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**A Newsletter from the Connecticut Department of Energy and Environmental Protection  
Exploring Long Island Sound - Issues and Opportunities**

**Fall/Winter 2023  
No. 70**

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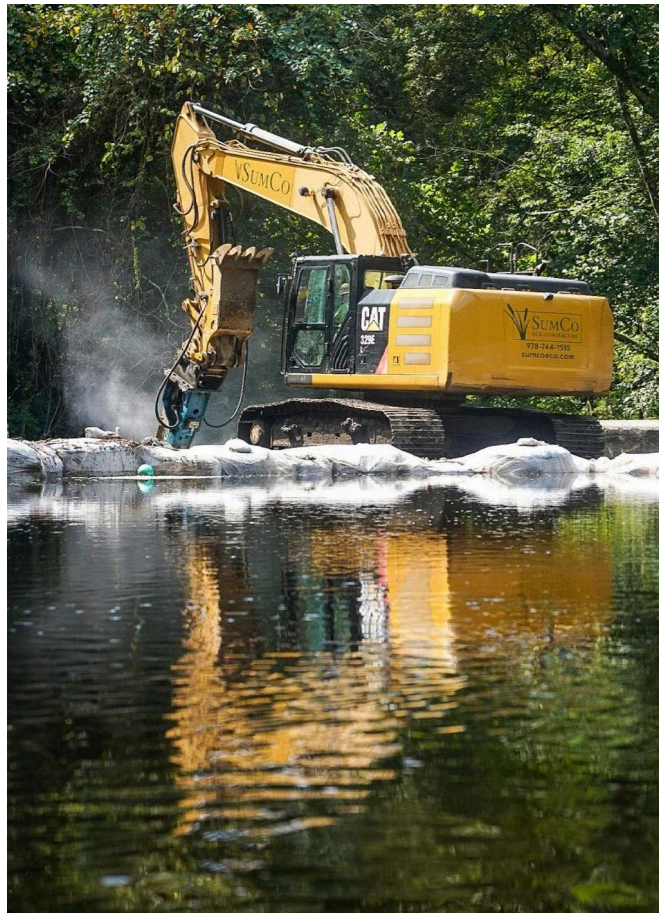
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## **Dana Dam Demolished**

In 1940, industrialist Charles Dana dammed the Norwalk River in Wilton to make an ice-skating and swimming pond for his children. At the time, the dam construction may have seemed innocent; he may have been trying to connect his family to the Norwalk River and the Wilton environment. Unfortunately, the small dam would have unintended consequences for the area's ecology. Water temperatures warmed, stream flow slowed, and for over 80 years, Dana Dam, also known as Strong Pond Dam, would serve as one of thousands of barriers to the passage of fish and the free flow of water in Connecticut's rivers and streams. On Monday, September 11, 2023, after years of work by several non-profits and environmental groups, the dam was finally removed.

First Impressions: Joy Sajimon,  
DEEP LWRD



Dana Dam is removed on September 11, 2023  
Photo: Braden Lynn/DEEP LWRD

According to [Save the Sound](#), the removal of Dana Dam means that about 5 upstream miles of the Norwalk River and an additional 5 miles of tributaries will now see fish passage restored. Together with the removal of the downstream Flock Process Dam in 2018, about 14 miles of free-flowing river are now reconnected to Long Island Sound.

Native [sea lamprey](#) appeared in the Norwalk River for the first time in 125 years as a result of the Flock Process Dam removal. Until recently, the lamprey's journey upstream ended at Dana Dam, as did that of [alewife](#), [blueback herring](#), [eel](#), [brook trout](#), and other migratory and sport fish. With that dam now removed, fish can once again swim upriver to historic spawning grounds that they haven't had access to for over a century.

This victory for the Norwalk River ecosystem has been decades in the making, with [Trout Unlimited](#) first making inquiries about the dam removal in the 1990s. Save the Sound has been working hard to remove several dams across the state that disrupt the flow of rivers and streams and segment habitat for fish and wildlife. They became integral partners in the project throughout its planning and implementation, beginning their work on the project in 2017 and leading the project in partnership with the Town of Wilton, [Long Island Sound Study](#) (LISS), several other agencies and non-profits, and CT DEEP. DEEP provided project oversight and primary project funding from three different sources throughout the planning, design, and implementation of the removal. Funds from Clean Water Act (CWA) Section 319, LISS, and the Bipartisan Infrastructure Law (through LISS) amounted to a little over \$3 million by the end of the project.





