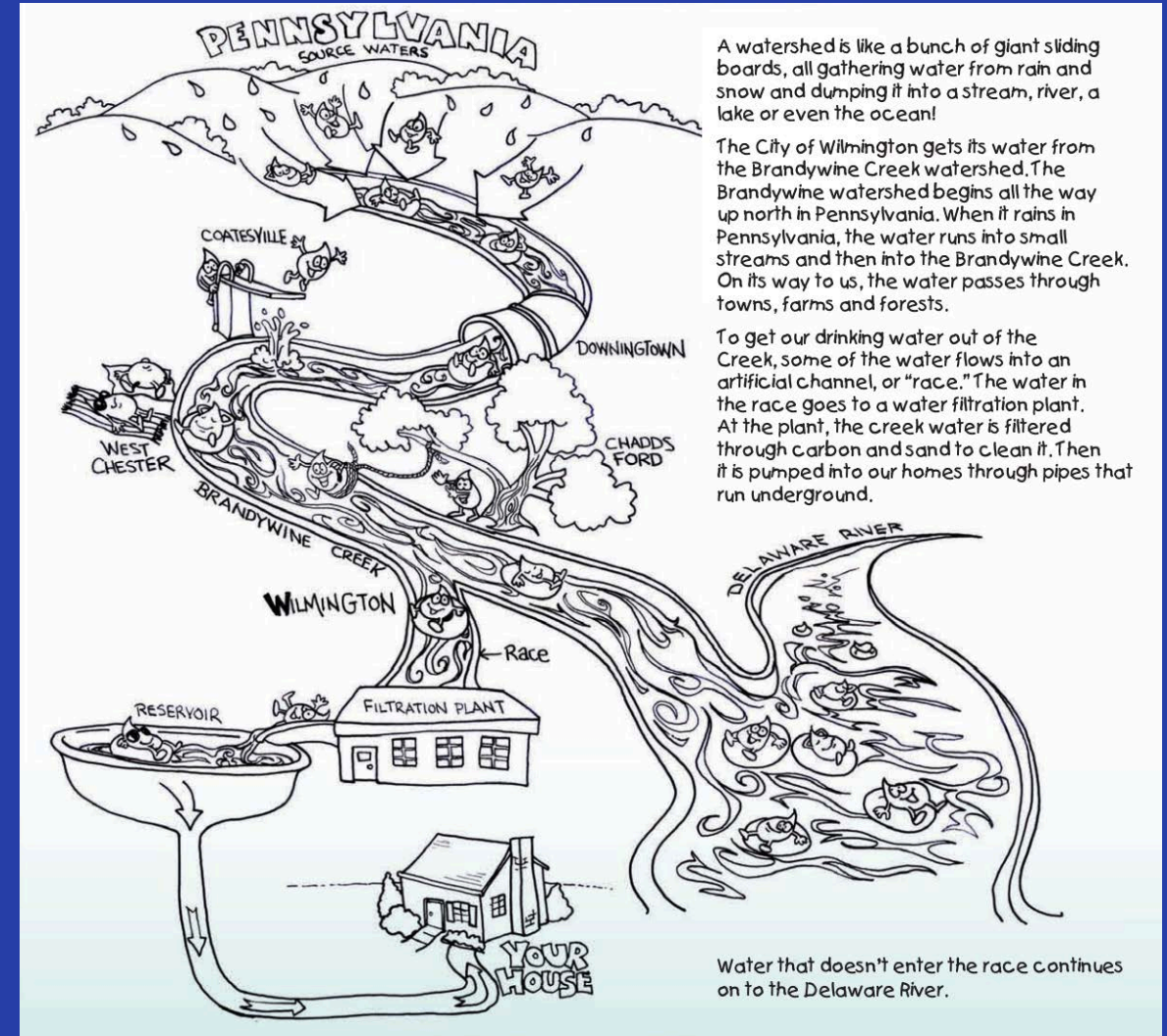
Salts and metals



Pesticides and cleaners



Organic and Radioactive
waste

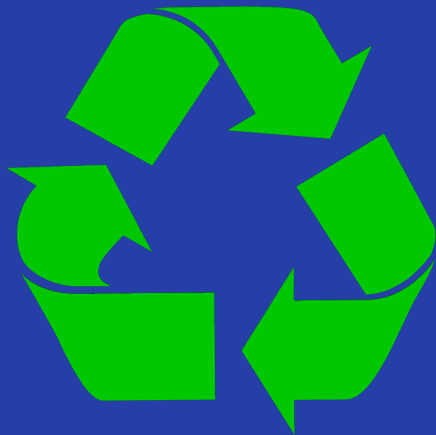


City of **Wilmington** water works

Here are some more *simple* To Dos: to help your community



use *reusable* bags and water bottles



Reduce, reuse, *recycle*



Carpool or *walk* if possible



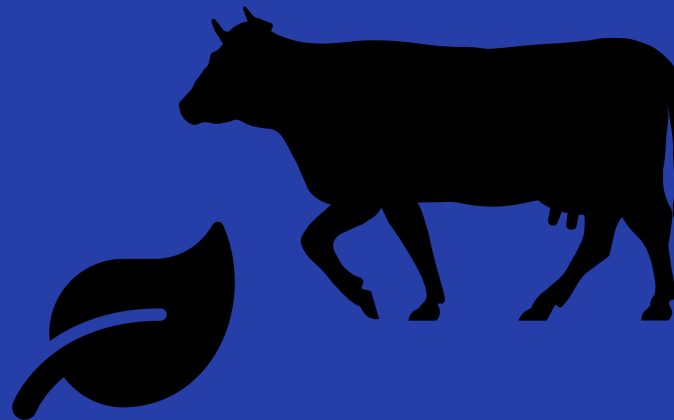
Don't print it if you can *email* it



Start a *compost*



Turn *off* the lights



