

# NCRC&DC WORM WIZARDS OF WASTE ENVIRONMENTAL EDUCATION PROGRAM

*“Gives Youth a Way to Engage Meaningfully to Help the Planet”*



## NCRC&DC Description

The North Coast Resource Conservation & Development Council is a small local nonprofit with a mission that supports youth education in resource protection and sustainable agriculture in the north bay, and is based in Sonoma County serving 4 counties: Marin, Sonoma, Mendocino and Lake. We conduct environmental education programs working with youth in learning about and planting pollinator habitat, diverting food waste from schools from landfill disposal to create vermiculture compost for onsite school use, conserving water through school rooftop rainwater collection for use in school gardens, and learning in our other environmental education programs—all with an element of on-the-ground change involving the targeted youth.

## Worm Wizards of Waste Program

The “Worm Wizards of Waste” program is a vermiculture waste-to-compost program working with schools to help them divert their food wastes from landfills to onsite bins with earthworm that recycle the waste into rich compost material, and builds on the work first initiated by the Healdsburg-based “Compost Club”, which our Council supported by serving as its fiscal sponsor. Recently, the Compost Club has started winding down and transferring its project work completely to the Council.

We continue to support vermiculture composting, and over the past year our conservationists have installed several onsite worm bins at schools in Sonoma County, and conducted environmental education in more than two dozen schools on reducing waste streams. Our conservationist provides a classroom module on composting, and works with student leaders at the school to develop an ongoing school composting program. Less food waste in landfills means less methane (a potent greenhouse gas) generation in the landfill, plus the compost can be used in school gardens, or even sold as a school fundraiser.

## **Worm Wizards of Waste School Project Description**

The Worm Wizards of Waste Project builds on the school deployments of this project in 2016, and accomplishes further on-the-ground change with our program to divert school food waste from landfills. Reducing a school's food waste stream through a campus-wide composting program diverts a significant amount of food waste from greenhouse gas-producing landfills, and instead transforms this waste into vermicompost, a useful product beneficial to the planet. These small actions cumulatively make for big changes to reduce or slow climate change.

Before Worm Wizard of Waste Program



After Worm Wizard of Waste Program



The project provides schools with a fun and engaging environmental education module that strives to teach students the importance of sustainable practices related to waste handling. The project also provides the schools with technical and monetary support to install a vermiculture composting system (worm bin composter) to reduce their food waste stream on campus.

### **Four Core Components of the Program**

1. Composting team building
2. Classroom presentations
3. Installation of composting units at the school
4. Quarterly follow-up monitoring for one year to ensure the program runs smoothly at the school.

## **Composting Team Building**

Our staff Conservationist will guide in the formation of a Compost Club Team (Team) at each school utilizing at least five student volunteers and two lead staff who have support energy interested in the “green movement” concept. The staff and students on the Team will be asked to advocate for participation and support from fellow students and school staff. The Team, with the support of our staff Conservationist, will calculate how much food waste is generated on campus, then estimate the number of worm bins needed to keep the vermiculture compost system running smoothly. The classroom will take on some of the daily recycling and composting duties, and administrative support of the project.

## **Classroom Presentations**

At participating schools, our staff Conservationists will present a lesson called “Recycling Changes Everything” to the participating class(es). In this lesson we introduce students to the importance of developing the habit of recycling through which students learn what can be composted and what cannot. After the lesson we pass out a “Learn and Tell” worksheet and ask the students to record what they have learned and require them to tell 3 other people about vermiculture composting. The worksheets are returned to the classroom and then to the Council, documenting the “Learn And Tell” process.

At the end of the classroom visit, the staff Conservationist will display a small table top vermiculture system where students will get to see “worms in action” and learn how to maintain a healthy and vibrant vermicomposting system at their school campus to support school wide responsible food waste disposal. This part of the lesson is always interesting and fun for students as they gather close to observe the worm wiggling around the compost.

