



# Trout of this World: Art & Science for Fish Conservation

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## Project Motivation & Goals

Freshwater ecosystems are vital to our planet. Clean fresh water is used for drinking, growing crops, energy, and manufacturing. They also support high levels of biodiversity, help with flood control, and nutrient cycling (World Wildlife Fund, 2026). Some species, known as indicator species, are used to assess the health of ecosystems because they are sensitive to environmental change (Encyclopedia of Puget Sound, 2012).

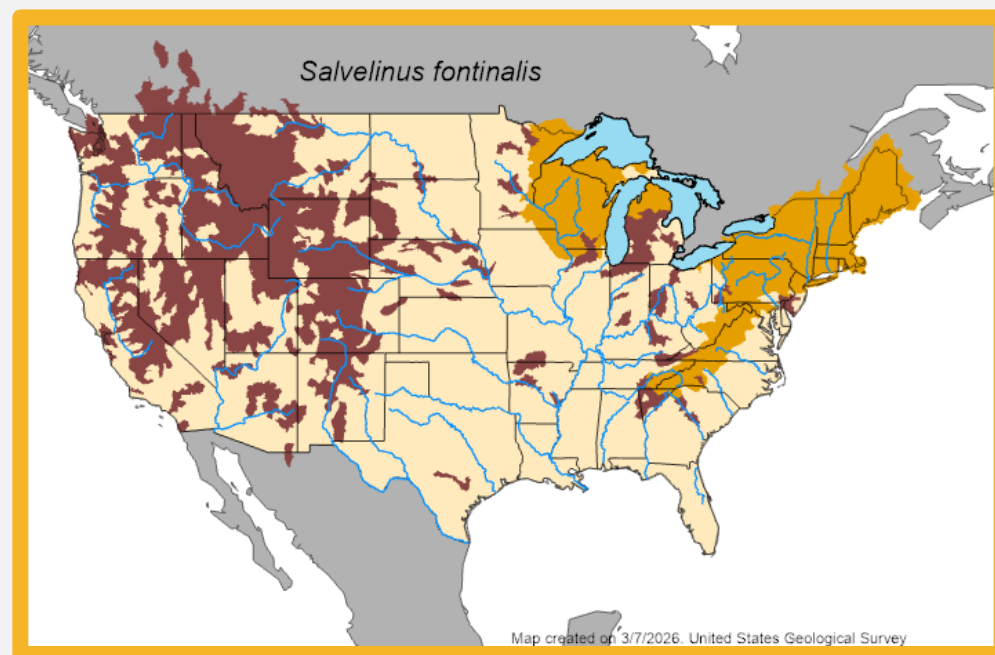
Brook trout (*Salvelinus fontinalis*) are the **only native trout** (actually a charr) to the state of Connecticut. They need clean, cold water to survive making them an effective indicator species. Brook trout habitat is threatened by numerous factors including climate change, urbanization, and agricultural practices. I am focusing on brook trout populations because they are an essential component of Connecticut's freshwater ecosystems and a great gauge of their health.

### My main project goals are:

- Connect with a fisheries biologist at Connecticut Department of Energy and Environmental Protection (CT DEEP) to learn about fish sampling.
- Contribute data to the state through a partnership with CT DEEP.
- Partner with a local artist who will create brook trout art.
- Create a fundraising campaign using art to raise money for my local Trout Unlimited chapter (Thames Valley).



