

Ground Zero Waste

The Monterey Peninsula has become the epicenter of a student-led movement to reduce waste, for the ocean.



Nic Coury

(left) Los Arboles Middle student Hoan Lee, right, models a bow of bottle caps and polyester for the Zero Waste Week trash-fashion show. (right) Los Arboles Middle student Hoan Lee, right, models a bow of bottle caps and polyester for the Zero Waste Week trash-fashion show.

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• by [Kera Abraham](#)

Anna Munoz is wearing a chunky necklace her students made out of upcycled corks, a touch of gold shadow on the edges of her eyes and an enthusiastic grin. It's the Los Arboles Middle School Zero Waste lunch and fashion show, and she is *pumped*.

Her eighth-grade science class projects are on display inside the library. Munoz doesn't let her students buy materials for these weekly homework assignments, so they have to repurpose things they find lying around. One of her favorites is a plant cell membrane made of Q-tips and plastic Easter eggs.

She's like Ms. Frizzle from *The Magic School Bus*. But instead of wild red hair, Ms. Munoz wears a dark plaited bun pinned with a colorful newspaper flower.

The kids are in the courtyard eating today's special zero-waste lunch. There's not a speck of plastic anywhere on the recycled paper tray, just a pair of fresh sloppy joe sliders made with local Tassajara grass-fed ground beef next to a generous pile of salad.

It took 85 students five hours to pick, clean, cut and prep the 50 pounds of salad veggies: beet, kale, broccoli, radish and spring onion from the school garden, Munoz says.

Her students assemble for the trash fashion show in front of the library. As DJ Eric cues the first song through a staticky speaker (Katy Perry's "Roar"), an audience gathers on the lawn. "What's the point of this?" cracks an elfin boy in black jeans and chains.

The catwalk is edged by bright chalk art of ocean scenes. The kids clown a little as they model cardboard-box robot heads, a dress made of newspapers and a jumbo bow tie made of candy wrappers.

A low-pitched bell rings, and the students sort themselves into classrooms. Munoz shepherds hers out into the garden, a humble hodge-podge corner of campus with freshly planted citrus trees and raised beds made from salvaged furniture. Her classes have harvested 2,000 edibles out of this space in the past two years, says Munoz, who really seems to delight in the numbers.

Some of these students are special ed, she adds, and it's less stressful for them to spend time in the garden than around thicker groups of kids on the paved parts of campus.

Chardnay Ogden is watering a veggie bed, one literally made out of a salvaged bed frame. She invites me to taste a cabbage leaf, then smell a lemon leaf. This is her favorite class, she adds, tapping her temple: "I'm smart about it."

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It's Students for Zero Waste Week (ZWW) at Los Arboles, plus 12 other schools across the Monterey Peninsula. And the students are doing a lot of the teaching.

ZWW is something of a misnomer; the event actually runs from March 16-April 24. Each school picks a week within that window when their students showcase environmental stewardship projects, from the classic three Rs (reduce, reuse, recycle) to the more progressive ones (refuse unnecessary stuff, restore landscapes and make rot, as in compost). A key part of this program: The kids are connecting their campus waste with the watersheds that flow to the sea.

This year, ZWW organizers are expanding the waste-reduction concept to include energy, because fossil fuel burning drives ocean acidification (see story, p. 32). By picking up litter on the land, they're housekeeping for whales. By switching from incandescent to LED lights, they're making life a little less uncomfortable for coral reefs.

"Zero waste" is a term that pre-dates ZWW, and it's more an ideal than a literal end of all trash. As Zero Waste International Alliance defined it in 2004, "Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources."

It's a concept familiar to [Ocean Guardians](#): K-12 schools that have committed, through the National Oceanic and Atmospheric Administration's Office of National Marine Sanctuaries, to conserve their local watersheds and the seas they flow into. The National Marine Sanctuary office in Monterey is the national base for NOAA's six-year-old Ocean Guardian School program, which provides grants of up to \$4,000 each to participating schools, including 15 in Monterey County. Schools that receive the money are asked for data: How many disposable plastic bottles did the water-bottle refill machine prevent? How many square feet of invasive plants did the students remove?