Photos of the removal of Dana Dam: Braden Lynn/DEEP LWRD

Now that the dam has been removed, the dammed channel is significantly narrower, increasing upland riparian habitat. Water quality will improve as the flow of water improves dissolved oxygen, decreases phosphorous levels, and leads to a reduction in stream temperatures. Aquatic habitat has been restored and reconnected, with 1.5 acres of riparian buffer habitat being restored and previously obstructed sections of river now flowing unimpeded to Long Island Sound. In addition, the dam removal reduces public safety risk and improves flood resiliency.

The site of the former dam is located on the Norwalk River beside the Norwalk River Valley Trail north of Merwin Meadows Park.

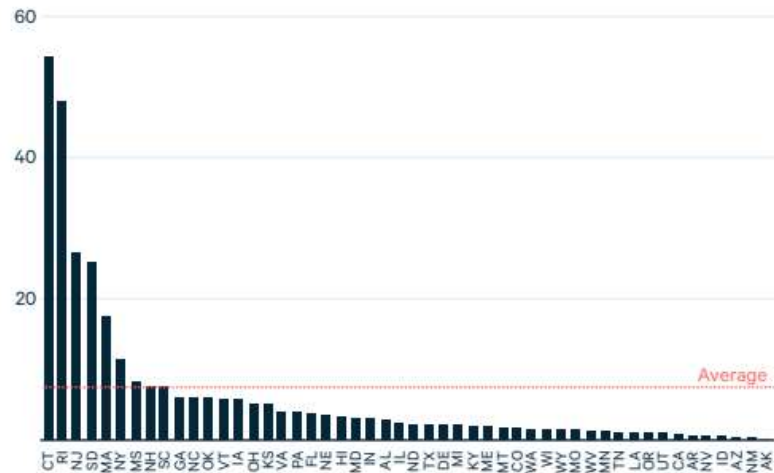
### **SPOTLIGHTED COASTAL RESOURCE: Connecticut's Free-flowing Rivers & Streams**

Across Connecticut, the free flow of rivers and streams is impeded by thousands of small and large dams that dot the landscape. Most of these dams are relics of our state's industrial past, when water was the source of critical power for the mills and watercourses were dammed to power water wheels and create private ponds. The rivers and streams that feed into Long Island Sound are a key resource for many of our migratory fish species that use Long Island Sound as a gateway to their freshwater breeding grounds. Much of Long Island Sound's wildlife depends on the ecological web that is created at the estuaries of these rivers, where freshwater and saltwater meet. The free-flowing river ecosystems on the inland side of these complex life cycles have been significantly altered over the course of the industrial era by a dense network of dam infrastructure.

"We're one of the most densely dammed states in the country," says Steve Gephard, former supervising fisheries biologist at the Department of Energy and Environmental Protection. "In rivers like the Aspetuck, you can stand on one dam, look upstream and see the next."

In fact, Connecticut has the highest number of dams relative to river miles in the country. According to the [U.S. Army Corps of Engineers](#), there are 54 dams per every 100 miles of free-flowing rivers in the state—the national average is six. If you look at the map below, showing over 4,000 dams in the state, it isn't hard to see just how densely dammed our state is. The most common dam purpose in the state is recreation, as with most of our neighbors in the northeast.

