

A Case Study: Compost and Community at College of the Atlantic

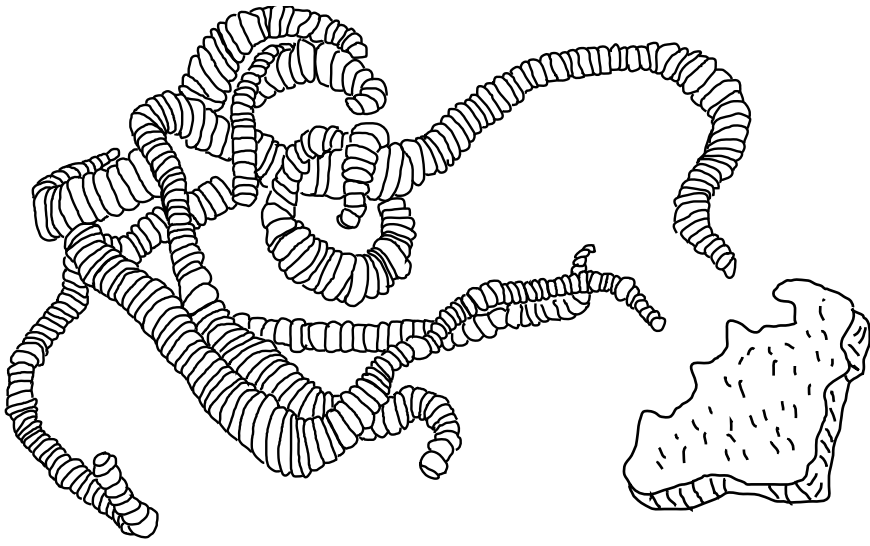
by Lisa Bjerke



College of the Atlantic
Human Ecology, B.A
Senior Project - Spring 2013

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Spring 2013

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Compost and Community
at College of the Atlantic**



Abstract

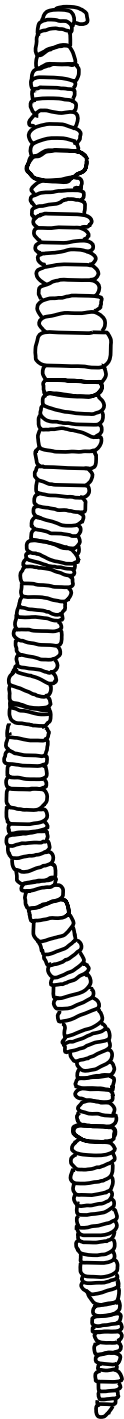
My Senior Project is a capstone of my time at COA and has many different components to it, as well as an overarching vision. The different components are communicative writing, transitioning and supporting the Compost Work Study students, public outreach about compost and the carbon cycle to COA as well as the wider community, and this written report. All components represent my exploration of COA's culture around compost, conceptions of waste, and organic material management. Through this project I aim to better comprehend the institution's understanding of the human role in managing ecological services on campus.

I examine the ways in which the College of the Atlantic (COA) community views and engages with the organic material in the campus landscape. Through intimate exploration of the interconnectedness between different activities on campus, I have been able to outline the past and current efforts with composting and organic material management. I have gathered historical information around organic material management at COA, and I have organized and structured my own documentation of compost and landscape management.

This report provides historical background, outlines basic needs, and can be a guiding manual for our compost and organic resource management. It includes my ideas and suggestions of how to improve the situation, both infrastructurally and culturally, and it has outreach pieces, such as my vermicompost guide. My goal for this report is that you will gain more knowledge of the past and current organic material management at COA as well as be able to use this information to constructively engage with organic material management.

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Foreword

Composting is about people. It is human-facilitated decomposition that benefits us in our relationship to the soil and to the earth. You can think of composting as farming, but one step down in the chain. Composters use nature's decomposition process to create soil suitable to grow food just as farmers use and manipulate nature's process of growth to benefit us through the production of food. Vegetation will grow with or without farmers, and decomposition will happen with or without compost piles. It is up to us if we want to benefit from the processes of nature.

Compost is therefore not at all about waste. Compost is about resources: it is about utilizing decomposition. We have turned the concept upside-down when we think that composting is about reducing our negative impact on the planet when it is actually about using the planet's resources to our benefit.

The current cultural concept of compost is an example of how we try to fit nature into our lives. This backwards way of looking at our relationship with the natural world can manifest itself through absurd efforts to think about composting as "reducing food waste." This mantra to reduce food "waste" comes from our efforts to not harm nature by minimizing our use of it, when we actually should try to understand how to live within nature. What would happen if we adopted nature's model that nothing is ever wasted—therefore, that there is no such thing as food waste? Human Ecology is putting humans back into nature and composting is one active way to practice Human Ecology.

Under our feet is an unseen but absolutely essential universe of life. In one spoonful of soil there are six hundred million bacteria and one million different fungi. In one cubic meter of earth there are hundreds of worms and thousands of insects.¹ This universe under our feet creates the soil essential to life on earth, soil that provides a readily available carbon source on which all life relies. Unlike petroleum that takes eons to replenish and is difficult to extract, this black gold is easily accessible and renewable, as long as we humans make a conscious effort to help nature continue this elegant cycle.

I hope that the COA community can incorporate composting into our institutional culture. It could be something as incorporated into our daily routines as much as is breathing in oxygen and breathing out CO₂. That it becomes something as natural as eating food. I hope this document in your hand will be a useful tool for you to envision a COA that functions within nature, and not on nature. I hope this case study will make you ask more questions about human behavior, how we act, and how the world around us functions.

1 Soil Biology Primer [online]. Available: soils.usda.gov/sqi/concepts/soil_biology/biology.html [May 30th, 2013].

Compost is one entry point to the larger question of human's role within nature and its nutrient and carbon cycle of life. This project is about the potential of our leftover food and the landscape that we live in and affect to be valued and managed as important resources. In my senior project I try to consider the broader implication of human's role within nature by incorporating all the organic landscape material on campus, and at times including COA's farms, Beech Hill Farm and Peggy Rockefeller Farm. Overall, this report explores how to think about human behavior in the context of organic resource management, and even human ecology. Using praxis to look at what has been done, the impact of the decisions, and what we envision the future to be, I hope this case study will be a useful tool for COA to consider and engage with the many needs and resources that we have.

Introduction

My involvement with COA's compost did not start in an intentional way. When I came to COA in the fall of 2009, I was determined to have a hands-on and experiential education in college. High school had made me tired of studying for my own academic, intellectual, and personal benefits without much intentional interaction with the rest of the world. One of my first efforts to be useful was to join the Campus Committee for Sustainability (CCS). My friend Graham and I joined the committee, and we were thrown into the discussion about the compost system (see appendix for CCS minutes). I found the questions and proposed solutions to the college's compost problem to be a simple and small task to take on; little did I know how much time I would spend on the compost system. Graham and I became so involved in our first fall term that we decided to do our final group project for the human ecology core course on COA's composting system. Through our involvement we decided to try to create a work-study position for us to work more with the composting system at COA. By coincidence, my assigned academic advisor, Suzanne Morse, was the manager of the community garden and had been working on the compost system in the past. She had a lot of useful insight for us on our new work-study position. We learned from trial and error, and that approach became the theme of my interaction with COA's compost. After the first year, Graham moved on to be a residential advisor and I recruited our friends to help me with the compost.

Four years later, compost has been the constant project I have worked on at COA. I have been very involved, to the point of me worrying how the compost system would function if I were not there. This feeling was troublesome and made me realize that my time and effort would

be of little help to the institution if the compost system ceased to function when I graduate.

I needed time and space to pass on my knowledge about COA's composting system. This involved reflecting on what I have learned, phasing myself out of my compost duties, recruiting and supporting new compost work-study students, and thinking about the bigger picture – how to reveal our connection to the carbon cycle through COA's organic landscape and management. In addition, I wanted to focus on further developing specific small-scale compost systems, such as the vermicompost program.

It was therefore a natural step to make my senior project about compost at COA. It would be a culmination of my time at COA through the lens of composting: a case study of community and compost. The case study has enabled me to gather information about compost at COA in a presentable form for others to have as a resource. I had a lot of notes and resources collected about compost systems that I wanted to share in an effective way. I also wanted to explore the history and reasons behind the current management of COA's compost and organic landscape, and to look into possibilities for improvements.

To do the above, I needed to ground my work with definitions of terminology and concepts to help explain my frame of reference. There are many ways that one can categorize organic matter: scientifically, food-centric, landscape-focused, or even as a waste. I approached the questions of what is organic material and organic management as a hybrid of environmental- and human-centric frameworks. I focus on the activities that involve organic materials on campus, in the landscape and in our stomachs.

The use of the organic matter of COA is multifaceted. There is the physical stuff and the management of it, as well as how COA as an institution values and makes decisions regarding organic matter. COA has managed compost and organic material since the school was created in 1969. The organic matter itself has not changed much in quality or volume over the past forty years. We have everything from leftover food to leaves and grass. The ways we have managed it have varied greatly.

In this report I will not use the word “waste” to describe organic matter. This is to demonstrate my belief that the organic matter around us is never waste. Instead I have incorporated my native word “livsmedel” to substitute the common description of leftovers of pre- and post-consumer food. It is commonly called food “waste” whereas I will call it leftover livsmedel. Livsmedel in Swedish is all the organic matter that you can consume for nutrition and pleasure, disregarding medicine but including water, tobacco, and alcohol. It is both the ingredients and the finished dish – a raw potato and its peels as well as the mashed potatoes. The word can be translated to “life fuel”.

I do not believe that compost and organic material are things that COA as an institution or community actively value. We agree that it is important but do not pay adequate attention to our role within it. Depending on the type of organic management, it is executed by dedicated individuals or staff members, and too often viewed as a waste management problem. There are many individual and group efforts, but neither have been successfully institutionalized. The purpose of this report is to present you with my knowledge and observation about COA compost and organic management. It is meant as a background guide for future work and will hopefully become updated or incorporated into future documentations and working plans for COA's organic management system. My specific goals are to give you a good understanding of the history of organic management at COA, present the current organic management system at COA, and give an overview of potential options for improving COA's management of organic materials.



*Community Graden 2009 May
(Lisa Bjerke)*

Methodology

Interviewing

Most of my work has involved interviewing former and current COA community members. I have used a range of methods including phone conversations, e-mail correspondence, face-to-face meetings, and informal dialogue. I interviewed twelve current COA members as well as five alumni to put together the history of compost and organic management, to understand how we got to where we are today. I took notes and wrote up every interview. See appendix for the full list of people.

Field Trips and Exploring Topics

I have investigated specific and detailed questions about organic management as well as different management options for COA. This included following the life cycle of compostable cutlery to Gott's Disposal's¹ compost site in Southwest Harbor, contacting and visiting farms and horse stables with manure, and looking into and writing up information for the purchase of a tractor.

Community Input

On Earth Day 2013 I held an open event for the greater community where people answered five broad questions about compost and the values we have on the COA campus. I have presented my senior project and work twice to Campus Planning and Building Committee: the fall of 2012 and the spring of 2013.

In the end of Spring 2013, I organized a visioning session with Suzanne Morse. She helped me plan and execute the two-hour long visioning session, in which all the Compost Work Study students attended.

Earth Day Questions:

- A: "For you, which spaces on campus play important ecological roles?"
Example: Trees by Davis Garage (location) – carbon storage (ecological role)
- B: "For you, what values do you have in the campus landscape?"
Example: North lawn (location) – play (value)"
- C: "What does compost mean to you?"
- D: "In 2023, what are the ideal qualities of the COA campus?"
- E: "Your feedback on this event."

1 Gott's Disposal is a private waste management company on Mount Desert Island.

Archive Research

Exploring COA's archives has been an ongoing part of my senior project that I have come back to when I have had questions and wanted to understand past actions. I have gone through the online archive of COA committee minutes, specifically the minutes from Campus Committee for Sustainability (CCS), Campus Planning and Building Committee (CPBC), All College Meeting (ACM), and the Steering committee between 1999 and 2012. I have gone through all of Jamie McKown's Off The Wall (OTW) magazines between 1979 and 2000. This excludes the years 1985, 1989, 1992, and 1993.

Form

This report will be presented in a timeline format, starting with the history from the early days of COA and moving forward to where we are now in the physical management of the organic material, outlining the main strategies as well as the external change of social and physical environments. This is followed by the institutional conversations and governance regarding organic management. Both chapters are meant to give the necessary context for understanding the current situation. The chapter on the current situation is the manual part of the report. It outlines the current state, with supporting and detailed information in the appendix. The second part of the report is dedicated to presenting possible ways to move forward, with recommendation on framework, strategies, and decision trees in the fifth chapter. The last chapter is a directory of the main characters in the story of compost at COA.