Coordinating much of this from the National Marine Sanctuaries office in Monterey is a delicately boned woman with tidepool-colored eyes and a name that would suit a character in an ocean adventure book. Seaberry Nachbar, director of the National Marine Sanctuaries' Ocean Guardian Schools program, chats with me and several of her collaborators, including Ocean Guardian Program Coordinator Naomi Pollack, around a table piled with student-designed ZWW posters. "We're not just doing fluff, but showing it," Nachbar says.

ZWW started in 2013, when Peter Hiller, then a teacher at Carmel Valley's private All Saints Day School, rallied seven Ocean Guardian schools around the Carmel River Watershed to aim for the zero-waste ideal. There were already events calling themselves Zero Waste Week, including one in the Bay Area, but Hiller envisioned students at the helm.

"It's a very lofty goal. And there was some pushback about that," says Hiller, who's now retired. "People said, 'You can't possibly have zero waste.' That didn't really dissuade me. Every step we take is toward that goal, even if we never live to see it."

Declaring Students for Zero Waste Week, he decided, was a matter of manifesting a thought into action. He watched that singular focus bring together collaborators who hadn't worked together before. Since then, their version of ZWW has become an official NOAA program, spreading to 40 schools – most in California, but this year expanding to a few other U.S. states, plus one participant in Madagascar. The Monterey County shoreline remains the headquarters, both as the National Marine Sanctuary's organizational base and as home to one-third of the participating schools.

During ZWW, students design plans to cut back on their schools' waste. The most common target is single-use plastic like water bottles and disposable utensils, which don't biodegrade and are especially problematic when they reach the ocean as litter.

In a groundbreaking new development this year, Carmel Middle and Carmel High have partnered with the Monterey Peninsula Waste Management District to send their cafeteria food to the landfill in Marina, where anaerobic digesters turn it into compost and electricity. The Organics to Energy program kicked off earlier this month.

"One of the things we all identified as a major problem is the food waste in the school," says Carmel Middle teacher Nicole Chupka, who advises the school's Environmental Club. That means kids are dumping compost buckets and picking through garbage cans after lunch. "It gets kind of messy," Chupka says. "They're really good sports about it."

As part of the Organics to Energy program, students recently convinced school administrators to switch from plastic to compostable plates and utensils in the cafeteria. They gave names to blinged-out trash cans throughout campus, where students toss recyclables into sorting buckets. Kids cash in the glass and plastic bottles, generating up to \$500 a year for environmental education.

Carmel Middle will celebrate ZWW just before Earth Day this year, culminating in a zero-waste dance with an “under the sea” theme. Students are crafting the decorations entirely out of recycled stuff, like turning plastic water bottles into jellyfish string lights.

Other Monterey County schools participating in ZWW: Monterey Bay Charter in Seaside/Pacific Grove, Ord Terrace and Highland elementaries in Seaside, Pacific Grove Middle, Robert Louis Stevenson in Pebble Beach, Captain Cooper in Big Sur, Tularcitos Elementary and All Saints in Carmel.

That’s a pretty broad range of schools – not just geographically, but also in terms of socioeconomic and racial diversity. Their playing fields aren’t exactly equal.

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Only two school days of planning left before Seaside Middle School’s Zero Waste Week kicks off, and the Green Club is using lunchtime to strategize. Twenty-odd kids are divided into five teams, each tasked with planning a ZWW day.

I sit with an all-girl group that’s come up with a game. They’ll set up four bins, labeling each one with a sport and a recyclable – say, soccer and aluminum cans. The bin that fills up with the most recyclables determines which sport students get to play against the teachers at recess. The kids *love* playing games against the faculty, says teacher Valerie Rivera, one of three advisers rushing to get the kids through their group sessions in the half hour before the next class. The kids, while scribbling out their plans, are eating lunches mostly out of disposable plastics: peach cups, juice boxes, mayonnaise packets, sealed packages of celery. It’s disorganized. It’s also a good try. This is Seaside Middle’s first year as an Ocean Guardian school and its first participating in ZWW.

It’s not clear the message about plastic has made it much farther than the Green Club. On Feb. 27, students in the Seaside Middle School Leadership Club presented Seaside firefighters with six cases of disposable bottled water, each with a handwritten thank-you note.

It was meant as an act of kindness, a token of appreciation. It was also exactly the kind of disposable plastic waste ZWW organizers are trying to curb.