## **Installation of Composting Units at the School**

The Council Conservationist, with the help of the Team, will develop a written set of guidelines/instructions for the daily recycling duties and administrative support of an on-site vermiculture system. The instructions identify key positions, classroom(s), or staff who can carry-on the program. The lead staff and Team will assemble sturdy handcrafted worm bins that we will provide for the school, complete with worms, bedding, an instruction guide, and a compost thermometer. These bins are placed on a short support platform that can easily fit many locations at a school. The Team will determine the location for placing the dual-bin system and how many the units the school will need. The composting bins will be delivered and set up by the Council at the selected location. After the



Typical worm bin

installation, composting can begin at the school site. Using the system on a regular basis will divert approximately 500-1000 pounds of food scraps from the landfill waste stream, and instead turn this waste into vermicompost. The Team and support staff will decide whether to use the vermicompost on-site in a school garden or sold at a school fundraiser. The Council will connect the school, if necessary, with a school garden network and will work with schools to market their compost at a Farmers Market, Earth Day event or to the greater parent community before the end of the school year. Using compost to offset costs for purchasing compost for school garden use or to generate income as a fundraiser encourages the durability of the program



### **Quarterly Follow-up Monitoring**

Students and employees at each participating school will be surveyed with easy-to-use Council forms before, during and after the program to obtain feedback of the impact, adjust to any unforeseen problems during the implementation of the project, and measure its success at meeting the educational and physical objectives of reducing organic food waste at each participating school. Students and employees will also be asked to fill out a “before and after survey” about their experience and knowledge of the impact of recycling food waste.

The Council Conservationist will return to the school once per quarter to evaluate how the vermiculture composting system is working, identify problems needing correcting, and encourage changes that could make the effort easier or have greater impact. At the end of the year, the Council will provide a short summary of recommendations for continuing and expanding the program at the school.

### **Join Us to Reduce Food Waste at Your School**

Reducing the size of our landfill waste streams through waste diversion and increasing recycling is one way to help slow or reduce climate change on the planet. The small act of changing how waste is viewed can make a big difference towards protecting our fragile ecosystems, agricultural systems, and air, water, and land resources.

Our Worm Wizards program includes on-the-ground change as well as educational outreach to schools on the climate change benefits of recycling and diverting food waste from landfills. Reducing a school’s food waste stream through implementing a campus wide composting program can divert a significant amount of food waste from the landfill waste stream, and instead transform this waste into vermicompost, a useful product that is beneficial to the planet.

If your school would like to participate in our Worm Wizard of Waste program during the school year, or you would like to learn more about our program please go to [www.wormwizards.org](http://www.wormwizards.org) or contact our Program Manger Oona Heacock - [oonah@ncrcandc.org](mailto:oonah@ncrcandc.org) (707) 978-4149

## **Worm Wizards of Waste Program Action Plan & Timeline**

Phase 1: Date: \_\_\_\_\_

Stakeholder meeting - identify and prepare for waste audit in Phase 2 (Post Consumer Lunch Scraps for worms and possible pig farmers)  
Conduct Pre-Survey  
Recycling Changes Everything Lesson  
Compost Club Recruitment  
Bring Classroom Worm Bin: teacher instructions, classroom data sheet  
Compost Club Recruitment

Phase 2: Date: \_\_\_\_\_

Conduct Waste Audit w/ lunch time students in cafeteria  
Conduct Post-Survey  
Compost Club Recruitment: review data sheet and review Waste Audit results.  
Continue to have Compost Club do daily data sheets on classroom worm bin and conduct weekly waste audit of cafeteria salad bar PCLS

Phase 3: Date: \_\_\_\_\_

Compost Club Waste Audits results report  
Refine Compost Collection systems by simulation and walkthrough with CC  
Compost Club Formation - exploratory conversations, sourcing of browns (leaves, paper, etc.), open up for student led lunch time PCLS collection, start card game for other students  
Pitch Recycling Changes Everything lesson to remaining school population

Phase 4: Date: \_\_\_\_\_

Delivery and training of worm bins  
Ecology class - implementation, collection/feeding process  
Data Collection  
Learn and Tell form- H2O retention, carbon sequestration via application to any soil

Important - Stakeholders and CC must know to do a "End of day Vector Control check" of the bins to ensure security.