Focus

My senior project stays broad on the topic of compost and organic management at COA. I have avoided researching a specific approach or possibility, but rather tried to represent my overall understanding of the COA community in regards to compost and organic management. I have also limited this senior project in a geographical sense by excluding the two farms' own organic management. This means that there is a lot of more information and knowledge out there, both on campus and off campus, about how to manage compost and other organic matter as well as how institutions value their role in the ecological services of carbon and nutrients for the soil.

History: Past to Present

COA has managed landscape debris and leftover livsmedel since the school was founded. We have burned, composted, trucked off-site, chipped it to mulch, and simply left the organic matter to decompose on site.

In March 1973 the first organic management for COA starts with Millard Dority's Building and Grounds (B&G) work. He cut grass and managed leaf matter on the newly founded college campus. He had a gasoline lawnmower and used leaf fences to collect leaves in the fall. The collected leaf matter was stored on top of the hill by the Northeast end of campus and the grass was left on-site to decompose for a direct return to the earth. The leaf pile on top of the hill grew fast and in 2013 it reached the size of around 120 cubic yards. Throughout the years it had been contaminated with trash and colonized by red ants, which made the material in the pile unsuitable to use. During the Turrets renovation in 2013 the pile was removed by an external contractor – a decision made by Millard Dority since they needed a place to store all the granite from the Turrets building. Like many others, such as Laura Pohjola (COA'09), I wanted the pile to either be removed altogether or the trash to be removed from the pile so the organic matter could be used around campus where red ants are already present. However, the institution lacked incentive, until the cost benefit analysis favored the granite storage from the Turrets restoration project.

Livsmedel Compost

When the school was not yet open to students, Mel Coté, the administrator, created the community garden by using a Gravelly tractor to plow a 20 by 40 foot garden. The garden had normal garden- compost, and both the garden and the compost was used only by the COA staff and faculty community. When students were admitted to the school the amount of leftover livsmedel generated by the community grew. Between 1973 and 1976 Chellie Pingree and David Winchip managed the compost and the leftover livsmedel from the dining area in Turrets. Chellie was nicknamed Commander Compost, and David and she “shared the duties of retrieving kitchen waste combining it with other essential ingredients and producing compost.”¹ Chellie and David worked on the compost as volunteers, and defined their motivation to be: “it was what we thought needed to happen.”² Their work was featured in a Maine magazine Farmstead, in which Chellie clearly and beautifully explained compost in general but also how they managed the COA compost.

1 Pingree, email correspondence on April 4th, 2013

2 David Winship, email correspondence on May 6th, 2013

Excerpt from the article:

“1) Dry organic material – Leaves, hay, grass clippings, garden residues, weeds, etc. Use your imagination; almost anything that is organic is worth composting.

2) Kitchen garbage – Your compost bin will provide you with a convenient spot for disposal of all those peelings, trimmings and leftovers.

3) Animal manure or some other nitrogen source – Nitrogen is necessary to support the microorganisms. If you don't have manure, check with your feed or hardware store for bloodmeal, dried blood, sludge, cottonseed meal or fish concentrate.

4) Loam – This soil can come from your garden. It will bring the microorganisms to your compost bin.

5) Lime – Since most organic matter tends to be acidic, lime is necessary to keep the pH high enough for decomposition to take place.

Once you have collected everything, what do you do? In explaining how to run a composting operation, I'll tell you how we do it at College of the Atlantic in Bar Harbor, Maine. We have a system of four composting bins and a holding

bin. They are made of one inch hemlock boards spaced one inch apart. The boards in the front and on the sides are removable for easy turning of the compost.

Every Monday two large cans of garbage from the school are brought to the site. Near the bins we keep a stockpile of leaves, hay, manure and garbage cans of loam and lime. The kitchen garbage is shredded along with the other organic matter, which is then mixed into the bins. Every foot or so we add an inch of loam and a shovelful of lime. Once a bin is full, which takes about three weeks, the material is turned into the next bin down the line. The final bin serves as storage for the compost. The process of moving the compost every three weeks provides for some aeration. In addition, as each pile is being built up, we drive a stake down into the pile in several places to provide holes for the air. So far our system is working well. We have only been composting for a couple of months but already our piles are heating up, despite the low winter temperatures. There are some things you should watch out for



when beginning your operation:

1) Excess moisture – Don't put too much wet garbage in your pile; it will compact the materials and slow down decomposition as a result of poor aeration.

2) Over-liming – You can raise the pH so high that the bacteria will stop working or your nitrogen content will be too low for good plant growth. A pH of 6.0 to 6.5 is ideal.

3) No action in cold weather – The action in the compost bin will slow down considerably in the cold Maine winters. If you want to keep it working, insulate the bin. Our bins are sheltered with hay bales, and we put a clear plastic cover over the top which creates a greenhouse effect on sunny days.

4) Animals and rodents – You shouldn't have too much trouble if you avoid putting meat scraps in the bin.

5) Materials that won't break down – If you don't have a shredder or a rotary lawnmower to grind the materials you will be using, then be careful not to leave things in big pieces. If you

put in a whole cornstalk or broccoli root, you may never see the end of it.

The least of your troubles will be finding a use for your compost. You can make your own potting soil, spread it on your garden or use it as Christmas presents. It will also provide a great boost for a corn or squash seed or a tomato plant. I dig a big hole, fill it half full of compost and then put in the seed or plant. I also often side dress a green pepper or eggplant that isn't coming along fast enough. Well-rotted compost will speed anything up.

The more you see of the wonderful results you get from using your compost the more you will want to make. There's no end to the variations you can try – from whatever materials you can find. You will always be successful if you can remember the four needs of compost: aeration; an optimum temperature for bacteria to work (60 F to 160 F); a sufficient microbial community to do the work (brought with the loam); a source of nitrogen.”

(Chelie Johnson, *Farmstead Magazine*, 1970s)



“Comander Compost”, 1970 (David Winship and Chellie Pingree)

OTW Documentations

Off The Wall (OTW) excerpts about compost show that there were individual commitments made throughout COA's history to make the COA community's compost in the community garden. The OTW notice from March 31, 1986 shows the efforts to help the B&G crew with their work with the COA landscape. This commitment speaks to the resourcefulness that exists at COA and how we value the aesthetics of our campus. However I have not been able to determine the successfulness and usefulness of Volunteers for a Beautiful Campus (VBC) and other efforts such as the organized work days during Steve Katona's presidency at COA, and the ACM-sponsored work events on Wednesdays from 13:00-14:30 in the last five years.

This sense of public outreach and a willingness to serve the community speaks to COA community involvement. These notices are informative and inviting. They are public announcements to make people collect leftover livsmedel, but they are not educational. They do not mention how the leftover livsmedel is managed, and the natural process that we all are part of: decomposition.

#####

Compost:

Where humankind gets its busy little hands moving to direct the decay process to a true and noble end. Yess, that's what we do with our kitchen scraps here at COA. For all practical purposes, the system has been nonexistent this semester, but next semester will be different! Community members help out this process, and contribute less to solid waste disposal problems, when they bring their kitchen wastes in from home.

A large bucket with a sealable lid (like restaurants get some foodstuffs in) is almost essential. It's easy to get into the habit of dumping scraps into it as you cook, and periodically lugging it to school. It is a good idea to cut up the large pieces (like grapefruit half-rinds) so they will decay more thoroughly. The compost bins are at the end of the community garden by the back parking lot. However, please don't dump your compost directly into the bin --- it has to be layered and covered. Instead, put it in the green trash can alongside the bins. If your compost is in plastic bags (a rather wasteful way to go about it) please empty them --- plastic doesn't decay quickly. If you have any questions or suggestions... see me.

Cheers! ,Jill

Note: The food scraps you bring in go to the Bioshelter too; still another true and noble endeavor!

#####

OTW 1979 December

COMPOST! COMPOST! COMPOST! Old
orange and banana peels, potato skins, apple
cores, coffee grinds, egg shells, leftovers,
etc. etc. magically transformed into succu-
lent vegetables in just a matter of months!
Keep a bucket in your kitchen for food
trimmings and waste (Please no meat, bone,
paper or plastic). When your bucket is full
bring it to the COA compost area at the far
corner of the COA gardens (or Haul with Paul
will do it for you). Please dump your bucket
into the rectangular, green plastic trash can.
Nature and I will do the rest.

Decomposingly yours,
Ray Wirth
Compost Commander

OTW 1981 October

ATTENTION
ALL GARDENERS!!!!

It's time to compost your corn
stalks and put up the trellises
of summer.

ALL COA GARDENERS ARE REQUIRED
TO DO THE FOLLOWING:

- 1) Pull all stakes, tomato cages,
bean poles and trellises from their
garden and either take them home or
deposit them on the pallet near the
compost bins.
- 2) Pull and chop up (for easy
composting) all corn stalks, sun-
flowers, brassica plants, etc.
and place them in bin 1 of the
compost area.
- 3) If you have any fall crops
(brussels sprouts, kale, leeks,
spinach, chard, fennel, beets,
parsley, etc.) that you intend to
use or overwintering crops (garlic,
shallots, bulbs, parsnips, salsify)
that will brighten your spring then
you must MUST mark the four corners
of the planted area with brightly
adorned stakes. ALL other stakes
will be removed.

YOU HAVE 10 DAYS TO COMPLETE
THIS GARDEN CLEAN-UP!!!
DEADLINE: NOV. 17

OTW 1988 November

VOLUNTEERS FOR A BEAUTIFUL CAMPUS (VBC)

Each Wednesday morning from 9 a.m. to 11 a.m. VBC workers will meet in front of Turrets ready to help the Buildings and Grounds crew with Spring cleaning projects. There's far more work to do than can be expected of the small paid crew.

• Be a VBC worker on Wednesdays at 9 a.m. and see for yourself how much a small group of determined workers can accomplish! See Ted for details.

OTW 1986 March 31

Composting at C.O.A.



WE CAN ALL DO OUR LITTLE
STEPS TOWARDS BUILDING A
BETTER WORLD... ONE
WAY WE CAN PRODUCE LESS



TRASH FOR THE DUMP AND REBUILD
ONE OF THE BEST RESOURCES AROUND--TOPSOIL,
IS BY **COMPOSTING**. COMPOSTING IS THE "BIO-
LOGICAL BREAKDOWN/DECOMPOSITION OF
ORGANIC SOLID WASTE INTO A STABLE
HUMUS-LIKE (SOIL-LIKE) PRODUCT WHOSE
CHIEF USE IS AS A SOIL CONDITIONER!"
ALL YOU DO IS START COLLECTING FOOD
SCRAPS (DECEASED LEFTOVERS, REFRIGERATOR
SCIENCE EXPERIMENTS, CARROT TOPS, GARLIC
PEELS, COFFEE GROUNDS, HAIRCUT REMNANTS,
ETC.-- ANYTHING ORGANIC LIKE). USE A FIVE-
GALLON BUCKET FROM A LOCAL RESTAURANT,
FILL 'ER UP AND GET IT TO THE C.O.A. COM-
POST AREA. **YES, YOU CAN START NOW!** FOR MORE
INFO, SEE JESSIE G., LIBBY D., JOHN NAVAZ., ANDY,
BOB D., GREG, BENNETT. HERE'S WHERE*:



HOW YOU BENEFIT:

- ▲ LESS TRASH TO FEEL GUILTY ABOUT...
- ▲ YOU CAN USE THE HUMUSY COMPOST ON YOUR C.O.A. GARDEN PLOT THIS SPRING!



OTW 1988 January

COMPOST

In an effort to squeeze more energy out of the food that flows through campus, a CoA compost is being organized. This week Turbets, Seafox, Ryles, Gate house and Cottage house will be provided with a plastic, 5gal., lidded compost bucket. Would you please collect all vegetable and appropriate wastes? For folk who don't live on campus but would like to contribute, I'll set an additional bucket out - probably in the vicinity of the carriage house. I'll make a compost pick-up weekly, biweekly if necessary. If you have comments, questions, suggestions or compost knowhow, let's talk.

Jiff

OTW 1986, November 7

COMPOST

troubles? Is it taking over your kitchen? Have your friends stopped coming over? Do you know what compost is? If you have questions about the disposal of your compost, PLEASE 'Dump' a note into

Greg Walker's

box. Satisfaction guaranteed, or double your compost back!

