



TABLE OF CONTENTS

Contents

Letter from the Climate Action Manager	
Executive Summary	2
List of Committee Members	3
2015 Year In Review	
2015 Financial Report	10
Acknowledgments	11
Contact Information	12

TABLE OF CONTENTS

TABLE OF CONTENTS

Letter from the Climate Action Manager



Dear friends of the Carbon Fund,

It is my pleasure to present to you this year's annual report! This has been a very successful and productive year for the Carbon Fund. The Carbon Fund financed twenty-three projects, each which has benefitted our community by either reducing greenhouse gas emissions directly, or by funding educational projects that encourage sustainable living. I am delighted by the initiative that students, staff, and faculty have taken in order

to implement projects that have not only reduced our campus's carbon footprint, but have reinforced UCSC's commitment to sustainable stewardship.

The Carbon Fund team could not have done this without the support that students provide through the annual fee measure. Students continue to demonstrate that they are determined to establish real change here at UCSC and in the community. We thank especially our students, but also our staff and faculty who have worked with us in order to create such a successful program!

Christina Thomure
Climate Action Manager
Spring 2015

TABLE OF CONTENTS

Executive Summary

THE UCSC CARBON FUND AT FIVE YEARS

The Carbon Fund marked its five-year anniversary in 2015. It has been five years of remarkable achievements by stakeholders of the Carbon Fund, with dramatic expansion of programs that reduce greenhouse gas emissions on campus and in Santa Cruz County. As of June 2015, the UCSC Carbon Fund has awarded a total of \$586,419 to a total of 62 projects.

2015 IN REVIEW

The UC Santa Cruz Carbon Fund has had a successful funding round this year. The Carbon Fund Committee awarded a total of \$177,002 to 18 projects in the 2014-2015 year.



Members of this year's Sustainability Climate Action Team (from left to right): Chrissy Thomure, Lily Urmann, Robert Jones, Jaric Sawatdee, Ariel Lee, Alden Phinney

TABLE OF CONTENTS

UCSC Carbon Fund Committee

The Committee was established in 2010 in accordance with Measure 44 to publicize and manage the Carbon Fund. The Committee is a student run organization comprised of students, UCSC staff and faculty. It has a student chair/ facilitator, student staff and a majority student membership, to oversee the Carbon Fund. As such, the Committee's first consideration in achieving its mission is that of student needs, education, and engagement.

Mission Statement

The UCSC Carbon Fund committee strives for a sustainable future by working to mitigate Climate Change through funding and participating in projects to reduce greenhouse gas emissions, conduct relevant research, or carry out education and behavioral change programs. The Committee's commitment is foremost to the campus and its students, but also to the wider community as Climate Change is a threat without boundaries.

2014-2015 COMMITTEE MEMBERS

Voting Members	Name	Affiliation
Student Environmental Center	Ian Barker	Student
PowerSave Green Campus Program	Kasey Skinner	Student
Undergrad for the CECSCC	Alden Phinney	Student
ESLP	Dalia Gonzalez	Student
Energy Analyst	Sarah Gilchrist	Staff
Sustainability Office	Christina Thomure	Staff
Purchasing Working Group	Kathleen Rogers	Staff
NON-VOTING MEMBERS		
Outreach Coordinator	Ariel Lee	Student Staff
Student Facilitator	Robert Jones	Student Staff
ENVS/EE Faculty Consultant	Adam Millard-Ball	Faculty

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

2015 Year In Review

This year the Carbon Fund separated applications into two different categories based on requested award amounts. Micro-grants refers to projects requesting \$5,000 or less and Macro-grants are those requesting more than \$5,000.