use *sustainable* meat products



Decrease shower time

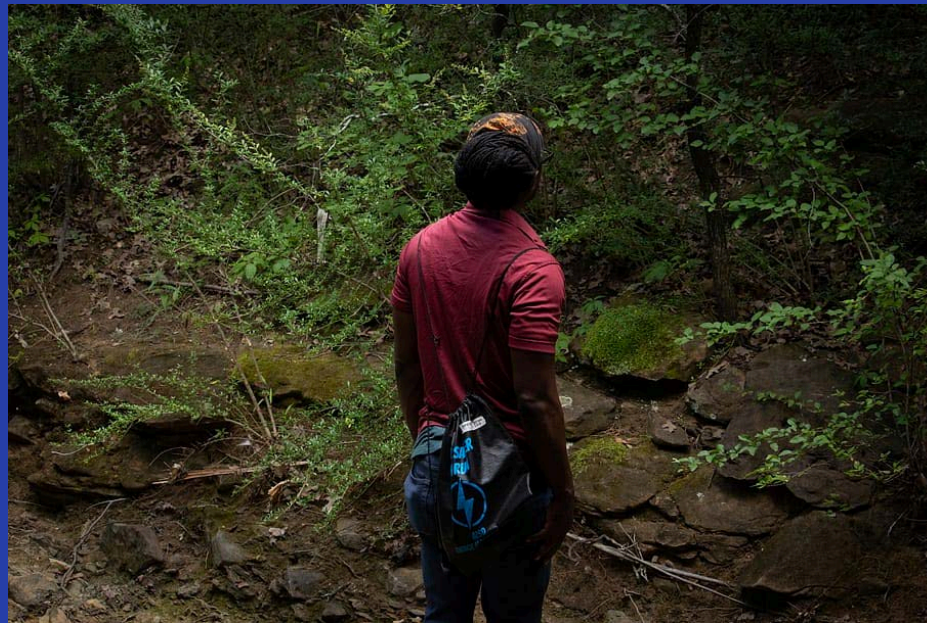
Just For Fun

Nature as Therapy (Ecotherapy)

For many years, people looked to nature as a means of **healing** by way of medicines and recreation. One of the earliest known practices is that of **Shinrin-yoku** or "Forest Bathing". This is not literally taking a bath but rather allowing yourself to be fully **submerged** in nature in a way that stimulates all your **senses**.

