



SCHOOL DAYS

SoundWaters Response to a Broken School Year

June 2020



SoundWaters is delivering lessons online, every day.

When the pandemic forced schools to close, **the health crisis created an education crisis**. Teachers, now stranded at home, need engaging materials for students who are also marooned. In response, **the entire SoundWaters team mobilized to meet the needs of our region** by creating a full Distance Learning Experience of great depth and are sharing this material through an online portal with hundreds of teachers and thousands of students.

"Thank you so much for this! This is a perfect addition to our curriculum-- We appreciate the entire SoundWaters education team for supporting us and our students."

- 3rd Grade Teacher, Bridgeport, CT

SOUNDWATERS RESPONDS: BIGGER & DEEPER

DEPTH:

95 DISTINCT SCIENCE
LESSONS PRODUCED
AND DISTRIBUTED



REACH:

OFFERED TO 600
SCHOOLS (55,000
STUDENTS)
AT NO COST

ENGAGING:

LESSONS INCLUDE
VIDEOS, WORKSHEETS
& QUIZZES



UNIQUE:

LESSONS PRODUCED
OUTDOORS AS
VIRTUAL FIELD TRIPS



TURNKEY:

EASY FOR TEACHERS
TO DELIVER TO STUDENTS

A Crisis Unfolds Overnight & SoundWaters Acts

Over 8,000 students were coming to SoundWaters this spring to study the science of Long Island Sound. That didn't happen and it left a huge hole in their learning. To meet this need, we quickly worked with teachers to bring Long Island Sound to their students.

"It's the Wild West right now. We call it distance learning, but it's crisis education."

**- Michael Alfano, PhD
Sacred Heart University**



The Solution: SoundWaters Distance Learning

With our experienced educators, deep relationships with teachers and administrators, and our unique connection to the natural world, SoundWaters is well prepared to help in this crisis. To meet the needs of teachers and students, SoundWaters mobilized all of our resources and created – from scratch – a brand new online science library for teachers and students.



"I am so excited to have this experience for my class. I really appreciate all of the effort you have put into creating this program and making a Google Classroom for my students to join. Thank you for making this experience possible for my students."

- 5th Grade Teacher, Stamford CT

Helping Teachers Finish the School Year Strong

We leveraged our ability to teach science and developed new skills in technology and outreach to deliver Long Island Sound science online to elementary, middle and high school teachers and students to carry them through the end of the school year. SoundWaters was forced into distance learning by a crisis, but we recognize the power of this platform to bridge a gap between teachers and students and to bring Long Island Sound science to schools who may never get to experience SoundWaters in person. The potential is enormous.

"This crisis...has revealed profound disparities in children's opportunities...the most economically challenged in our society will be the most vulnerable in this crisis.

**-Paul Reville, PhD
Harvard University**



**\$182,000:
SOUNDWATERS INVESTMENT
IN DISTANCE LEARNING**

**\$0:
INCOME GENERATED FROM
DISTANCE LEARNING**

**ALL DISTANCE LEARNING
CONTENT WAS PROVIDED TO
SCHOOLS AT NO CHARGE.**

"This is awesome!!!! Yes, we sure are disappointed to be missing SoundWaters this year....this is exactly what we were looking for a way to bring the SoundWaters experience to the kids remotely... these are fantastic materials to embed into our curriculum.

- 6th grade Science Teacher, Greenwich CT

*"SoundWaters created the online learning to meet the specific needs of administrators and teachers in Stamford Public Schools. The project then grew dramatically as we heard from teachers across the region. In this crisis, **every district and every classroom has overwhelming needs** and so we pivoted to make our materials available at no charge to all children -- **from Greenwich to Bridgeport, from New Canaan to Norwalk** – to help all teachers, students and families in these unprecedented times."*

- Leigh Shemitz, SoundWaters

Student Researchers Continue Amid the Crisis

Normally, our high school interns would be completing their 30+ hours of research and preparing to present their science posters to a live audience. Their internship ended abruptly, but that didn't stop their learning. They continued their research projects as much as they could and completed their posters, some of which you can see here. Their resilience and commitment earned them High Honors and the great admiration of the SoundWaters team!

Communities of Marine Species in the LIS

Hannah MacDonald¹, Jordan Mallis², Alessandra Pinto³
Greens Farms Academy¹, AITE High School², Westhill High School³

INTRODUCTION

We were all surprised to encounter local oyster fishermen during our weekly trips out on the Sound, so we decided to study the development of oysters and other marine organisms in this area. We set out to monitor the growth of oysters in the Standard Harbor, and plankton communities out on the Sound. We hope to be able to draw conclusions about trends in the populations of plankton and oysters.

RESULTS / CONCLUSION

Oysters: We had expected the oyster growth to be relatively rapid and as you can see in Figure 5, the growth was fairly consistent in the first month we recorded. Our average length actually went down so we conclude that our method of measurement was prone to human error.