MICRO-GRANTS

Walk to Class Challenge Day: Year 2

Project Leader: Theresa Buika

Grant Amount: \$2,800

Project Description: UCSC's Transportation and Parking Services (TAPS) provides and manages access and circulation to campus facilities. TAPS also oversees the planning, design, and operation of programs associated with on-campus transportation. In 2014, TAPS sponsored the highly successful Walk to Class Challenge Day, an educational event that promotes walking as a sustainable mode of transportation on campus. The event gathered over 400 students to consciously change their travel behaviors and walk to class. This year, TAPS has requested a carbon fund grant to make the second Walk to Class Challenge Day at UCSC even more successful. The project managers will use their funds to sponsor interns and volunteers to market and create the second annual Walk to Class Challenge Day.



TABLE OF CONTENTS

Increasing Compost Education

Project Leader: Mira Michelle, PICA
Residential Coordinator

Grant Amount: \$3,159

Project Description: The Program in Community and Agroecology (PICA) is an educational community focused on sustainable agriculture and community

building. PICA offers weekly and quarterly student-led workshops to teach students organic gardening and sustainable living skills. PICA's carbon fund grant will help support and expand their current compost education program. The project's goal is to increase education on campus about composting, as well as divert food waste from landfills. The funds will give PICA's compost coordinator the opportunity to offer compost education workshops to students and composting supplies, such as worm bins, to the PICA community. The program anticipates to reach over 170 students and divert 9,420 pounds of food waste from landfills.



Sustainable Commercial Export Packaging For Zero Motorcycles

Project Leader: Jennifer Chen

Grant Amount: \$1,800

Project Description: Zero Motorcycles is a company that manufactures 100% electric motorcycles, however, they rely on non-compostable and non-recyclable materials to ship their products worldwide. The company currently uses shipping crates made of unsustainable materials, such as cardboard, plywood, and styrofoam. UCSC students and faculty members have partnered with Zero Motorcycles to find a 100% sustainable packaging solution for shipping their products. The project managers will use their funds to work with the company to research, design, and create a new crate model. The project's goal is to present a sustainable, feasible, and affordable redesign of the shipping crate that satisfies all physical requirements for shipping.



TABLE OF CONTENTS

Santa Cruz High Garden Renaissance

Project Leader: Wyeth Wunderlich

Grant Amount: \$5,000

Project Description: A group of UCSC students, Santa Cruz High School students and teachers, and community members are beginning to convert a plot of degraded land into a thriving organic garden. The team plans to transform the site into a beautiful garden and educational space for Santa Cruz High School students. The garden will serve as a place to host relevant lesson plans and curriculum, and for students to develop and practice the technical skills of converting and tending to a garden site. The SC High garden will serve as a demonstrative training center and living classroom for sustainable food production. The team will use their carbon fund grant to purchase necessary gardening supplies, such as a shed, seeds, worm bins, straw bales, rakes, forks, and wheelbarrows.



Development of a Versatile Microbial Fuel Cell

Project Leader: Jasen Fernandez

Grant Amount: \$400

Project Description: A team of bioengineering students have been awarded a carbon grant to engineer and construct a portable, versatile microbial fuel cell (MFC). A MFC is a bioelectrochemical system that generates electrical power by exploiting the biocatalytic reactions of microbial cells. Ultimately, the team plans to design a MFC that can be employed in aquatic sediment that can effectively make use of microorganisms already present within the environment. The project's goal is to construct a MFC module versatile and portable enough to be used in any aquatic location and to prove that renewable energy can be harvested from soil.



TABLE OF CONTENTS

Green Field Trips to the Santa Cruz Wharf

Project Leader: Tiffany Wise-West

Grant Amount: \$2,400

Project Description: The Santa Cruz Wharf Outreach Network was awarded a carbon fund grant to run a pilot project for their field trips to the Santa Cruz wharf program. The goal of the project is to determine the feasibility of offering school field trips, where students learn about topics in sustainability, to the Santa Cruz Wharf. Often, the limiting factor of field trips is transportation, so the project manager plans to work with the Metro Transit District to pilot the field trip program. The pilot project will run for one year and provide 1-2 field trips a month.