This practice is known to:

- **Lower** blood pressure and pulse rate
- Decrease nerve **activity**
- Lower stress related **body** hormones



Here are some other environment related therapies:

- Beekeeping
 - For PTSD victims and prisoners
- Gardening
 - For Cancer survivors



Response to COVID

With COVID-19 having a large impact on daily life, people have been more inclined to go **outside**. There has been an increase in park visitors and even an increase in things like bike sales.

Whether this increase stems from boredom or as an **outlet for stress**, it is beautiful to see just how nature can provide comfort for all **different** types of people.

With a decrease in human activity in urban spaces, the animals have also been **"getting out more"**. Scientists are marking a new era called the **Anthropause**, in which animals are returning to their original home range. This shows that it is not necessarily the infrastructure keeping animals away but rather the people. See the resources section for more information.



Nature Places

Here are some of the **hidden** gems located in and around Delaware. Take the time to visit and get acquainted. Your **soul** will thank you 😊

First State National
Historical Park

Activities:

swimming, biking,
walking trails,
fishing



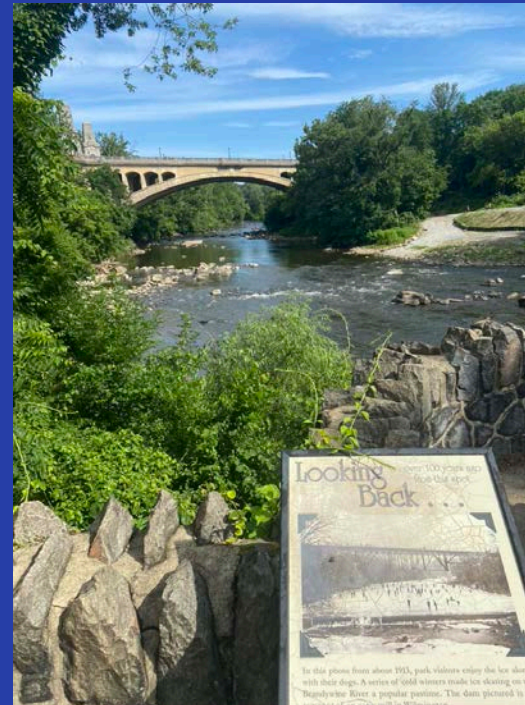
Dupont Environmental
Education Center

Activities: canoeing,
biking, **walking trails**



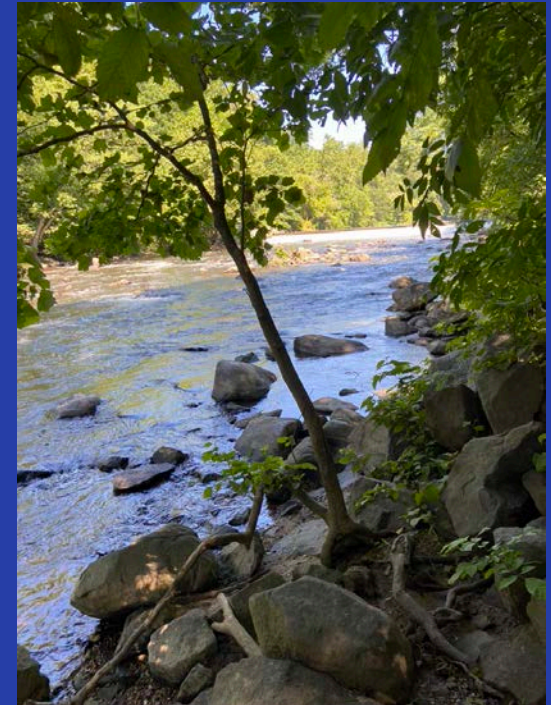
North Park Drive

Activities: walking trails,
fishing



Brandywine Park & **Zoo**

Activities: fishing,
biking, walking trails



Alapocus Run State Park

Activities: **swimming**, biking,
walking trails, fishing, rock climbing



Mike Castles Trail

Activities: biking, **walking trails**,
fishing, boating



John Heinz Wildlife Refuge

Activities: **biking**, walking
trails, fishing



Battery Park

Activities: biking,
walking trails, fishing
boating

Kilgore Falls

Activities: biking,
walking trails,