OTW 1988 February

.AGAGCG
 .TATGTGC
 TCAAAAGC
 .CCCTAGAGC
 GATGTGGTGA
 GCAAGTGGCG
 ATTCAGGAGC
 CCTCAGGCTT
 GTCCAGGGCC
 TCTTCGAGC
 TACGGCAAGG
 CAGAGCAAGT
 CTGAGCTTCC
 TCGGCACTCC
 GCTCCGGCTT
 AGGCTGGGCT
 GGCCTCAAGG
 TGGCCACGGG
 CTGCTTGGT
 ATGAGAAAAC
 CGGTTCCGGT
 TGGTCATTCC
 GCGAAGCAGC
 AGCTACCGGA
 AGCGAGCTGC
 CCAATCCTCG
 AAGTTTCGA
 AGCGGCTT
 AGCGTTAAGC
 GATAGTTGA
 GCGCAACGGAA
 CCGAATAATC
 AGACCAATC
 CCCCCGATTA
 GGGGTGTCCT
 GGACCAAGCT
 ACATCGAGCC
 AGCTGTTGA
 AGCCACAGCT
 CTGCTAGCCC
 AGCTCTGGC
 TTGGAGTCAA
 GCGGCTCGTC
 GCGATCGCC
 TTGGCAGTG
 ATTCCGAGG
 GCGATCCAGC
 GCGCTGATG
 CTGGTAAACA
 GAAAGCCGCC
 TCCAGTGCAA
 CAGAGCATGT
 TCGATGTC
 TCATTGTAC
 ATGTCACATC
 TGGCTATGC
 AGCAGTACCT
 CGATTAGCGG
 CGATTGGGCT
 TCAAATCGCC
 CGATCGTGA
 CTGAGCGGAT
 TGGACAGCTT
 TGGGCTTGG
 CGATCGAAGC
 AGACAGGCT
 AGCACTGTA
 AGTGTGTCA
 TCCTCATCTT
 TCTGGGCTTC
 TAATTCTCCA
 GTGGAGTGC
 ACATATCTC
 GCGTCAAGGA
 TCCTCGGGC
 CCATCGGGC
 ACATGGATCG
 CCTACTTTGC
 TGGATCGAGT
 GATCACTGG
 GCGCTGAGT
 GCACAAGGGT
 TCGAAGTGT
 GCATCTACCG
 GATTCGTCT
 GATTGAGATC
 TCGAATCATC
 TATTGTGGT
 GGCTGGGGT
 GACGGTCAGC
 CACTAAGGTC
 TGAAGATGT
 CCGGCTATT
 CCAGCGGTTG
 GAGAAAACAG
 CTGGCTCTTG
 ATCTCGGGC
 CAAGAAGCCA
 AATGGGTTCC
 CTGATTTGTT
 TCTAATGTGA
 AACCGAATCA
 CAGTCGGATA
 CCGCTTTGG
 TTAGCAGAAG
 TTAGAGTCC
 TTTTGGCTGA

A FEW WORDS ABOUT COMPOST

Myself and a small handful of gardeners have been voluntarily taking care of the community compost pile at the COA gardens this spring and summer, and I think I can safely speak for all of us when I say it has been a horrendous task to deal with. I fear that with the new school year upon us and so many more people using the compost system, things may very well get much worse. I turned all of the bins about two weeks ago and right now things aren't too bad, yet a healthy, workable system is still something we are far from attaining. I have been picking out trash from the bins daily all spring and summer and am beginning to tire of attending to something that should not be happening. When I say trash I am not solely referring to the occasional twist tie or rubber band that finds its way into the compost, I am talking about things like whole coconuts, clam and mussel shells, corn cobs, whole spoiled vegetables like oozing potatoes and foul plastic bags of broccoli, cartons of milk(I kid you not), balls of tinfoil,etc., etc. In other words GARBAGE. Materials like clam shells, lobster carcasses and coconut shells are excellent amendments to the system, but only when they are ground up. If you prefer not to take the time to ground such things then please do not put them into the bins. Think about what you are putting into the bin. Things like entire corncobs and other whole vegetables will not rapidly decompose, generally the smaller the scrap is the easier it will decompose. I am glad to see that so many people are using the compost system and keeping kitchen scraps out of the landfill wastestream, but when raunchy anaerobic food scraps go into the bins garbage, not compost is the result. I believe that the majority of people who are putting their scraps into the COA system think that composting ends with the dumping of the bucket. Nothing could be farther from the truth. Composting is a rather intricate balance of food scraps, soil, yard and garden scraps (leaves or straw), decomposition, temperature, human responsibility and muscle. To be effective "raw" compost (the stuff you dump in) must not be anaerobic. Anaerobic compost is the stuff that is most frequently put into the COA bins - smelly, runny, wet, week old scraps. Such material should never be put into the bins. A healthy compost pile should not smell like vomit. Ever caught a whiff of our pile on a hot, muggy August afternoon? Please do not bring anaerobic compost to the bins, bury it in the woods. Better yet, don't let your compost bucket go anaerobic - dump it every 2-3 days. Always cover what you throw into the bin with leaves or straw. If there isn't any leafy material in the hopper to the left of the first compost bin get a handful from the woods or top off the hopper again, it doesn't take long to fill. A layered pile is the key to creating rich usable compost. Also every now and then turn or stab the compost with a pitchfork to aerate the pile.

I do not ask that everyone commit to maintaining the compost system as a whole because that is what I and others have volunteered to do, but please realize that unless everyone is responsible for what they are putting into the system the system fails.

Thanks for listening.

Jason Devine



Community Garden Compost

In 1987 when Chellie and David had graduated and their bins had disappeared, four students – Jessi Greenbaum and Bob Danforth with two other students Andy and Libby – did a group study to build new permanent bins in the community garden. They are the four cement bins that still are in use in the community garden today. Before these bins, they remember it to be organically shaped heaps and it is unknown what happened between 1974 and 1987. The heaps that existed were turned in the spring, material was added in the summer and fall, left alone in winter to decompose, then turned in spring once again before the finished compost was used in the community garden.

Bob was the brain behind the construction of the new bins. He had worked on the renovations of the Farrand gardens, and many grounds projects. The project only took ten weeks from start to finish and a report was created, but I have not been able to find it. Through corresponding and meeting Jessie Greenbaum it is clear that a lot of thought went into both the location and design of the bins. They were located close to the entrance of the garden for convenience, and the back wall of the bins was put into the hill to make the bins be heated and cooled by the earth. Each bin's volume is 3-by-3 by-3 feet, and contains the optimum compost volume of one cubic meter – the ideal size for both good aeration and heat-holding capacity.



*Cement Bins
Community Garden Fall 2011*

They dug into the hill themselves, built the form for the concrete and poured it, and put gravel at the bottom of the bins to help drainage. When Jessie visited COA and the compost in the spring of 2013, she explained that they had envisioned the compost to be turned from one bin to another, but the structure makes it hard to turn the material over from one bin to another. Instead a system of shoveling the compost out in front of the bin, turning it on the ground, and then shoveling back into the same seems to be a better system. Also the lid is hard to lift and turn over, so a different lid structure is something to consider for the future improvements of the bins.



*Large straw structure
Community Garden, 2011*

When Suzanne Morse joined COA in 1991, she inherited the responsibility for the community garden from Mary Roper (COA'85), and with that came the responsibility of the garden and food compost. Overtime, she created a system to accommodate the lack of consistent labor for the compost. Throughout the fall and winter COA used was a big bin made out of straw bales in which all the leftover livsmedel from the dining halls and community members was dumped into and layered with straw and Azomite, a form of rock powder. On the community garden's yearly spring work day the big compost pile was demolished turned and put into the four small bins. The small bins would be turned in the summer once more and then emptied out to cure in the end of summer. One issue was the smell from the pile while turning and it had to be coordinated to not happen on the same weekend as the college graduation. Another problem that arose was the amount of leftover livsmedel that the people from town would bring to the community garden. Suzanne recalled that one summer so much food waste appeared by the compost area that it felt as if the community garden had become the new waste and recycling center of Bar Harbor.

Farms and Kitchen

In the beginning of the 1990s, on-campus food service was limited to a daily vegetarian lunch. The compost was collected by the dirty dishes collection point in TAB. Ken Sebelin was a student then, and he remembers a bucket on the counter where you would put any post-consumer waste. In 1997, when Ken came back to COA as part of the kitchen staff, COA had expanded its food service and served all meals during the weekdays. But the bucket on the counter for compost was still there, the kitchen staff took the leftover livsmedel to the community garden, and Suzanne and work-study students managed it through the big bin model in the community garden. The big bin model: using straw bales to build an approximately eight feet long by eight feet wide by four feet tall structure of straw bales, and fill it with leftover livsmedel and landscape materials such as grass, leaves, and straw.

The different schedules of the kitchen and Beech Hill Farm (BHF) have created an ongoing problem for coordination between the two places, including the emptying and cleaning of the compost buckets. In the summer the food waste can cook in the bins if they were stored outside TAB for more than a day, and there will be a potent smell and larvae in the bins when the bins are returned to the kitchen to be cleaned. The farm's tight schedule in the 1990s and 2000s limited the farm workers to picking-up the leftover livsmedel buckets twice a week and returning the buckets once a week. The pre- and post-consumer livsmedel was frequently dumped on a pile at the farm, without being covered or turned. The pile was large enough that only a tractor could effectively turn it, but the tractor was used for the fields, and to switch the front from field equipment to the front loader to turn the compost was too much of a time commitment for the farm managers, Alisha Strater and Alyssa Mack. Bethany Anderson (COA'13) and I interviewed them at the farm in 2009 for a final project in our Human Ecology core course.

In the summer of 2009, BHF received a complaint from a neighbor through the Town of Mount Desert about their compost pile. The compost did not have a cover and the compostable cut-



*Compost Pile
Cement Slab BHF 2012*



*Compost Pile
Apple Orchard BHF 2009*

leries and lobster carcasses were blowing around the property. The issue was brought to the Campus Committee for Sustainability (CCS) and the administration. The solutions were to temporarily stop any compost from going to BHF while Craig Ten Broeck and I wrote a compost management plan. In the spring of 2011, Jerzy Skupny (COA'11) brought pigs to BHF as an avenue for local meat production and soil management. The pigs were fed, along with spent grain from local breweries, mainly pre-consumer livsmedel from COA's dining hall during the spring, summer, and fall of 2010 - 2012. TAB would put all the pre-consumer livsmedel in buckets labeled "pigs." This continued with varying consistency depending on the number of animals and other feed sources for the animals. When Alisha and Jerzy resigned as BHF managers in the spring of 2013, the new farm manger Tess Faller (COA'08) decided not to raise pigs on the farm and stopped collecting leftover livsmedel from COA.

Instead of BHF picking up the leftover livsmedel, the workers at Peggy Rockefeller Farm (PRF) started to pick up the leftover livsmedel in the spring of 2013, with the supervision of the farm manager C.J. Walke. PRF was a donation to COA in 2010, and it is considerably closer to the college main campus than BHF. Instead of a twenty-five minute drive to BHF in Mount Desert, PRF is a ten minute drive from campus. This will simplify the time commitment of picking up leftover livsmedel and dropping off empty buckets to TAB. The plan is that PRF will take over the spring and summer leftover livsmedel from TAB when the compost work-study students are not on campus to maintain the compost. They have a small sheep flock on the farm that is a great source of compost ingredients. The animals' indoor bedding from the winter months are used to build eight feet diameter and four feet high compost piles in the old cattle shed.



*Compost Piles at PRFs
Spring 2013*

2005 Zero Waste Graduation

When Steve Katona was the president of COA (1993-2006), he spearheaded the Zero Waste Graduation effort in 2005. The main people involved in the effort were Millard Dority, Jean Sylvia, Robert (Bob) Nolan, and Lynn Berzinis. The planning process started in late July 2004. In February 2005 Millard Dority reported via email to COA's president at the time, Steve Katona:

“Zero waste will begin with your garden party and end with the graduation reception. Woven kiwi vine will replace plastic ribbon for the processional. Clearly marked recycling containers will collect graduation programs, plastic water bottles, and paper at the tent. Green cones will be planted in Newlin Garden to collect food waste, compostable plates, cups, and utensils. Student, staff, and faculty volunteers in ‘COA zero waste’ tee shirts will mingle with the guests to offer assistance or answer questions. A shuttle bus will run from COA, to local hotels and to many locations in Bar Harbor to shuttle guests to and from the graduation ceremony.”