**Figure 2. Number of Dams per 100 Miles of Free-Flowing Rivers, By State**





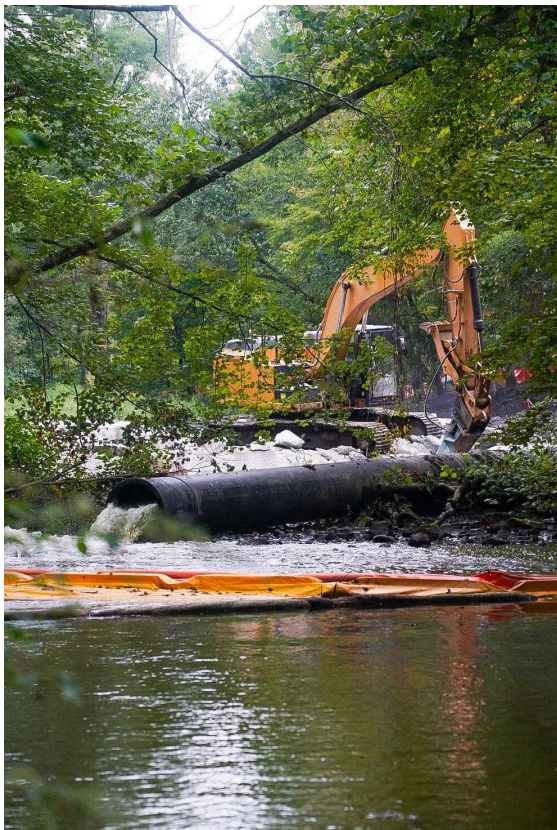
the state, although there is some evidence that they are [ready to make a comeback](#). Other migratory fish that are obstructed by dams include [alewife](#), [American eel](#), [American shad](#), [Atlantic salmon](#), [blueback herring](#), [sea lamprey](#), and [shortnose sturgeon](#). Both Atlantic sturgeon and shortnose sturgeon are federally and state-listed as endangered species.



Connecticut populations of shortnose sturgeon spend their life almost entirely in the Connecticut River

Photo: NOAA Fisheries

With climate change leading to warmer water temperatures in Connecticut's rivers and streams, dam removal can give declining populations of brook trout a fighting chance to survive the changing stream temperatures, flash floods, and other impacts that have been seen locally. Brook trout rely on cold pools and pockets in brooks and streams, which can be hard to come by. As streams are slowly warming, these pockets of cool water are becoming harder to find, and removing the impenetrable barriers that small dams create provides brook trout with a greater range to seek out the habitat they need.



A dam removal on the Norwalk River

Photo: Braden Lynn/DEEP LWRD

In addition to the ecological impacts of the numerous small dams across the state, there are also practical concerns involved with these structures. With many of these structures no longer providing economic benefit, some can pose unnecessary flood risks to communities and landowner liability risks for private property owners if they are not maintained. In many cases, removing outdated dams can resolve these concerns while improving water quality and restoring passage to fragmented fish populations.

Many non-profit groups are working in partnership with state agencies to remove some of these obsolete dams. Save the Sound's Ecological Restoration team has led several dam removals in the state since 2015, restoring free-flowing sections of the West River in New Haven, Whitford Brook in Mystic, the Quinnipiac River in Meriden and Southington, and most recently the Norwalk River in Wilton, where Dana Dam was removed (this issue's headline article).

Once these small dams are removed, centuries of damage can begin to be undone. Sludgy river bottoms are washed clean, allowing freshwater fish and mussels to flourish. Migratory fish can return, and with them river-dependent insects and birds. Semi-aquatic mammals like otter and

mink can thrive with more food sources and the streams begin returning to the wild. It is thanks to the partnerships between organizations like Save the Sound and the communities that get involved that many of Connecticut's free-flowing rivers and streams are returning to providing the ecosystem services they did before the industrial era fragmented them.

Do you see a dam removal in the next town over and think "Why can't we do that?" You can! Get involved with non-profit partners, volunteer with stream restoration projects, and let your community leaders know that you support restoring our free-flowing rivers and streams.

## FOUND IN THE SOUND: Interesting Catches on the Long Island Sound Trawl Survey

Introducing a new section to the *Sound Outlook* Newsletter: Found in the Sound. This section will sporadically pop up whenever there is an interesting or rare find in Long Island Sound waters or along its shores. This issue, we are featuring the Long Island Sound Trawl Survey crew and some interesting catches they hauled in on a late September survey.