fishing, **hiking**,
swimming

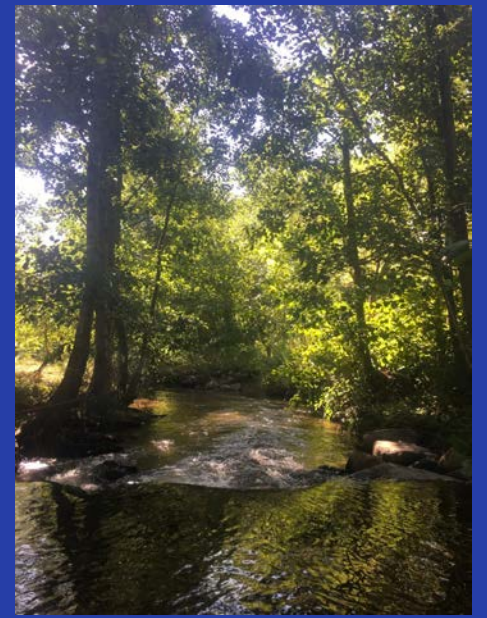


Newark Reservoir
Activities: biking, walking trails, park

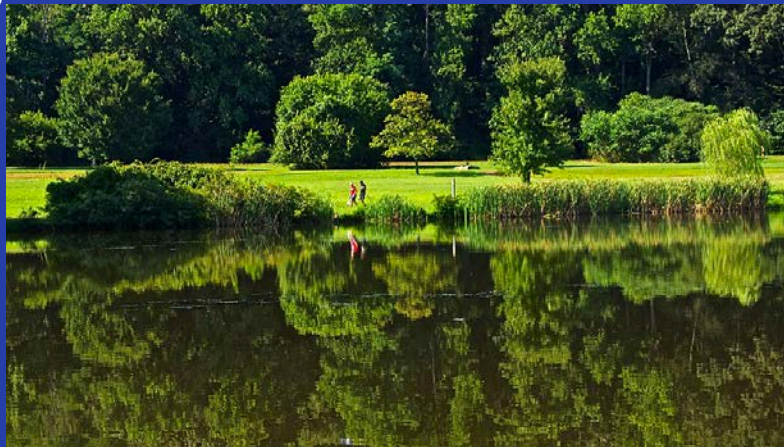


Augustine Beach
Activities: walking, fishing, boating

Berks Nature
Activities: walking trails, biking, fishing, snorkeling



Bellevue State Park
Activities: biking, walking trails, park and mansion, fishing



South Cape May Meadows
Activities: walking trails, biking, fishing, sightseeing



Glasgow Park
Activities: biking, walking trails, park



Bartram's Garden

Activities: biking, walking trails, park and mansion, fishing, **guided tours**



Killen's Pond:

Activities: biking, walking trails, waterpark, fishing, **paddle boating**, boating, camping



To name a few more:

- Coolspring reservoir
- Bombay Hook
- Banning park
- Ashland Nature Center
- Delaware City
- Gunpowder Falls
- Conowingo Dam Fisherman's Park
- Susquehanna state park
- Susquehannock State Park
- Marsh Creek State Park

Silver Lake Park

Activities: biking, walking trails, fishing, **picnicking**



Lum's Pond:

Activities: biking, walking trails, **fishing**, paddle boating, boating, camping



Nemours Mansion and Gardens:
walking & sightseeing



Winterthur Mansion and Gardens:
walking & sightseeing



Delaware Center for Horticulture:
walking & sightseeing



Shofuso Japanese Tea House and Garden:
walking & sightseeing



Longwood Gardens:
walking & sightseeing



Trail Systems and Etiquette

Here are a few things to **note** when navigating through parks and trails:



White Clay Creek State Park: walking trails, biking, hiking

- Many trails are hidden, **never** walk alone or at night
- Please do not **litter**, it may end up in a stream or eaten by an animal
- Make sure your phone is **charged**, many Delaware trails do not have signs for direction
- Do not pick up any bugs or **animals**, not only will you harm them, but they may bite or be venomous

Poison Ivy:

Keep **away** from leaves of three!