It was through the work to have a Zero Waste Graduation that COA started to purchase compostable diningware for the food service and events.

Compostable Cutlery

Suzanne Morse was introduced to the compostable tableware at a conference at Middlebury, and she suggested that the COA Development Office should use them instead of disposable plastic cups, utensils, and plates during events. The first version of compostable tableware broke down well in COA's compost pile, but they also melted if used for hot beverages or food¹. The tableware became more durable at high temperatures, but this also makes them hard to break down in a small low-tech compost pile.

Compostable tableware was introduced in the Zero Waste Graduation. Millard Dority composted everything from the event in a wooden structure with a glass cover. It was mixed with lobster carcasses and Millard turned it once a week. It degraded well until lobster shells were added to the mix in the end of the summer. Because the shells took too long time to break down and due to lack of maintenance, the compost pile started to smell.

After the Zero Waste Graduation the kitchen continued to purchase the compostable cutlery regularly. It was viewed as a more sustainable and environmentally-conscious alternative to plastic and paper cutlery. In addition, the kitchen ordered them for the daily food service on campus. They mainly use compostable bowls for the dessert served during dinner, since the small dessert dishes are

1 Suzanne Morse during CPBC meeting May 22, 2013

hard to wash.

When Sea Urchin opened in 2010, the café only served on compostable tableware since the kitchen was too small to handle dishwashing. As the use of the café increased, the concern for sustainability of the compostable cutlery was raised by students. The compostable cutlery is not made from petroleum, but its lifecycle is complex. The cups, bowls, glasses, plates, and silverware are made out of corn and wood, produced in China, shipped to the US, and then used for one to ten minutes before they are disposed. The energy put into the production and transportation seemed very high, compared to reusing and washing chinaware. It uses a lot of energy and water to wash dishes, but water is something that we are not lacking on MDI or in Maine. However no specific life cycle assessment of the compostable dishware has yet been made.

The manager of Sea Urchin responded to the critique by offering chinaware for customers who are eating at the café. However, no substitute for the compostable smoothie cups has been found. Until the winter of 2013 the café only had plastic straws for the smoothies. It is hard to make people separate the straw and the smoothie cup when they dispose their tableware. Caroline, the Sea Urchin manager found paper straw made by Susty Paty¹ in Brooklyn, NYC. However, they are more expensive (\$55 per box of 600 loose straws) compared to the plastic straws and they also get soggy after approximately twenty minutes in a liquid.

The disposal and management of the used compostable tableware has always been difficult. After Millard's effort to "bake" the compostable tableware from the Zero Waste Graduation, no one was willing to take over that job. Instead the compostable tableware was put in the leftover livsmedel bins behind TAB and mixed in with the leftover livsmedel. However the compostable tableware will not break down under the low heat and low maintenance compost system that COA uses. The compostable tableware requires an industrial facility, and the cutlery themselves needs to be approved by ASTM D6400 standard. Otherwise, the mugs, plates, and cups would blow away in the wind and birds would pull them out of the compost. The tableware became such an issue of Beech Hill Farm (BHF) that the neighbors complained to the Town of Mount Desert. In the compost bins everything had been decomposed and cured into dark finished compost, except the compostable tableware. If you were lucky the transparent water cups would have morphed into a weird shape and a fork would have started to bend, but they would not have composted.

To solve the issue of undesirable mixing we started to separate the leftover livsmedel from the compostable tableware. We used two different types of containers: one for leftover livsmedel and used paper napkins and another for the compostable cutlery. This enabled us to manage the cutlery without all the liquids and smells from the leftover livsmedel. To solve the other issue of slow de-

1 <http://www.sustyparty.com/>, May 16th 2013

composition rate, Graham and I tried to speed up the process by shredding the compostable tableware to increase the surface area. We tried to use B&G's leaf shredder, but it was a time-consuming activity, involving troubleshooting the shredder, repeatedly removing materials that would get stuck, and on top of it all using a lot of gasoline. We moved over to a weekly shredding session, in which we shredded all the tableware by hand using scissors. This became a very nasty business, cutting up containers containing old and moldy food and getting splattered by the different liquids as well as constantly sore and bruised up hands from the scissors. None of the shredding options produced a result satisfactory enough to exceed our efforts. We still had to pull out pieces of forks, mugs, plates and spoons from the finished compost.



Cut Tableware, winter 2009

In the fall of 2013, after almost ten years of trial and error with the compostable tableware, Craig Ten Broek contacted Gotts Disposal, an on-island local waste disposal company. Gotts is a family run company from Southwest Harbor with a DEP certified compost site between Benard and Southwest Harbor. They already had an arrangement to transport Acadia Stables' horse manure to their site, and agreed to pick up our compostable cutlery. The fee is \$10 per pick-up and they are supposed to do this once a week on Wednesdays. However, they often forget and the compost work-study students have to call and remind them.



Gotts Compost Pile, Fall 2013

Erickson Smith (COA'15) and I visited Gotts in the same fall to learn about how to manage to compost COA compostable tableware. Gotts' office is outside of Southwest Harbor, and they took us out their compost site which is further away, tucked away near Seal Cove Road. I was not positively surprised by their compost efforts. The horse manure, the compostable cutlery, and other organic material are stored in a large 50 square feet pile. I qualify it to be an organic landfill – organic material stored without any management to make it into usable compost and soil amendment. Weeds, grass and even trees are growing in the pile. The pile is out in the forest next to a large wood cutting area. The worker who took us out there informed us that in her twenty-five years she has never seen any of the organic material leave the site – only more has been added. She also took us to their gravel pit, where they have large stone crushing machines and sifters. They do sell organic material and compost in bulk, but that organic material comes from their site in Lamoine which I have not visited.

Green Cones

There have been two Green Cones by Seafox since 2000 and in the spring of 2006 John Deans (COA'06) and Craig Ten Broeck, COA's sustainability coordinator, installed four more Green Cones. The intention with the Green Cones was to promote convenient decomposition of leftover livsmedel from the residence halls and near places where people might have some food scraps left over from lunch. Green cones are hybrid of waste reduction and compost creation. The organic matter decomposes in the bin's bottom and then leaches into the ground. During the winter, the ground freezes and the process is very slow, with risk of too little oxygen and water content in the process.

Other functional problems include overflow due to the limited seasonal use and slow decomposing. Aeration is needed since the organic matter demands regular oxygen to decompose. John Deans aerated the cones by stirring the content with a stick every time new food was added, and according to him two bins could then handle the twenty-five students using them (e.g. Seafox student residents). The funding for the cones was around \$100-600 and financed by the sustainability coordinator budget. Today a green cone costs around \$200¹. To date only three cones are left on campus.



Green Cones by Sea Fox, Fall 2009



Green Cones by BT Bike Shed Spring 2013

1 <http://solarcone.net/store/Greencones/>, March 9th 2012

Composting Toilets

In 2009 COA opened our newest student residence and community center on campus: The Kathryn W. Davis Student Residence Village and Deering Common Community Center. They are built to be social and environmentally sustainable, and part of the sustainability effort is the use of composting toilets. It was thought that students themselves would turn the compost bins with education from student life but it did not happen, and the toilets malfunctioned due to the lack of consistent turning of the storage bins.¹ B&G staff took over the job, and it was spearheaded by Robert (Bob) Nolan, with the help of work study students. Since the fall of 2009, Anna Maddamma (a.k.a. poop girl) took on the job with great passion and humor.

The reasoning for using composting toilets in the houses was:

“To minimize water use — and maximize recycling — the buildings are fitted with waterless composting toilets. Ultimately, the waste from these Phoenix Composting toilets will be used to fertilize the surrounding landscape. Alumnus Abe Noe-Hays '00 of Full-Circle Compost Consulting installed the toilets with Ben Goldberg (COA'90) representing the firm. In the Davis residences, ground floor bathrooms are fitted with low-flow toilets, since composting toilets were not feasible.”²

So that the users properly use the toilets, the Campus Committee for Sustainability made signs for the compost toilets in the fall of 2010 and 2012 instructing the COA community that only humanure, toilet paper, sawdust, hair and nails can go down the toilet, and the lid needs to be down at all times when not in use. If the lids are up then the fans that stop any smell from escaping will burn out and a humanure smell will spread throughout the buildings. It is also important that only a small amount of sawdust is applied for each visit so there is the right carbon to nitrogen ratio.



Composting Toilet, Shorey 2nd Floor, Spring 2013

1 Millard Dority in CPBC meeting, May 22, 2013

2 <http://www.coa.edu/Assets/homepage/AboutCOA/kwddeeringbooklet.pdf>, May 16th, 2013

Hello everybody!

Just a friendly reminder that the ONLY things that should be going into every toilet on campus (composting and otherwise) are human waste, toilet paper, and wood shavings (for the composters). Recently we have been having problems with other things being dropped and flushed down.

The compost toilets: these are happy little science vats that work really well when fed a well balanced diet. Feminine hygiene products are not a healthy breakfast, lunch, dinner, or snack. I know that these can look like little black holes of no consequence but someone (me!) ends up fishing unwanted items out and it can be very unpleasant.

Traditional toilets: on campus toilets are pretty eco-friendly and therefore use less water to flush than your standard toilet. This being said they can clog extremely easily. The same dietary restrictions apply.

If anyone experiences any toilet issues of any kind please alert B&G by dialing 5800 from any on campus phone.

Thank you in advance,
Anna Maddamma (aka: poop girl)

PS: after receiving this question many times I thought I would settle it once and for all. Yes, if you drop your cellular device down the composting toilet I can most likely retrieve it for you (in exchange for your first born or a high five).

Email by Annarose Maddamma to the COA Community, May 2nd 2013

Even with the outlined efforts by B&G to manage the composting toilets, little has happened with the management of the resulting humanure compost. When the compost is finished it is removed from the bottom of the vessel and then put in a pile by B&G. The compost from the pile has not been used and is building up, due to the institution's lack of knowledge and action to put the compost material to use. Mark King at Maine Department of Environmental Protection (DEP) explained to me that there are no regulations on humanure in Maine, and he recommended that COA "do a composite sample for fecal coliform and if it's low then spread around campus on crops not



*Finished Compost from COA Composting Toilets
Stored by B&G, Spring 2013*

for human consumption.”¹

In addition, the pile is contained by pallets but has no cover. This makes all the nutrients leach out of the pile when it rains. Since the compost recipe is mainly made up of poop, urine, toilet paper, and sawdust and all of the ingredients except sawdust decompose quickly, sawdust is all that is left in the pile by B&G building. This is a great loss of valuable nutrients from the poop and urine, but hopefully COA will build a good structure for the compost and find a suitable use for the compost.



*Finished Compost from COA Composting Toilets
Stored by B&G, Spring 2013*

1 E-mail correspondence with Mark King, Maine DEP, February 2nd, 2013

2006 Landscape Plan

In the 2006 landscape plan for COA by Coplon Associates, it is stated under the ecological section that COA should produce more than it consumes, and reduce use of fossil fuels. Under the maintenance header it is stated that COA should “reduce maintenance needs/cost through promotion of sustainable practices, encourage student involvement as part of maintaining campus landscape, and address the red ants problem.”¹ These points are well aligned with COA expanding its composting program. I have not been able to find the complete 2006 Landscape Master Plan, but it was very informative to go over the compost part of the plan, as well as all the other organic management sections. I did, however, find in the minutes of the Landscape Subcommittee from March 3rd, 2006 a discussion about the north End of campus between the committee and Sam Coplon, which included suggestions regarding the composting system:

Item 5: North End Discussion

Compost: The committee discussed the potential an [e]ffective composting system could have for the community

- May involve the relocation and enlargement of the gardener’s shed
- Use of tractor and lawn clippings to speed up the composting process
- Possible educational compost production site with a demonstration area
- Organic debris management: current composting system is ineffective and does not deal with post-consumer waste.
- The new system must be able to accommodate all organic matter from TAB.

Landscape Committee minutes, March 3rd 2006

It should be noted that the last point has now been fulfilled, and how the second point is contradictory to the first point under the ecological section of the master plan: “reduce use of fossil fuels.” I have not been able to find the complete 2006 Landscape Master Plan, but it would be very informative to go over the compost part of the plan, as well as all the other organic management section.

1 2006 COA Landscape Master Plan

Organic Matter in the Landscape

The organic matter in the landscape has been managed by the Grounds manager and the garden managers. Both are part of Building and Grounds (B&G) and have support from work-study students, as well as volunteers.