The [Long Island Sound Trawl Survey](#) is a tool that the DEEP Marine Fisheries uses to measure abundance and distribution of finfish, squid, and macro-invertebrates in Long Island Sound. The crew never knows what they might bring on board on any given day out in the Sound. On a September 27th trawl survey, they were surprised to be greeted by a HUGE roughtail stingray (*Bathytosia centroura*). The ray measured over 6 feet long and 5 feet wide and weighed an estimated 400 pounds!

[Roughtail stingray](#) are usually found along the Atlantic coast from New England to Florida, but they are not frequently seen in Long Island Sound waters. Like all stingrays, they have a venomous spine in their tails, but they aren't aggressive and don't frequent the nearshore waters where people swim. The crew quickly returned the ray to the Sound, where it swam away unharmed.

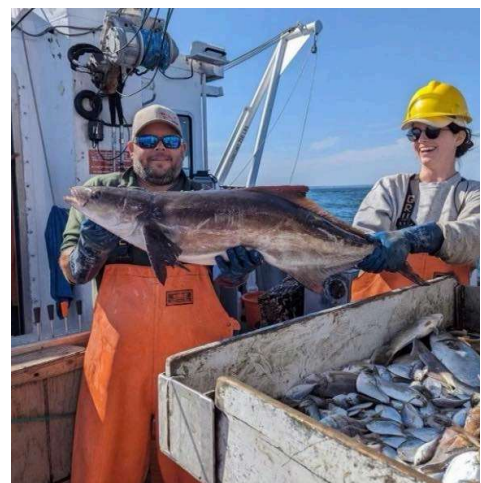
There was also a second notable catch on the same survey: the crew hauled up a cobia (*Rachycentron canadum*). The cobia is a large predatory fish that can reach lengths of over 6 feet and can weigh over 140 pounds, though most of them are closer to 3-4 feet in length and weigh around 75-85 pounds.

[Cobia](#) are found in many locations across the Atlantic coast (and worldwide) but historically was rarely seen north of Chesapeake Bay. However, as climate change is causing New England waters to warm, they are becoming an increasingly common visitor to Long Island Sound.

As climate change quickly alters the ecosystem in Connecticut's waters, the Long Island Sound Trawl



Roughtail stingray found in the Sound  
Photo: Connecticut Fish and Wildlife  
(Facebook)



The trawl survey crew also found a cobia  
Photo: Connecticut Fish and Wildlife  
(Facebook)



Survey is one of the primary tools that CT DEEP uses to document these changes.

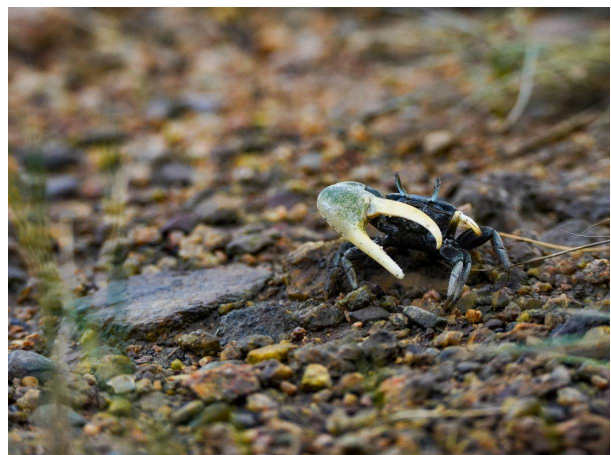
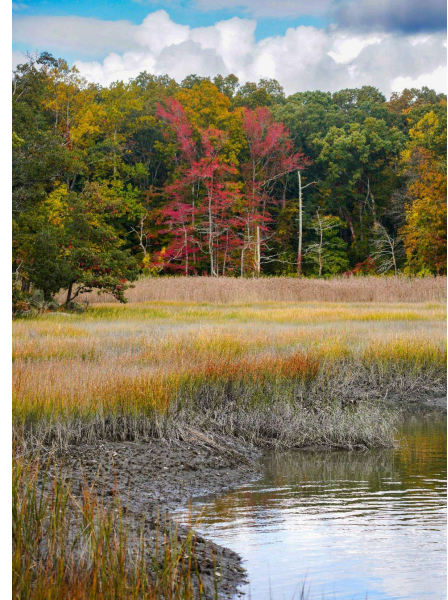
### SPOTLIGHTED PUBLIC ACCESS: Jarvis Creek Preserve