Poisonous spider's **native** to Delaware:

Black Widow & Brown Recluse

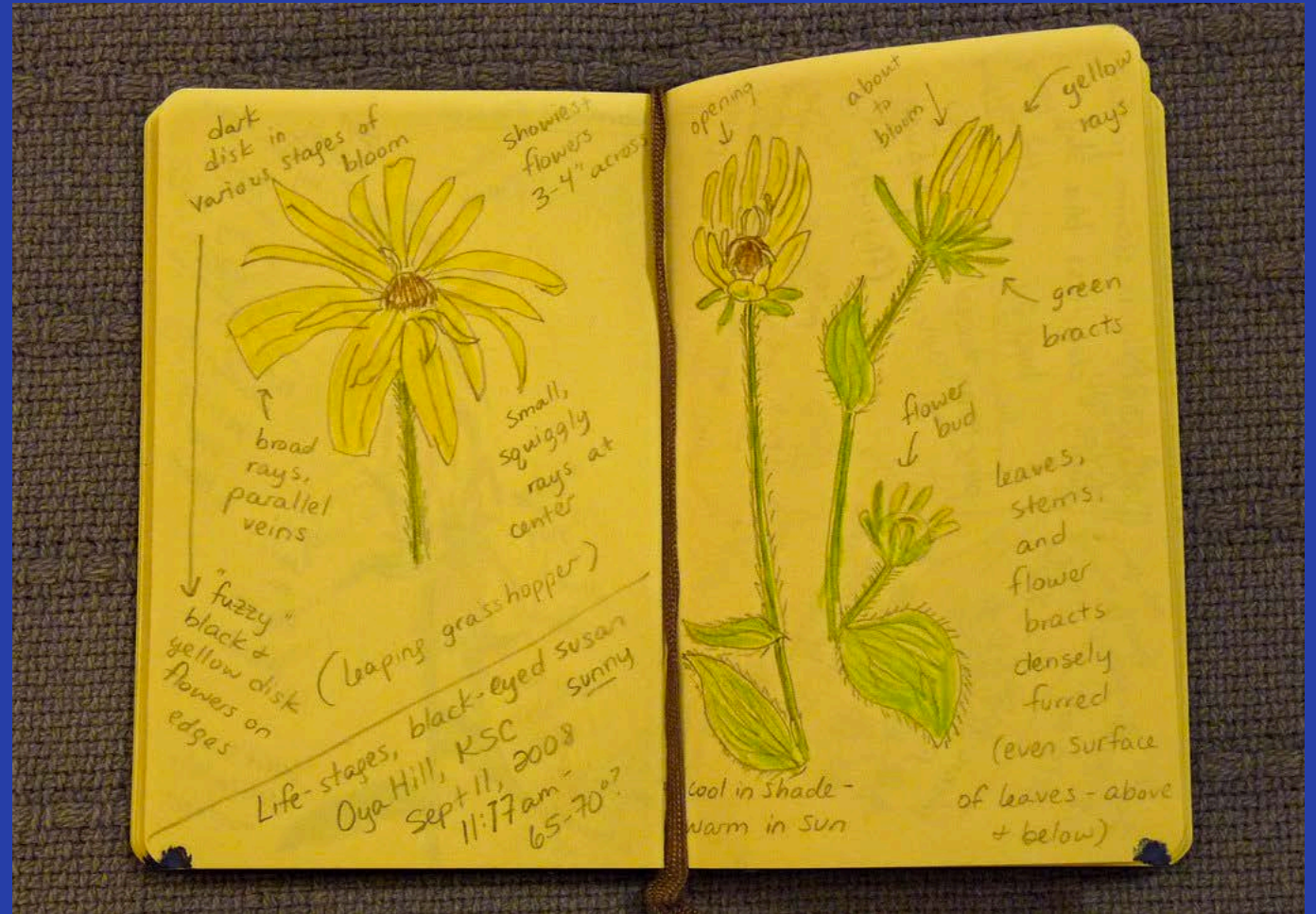


Nature Journaling

While visiting some of these **nature places**, consider writing about your thoughts and your surroundings.

There is no right way to journal, but here are some tips for those who need a bit of **guidance**:

1. Find a place outside that you feel **comfortable** and allows you to focus.
2. Start with the **simple** things like where you are, what day it is, and what the weather is like.
3. Discuss how this place makes you **feel** and what types of things you see.
4. Revisit this place and these feelings to **reflect** on your experience.



Resources and Useful Links

- Tools for the teens
 - Cab Calloway High School Dams Visual: <https://www.youtube.com/watch?v=amyZU-oLZG4&feature=youtu.be>
 - Environmental Careers: <https://www.youtube.com/watch?v=cuWVdwaSLY8>
 - Become a Watershed Fellow: <https://www.watershedalliance.org/education/fellows/>
 - Become a Junior Ranger at First State National Historical Park: <https://www.nps.gov/kids/become-a-junior-ranger.htm>
 - Volunteer with Delaware State Parks: <https://www.destateparks.com/GetInvolved/Internships>
 - Starting a compost pile: <https://youtu.be/kA3q07paN6E>
- Cool websites and links
 - The Alliance for Watershed Education: <https://www.watershedalliance.org/about/>
 - First State National Historical Park: <https://www.nps.gov/frst/index.htm>
 - The Nature Conservancy: <https://www.nature.org/en-us/>
 - Your local chapter: <https://www.nature.org/en-us/about-us/where-we-work/united-states/delaware/>
 - Lenape Fishing History: <http://delawaretribe.org/blog/2013/06/27/lenape-fishing/>