“This is a perfect example of the disconnect that exists,” Pollack says. “We have seen the gap close [at other Ocean Guardian schools]. Sometimes it takes a year. Sometimes it takes two.”

Of 13 Monterey County schools participating in ZWW, eight are in the more affluent districts of Monterey, Pacific Grove, Carmel, Pebble Beach and Big Sur. Five are in blue-collar Seaside and Marina; none are in Salinas.

Nachbar says almost half the county’s Ocean Guardian schools are Title I, meaning they have large low-income populations. But participation takes an above-and-beyond commitment from teachers and parents, she says, which is harder to come by in resource-strapped schools. One Salinas school received an Ocean Guardian grant a few years ago, she says, only to return the check when they couldn’t follow through.

“We don’t want this program to look like it’s just catering to the wealthy,” she says.

But the reality is, ZWW – and environmental programming in general – often tends to skew toward the privileged.

Carmel Unified, for example, is working toward becoming NOAA’s first Ocean Guardian school district. That administration-level commitment shows up in both the curricula and the campus infrastructure. For example, administrators agreed with students’ request to stop selling disposable plastic water bottles on campus, replacing them with water-bottle dispensers funded by NOAA and the school’s parent-teacher organization.

Carmel Middle’s bucolic valley campus shares space with the Hilton Bialek Habitat, home to environmental education nonprofit MEarth. Students tend a garden so big and beautiful it’s more like a mini-farm, cooking their harvests in a new LEED Platinum Certified school kitchen. Every student goes through a six-week eco-literacy program.

“We have the means to do this, and that’s where some school districts are left out,” Chupka says. It’s a harder to make environmental changes at schools like Los Arboles in Marina, where the student body is a mash-up of cultures and income levels.

“We have like 50 languages spoken,” Munoz says. “You walk onto this campus and see so many colors and faces; it’s so cute. Environmental awareness has really bridged our cultures. Everybody can recycle, and we all need to do it.”

In the school kitchen, Food Service Manager Jose Rosa is closing up boxes of salad greens. I ask what prevents him from serving Zero Waste-style lunches every day.

A crew of five are working the school’s cramped kitchen today, he says, but normally there are only three kitchen staff. Still, they’re working to add a salad bar and supplement lunches with garden greens and local fruit. “The idea is for the kids to start learning to eat more healthy stuff,” Rosa says. “I have to push them to take the fresh vegetables.”

In the library, I run into David Chandler, who used to have Munoz’s job. In March 2013, Monterey Peninsula Unified School District hired him into their newly created energy specialist position.

Since adopting an energy-saving program in late 2012, he says, MPUSD has avoided more than \$1 million in utility spending. Water use is down 41 percent district-wide, natural gas use is down 29 percent and carbon emissions have shrunk 22 percent. That’s not counting the new solar panels now installed at four district schools, he says, with five more (including Los Arboles) in the pipeline.

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Teachers like Anna Munoz and Nicole Chupka work with a network of supporting agencies and organizations, like Monterey Regional Waste Management District and Save Our Shores, to chase the zero-waste ideal.

Another is Bay Area-based Litterati. Zoom in to certain Peninsula school campuses on the map at www.litterati.org, and you’ll see a colonies of red pins. Click the pins and you’ll see photos of water bottles, plastic forks, bottle caps, straws. Students at Los Arboles and Bay View Academy, among others, are Instagramming under the hashtag [#litterati](https://www.instagram.com/litterati). Their photos are added to a “digital landfill” that doubles as a database – tracking what, where and how much litter the kids are picking up. Hundreds of tagged and mapped pieces of trash later, teachers and their students have the data they need to start tackling litter the source.

Another supporting org: Monterey Bay Aquarium, whose Ocean Plastic Pollution Summit offers a year-long framework for teachers like Munoz. Educators in the program hear from leaders in the ocean conservation and anti-plastic movements, review the latest data on littered marine debris and workshop ways to engage their students on the subject.

Back at the National Marine Sanctuaries office in Monterey, I ask Nachbar what lessons she hopes students will take home from Zero Waste Week. “Make kids realize there really is no ‘away,’” she says. “Have kids make the connection that whether you’re in the Sierra foothills or Ohio, your actions can affect the oceans in many ways.

“Let kids see that it is one ocean.”