Fig 1. (Top) Example of a Brook Trout, (Bottom) Native Range of Brook Trout shown in orange



## Methods

### Data Collection and Research

- Determined streams to sample by looking at past population data and type of equipment required
- Sampled 4 different streams in the Southeastern Connecticut Area via electrofishing with a backpack (Lowden Brook ◆, Mount Misery Brook ◆, Yawbucs Brook ◆, Billings Brook ◆)
- Collected Air Temperature, Water Temperature, and Water Conductivity using sensor equipment at each site
- Compiled and evaluated data to determine patterns

### Creation of Fundraising Campaign

- Reached out to a local artist who is interested in environmentalism and fishing
- Used the online platform Bonfire to create a t-shirt design using the art from Mike Lussier
- Created flyers to advertise online and in-person

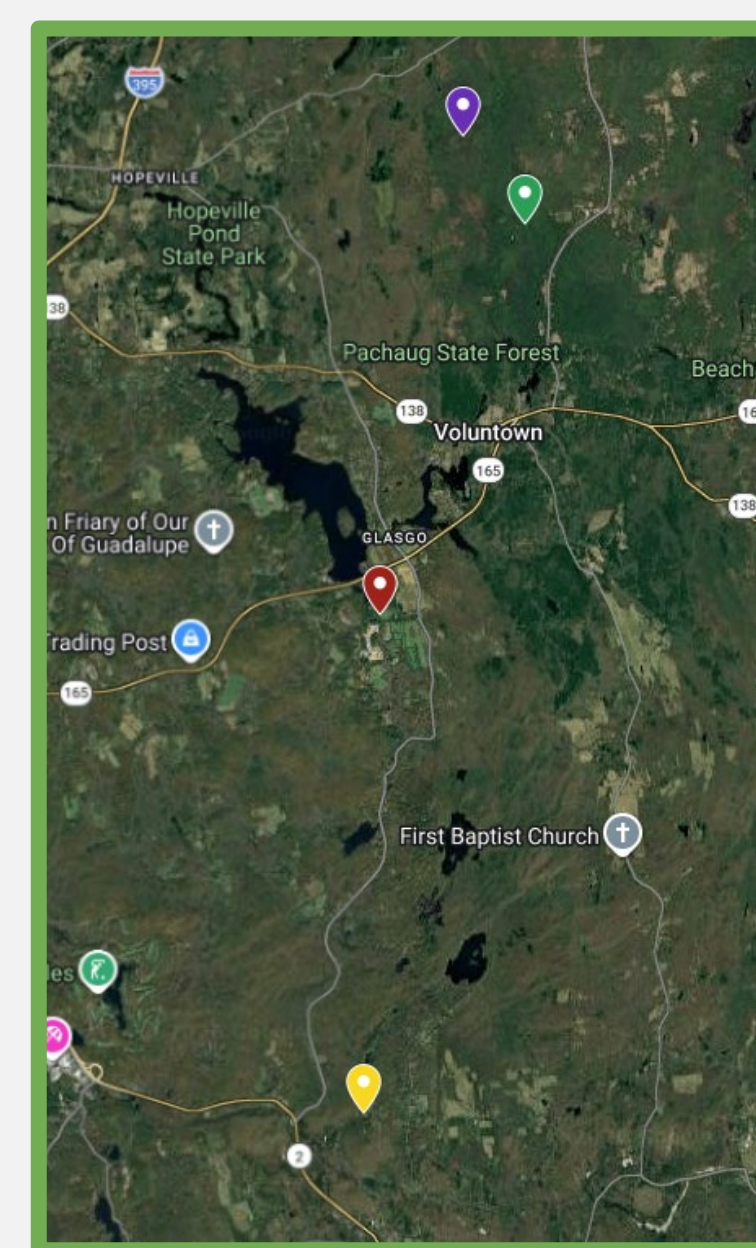


Fig 2. (Right) Map of each location sampled, corresponding with colors in Methods. (Left) A brook trout being measured during sampling.