 - Creek History: <https://storymaps.arcgis.com/stories/1ff58fa6cfaa4730a17bf4f6a5bc1657>
 - Watershed Explained: https://www.usgs.gov/special-topic/water-science-school/science/watersheds-and-drainage-basins?qt-science_center_objects=0#qt-science_center_objects
 - World Fish Migration Day: <https://www.worldfishmigrationday.com/about>
 - Where does Wilmington get its water?:
<https://www.wilmingtonde.gov/home/showdocument?id=274#:~:text=Have%20you%20ever%20opened%20your,our%20own%20New%20Castle%20County>
 - Shinrin-yoku: <https://youtu.be/LufoMIGexkM>
 - Connecting Black People & Nature: <https://outdoorafro.com/stories/>
 - The Anthropause: <https://www.wired.com/story/the-anthropause-a-new-way-to-study-wildlife/>
 - Trails: <https://destateparks.com/Trails>
 - Brandywine Shad 2020: <http://www.wrc.udel.edu/public-service/brandywine-shad-2020/>
 - Juvenile Fish Survey: <https://www.facebook.com/watch/?v=598140594470894>
 - Nature Therapy: <https://www.goodtherapy.org/learn-about-therapy/types/econature-therapy>
 - Bees 4 Vets: <https://bees4vets.org/>

Closing Note

I want to give thanks to The Alliance for Watershed Education, The Nature Conservancy, and First State National Historical Park for all their contributions to me this summer, to the Wilmington community, and to the world!

I also want to give a special thanks to Kim Hachadoorian for not only being a great mentor, but for reminding me time and time again that my impact is much greater than what my mind allows me to see.

I hope you enjoyed the reading and various tips. I truly hope it was the bee's knees!

THANK YOU ☺



If you or anyone you know is having a hard time dealing with the impact of COVID, please seek help. Text HOME to 741741 to contact a crisis counselor.