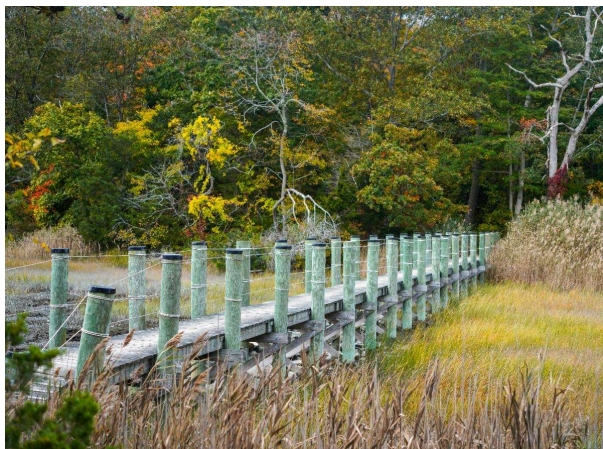
The town of Branford may be situated at the edge of a densely populated corridor of the state, but there are still plenty of natural areas that offer beautiful scenery, fresh air, and recreation opportunities. A neighborhood scale preserve in the village of Stony Creek, the Jarvis Creek Preserve may surprise you with the natural diversity it offers just a few minutes from downtown Branford.

The Jarvis Creek Preserve offers trail access along the [Branford Trail](#) and a network of other trails that cross through coastal forests, fields, and tidal marsh. A boardwalk across the marsh leads to an island and an old tide gate. Along a hike on the trail, you might find an old field, an old quarry pit, and other relics of the area's historical use in the quarry industry. In addition to a section of the Branford Trail, the Jarvis Creek Preserve also features a network of almost two miles of trails through the Washburn Preserve and the Weil Property, which make up the larger preserve.

While the Branford area is now at the tail end of [peak fall foliage](#), now may be a great time to get out for a hike and photograph the last glimpses of fall and experience the changing of the seasons on the shores of Long Island Sound with a wonderful view of the Thimble Islands. Check out the Connecticut Coastal Public Access Guide for more information on [this site](#).

For information on the over 300 coastal public access sites like this one available along Connecticut's shore, please visit the [Connecticut Coastal Public Access Guide](#).





Jarvis Creek Preserve Photos: Braden Lynn/DEEP LWRD

## Wetland Mitigation Plantings Completed in Norwalk

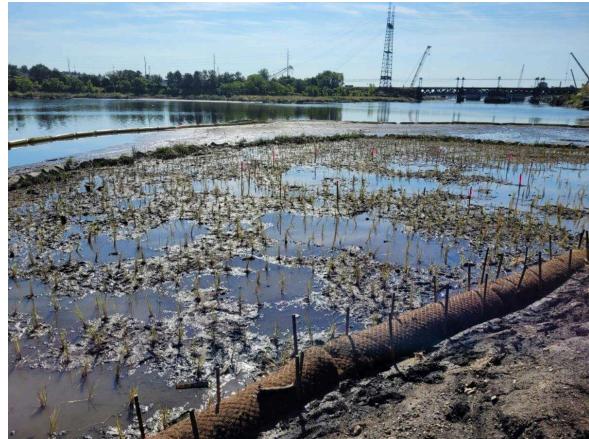
In late September of 2023, staff from CT DEEP and CT DOT joined environmental consultants along the north bank of the Norwalk River to assist with planting a tidal wetland mitigation site. Construction of the tidal wetland and other aspects of the mitigation site took several weeks to complete, with over a dozen staff pitching in to plant over 6,000 individual plant plugs! The vast majority of the plants were a classic tidal marsh species, smooth cordgrass (*Spartina alterniflora*), which were placed in the low marsh. Crews also worked to plant several higher marsh species including Soft-stemmed bulrush (*Schoenoplectus tabernaemontani*), Marsh elder (*Iva frutescens*), Eastern baccharis (*Baccharis halimifolia*), and a few other species. In addition to planting tidal marsh, the mitigation project at this site also included invasive species (*Phragmites australis*) removal and construction of a stone sill "living shoreline" to protect the mitigation area from tidal wave energy. A new sand berm was created to support terrapin turtle nesting habitat as part of an effort to mitigate potential impacts to the [northern diamondback terrapin](#) turtle, a State Species of [Special Concern](#).