Leaf collection has been managed by B&G, and since 1997 Bruce Tripp has been the grounds manager and is responsible for the lawn, paths, and trees. In the fall B&G students rake up the fallen leaves from lawns and paths into bins, load it onto the beds of trucks, and transport the material to a designated leaf pile. The leaf pile location has been on the top of the hill in the north east corner as well as the area west of the Davis Garage.

Other landscape and garden work has been led by Barbara Meyers, the COA alumni and gardener. Depending on COA funding and budget, she has been working as COA's gardener off and on since 2008. In the fall and spring she manages work study-students under the B&G budget. Barbara has given COA knowledge in understanding the needs of plants and trees to have their organic matter returned to them for their nutrients. She is the main user of the leaf composts and is invested in the quality and management of the piles, as well as the piles for sticks and other wood debris that take longer to decompose.



Stick Pile by Davis Garage, Spring 2013



Leaf Pile by Davis Garage, Spring 2013

Currently B&G has the largest number of work-study students of all part of the campus. Somewhere around forty students work for B&G, the majority of them are involved with the landscape work, both through the grounds and the garden. There have been different ways of managing the leaves on campus, and there seem to be an ongoing struggle to balance the human conceptions of beauty and the ecological benefits, and the collection with the use of organic materials.

The balance between artificial beauty and ecological services is a value- and perception-based ques-

tion. Should we collect leaves to make the campus look neat and tidy and to protect the lawns by suffocation from leaves, or should we not mine the natural input of new organic matter for the soil around the trees and shrubs by letting the leaves stay on the ground?

The balance between collection and use is a question of management. How can we collect leaves and sticks effectively but without contamination of trash? The gardeners need the finished leaf piles to be uniform and free from trash, gravel, and large sticks to effectively use the local organic matter on the gardens. But there has been a problem with the energy and hours of labor demanded from the B&G work study student to sort leaves, pine needles, trash and sticks while raking. COA is missing an overall plan and vision for landscape management, and how to manage the leaf piles in particular. The location for leaf piles has been at two locations: top of the hill in the north end, and beside Davis Garage. Both locations have multiple uses which all are competing for space and access. As mention previously, the pile on top of the hill was removed to accommodate the storage of Turrets granite and will not be used for leaf compost. The only assigned location is now the area beside the Davis garage, which is also used by the boat program. None of the areas are ideal for composting leaves due to lack of space, accessibility, and ground material. The piles need to be turned with a machine without disturbing the soils underneath it to take neighboring trees into consideration and without contaminating the leaf pile with gravel. A conflict of interest arose in the summer and fall of 2012 in the Davis Garbage location. The boats need more area and access in the area and at times the entrance to the piles where blocked by boats. In addition, B&G staff turned the piles to mix the leaf piles, but in the process the tractor mixed in gravel, which is seen as a contamination by the gardeners. The solution was that only the gardeners would use the tractor to turn the piles, but they cannot turn the pile in that area without mixing in the ground gravel. There is no plan for how the area will be managed and where better locations for the leaf piles would be.

To my understanding, Campus Planning and Building Committee (CPBC) is not a satisfactory forum to discuss and plan the location of the leaf piles due to the amount of other topics that CPBC discusses. CPBC is a space for approval and discussion for the general community, but the detailed discussing, planning, and decision-making process for organic management and leaf piles in particular need to be decided on a staff- and work-study-level.

One example of this lack of cor-



B&G Tractor, Spring 2013

relation between CPBC decisions and actual action is Millard Dority's announcement that no more burning will happen on campus with the removal of the pile on the north end.

“The northeast side of campus has finally been cleared. There has been contaminated compost there for a very long time; it was also the location for the burn pile. All of the materials in the area were disposed of. There will be no brush or materials burning on campus, instead, the materials will be bundled and brought to the facilities in Southwest Harbor.”¹

However, after asking B&G staff and observing new burn piles being created by Davis Garage it is clear that an overall vision does not exist or is being implemented regarding organic management. The B&G staff response to my questions about the new built burn piles on the south end of campus was that they were used doing what they had been told to do. This double messaging and acting makes it hard for community members, particularly staff to follow and implement the statements created in CPBC and other governance committees.

Work Study

Student-led initiatives of organic management have seen many permutations in the history of COA. Linking these different management approaches I have found several trends. Work-study students are only working during the school year which makes seasonal variations of human resources, students rotate jobs and no specific staff member guides and troubleshoots issues that arise and with that we lose institutional memory and continuity. However, it creates the space for fresh ideas and personal growth for each student. A balancing factor to this constant rotation is the importance of keeping records, and having faculty and staff informed and involved in student work.

Over the years, Suzanne Morse has hired interested students both as work-study students during the school year and as summer workers to help manage the community compost as well as other tasks in the community garden. Since B&G has the largest number of work-study students on campus it might be the best source of direction and oversight for student work on organic material management. Students interested in recycling are assigned the task of picking up recycling from the recycling stations around campus and storing the returnable bottles in a shed by B&G to be donated, and bringing paper, cardboard, plastic, glass, and metal to Bar Harbor's recycling station at Strawberry Hill.

In 2009 Graham and I created compost work-study positions under B&G, with the support of Suzanne Morse and Craig Ten Broeck. We managed our own tasks and hours independently. No one was managing us, and as long as the work got done and no one complained we were fine. This created

1 CPBC Minutes, April 3rd, 2013.

a very self-directed work-study situation. It demanded maturity and commitment, and we learned a lot. We had autonomy and could also ask faculty and staff questions, but it was up to us to follow-up on our initiatives. We were responsible for recruiting new work study students, keeping record of our work, and developing the compost system, and we missed out on the day-to-day learning from someone who had been at COA and had more knowledge of the history of the place.

The compost work-study morphed over the years, and the line between work-study, community engagement, volunteering, and personal interest became blurry. Since the work was not institutionalized under a staff or faculty member it became part of my own baseline of being a community member at COA.

Between 2009 and 2012 of the compost work-study regularly changed. To keep track of our work we kept an online diary document in Google Drive. It was a way of documenting our work for the next person and keeping track of new things to do. An example of this is:

Spring Term: Compost Journal Week 1

Thursday March 29, 2012

Anyuri: 7:50am- 11:50am,

32°F Snowing, quite chilly and nice :)

- This morning I started measuring the temporary compost bins that we built last term I will attach later an image with the information and the ideas I draw down of how to use that space appropriately to make a two middle size (bigger than the ones we have) bin and some small ones (like the size we have now).
- So, after measuring I went to TAB and started moving the food bins (4 ½ very heavy) and 1 ½ with plates, plastic cups and you might guess-- yes napkins (I will be working on new signs for that later today or tomorrow by next week they will be there).
- Some of the temporary compost bins had no lids on it so I went to the wood pile to look for some wood pieces that could fill the holes; hopefully the new pieces will not get soggy (we had one that looked like paper when it gets wet, not a good quality).
- Fed the worms from Millard's office (a good banquet).
- Went to Sea Urchin cafe with some hay. Found the black boxes kind of empty, well not really, I spend a quality time with them. I mixed up the food that was in the BB (black box) on the with hay then I try my best to layer up (putting a layer of hey then a layer of food) when the food form that bin was gone I passed the food that was in the BB of the left to the one in the right keeping the layer of food and hay until passed all the food that was in that BB and left it with a bed of hay. Some of the part of these separable BB were aside so put them together (now they look taller and spacious).
- I went back to the compost area and brought back the compost-able plates, etc form Sea Urchin cafe and sort them. Spread the food that put into Lola and Billy put some hay (didn't mix them much).

Sasha

- Fed worms in basement! they look SO HAPPY

Depending on everyone's schedule, we also met once a week to discuss term long projects, updates, coordination of the to-do list, and to share newly gained information and knowledge.

Vermicompost

During the winter of 2011, I meet Rosali Kell, a local community member on the island. I was working in Thorndike library over the break and we started to talk about compost. She is an avid vermicomposter and introduced me to her work with worms. We had a year-long informal partnership, in which she taught me about worms, and I helped her store and manage her worms at COA. With the funding from COA we bought a recycled fish tub and renovated it to be a large-scale vermicompost bin. The bin was located behind TAB, in between the outdoor freezer and the smokers' corner, and we used the seedling greenhouse to sort the worms and harvest the vermicasts. We fed the worms vegetables, fruits, eggshells, and coffee grounds from TAB, and added hay and leaf as a bulk material.

In the spring of 2012, Rosali had the capacity to expand, and she bought out the fish tub and moved her vermicompost system to her house in Bernard, as well as bought an additional tub for the community on Little Cranberry. I kept some worms that I cultivated on campus with the help of the compost work-study students. The vermicompost was kept in plastic tubs, first in the basement under TAB during the winter and spring of 2012, and then in the basement of B&T student housing during the summer of 2012.

In the fall of 2012, the worms moved with me into Katherine Davis Student Housing Village. I stored the vermi-bins in the laundry room under a bench. The food source for the worms switched to banana peels and coffee grounds from Sea Urchin café, the lunch-only operated food service in Deering Common. The café opened in 2010. Its operation hours are between 11 a.m. and 2 p.m. on weekdays during the school year. It serves limited options of the TAB food with supplementary smoothies, subs, and pizzas. Every day they would leave a bucket with the days banana peels and coffee grounds outside the Sea Urchin kitchen, and I would pick it up and feed the worms. The other compost



FishTub by TAB, Spring 2011



FishTub & Lisa Bjerke by TAB, Spring 2011



Rosali Kell & Worms at Little GreenHouse by Art&Science, Winter 2011



Worm Bins in the Basement of TAB, Fall 2011

created in the Sea Urchin kitchen or by its customers is still brought outside to the black plastic compost bins between the kitchen window and the wooden fire-stairs on the south side of Deering.

In the winter term of 2013, I created a booklet for COA about vermicompost, and at COA's Earth Day Celebration in the spring of 2013 I held a workshop on vermicompost and gave out the booklets as well as eight of my ten vermi-bins. The public schools on the island also have an interest in vermicompost. Connors Emerson has an outdoor vermicompost system that their sixth graders take care of. Mount Desert Elementary School in Northeast Harbor requested worms that spring as part of their second graders unit on soil.

Compost Work Study 2009-2013

The compost work-study students have explored and documented many composting methods and efforts in the community garden and campus. To manage leftover livsmedel from COA's campus, four main strategies for composting have been explored in the community gardens compost area: large wooden structures, large straw structures, pallets bins, and cement bins. All methods have used straw as a bulk agent, cured the compost under composting blankets, and used sifting in the final step of making the finished compost.



Large Wooden Structure, Spring 2010



Large Straw Structure, Spring 2011



Pallet Bins, Spring 2012



Cement Bins, Spring 2012

2009-2010

In the academic year of 2009-10 the composting system depended on Graham Reeder (COA'13) and myself collecting the food waste from TAB and the residential houses on campus. We used the community gardens wheelbarrows to pick up TAB leftover livsmedel. TAB stored their leftover livsmedel in gray bins outside their kitchen door, and we brought it down to the community garden.

For the student housing compost, the new houses in the Katherine Davis Village had small, three gallon stainless steel buckets with lids in each kitchen, and the house would bring out their compost to black plastic compost bins behind their houses. This system did not work well, since no bulk material was added to the black bins and no one turned or managed the bins. Bethany Anderson and I emptied out the black bins in the fall of 2009, as part of our Core Course final project. We dismantled the black bins and found all types of contamination in them: plastic bags, bottles, chinaware, etc.

Graham and I decided to start picking up the compost in the student houses to help start up a new model in which all houses composted and it was all brought to the community garden. We bought five gallon white plastic buckets with lids for the residential houses that lacked the stainless steel buckets. We picked up all the buckets in the kitchens once a week, and kept track of who used the bins. This was a very time-consuming activity, requiring us to empty and clean other peoples' buckets.

In the spring we decided that the residential houses needed to drop off their own compost at the community garden so that we could spend more time on the actual composting process. This would also make students more aware of the composting process and their personal involvement with it. Initially there was resistance from the student houses: students complained about the time and effort, as well as how smelly and dirty the activity was. However, it also brought greater aware-



*Turnig Compost for curing, Fall 2011
(Kelley Sharp, Sasha Dunbar, Konrad)*



*Learning about Compost Creatures, Spring 2010
(Suzanne Morse & Graham Reeder (COA'13))*

ness and appreciation about the compost work-study student job. Graham and I then had the time to experiment with the composting bins in the community garden and we concluded that more compost bins were needed to accommodate all the compost from the dining hall and the residential houses.

