THE Mokelumne Current

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On the Bay with the Marine Science Institute

Lodi High students board a research vessel to learn about the Delta and the San Francisco Bay ecosystem

Elizabeth Khoury
LODI HIGH SCHOOL

On October 25, 2023, the AP Environmental Science and Honors Biology classes at Lodi High School took a trip to the Marine Science Institute to learn about the water quality and marine life in the San Francisco Bay. During our time on the boat, we caught a variety of marine life including 200 indigenous crabs, 150 anchovies, 100 herring, 30 common shrimp, 10 sole, four perch, and four rays. We also observed and identified plankton under microscopes, learning their important role in producing the oxygen we breathe.

Connecting to our involvement with Storm Drain Detectives at Lodi Lake, we got the opportunity to test the deep and surface water of the bay for temperature, dissolved oxygen levels, salinity, and pH.

The trip also highlighted the lasting effects of the California Gold Rush in 1849, which introduced mercury into the bay. Some of the mercury still remains today, ultimately harming marine life.

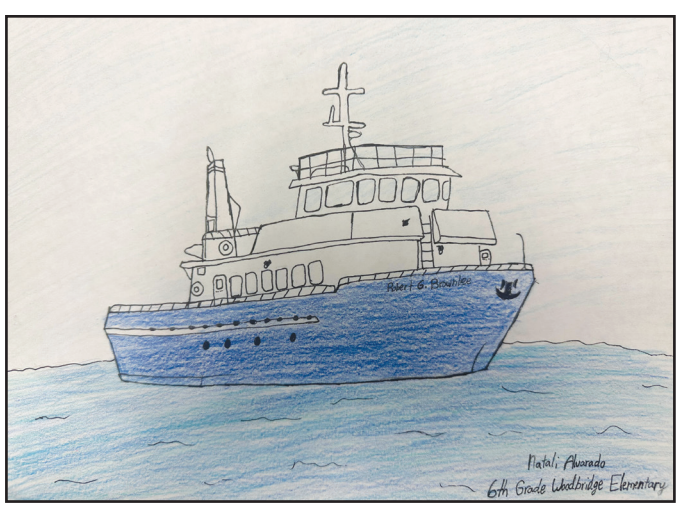
After asking Lodi High School senior Hannah Larson about her most memorable experience from the trip, she shares, "My favorite part of the MSI trip was painting our faces with the mud samples we collected from the bottom of the bay! An environmentally friendly moisturizer for sure."

Revisiting the Marine Science Institute for the second time, senior Lucas Goulart shares, "This was my second experience going on the MSI trip and it was fun to test myself on what I remembered from back in sixth grade. As a little kid I was more focused on naming the fish we caught and not getting seasick, but this time I felt like I learned so much more about our local waters! Although I got a really cool opportunity to play around with the microscope during the plankton lab, my favorite part this time around (and back in sixth grade) was painting my face with the mud we collected from the bay."

AP Environmental Science student Isabella Coughlin shares, "My favorite part of the trip was catching all the different organisms from the bay. We caught several different fish, crabs, and bat rays, which was really exciting! The most shocking thing I learned was that the bay is only 10 to 15 feet deep! It was overall a great learning experience and I'm really glad we were able to go."

PHOTOS COURTESY OF ELIZABETH KHOURY/LODI HIGH SCHOOL

Left: Lodi High School senior Isabella Coughlin aboard the Marine Science Institute's research vessel Robert G. Brownlee. Right: Savannah Chinchiolo and Isabella Coughlin aboard the research vessel.



NATALI ALVARADO/WOODBRIDGE ELEMENTARY SCHOOL

Woodbridge Elementary sixth-graders get hands-on research experience with MSI

Zackary Werner
WOODBRIDGE ELEMENTARY SCHOOL

On March 7, Mrs. Bechthold's sixth grade class at Woodbridge Elementary School eagerly joined the Marine Science Institute for a four-hour expedition on the San Francisco Bay aboard a 90-foot research vessel, the R.V. Robert G. Brownlee.

Over the course of the day, we collected data and were able to participate in three hands-on rotations where we explored life in

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Lodi Unified superintendent explains importance of science education

Anna Young
WOODBRIDGE ELEMENTARY SCHOOL

Q: What do you know about the Storm Drain Detectives Program, which provides a bridge between the City of Lodi watershed education program and Lodi Unified schools?

A: I know that the partnership between our students and the city of Lodi has been a great relationship for many years, that exposes our students to the importance of caring for our Mokelumne River and the greater watershed.

Q: Is environmental science a district priority?

A: As we continue to grow our Career Technical Education programs, and because we are better understanding how our decisions impact our environment, it is important for all our students to have opportunities like the Storm Drain Detectives offers, to engage our students in this important area of science.

Q: What strategies do you intend to implement to enhance the environmental sciences curriculum in our district?

A: This is a really good question. I need to spend more time with our Science Coaches, teachers, and Career Technical Education programs, to understand all the ways we as a school district are engaging in implementing environmental science, and how this area connects with our Next Generation Science Standards. I am thankful we have great events like the NorCal Science Festival, and opportunities for students like Science Olympiad and Storm Drain Detectives, that expose our students to environmental science.

Q: What is the significance of teaching our students about our watershed and the impact humans have on our watershed?

A: Students learn best when they make connections to the world around them. We

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Deer

ELIGH OEUN/JOHN MUIR ELEMENTARY SCHOOL

Heron

HANNAH HUIPE/VINEWOOD ELEMENTARY SCHOOL

How the East Bay Municipal Utility District cares for the Mokelumne River watershed

Peyton Diehl
LODI HIGH SCHOOL

There are many different services and organizations centered around the water sources in California such as our very own Mokelumne River.

One of these organizations is the East Bay Municipal Utility District, or EBMUD. EBMUD is a California public utility that provides clean, good drinking water, renewable energy, pollution avoidance and wastewater treatment jobs to protect the San Francisco Bay. Its main water supply is from the Mokelumne River, where an average of 90% of EBMUD's water comes from. The Sacramento River is also used when needed as California goes through multiple dry periods.

EBMUD produces renewable energy by solar and hydropower, and also the generation of energy called cogeneration at water treatment facilities. The organization also protects the environment and the river itself in many different ways.

One thing that EBMUD does is it is partnered with the U.S Fish and Wildlife Service to create protection for endangered species.

Another thing that EBMUD does is to provide drinking water to Bay Area cities. We do not get our drinking water from here, but from Woodbridge instead. EBMUD gains about 325 million gallons of drinking water every day. This is one of its most important purposes.

It also helps to maintain flood control in places such as Lodi. This is done through the management of the Pardee and Camanche Reservoirs.

Although these reservoirs have their benefits, they also have their downsides such as affecting the environment in rivers. Because of this, hatcheries have been built. This is called mitigation.

Through these hatcheries we have been able to observe salmon every year.

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