Digging Deeper in the Harbor High Grow Quad

Project Leader: Wyeth Wunderlich

Grant Amount: \$1,000

Project Description:

A team of UCSC students have been awarded a Carbon Fund grant to transform the Harbor High Grow Quad into a living classroom that educates students and community members about sustainability and organic gardening. The goal of the project is to create a gardening space for students and community members to engage in sustainable education about food production and permaculture. The team will use their Carbon Fund grant to purchase the necessary items for creating a beautiful garden space, such as fruit trees. The team intends to plant around 30 fruit trees, which will produce 6,000 pounds of fruit annually.



TABLE OF CONTENTS

MACRO-GRANTS

Pathway Lighting Retrofit

Project Leader: Logan Weinberg

Grant Amount: \$27,300

Project Description: The UCSC PowerSave team is using their carbon fund grant to replace existing High Pressure Sodium (HPS) light bulbs on campus with more efficient LED bulbs. The team piloted the program in 2014, and will now be working towards completely replacing the bulbs. They will also analyze data from before and after the replacement to determine energy savings this year. This project will save an immense amount energy and directly reduce our campus' carbon footprint. It is estimated that the project will save 422.25 tons of CO₂ and 1,774,170 kWh of electricity over its lifetime.



Water and Energy Efficient Steamer Cookers in Campus Dining Halls

Project Leader: Lauren Mills

Grant Amount: \$13,503

Project Description: The project's goal is to install 2 energy and water-efficient steamer cookers in the Cowell/Stevenson and 9/10 dining halls. The team will work closely with campus dining services to monitor and collect data from the machines.



TABLE OF CONTENTS

Fleet Services Electric Vehicle Upgrade Project

Project Leader: Shuhei Takahashi

Grant Amount: \$6,430

Project Description:: This project's goal is to upgrade a fleet of 10 Neighborhood Electric Vehicles (NEV) to avert the purchase Internal Combustion Engine (ICE) trucks on campus. Lead acid batteries contain sulfuric acid and large amounts of lead. Although lead acid batteries can be recycled, the lead recycling industry is considered one of the worst industrial polluters worldwide. The upgrade includes replacing toxic, lead-acid batteries with Lithium ion batteries, which are safer and more efficient.



UCSC Bike Library

Project Leader: Julie Foster

Grant Amount: \$33,537.50

Project Description: The Bike Library increases bike ridership, safety, and awareness on campus by making bikes accessible to students, staff, and faculty. Funds will help the library purchase 40 bikes and hold classes, which will expand the program. This program supports and motivates students to embrace human-powered transportation, and reduces the impact of single occupant vehicles on campus.



TABLE OF CONTENTS

Graduate Student Commons Kitchen Retrofit

Project Leader: Rachel Neuman

Grant Amount: \$25,000

Project Description: The Graduate Student Commons is a space for graduate students to gather, hold meetings, and form a community. This project will indirectly help UCSC reach the University of California Office of the President's climate and energy initiatives to become carbon neutral by 2025. By replacing old kitchen appliances with water and energy efficient ones, the Graduate Student Commons Kitchen Retrofit will reduce energy demand and carbon emissions over the course of the appliances' lifetimes (about 8-12 years)



Green Labs Equipment Retrofit

Project Leader: Lily Urmann

Grant Amount: \$13,000

Project Description: This project's goal is to increase the incentive for campus labs to upgrade existing equipment with energy efficient equipment. The team has accumulated a list of My Green Lab-recommended lab equipment that the funds can cover. This project will have direct environmental impact through high-use energy efficient equipment upgrades. Indirect benefits include an enhanced presence of the Green Labs program on campus, increasing its potential to act as an educational opportunity in campus sustainability for students and staff alike.



TABLE OF CONTENTS

Cowell/Stevenson Dining Hall: Water & Energy-Efficient Dish Machine Replacement

Project Leader: Lauren Mills

Grant Amount: \$30,000

Project Description: The Carbon Fund awarded money to incentivize the purchase and use of a water and energy-efficient dish machine for the Cowell/Stevenson dining hall. This machine will generate massive energy and water savings. The current dish machine is 15 years old. Based on several monitoring studies, there is a tendency for the specified rinse flow rate to be significantly elevated with older machines.