## Project Outcomes

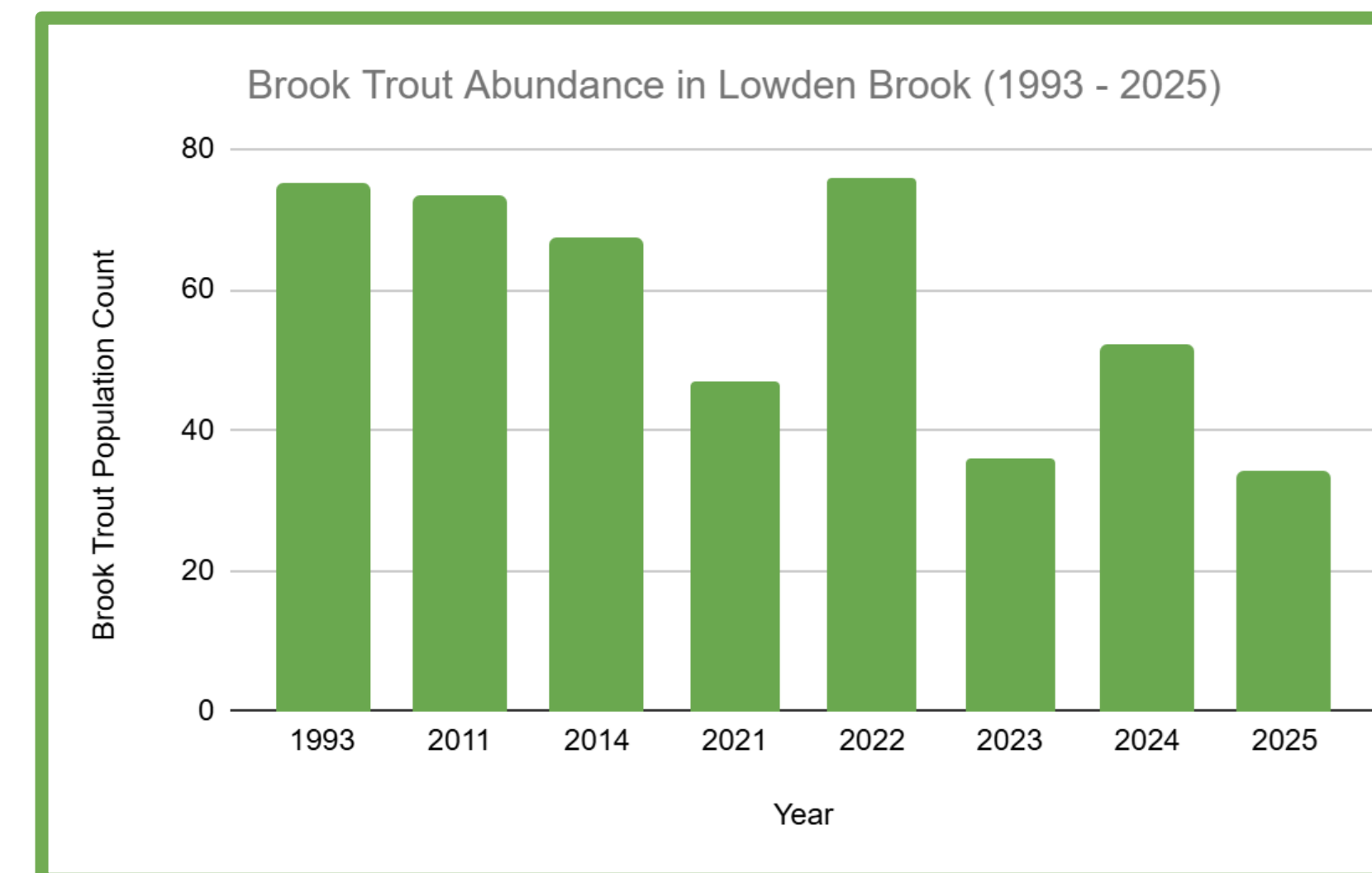
### Fish Sampling Results

- Species found in the streams sampled included:
  - Native Brook Trout
  - Tesselated Darter
  - American Eel
  - Largemouth Bass
  - and more!
- My project focused on **native brook trout population** and its **change** over time to inform water management practices
- In Lowden Brook, we collected 34 brook trout showing a **gradual decline**, with the exception of 2022, since initial sampling in 1993
- In Billings Brook, we sampled 20 brook trout, an increase from the 9 sampled in 2014 (the only other data point)
- For both Mount Misery Brook and Yawbucs Brook, **0** brook trout were collected, showing a **complete** lack of fish compared to initial sampling in 1993
- Data were added to the CT DEEP community fish data