The work conducted at this 'Walk Bridge Mitigation Site 2' is one part of a larger mitigation project, which involves restoration and enhancement work at six total wetland locations in the vicinity of the Walk Bridge. The six wetland restoration and enhancement areas were developed (and licensed) by DOT and DEEP to serve as compensation for permanent wetland impacts that will result from the Walk Bridge replacement across the Norwalk River, which will modernize rail traffic between New York City and Connecticut. The bridge replacement began in 2023 and is expected to take 6 years to complete.

It was a pleasure for DEEP staff to collaborate with CT DOT and private partners to get the job done and help to successfully install the mitigation site this summer! In the future, this site will support improved tidal marsh habitat and associated species along the riparian edge of the Norwalk River.





Photos of the wetland restoration in Norwalk: CT DOT/DEEP LWRD

## CLIMATE CHANGE UPDATE: Long Island Sound Community Impact Fund

Applications for the Long Island Sound Community Impact Fund (LISCIF) are now open. The LISCIF is a partnership between Restore America's Estuaries, the U.S. Environmental Protection Agency, and the Long Island Sound Study (LISS), funded through the Bipartisan Infrastructure Law. The LISCIF will help meet the goals of the Justice40 initiative, which calls for 40% of certain federal investments to be allocated to disadvantaged communities that are underserved and disproportionately impacted by environmental and human health risks. The fund also aims to provide technical assistance to organizations in these areas and support proposals to improve access to Long Island Sound.

The LISCIF's funding priority themes for 2024 are:

- Clean Waters and Healthy Watersheds
- Thriving Habitats and Abundant Wildlife
- Sustainable and Resilient Communities
- Sound Science and Inclusive Management

Eligible projects will be community driven approaches to addressing challenges and risks faced by communities that are experiencing environmental justice issues.

Funding is available for:

- Projects that result in quantifiable pollutant prevention or reduction.
- Restoring habitat within the Important Coastal Habitat Types targeted by LISS.
- Projects that foster a diverse balance and abundant populations of fish, birds, and wildlife.
- Public engagement, knowledge and stewardship.
- Projects that enhance community resilience and sustainability.
- Planning and design that sets-the-stage for implementation of water quality projects, eligible habitat restoration projects and resilience projects.
- Community-based science projects.
- Data management and integration projects.
- Other similar activities that the applicant proposes, and EPA approves consistent with section 119 of the Clean Water Act.

Letters of intent from prospective applicants are due on December 1st, by online submission only. For more information, visit the Long Island Sound Community Impact Fund [webpage](#).



### First Impressions: Joy Sajimon, DEEP Land and Water Resources Division

This column features the "First Impression" that set someone on his or her path to environmentalism. We hope *Sound Outlook* readers will relate to these "First Impressions" and recall their own experiences that led them to appreciate and care about Long Island Sound.

Last issue, we featured our the most senior (in rank only!) member of the LWRD team, Division Director Brian Thompson.

While Brian is well into his second decade of LWRD experience, this issue, we thought we'd take a look on the other end of the spectrum and feature one of our newest hires who is only in his second month of LWRD experience.



We have highlighted many different people's journey towards their career in the environmental field around Long Island Sound throughout the years of our First Impressions column, but Joy Sajimon's path may have been the longest of them all... geographically speaking. Joy spent the first 18 years of his life living in Dubai, United Arab Emirates, about 6,750 miles from Hartford. The UAE is a melting pot of mostly foreign workers from all over the world—only about 11% of the population are Emirati citizens. Joy's parents were among those who moved to the UAE for work, his father being a renowned civil engineer in Dubai during a period of major economic growth and significant population increase.