With the help of Suzanne Morse and Millard Dority, Graham and I built a large wooden structure in the middle of the community gardens compost area. The structure was built out of pallets and the discharged bedframes from the Blair-Tyson residence found in the northeast burn pile on top of the hill by B&G and Studio 5. We built it to be wide enough to fit COA's tractor within it. We filled it up from the back with leftover livsmedel from TAB and student housing. The structure enabled us to layer food waste and hay during the winter, and we covered it up with old rugs from the community garden. Most of the pile froze in the winter, and the snow on top of it was an issue everytime we added compost to the pile. In the spring it all melted and the compost became very anaerobic due to the layering of two different textures; wet and acidic leftover livsmedel and carbon-rich straw did not mix well. In addition we had put in all the compostable tableware with the leftover livsmedel, and the tableware created a thick layer of non-degradable matter within the compost bin.

Suzanne's Gardens and Greenhouses class helped us turn the large compost bin over to a large straw structure behind the wooden structure. We added grass as a buffer between the straw and the leftover livsmedel, and we shredded the compostable cutlery to increase the surface area. The increased surface area help to decompose the material faster, but some cutlery and cups needed more controlled conditions to compost properly.

We also tried to improve the communication between the composting work and the greater COA community by involving more people and do public outreach. We started a blog and sent out e-mails asking for volunteers to help us. Carlisle Segal (COA'13) split her work study between the kitchen and the compost, and she became the link between the kitchen and the compost. She helped us understand TAB needs and duties, as well as promoted our work to the kitchen staff. The kitchen staff cleaned out the gray bins in their washer, which was a great benefit for us in the compost work-study group. Other students volunteered, and helped us turn the already-existing small cement bins in the community garden.

2010-2011

In the fall of 2010 – the second year of the current compost work-study structure – I started off working alone in the compost and I had to actively recruit other work-study students from B&G to help me. That year my good friend Åse (Jo) Hellström Vogel (COA'12) and I ended up working with the compost. To more effectively move the leftover livsmedel from TAB to the community garden, we started to use the B&G truck. The food waste from the houses and TAB had increased since BHF had stopped taking leftover livsmedel from TAB due to the complaining neighbors, and

students had caught on to dropping off compost at the community garden. We were able to move the almost finished compost from the large straw structure into the small cement bins, but we were not able to move the new compost that we had added to the large wooden structure. By the spring the compost in the large wooden structure desperately needed to be turned. All the food from the winter had melted and it had attracted flies and become anaerobic at the bottom, but we were unable to turn it all by hand. The solution was to use the COA tractor to turn the material. Bruce Tripp generously taught me how to use the tractor, and I used it in the early mornings (5-8 a.m) before cars would park and block the big entrance to the community garden. The tractor was very effective in turning the compost, but it was heavy on the ground around the compost, and the area became extremely muddy. It also became unsustainable for us to only turn the compost during early mornings. We could not dig around enough to trouble shoot the pile effectively, and ended up turning the large bin too seldom,



Lisa Bjerje Turning the compost in the Large Wooden Structure, Spring 2011



Small B&G Leaf Shredder and Compostable Tableware, Spring 2011



Mess in the Community Garden Compost Area due to Compostable Tableware, Spring 2011



Compostable Tableware Bin in TAB, Spring 2013

which made it even more anarobic.

We spent many hours trying to shred the compostable tableware. This was the year when Sea Urchin expanded and started to use compostable tableware for smoothies and soups, and the small gasoline shredder could not handle the soggy soup containers and crisp smoothie cups. We stopped putting the compostable tableware in with the leftover livsmedel, and instead we stored them in plastic bags by the community garden compost. By the end of the year, we had fifty full trash bags full of compostable tableware. We were unable to shred them quickly enough, and in the summer I threw them away at Bar Harbor's garbage collection site on Strawberry Hill.

Craig Ten Broeck and Suzanne Morse mentored me in my compost work, and helped me attend the Maine Compost School that summer. It was a one-week program through University of Maine's Cooperative Extension Program and Maine DEP, and it was held at University of Maine's research farm: Highmoor Farm in Monmouth, Maine. This was a great experience, and helped me answer many of my questions about compost as well look at the COA composting system in new ways.

2011-2012

My third year at COA was the year that I felt that I had a structure for the compost program. I recruited students from B&G work-study and we were a total of seven compost work-study students: Hannah Flagg, Kelly Sharp, Nimisha Bastedo, Anuyri Betegon, Ana Puhac, Sasha Dunbar, and myself. There were many more students interested, but for different reasons, few were able to commit. I became the manager of the other work-study students and the structure became much more organized than in previous years. We had a weekly schedule, had a term-long and weekly to-do list, met once a week on Wednesdays, and wrote up what we did in a Google document called the Compost Work Study Diary. Students divided up the work and we focused on improving the structures, information, and communication.

An important aspect was that the work-study student would not only work but also learn, and I encouraged work hours to be spent reading books and researching information regarding composting that would benefit our work. Everything we did should be documented in the diary, but it became clear that everyone had different types of work ethic, time commitment, academic and life interests, and time management skills. Many students had a hard time with the independent work schedule, and often did not fulfill their hours even though there was work to be done. We regularly debriefed our struggles and successes, and some of the solutions we found were to always work in pairs and never skip documentation. This helped to reduce the uncertainty of expectations and lack of communication.

We had many ideas of things to do with the compost program. One of the ideas that we implemented was to build more small bins with a volume of 3-by-3-by-3 feet instead of the large straw and wood structure. This would make it easier to turn the compost and control the composting process. We also put up signs around the compost area, and removed the rugs from the compost site, and rebuild the roofs of the cement bins. We did a lot of outreach, and I presented about composting in sustainability-focused classes.



*Sign in Community Garden,
Spring 2010*

We actively tried to become more sustainable with our compost management and wanted to reduce the use of fossil fuel consumption. We stopped using the shredder and tried to reduce the use of the B&G truck. Craig Ten Broeck helped us with our effort by purchasing a Vermont cart for us to more easily transport the leftover livsmedel from TAB to the Community Garden. He also arranged Gotts to pick up the compostable tableware once a week and compost them in their large-scale compost pile.

2010-2011

I decided in the spring of 2012 to not do compost as my work-study position and to instead be an residential advisor. This part of my strategy of phasing out of the compost work and giving space for others to work and develop the program. The students from the year before were Anyuri Betegon and Nimisha Bastedo, and we recruited Daniela de Guzman, Marissa Gilmour, and Aja Mathews. The two returning work-study students decided to do so on half-time. Anyuri had stayed over the summer and she had put in many hours to the compost system, and decided to split her work-study between the compost and the TAB kitchen to have some of her work-study hours be more structured. Nimisha also started to split up her work-study: she worked with the Sustainable Food System Newsletter and wanted to learn more about other aspects of sustainability.

In the spring of 2013, the work-study students took on a different type of outreach by teaching the sixth graders at Conners Emerson in Bar Harbor about composting. The experience taught us a lot about how to explain why compost is important and cool, and how to explain the physics, chemistry, biology, economics, and cultural aspect of composting. They also worked on projects for the compost area in the community garden: they restructured the drop-off location, fixed the roof of the cement bins, and dismantled the pallet bins to build more sound structures.



*Clearing Old Structures,
Community Garden Compost Area, Spring 2012*



*Tool Shed, Compost Area in
Community Garden, Spring 2013*



*Community Garden Compost Area,
Winter 2011 Anyuri Betegon (COA'15)*

Current State

Organic Management Locations

There are five composting locations on campus, not including all the places where non-human facilitated decomposition is happening. We have the leaf piles by Davis Garage, the chipping piles by the hill on the Northeast end of campus, the weed piles and the leftover livsmedel compost bins in the community garden, the Green Cones around campus, and the black plastic bins by Deering Commons, see map.

Landscape Matter

Landscape materials that COA manages are fallen leaves, sticks, and pine needles, as well as lawns, trees, bushes, and gardens. The landscape is currently managed under Buildings and Grounds (B&G), and the person in charge is Bruce Tripp. Bruce is responsible for the grounds keeping, and he has B&G work-study students helping him during the school year and the school breaks. They cut the lawn with gasoline lawnmowers, rake the leaves and pine needles in the fall, keep paths clear, collect branches, and chip wood.

The leaf materials are raked up by work-study students into trash bins and bags, and with the use of the B&G truck moved to a fresh leaf pile next to the path to Davis Center. They also collect any trash or branches that are also raked up. The trash should be thrown out, and the sticks should be put in a stick pile next to the fresh leaf pile. However, this sorting is time-consuming, and some trash and branches end up in the leaf pile contaminating the the finished compost.

When the leaf and stick piles are large enough, they are moved to an area behind the boat storage area of Davis Garage parking lot. The leaf piles are turned and moved with the use of B&G tractor. B&G tries to turn the piles with as little disturbance to the ground and soil as possible. However, this is not an easy task with the current tractor and the very soft ground. Gravel is



Leaf pile by Davis Garage, Fall 2012



Stick pile by Davis Garage, Fall 2012

laid down in the area to prevent damage to the ground, but the gravel is turned into the piles and becomes contamination itself. Barbara Meyers uses the finished leaf compost in the COA gardens, and she and her workers sift the compost by hand. It is also an intensive and time-consuming job to pick out gravel rocks, sticks, and trash from the finished leaf compost.

The pine needles fall after the leaves in the fall and they are bagged up by B&G and brought to the community garden. The community gardeners use the pine needles as well as the B&G gardeners. The pine needles break down slowly and are acidic; this makes them good at controlling high pH soils as well mulching to reduce weed growth.

Leftover Livsmedel

The leftover livsmedel is managed by the compost work-study students during the school year, and B&G in the breaks. Leftover livsmedel is generated in six different ways: TAB, Sea Urchin, Student Housing, Off-Campus Housing, special events, and snacking on campus property. We can think about the leftover livsmedel as either pre- or post-consumer leftovers from food production and consumption, depending on its prior purpose. Any part of livsmedel that is not used for cooking and consumption during food preparation is pre-consumer leftover livsmedel. This could be the leaves and tops of onions and garlic, potato and orange peels. The livsmedel that is leftover after it has been put on a plate and served to someone but not eaten is post-consumer livsmedel.

The leftover livsmedel from TAB is put in gray bins behind TAB and either picked up by compost work-study students or by Peggy Rockefeller Farms (PRFs) work-study students or staff. The leftover livsmedel in dorms are deposited by the dorm members in bins located outside the community garden fence. The compost work-study students will then empty the bins into the composting bins in the community garden. The finished compost in the community garden is used by the community gardeners, and they manage the compost bins in the community garden over the summer. The work-study students resume in the fall when collection of leftover livsmedel starts again.

During the school year, the leftover livsmedel created in Sea Urchin is brought outside by the Sea Urchin staff and put into the black plastic bins on the south side of Deering Common. The compost work-study students are in charge of managing the black bins, and the café staff is responsible for bringing the leftover livsmedel to the bins. In the summer months, B&G is responsible for managing the black bins, including turning the bins regularly.

Compostable Tableware

During the school year the compostable cutlery is collected by the compost work-study students and put into a bin behind TAB. Gotts picks it up once a week, and often they need to be reminded to stop by. B&G is responsible for purchasing compostable trash bags to store the tableware. In the summer TAB, B&G, Summer Programs, and Development staff is responsible for coordinating the compostable cutlery collection for Gotts to pick up.



Compostable Soup Containers, Sea Urchin, Spring 2013



Compostable Plate, Sea Urchin, Spring 2013



*Compostable Smoothie Cups
Left Straw (plastic) Right Straw (Compostable)
Sea Urchin, Spring 2013*

Composting Toilets

The composting toilets are all installed in Katharine Davis Student Village, and they are turned and managed by B&G staff and their work-study students. The finished compost is removed from the compost bins and put in a pile without a cover beside the B&G building in the north end of campus. COA has not used the finished compost yet, but Maine DEP recommended COA do a composite sample for fecal coliform and, if it is low, to spread it around campus on vegetation not-for-human consumption.

Compost Work-Study

The compost work-study students are under the B&G budget but work without supervision. Their main responsibility has been to compost the leftover livsmedel, and this has come to involve the compost diningware since no other part of the institution saw it as its responsibility. They are currently still working within a waste-reduction framework. The objective has been to not waste livsmedel on campus, and they learn by trial and error as well as by documenting their work in Google Drive. See appendix for complete work description.