### Support the Fundraiser!



### CT DEEP Data Collection Results



### Protect Native Trout Fundraiser

**Help Support Native Trout!**

Back Design Front Design

My Name is Nolan Varas, and I am a High School student from North Stoughton, Connecticut.

I am part of a program called the Conservation Ambassador Program within UConn's Natural Resources Conservation Academy. Students develop and carry out environmental action projects in their communities. For my project, I'm creating a t-shirt fundraiser to support the conservation of native trout.

All profits made from these shirts will directly go to supporting my local Trout Unlimited chapter and my goal of helping protect native trout. The link and QR code below take you to my store.

Thank you for supporting my cause!

<https://www.bonfire.com/store/protect-native-trout/>

### Fundraiser for Thames Valley Trout Unlimited

- Designed shirts in colors White, Black and Blue
- Coordinated with Thames Valley Trout Unlimited to receive funds through Bonfire (fundraiser site)
- Set up the option for extra donations to be added on
- Advertised the fundraiser through flyers, social media, and community outreach

Total earned **\$534.88**

Total sold **44**

Product sales **+\$187.52**

Donations **+\$347.36**

**SOLD 44 SHIRTS AND RAISED \$534 FOR MY LOCAL TROUT UNLIMITED CHAPTER SO FAR!**

Fig 3. (Top Left) Results from sampling brook trout in Lowden Brook gathered by CT DEEP, (Top Right) Flyer designed for fundraiser, (Bottom) T-Shirt designs created in collaboration with Mike Lussier to raise money for Trout Unlimited and amount raised to date.

## Community Partnership

My community partner was **Brian Eltz** from the Connecticut Department of Energy and Environmental Protection (CT DEEP). CT DEEP is the state's department that focuses on "conserving, improving, and protecting our natural resources and the environment".

- Brian is the CT DEEP Wild Trout Biologist, providing the perfect expertise to help achieve my project goals
- Brian taught me skills relating to fish sampling using electrofishing equipment and field safety protocol

My second community partner was **Mike Lussier** from Art Freck Tattoo in Providence, RI.

- Mike designed the art for my T-Shirt Fundraiser



Fig 4. (Left) Brian Eltz in the field, (Right) Mike Lussier in his tattoo shop

## Conclusion

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- Furthered my knowledge of brook trout through field research
- Rallied public support for my cause and made an impact with an organization helping fight for it
- The fundraising campaign will continue to run and raise funds

### Impact of Fundraiser

- The TU Chapter directly received all donations made off the fundraiser
- These funds will be used for TU **conservation** and **community events**
- Past projects by TU Thames Valley include
  - Trout in the Classroom
  - Riverbank Tree Plantings
  - Fly Tying Classes
  - Trout Stockings
  - Stream Cleanups



## Acknowledgements and References

I would like to thank everyone who helped take part in guiding me through and assisting me with this project. I would first like to thank **Laura Cisneros** and my Difference Maker Mentor **Shanelle Thevarajah** from UConn NRCA for the opportunity to participate in such a fulfilling program and experience. Next I would like to thank my community partner from CT DEEP **Brian Eltz** and other DEEP staff present on our day of stream sampling for providing an amazing field research opportunity. Next I would like to thank **Mike Lussier** for creating such truly wonderful artwork for my fundraiser and being very responsive as I had past troubles with that. I would also like to thank **Gary Lussier** from Thames Valley TU for setting up fundraiser payments on your end, inviting me to present to the chapter, and featuring my project in the chapter newsletter!

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