*I grew up in Dubai, born and raised for 18 years. It is a very hot city, and very urban. I would say it is similar to New York City: very dense and diverse. I met a lot of different people who spoke multiple languages, Arabic, Hindi, Malayalam, French, Spanish—and most of us had a common language in English. Most of Dubai is expats, or migrants, who come for work to essentially look for a better life, and that's what my parents did.*

Having grown up in a very urban city, Joy's **First Impression** of environmental awareness came from his visits to his grandmother in their family's hometown of Monippally, a small village of about 10,000 people in the state of Kerala, India. Joy would take family trips to the village at least once or twice annually during his childhood.

*Back when I was in Dubai, we would go to India every year, sometimes twice a year, to visit my grandmother. We would visit her frequently to accompany and spend some time with her. My hometown in Kerala, in India, is very tropical and forested. Everything has a village atmosphere, and that was a big shock for me as a kid, because I lived in a big city. So that was my first exposure to what nature was like.*



Admittedly, he remembers preferring life in Dubai to that in Monippally. The architecture in Dubai was clean and modern, while the older buildings and village atmosphere of Monippally seemed comparatively less lively and tidy. However, experiencing the rainforests and rivers around the village grew on him, and he began to notice how much more time people spent outside. Almost all of their life was spent outside in Monippally, compared to the largely-indoors lifestyle of Dubai. Experiencing the farm fresh eggs, milk, and meat of a culture that raised their own livestock, grew their own produce, and spent most of their time outdoors began to shift his opinion of the rural lifestyle that was closely connected to the environment around it.

*I experienced that area where there were rivers that you could shower in instead of going into a bathroom to shower, and where everyone lived outside more than they lived at home. My uncle was a farmer, whose livelihood was farming rubber trees. I would go out and help him, and I got to experience that some people actually depend on the environment for their livelihood, and I guess that was my first impression where I thought, "preserving this is important."*

Joy's focus in school was initially on athletics. Joy played soccer and basketball and preferred to spend his time training and playing sports over focusing on a career. When a chronic injury made life as an athlete less realistic, he decided it was time to focus on a career. His initial interest was in mathematics and engineering.

*Something that always captivated me was mathematics and engineering concepts—being able to build and design something. So, I decided initially to follow the path that my dad pursued which was civil engineering.*

After high school, Joy came to the United States with his mother and some other family members. They moved to California, joining members of his extended family who already lived there. Joy spent a lot of time hiking with friends here in the States and continued to develop and enjoy his appreciation for the environment. Joy credits his **First Step** to his cousin, who pushed him to consider the field of environmental engineering.

*My cousin also moved to Dubai, and was working for the safety department, so he worked on worker safety and health and safety for office work and work sites. He pushed me to look into environmental engineering, and I was interested because it involved water and air quality management but also related to civil engineering.*

Joy kept this idea in the back of his mind as he attended Foothill College, a very scenic community college in Los Altos Hills, California that is often regarded as one of the most beautiful and successful community colleges in the country, and he questioned if he was entirely interested in civil engineering. On second thought, he decided to take his cousin's advice and recognized environmental engineering would be a good way to incorporate his interest in civil engineering and his appreciation for the natural environment.

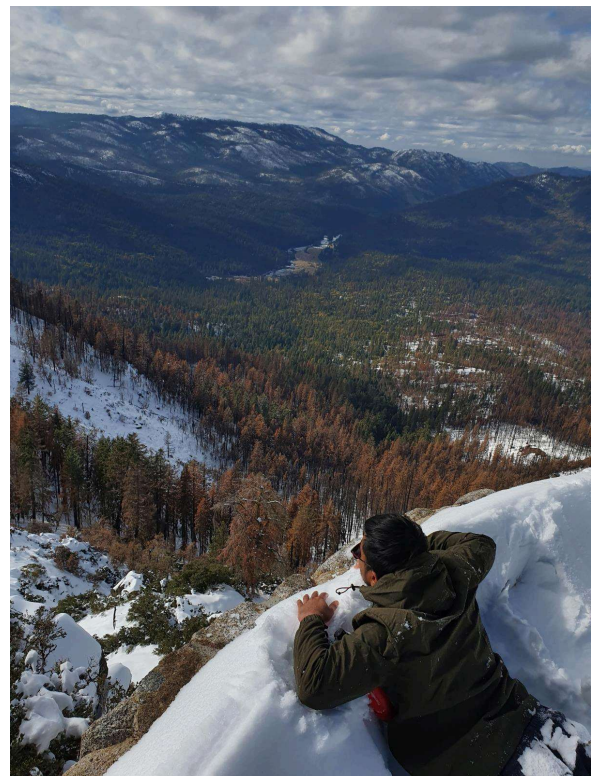
Joy attended the University of California at Merced, where he had a variety of new experiences while studying environmental engineering. He recalls a literature class in which he read the book *The Water Knife* by Paolo Bacigalupi. The science-fiction novel depicts a near future in which a perpetual drought has created a new dust bowl in the American southwest, leading to the Western states forming their own militias and shutting down their borders over water rights as the federal government is weakened by corporate influence. The novel's complex water rights issues and ethical debates about humankind and its obligation to the planet were