Currently there are five compost work-study students, and one B&G work-study student working with turning the composting toilets. The compost work-study students share the responsibility of collecting food waste behind TAB, emptying the drop-off bins by the community garden, and building and turning the compost bins. The collection of compostable cutlery from drop-off sites to the bin in behind TAB is also their responsibility. They pick up the compostable trash bags from the recycling station by Katherine Davis Village and from the dish-return location in TAB.

In the spring of 2013, on their own accord the Compost Work Study students took on leading sessions about compost with the sixth graders at Conners Emerson School in Bar Harbor. They have been visiting three different classes once a week for six weeks. The sixth grade students visited COA and our compost as well as showed the work study students their outdoor vermicompost system at Conners Emerson. This partnership is an extension of the Farm to School initiative that COA students started with Beech Hill Farm and Conner Emerson School in the fall of 2012.

Governance

Currently there is no committee that oversees or work on COA compost system or organic material management in general. There are three committees that have organic materials within their mandates: Campus Planning and Building Committee, the Landscape Subcommittee, and Campus Committee for Sustainability. I have given presentations to the Campus Planning and Building Committee about this senior project, the last being on May 22nd, 2013. It was a forty-minute presentation followed by a twenty minutes of discussion, during which the committee discussed how my senior project can be carried forward and what the school can do to improve our relationship with the management of organic materials.

Student Life & Academics

Currently Student Life has no specific information or education for students regarding composting and organic management. However in the winter 2013 Sune Andersen and Clara de Iturbe made an informational movie about COA's composting system in Nancy Andrew's Documentary Video class. It clearly explains and demonstrates how students should use the composting system. It also includes the kitchen compost in resident housings, dining hall composting both for TAB and Sea Urchin, and how to contact COA Compost_Work_Study@coa.edu for answers to any questions. The plan is that the movie will be shown during orientation week in fall 2013, as well as being online at www.coa.edu. It is every residential advisor's house responsibility to have a composting bucket in their house, to empty their compost at the drop-off location by the community garden, and to clean out the bucket.

Future Possibilities

Based on my four years working with COA's Compost Program and this senior project about organic material management at COA, I have suggestions for practical improvements as well as long-term goals and vision for COA. I would like to emphasize that these are only my suggestions, and I believe it is up to COA to decide how to move forward. However, it is important to consider the history of COA to be able to make informed decisions about the current and future possibilities. I hope that my suggestions will be useful, show you some low hanging fruit, but also make you think about options that you might not otherwise consider.

A Shared Vision

In COA's 2006 Landscape Plan we decided that the COA campus "should produce more than we consume."¹ The commitment is a goal, but there is not a commonly shared vision for how the institution will move in that direction. I believe that a key aspect to making any positive changes is a common understanding of shared and differing values and priorities within our community, exemplified by one shared vision. It will help us in our day-to-day work but also guide financial and management decisions. How would COA look without any lawnmowers, trucks, or tractors running on diesel or gasoline? How might the campus look if we wanted to produce more than we consume? What do we produce and what do we consume now? How do we measure or value these things? COA needs to start exploring options for moving forward, but also to define what forward means to us and acknowledge where we are now with our strengths, weakness and differences. To do this we need to feel safe and comfortable with each other, and also better understand our own motivations.

To me, a shared vision for an institution is not the authoritarian model of leaders formulating a vision and then announcing it to the group, as standard practice in many corporations and organizations. To me, a vision is group process, in which the creation of a vision is everyone's responsibility. A vision need leaders to engage and support in the visioning.²

In the spring of 2013, Suzanne Morse helped me arrange and mediate a visioning session, open to the COA community, in which we started with mind-stilling activities and then explored the ideas we have inside ourselves about working and living at COA. On COA's Earth Day celebration in the spring of 2013, I held a workshop in which I I asked the COA community to tell me how COA campus would look in 2023. I believe these types of activities are important for COA to figure out what it means to be sustainable beyond intentions and goals and move into a vision that incorporates

1 2006 Landscape Master Plan for COA

2 Parker, Marjorie, *Creating Shared Vision* (Clarendon Hills, IL: Dialog International Ltd., 1990)

our organic materials.

In the book *Creating Shared Vision* the author Marjorie Parker eloquently explains the importance of visioning: “shared vision is about talking the responsibility of and the shaping the future.”¹ As Parker makes clear, visions are not departures from reality or wishful thinking, but rather:

[v]isions are powerful mental images of what we want to create in the future. They reflect what we care about the most, and are harmonious with our values and sense of purpose. ... Visions are the product of the head and the heart working together... [They] are rooted in reality but focus on the future. ... While visions direct us toward the future it is experienced in the present.

The tension we feel from comparing a mental image of a desired future with today’s reality is what fuels a vision. Powerful visions can never be an escape from reality. Without an ongoing awareness of today’s reality, visions become powerless. ... Any group of people can create a shared vision. Any challenge can be the focus of shared vision.²

The above statements touch me deeply and inspire much thought in the context of COA and our organic material management. Here I am referring to the word “management” as not only the people that are currently working with landscape debris and leftover livsmedel, but as all of us at COA who are benefiting from the oxygen through photosynthesis, eating food, walking on the soil under our feet, and using organic fuels such as oil and diesel – all made up of carbon just as we are. We need to figure out ways of thinking and acting as if organic material is not waste but is instead as being valuable to us. We all need to think about our involvement with the other organic material, and how we benefit and are part of it, and how we can make sure that it is not harmed by us – because wasting organic materials will harm us as well.

I hope a process of creating shared visions about our involvement with compost and other organic materials and processes is future possibility at COA. If so, then the rest of my suggestions for this section – Future Possibilities – will be redundant, since COA will have identified options and possibilities that are aligned with our reality and desired future.

1 Parker, page 1

2 Parker, page 3

Responsibility

I recommend that COA start a structured dialogue between the different current organic material characters. Kitchen staff, B&G staff, Student Life staff, the Development Office, the Community Garden, Academic Programming, compost work-study students, and the farms all need to communicate with each other and clearly define the needs and resources available with composting, landscape materials, events, food service, food production, student involvement, etc. To better work together, I think we would benefit greatly from better understanding each other's efforts and struggles. At the moment leftover livsmedel composting is the work-study students' responsibility during the school year, but beyond that there are not more formal responsibilities within the schools structure, such as a policy or workdescriptions. In a way, the waste management perspective that dominates COA's work COA with organic materials is embedded in COA priorities, and the work itself is discarded as less valuable, or a form "waste" of time and energy.

I believe that COA needs a specific work description about organic materials and our management of it on campus. This includes responsibility of overseeing and evaluating our management of physical resources on campus, including the organic resources. This could embrace our different types of recycling, landscape materials, and our different composts. It would make a base-level understanding of the current situation as good as possible, help COA's different departments with improving their work, and would help the institution to do educational and public outreach. Even though an overall leader responsible for the overall support, it is important to recognize that organic material management at COA will not be managed by one person or one department: Many are needed to be involved and collaborate to ensure successful management.

Organic Matreial Management

Compost Sifter

To be able to use the leaf compost on ornamental gardens on campus, the finished compost needs to be sifted using a large scale sifter with a vibration mechanism. This will greatly improve the usability of the leaf compost and will reduce the need for very detailed separation of sticks and leaves.

Tractor

For Peggy Rockefeller Farm to effectively manage the compost piles for not only organic certification but good compost management in general, a tractor is needed. The animal bedding, manure, and leftover livsmedel and other compost materials need to be kept at 120 degrees Farenheit for a two

week period, and this is hard to sustain if the pile is not turned regularly. Also, the community garden and the ornamental gardens need a smaller tractor to handle the more sensitive grounds on campus. Allied Whale also needs a tractor for large marine mammal necropsies. I have met with C.J., Suzanne Morse, and Sean Todd to discuss a shared tractor. PRF would store and do the upkeep, since the farm would use it more regularly. The community garden would pay a portion of the cost, and use it during larger projects a few times a year and Allied Whale would pay most for the tractor and have exclusive use of it during stranding events. However, due to lack of funding and momentum, the possibility did not further evolve beyond my write up and market research (see appendix).

Composting Toilets

The compost from the composting toilets should be stored under a roof at a dedicated location so that the nutrients do not wash away through the porous sawdust. COA should composite sampling for fecal coliform and use the compost on paths and grounds where no food is growing.

Leaf, Stick, and Wood Piles

The leaf piles need a dedicated location with a cement slab on which to turn the piles without contamination by gravel and to reduce compaction of surrounding tree and plant roots. The location needs to have an easy access for drop-off by leaf collectors and pick-up by gardeners of the finished leaf mulch.

Decision Tree

Suzanne Morse made and presented a schematic for framing the discussion of our landscape-related questions in the Landscape Sub Committee meeting on April 18th, 2013. It includes the central importance of educational value surrounded by connected issues of aesthetics, history, ecology, production, sustainability, and further practical considerations. I think we need this type of structured visualization and decision mapping in decisions regarding COA landscape and organic materials.

Public Outreach

Student Life needs to educate and promote stewardship of the campus environment to the incoming students every year. The compost video by Sune Andersen and Clara Deiturbe should be shown to the students, and the residential advisors (RAs) should be taught during RA training about sustainable living and features of their residences. Also, new signage and information needs to be made, including information for Development events.

Data Collection and Research

COA has great potential for more formalized data collection and research about composting and organic materials on campus. This would align with many of the 2006 Landscape Master Plan's nine "role groups" COA's landscape has: educational, ecological, agricultural, functional, and maintenance. Here are a few suggestions:

Carbon Study of COA

To understand our involvement with organic material we need to understand the carbon around us. A study of the stored carbon on COA campus, as well as consumed and produced carbon would be a great start to create a baseline for COA moving forward to become fossil fuel free in 2050. It would also move the COA campus forward to becoming a more dynamic and experimental "learning laboratory."¹ Clarkson University did a study of Carbon Sequestration on their campus, which can be a resource and starting point for COA to investigate its own resources.

Produce as much as We Consume

This could involve looking at the different nutrient cycles on campus to understand what, where, and how much we consume and produce, and where it goes. It could also entail assessments of carbon, phosphorus, nitrogen, energy, etc.

Leftover Livsmedel Composting and Compostable Tableware

There has not been a structured data collection of how much leftover livsmedel we create, and a life assessment of the energy used. In addition, a life cycle study of the compostable cutlery we consume would enable us to make an informed decision if and when we should use chinaware or compostable tableware in our dining hall, café, and during events.

1 2006 COA Landscape Master Plan

Characters

Organic Management Locations

There are five composting locations on campus, not including all the places where non-human facilitated decomposition is happening. We have the leaf piles by Davis Garage, the chipping piles by the hill on the Northeast end of campus, the weed piles and the leftover livsmedel compost bins in the community garden, the green cones around campus, and the black plastic bins by Deering Commons, see map.

Landscape Debrief

Landscape materials that COA manages are fallen leaves, sticks, and pine needles, as well as lawns, trees, bushes, and gardens. The landscape is currently managed under Buildings and Grounds (B&G), and the person in charge is Bruce Tripp. Bruce is responsible for the grounds keeping, and he has B&G work-study students helping him during the school year and the school breaks. They cut the lawn with gasoline lawnmowers, rake the leaves and pine needles in the fall, keep paths clear, collect branches, and chip wood.

The leaf materials are raked up by work-study students, into trash bins and bags, and with the use of the B&G truck moved to a fresh leaf pile next to the path to Davis Center. They also collect any trash or branches that are also raked up. The trash should be thrown out, and the sticks should be put in a stick pile next to the fresh leaf pile. However, this sorting is time- and effort-consuming, and some trash and branches are put into the leaf pile and contaminate the pile for the end users.

When the piles are large enough they move to an area behind the boat storage area of Davis Garage parking lot. The leaf piles are turned and moved with the use of B&G tractor. B&G tries to turn the piles with as little disturbance to the ground and soil as possible. However, this is not an easy task with the current tractor and the very soft ground. Gravel is laid down in the area to prevent damage to the ground, but the gravel is turned into the piles and becomes contamination itself. Barbara Meyers uses the finished leaf compost in the COA gardens, and she and her workers sift the compost by hand. It is also time- and effort- consuming job to pick out gravel rocks, sticks, and trash from the finished leaf compost.

The pine needles fall after the leaves in the fall and they are bagged up by B&G and brought to the community garden. The community gardeners use the pine needles as well as the B&G gardeners. The pine needles break down slowly and are acidic; this makes them good at controlling high pH soils as well mulching to reduce weed growth.