Reducing GHG Emissions by Greatly Reducing 2-Stroke Leaf Blower Use on Campus

Project Leader: Dave Roe

Grant Amount: \$11,325

Project Description: This project intends to replace fifteen 2-stroke leaf blowers with battery powered ones. This replacement will eliminate one ton of carbon monoxide emissions and various other pollutants. The equipment will be purchased locally, less than 6 miles from the UCSC campus. The grant will also allow the project to purchase equipment in larger quantities, rather than purchasing each unit separately.



TABLE OF CONTENTS

Microscopy Facility LED Light Source Upgrade

Project Leader: Benjamin Abrams

Grant Amount: \$11,748

Project Description: The project's goal is to replace microscope lights in the UCSC microscopy facility. The switch from mercury bulbs to LED will generate energy savings while eliminating the use of toxic- containing bulbs. Lab users and researchers will directly benefit from gaining access to stable, efficient light sources. This project places UCSC and the Microscopy facility in a role model position for other labs that are considering going with green technology.



Arboretum Bioponics

Project Leader: Kevin Green

Grant Amount: \$10,000

Project Description: This project team will build a closed-loop bioponics system at the UCSC arboretum. By growing plants without soil, the system will produce food as well as educate students and promote research. Environmental benefits include soil preservation, reduced eutrophication and erosion, direct reduction of atmospheric CO₂ through plant production, and indirect reduction of atmospheric CO₂ through alternative electric and natural gas energy systems.



TABLE OF CONTENTS

Ecotopia House

Project Leader: Ronnie D. Lipschutz

Grant Amount: \$2,000

Project Description: This student-run project involves constructing a small, sustainable home that will be exhibited at UCSC, and showcased at a competition in Sacramento. As a collaboration between UCSC and Cabrillo College, this project will be exhibited as an example of what can be achieved with careful design and recycled materials. The Ecotopia house will also be a demo and rebuilding project for campus and community.



TABLE OF CONTENTS

2014 FINANCIAL STATEMENT

revenues

Measure 44	\$110,700. 00
Carry forward FY '13	\$146,902. 00
Returned Allocations	\$6,923.00

EXPENSES

Commitments

Green Revolving Loan Fund	\$68, 365.00
Contingency (Previous Projects)	\$9,000.00
Subtotal	\$77,713.0 0

Projects 2014- 2015

Micro-grants	\$16,559 0
Macro-grants	\$165,843. 50
Subtotal	\$182,402. 50

Other Expenses

Staff Salaries	\$7,984.00
Staff Benefits	\$1,188.00
Subtotal	\$9,172.00

TOTAL	\$231,703. 40
-------	--------------------------

SUMMARY

TABLE OF CONTENTS

TOTAL REVENUES	\$257,602. 00
TOTAL EXPENSES	\$231,703. 00
BALANCE	\$25,898.0 0

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

Acknowledgements

The Carbon Fund would like to thank University of California Santa Cruz (UCSC) students for their generous contribution, though a student fee of \$3 per quarter, without which the Carbon Fund would not be able to provide grant money and fulfill its mission of reducing local greenhouse gas (GHG) emissions.

The Carbon Fund thanks all Carbon Fund project managers and their mentors for their dedication to reducing GHG emissions, and the committee for being the driving force behind the success of the Carbon Fund program.

TABLE OF CONTENTS

TABLE OF CONTENTS

Contact Information

CLIMATE ACTION MANAGER

Christina Thomure
831-502-7086
cthomure@ucsc.edu

UCSC Carbon Fund

University of California Santa Cruz Sustainability Office
1156 High St.
118 Kerr Hall
Santa Cruz, CA 95064
sustainability.ucsc.edu
carbonfund.ucsc@gmail.com