very impactful, and helped lead Joy to speculate just how strenuous water rights and environmental catastrophes might be in the future.

Water waste was particularly interesting to Joy. He recalls learning about the concept of greywater in one of his classes.

*[My professor] was explaining what greywater was. I didn't know. She gave an example: "When you shower, do you turn the water on and get in immediately, or do you let it run for a few minutes?" Everyone in the class answered that they let it run for a few minutes, and I realized was guilty of that as well. She also gave us a statistic about how much of that water is wasted and goes into the stormwater system to drain out to the sea. That was concerning to me, because I remembered that freshwater is only 3% of the world's water. As population increases, if everyone in California is wasting water, we're going to have stress issues in the future.*

While living in California, Joy also enjoyed skiing. However, he noticed that the resorts were faced with decreasing snowfall, and learned more about the region's snowfall history and changing winter patterns in one of his classes. These experiences while at UC led to his **Behavior Change**, and he began to think about ways he could reduce his environmental footprint at home and help solve environmental issues at a larger scale.



Joy enjoying some winter hiking and skiing in California

For Joy's capstone project, he worked on a floodplain management project in a small unincorporated community in California. The goal for the project was to manage floodwaters from the San Joaquin River through the installation of culverts and floodplain restoration to prevent flooding in the disadvantaged farming community. The project also helped restore salmon spawning habitat.



*There was a huge river that was going through the site, and behind the site was an economically disadvantaged community that was being greatly affected by flooding. Our job was to reroute that floodwater through a different channel and back to the river. I had time to visit the community, which was mostly farmers, and it brought me back to the time of being on my uncle's farm in India. I saw that these people had a livelihood that is affected by this issue. To be able to do this work that helps people brought me a motivation that I didn't know I had.*

After the capstone, Joy took a break to do some travelling, including trips to India, Chicago, Texas, San Diego, Los Angeles, and a few National Parks. He then applied for a position here at DEEP in our Land and Water Resources Division and was offered the job. He accepted, which meant moving across the country to Connecticut and taking his **Big Step** toward a career in environmental engineering.

*I wanted to learn more about floodplain management, and I decided that was the kind of job I was looking for. I applied to DEEP, because I saw that they had a program for flood management. When I got the call back, we discussed the FEMA program and the permitting processes that I could learn, and I said, "Sign me up. I want to work here."*

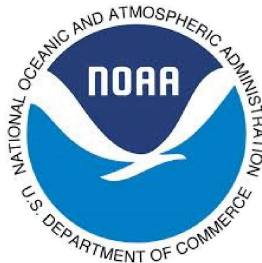
Joy has been in Connecticut for about six weeks now and says he has enjoyed the change of pace and the more familiar feel of the forests here, which remind him of his family's home in India. He is looking forward to learning all he can about flood management, permitting, and everything else that the Land and Water Resources Division is responsible for in Connecticut, and our office is excited to have his knowledge, enthusiasm, experience, and global perspective contribute to our goals here at DEEP.

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Editor: Braden Lynn

Layout: Caryn Furbush; Illustrations: Tom Ouellette

Contributors: Laura Robbins, Abbie Winter, Joy Sajimon, Connecticut  
Fish and Wildlife



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CT Department of Energy & Environmental Protection | 79 Elm Street, Hartford, CT 06106

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