Plankton: Comparing our plankton data to last year we were able to make some observations. We found that there is the most plankton diversity in the fall months. Copepods are the most common plankton species we encountered and Barnacles seemed to be less prevalent in Spring of 2020.

METHODS AND MATERIALS:

Oysters

- Each week we go out on the Sound and pick up the oysters from the Standard Harbor.
- We bring them aboard and measure the longest side in with a ruler.
- We then weigh them individually in grams.
- All of this data is recorded in our table.

Plankton

- While out on the Sound, we use thermometers, hydrometers, and pH and nitrate strips to measure the quality of the water.
- We record the temperature, salinity, pH, and nitrate levels in the water.

More Data

- In future research we plan to continue monitoring the growth of our oysters and hope to find more conclusive data. To ensure our data is more accurate we will use more precise tools and lengthen our investigation.
- We also hope to research other types of organisms in the Sound. We have considered tagging and tracking horseshoe crabs and monitoring the new kelp farm, both of which are so important in our local ecosystem.

NEXT STEPS

In future research we plan to continue monitoring the growth of our oysters and hope to find more conclusive data. To ensure our data is more accurate we will use more precise tools and lengthen our investigation.

We also hope to research other types of organisms in the Sound. We have considered tagging and tracking horseshoe crabs and monitoring the new kelp farm, both of which are so important in our local ecosystem.

Figures:

- Our field team alongside the 30 oysters that we track
- Measuring the length of the oysters and recording them aboard the research vessel
- Analyzing plankton sampling using field microscopes
- The SoundWaters Research Vessel docked at John J. Bonaccisi Park over the Spring Semester
- Graph of Average Oyster Growth over the Spring Semester
- Graph of Plankton Communities Present in the LIS

Can Fish Be Trained to Swim Through Hoops?

Sound Generation, Griffin Acevedo, Darien High School

INTRODUCTION:

IMPORTANCE
Our study is important because it disproves the common misconception that fish can't hold memories well.

SIMILAR EXPERIMENTS
Other experiments on memorization have been conducted on other species of fish, such as **Betta Fish**. From these other experiments we can see it is possible to train other species of fish to go through a hoop.

OBJECTIVE
The objective of our study was to see if we could train a Striped Sea Robin and a Blackfish to go through a hoop to receive food and to see which species was able to learn the quickest.

HYPOTHESIS
Both species will be able to learn to swim through hoops for food. The Blackfish will learn the fastest because its behavior seems to be more food driven.

MATERIALS

- Two tanks: Striped Sea Robin, Blackfish
- Fish net
- Pipes
- Thawed shrimp, scallops, fish, and calamari

METHODS

O'Neals tanks left and right fish tanks
Week 24 - Mar 7th
O'Neals the same fish: Striped Sea Robin, Blackfish

RESULTS

With an average of 4.6/10 for the Striped Sea Robin and 2.6/10 for the Blackfish, we learned that fish can be trained to swim through hoops to receive food, proving the first part of our hypothesis correct. However, we believed the Blackfish would learn faster than the Striped Sea Robin, and we were proved wrong. By the end of the 3 weeks, the Blackfish went through an average of 2.6/10 times and the Striped Sea Robin went through an average 4.6/10 times.

PROCEDURE (ONE TANK)

- Create a hoop by connecting a PVC pipe with elbow joints.
- Chop up and thaw shrimp, scallops, fish, and calamari for both tanks.
- Hold the hoop below the surface of the water.
- Once the target fish notices the hoop, drop food on the side of the hoop opposite to the fish.
- Mark down how many times the fish swims through the hoop for 10 trials. If needed, wait away the other tank fish to make sure the target fish notices the food in order to establish a positive connection to swimming through the hoop.

CONCLUSION

This experiment showed us that fish can be trained to swim through hoops. We also learned the Striped Sea Robin swam through the hoop most often, it averaged out to a 4.6/10 success rate. This is higher than the Blackfish, which had 2.6/10.

REFERENCES

Video: <https://www.youtube.com/watch?v=0000000000>

Virtual Learning for Students of All Ages

Students weren't the only ones stuck at home. When we canceled our spring volunteer and education events, adults lost out too. To fill that void, our team has released a new video every weekday for almost 10 weeks on a different interesting Long Island Sound topic.

Loving @soundwaters videos about Long Island Sound! ❤️

soundwaters If you want to explore the shoreline, low tide is your friend. Low tide exposes the intertidal zone and is br...

45 POSTS

79,946 VIEWS AND GROWING

HAVE YOU EVER WONDERED...

CLAMS VS OYSTERS

WITH JESS CASTORO

Children's Learning Centers of Fairfield County shared a video from the playlist SoundWaters Daily.

1 hr · 🌐

As the weather gets warmer you may spend more time at the beach and you might see some horseshoe crabs while you're there. Our friend Mr. Tim from SoundWaters explains how a horseshoe crabs sees in this video.

really see basic shadows and shapes. Also has a little pair