Leftover Livsmedel

The leftover livsmedel is managed by the compost work-study students during the school year, and B&G in the breaks. Leftover livsmedel is generated in six different ways: TAB, Sea Urchin, Student Housing, Off-Campus Housing, special events, and snacking on campus property. We can think about the leftover livsmedel as either pre- or post-consumer leftovers from food production and consumption, depending on its prior purpose. Any part of livsmedel that is not used for cooking and consumption during food preparation is pre-consumer leftover livsmedel. This could be the leave and tops of onions and garlicks, potato and orange peels. The livsmedel that is left over after it has been put on a plate and served to someone but not eaten is post-consumer livsmedel.

The leftover livsmedel from TAB is put in gray bins behind TAB and either picked up by compost work-study Students or by the Peggy Rockefeller Farms (PRFs) work-study student or staff. The leftover livsmedel in dorms are put by the consumer in bins located outside the community garden fence. The compost work-study students will then empty the bins into the composting bins in the community garden. The finished compost in the community garden is used by the community gardeners, and they manage the compost bins in the community garden over the summer. The work-study students resume in the fall when collection of leftover livsmedel is starts again.

During the school year, the leftover livsmedel created in Sea Urchin is brought outside by the Sea Urchin staff, and put into the black plastic bins on the south side of Deering Common. The compost work-study students are in charge of managing the black bins, and the café staff is responsible for bringing the leftover livsmedel to the bins. In the summer months, B&G is responsible for managing the black bins, including turning the bins regularly.

Compostable Cutlery

During the school year the compostable cutlery is collected by the compost work-study students, and put into a bin behind TAB. Gotts picks it up once a week, and often they need to be reminded. B&G is responsible for purchasing compostable trash bags to store the tableware. In the summer TAB, B&G, Summer Programs, and Development staff is responsible for coordinating the compostable cutlery collection for Gotts to pick up.

Composting Toilets

The composting toilets are all installed in Katharine Davis Student Village, and they are turned and managed by B&G staff and their work-study students. The finished compost is removed from the compost bins and put in a pile without a cover beside the B&G building in the north end of campus. COA has not used the finished compost yet, but Maine DEP recommended COA do a composite sample for fecal coliform and if it is low, to spread it around campus on vegetation not for human consumption.

Work-Study Students

The compost work-study students are under the B&G budget, but work without supervision. Their main responsibility has been to compost the leftover livsmedel, and this has come to involve the compost diningware, since no other part of the institution saw it as its responsibility. They are currently still working within a waste reduction framework. The objective has been to not waste livsmedel on campus, and they learn by trial and error, as well as by documenting their work in Google Drive. See appendix for complete work description.

Currently there are five work-study students working with the compost, and one B&G work-study student working with turning the composting toilets. The compost work-study students share the responsibility of collecting food waste behind TAB, emptying the drop-off bins by the community garden, and building and turning the compost bins. The collection of compostable cutlery from drop-off sites to the bin in behind TAB is also their responsibility. They pick up the compostable trash bags from the recycling station by Katherine Davis Village and from the dish return location in TAB.

On their own accord the Compost Work Study students took on leading sessions about compost with the sixth graders at Connors Emerson School in Bar Harbor. They have been visiting three different classes once a week for six weeks. The sixth grade students visited COA and our compost as well as showed the work study students their out-door vermicompost system at Connors Emerson. This partnership is an extension of the Farm to School initiative that COA students started with Beech Hill Farm and Conner Emerson School in the fall of 2012.

Governance

Currently there is no committee that oversees or work on COA compost system or organic material management in general. There are three committees that have organic materials within their mandates: Campus Planning and Building Committee, the Landscape Subcommittee, and Campus Committee for Sustainability. I have given presentations to the Campus Planning and Building Committee about this senior project, the last being on May 22nd, 2013. It was a forty minutes presentation with twenty minutes of discussion, where the committee discussed how my senior project can be carried forward and what the school can do to improve our relationship with the management of organic materials.

Student Life

Currently Student Life has no specific information or education for students regarding composting and organic management. However in the winter 2013 Sune Andersen and Clara de Iturbe made an informational movie about COA's composting system in Nancy Andrew's Documentary

Video class. It clearly explains and demonstrates how students should use the composting system. It includes in kitchen compost in resident housings, dining hall composting both for TAB and Sea Urchin, and how to contact COA Compost_Work_Study@coa.edu for answers to any questions. The plan is that the movie will be shown during orientation week in fall 2013, as well as being online at www.coa.edu. It is every residential advisor's house responsibility to have a composting bucket in their house, to empty their compost at the drop-off location by the community garden, and to clean out the bucket.

Conclusion

College of the Atlantic (COA) has and has had many different organic management methods, specifically regarding leftover livsmedel and compost. However, they have often not been combined or directly benefited from each other. Instead the good intentional efforts have been separate efforts, in which we have not been able to overcome the human-created walls of organizational structure.

Organic materials are so naturally integrated into our lives that we have a hard time recognizing their value or even existence. This became evident when I interviewed the different groups on campus who have work descriptions that directly or indirectly involve organic material management. With the exception of the community garden and the gardener on campus, no one recognized the organic material as a resource — instead it was viewed as a waste management issue. Everyone does recognize the importance of organic materials, but their commitment to manage the organic material becomes secondary to their main work responsibilities.

There are great possibilities for COA to move forward with organic material management. It needs to be an institutional effort, with specific groups taking on the main responsibility. The key is to make the community see the joy, beauty, and necessity of many organic materials (beyond the food we eat, the flowers we see, and the gas we consume), and better understand human's interactions with the carbon cycle.

This report outlines some of the organic material management efforts and possibilities at COA and also shows that there is more to do in collection and analyzing COA's history of organic material management. What we still need is a vision for the future for COA organic material management. I hope that the current COA community will take this document, critique it, and incorporate this history into decisions about the future of organic management at the college.

Reflection

A few weeks ago I met with my advisor Suzanne Morse, expressing my frustration about how I felt that I had not learned much in my senior project. She immediately added on more things for me to do, which I at first found even more frustrating: I did not need more stuff to do, I just wanted to do what I had planned to do well. But now, looking back at my senior project process, I do feel that I have learned a lot. Of course I have not learned or accomplished as much as I had hoped to, but I have had many valuable experiences to bring with me into the future. My learning might have seemed much more obvious and clear to Suzanne than to me as I was right in the middle of finishing my thesis. I was learning valuable skills in self-motivation, self-accountability, but most importantly in creativity, praxis, and institutional process.

In my work-study position I have been very goal- and outcome-oriented. Through this senior project I have come to realize that my work-study approach at times can be narrow-minded, and that a problem-oriented method is not always the most effective. This senior project has helped see that the compost system needs to be addressed at an institutional level. The experience has created more questions than answers for me, which I am excited to bring with me into my Watson Fellowship. I have come to realize that I can be immature when I share my understanding and observations of COA's compost and organic management with other members of the community. To be frank I do not always choose the most considerate options in communicating my thoughts and I have learned that I need to be more considerate when I think that I am just being honest. I had spent many hours and energy on interpersonal relationship between staff, students, and faculty members, realizing that I need to distance myself from my own and other people's relationships to compost and our work. At the same time I also need to learn how to listen to others and myself, analyze what everyone's different narratives can possibly mean, and then explore possibilities for the future, while acknowledging that there is never one truth or one answer to anything when you work with people.

I wish I would have spent more time preparing myself for my senior project. This would probably have lent me more intentionality to the proposal and structure of my project. I think that if I had read more books, articles, and thought about ways of documenting the current and past situations, I would have been more realistic with my goals and objectives, and also more prepared for my senior project.

As I went along with the project, I designed and changed my methods and my focus, dropping approaches that did not work, and doing more work on a topic that was encouraged by the community. For example, I did not follow through on collecting data on the amount of food waste the college produces when the work-study students showed little interest in that type of work, and I spent most

of my winter term working on different projects on vermicomposting since many community members showed great interest in learning about it.

My writing process is something that I am proud of. A large part of my senior project is the writing process. I had goals to improve my writing skills, dedicate myself to the writing process, gain experience and confidence in expressing myself through writing, and have a finished written document by the end of the process. I have accomplished this, and I feel that I have improved my written communication. I still have much to learn, but I now have a good practice and model for how to get started with my writing in the future.

Acknowledgements

I would like to show my appreciation for everyone who has helped me in this process. First, I want to thank my two senior project advisors, Suzanne Morse and C.J. Walke, who have supported me through this process and have been understanding and supportive of me. Without any idea of the extent of the commitment, C.J. agreed to be my senior project advisor despite the fact that he was a new staff member at COA with many other things to do. He met with me once a week for my whole senior school year, in addition to reading and editing my work. Our meetings were a grounding part of my senior project adventure. He has been flexible, kind, calm to me at all times, and he makes me feel good about my work.

Suzanne pushed me in directions I would not have dared to go without her support, and gave me thought-provoking feedback and suggestions. In my last two terms, she put aside time to help me when I felt stuck and without direction or guidance. Suzanne is also my academic advisor, and I am grateful for the help and support she has given me throughout my time at COA. She has helped me with my compost work-study position and my academic and extracurricular work. Thank you.

Carlisle Segal has been a great senior project co-worker and student advisor. Our weekly check-in meetings in the fall and winter put perspective to my work, and helped me engage with the process and emotions of a senior project. She has given me consistent feedback and helped me to stay accountable to my work.

Erickson Smith has been an invaluable resource for editing and listening to my never-ending ideas, frustrations, and insecurity. He supported me throughout my struggles with my writing process, and is my most supportive companion throughout my senior project. I am immensely grateful for all the times he helped me pick up the balls that I dropped. He happily took on the role as my fieldtrip buddy, and helped and follow through on ideas that I had, and was my sounding board. He has always given me structural criticism when I needed it. Thank you.

Addie Namnoum became my writing tutor in the winter term and stayed with me for the rest of the year. She has been my professional and empathetic editor and writing tutor, and spent countless hours on Thursday afternoons editing and explaining the writing process to me.

I also want to thank B&G, and especially Millard Dority, Barbara Meyers, and Bruce Tripp for letting me interview them: asking them questions (at times questioning them to the point of interrogation) about their work and views on organic material management. They have been patient, forgiving, and understanding. Thank you.

In addition, I would like to mention Marketa Doubnerova for her helping me with the set-up of a WordPress; Michael Joffe for visual help with my report in the Visual Center at COA; Katie O'Brien for helping me with InDesign details; Jamie McKown for opening up his office for me to do OTW archive research; and Eliza Ruel for helping me to digitize the OTW notices.

Anjali Appadurai, Graham Reeder, and Trudi Zundel for the scheduling structure you created with me in spring term. Our writing sessions helped me focus and made the writing process shared and fun. Thank you. I also want to thank everyone who helped me learn InDesign and Illustrator in the winter of 2013 and edited my many versions of the vermicompost booklet.

Other people that I am thankful for Ken Sebelin, Lise Desrochers, David Winship, Chellie Pingree, Jesse Greenbaum, John Dean, Mel Coté, and many more that I have interviewed and contacted for my senior project; Craig Ten Broeck was one of them who received many emails from me with questions. I am also thankful for his financial and institutional support towards the compost program: his budget helped us cover the cost of a compost thermometer, Vermont cart, and my week at Maine Composting School.

Finally, I want to thank the compost work-study group. They have all helped me with my senior project by working and caring for COA's compost system. Especially Anyuri Betegon, who helped me set up and clean for my 2013 Earth Day event and who spent part of the summer in 2012 turning the compost bins in the community garden, and dealt with the compost and recycling after 2012 graduation celebration. Through my conversations and meetings with the compost work study group I have learned so much about COA, myself, my senior project, and composting. Thank you.

References

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Appendix

Senior Project

Senior Project Proposal

Lisa Bjerke

Case Study: Compost and Community at COA

Purpose

This senior project will combine my passion for social and environmental sustainability with my commitment to College of the Atlantic (COA). During my senior year, I will use COA's composting system and organic waste materials as a case study for how to improve resource management at the college. Specifically, I want to (1) leave the community garden and residential composting system in a functioning and comprehensive state for the COA community when I graduate, and (2) create a manual for how COA can effectively manage our organic materials. This project will enable me to take the knowledge I have gained from my compost work-study, combine it with my academic experience at COA, and augment my experience with compost by participating in all composting operations at COA.

Background

For the duration of my time here, I have been in charge of the residential composting program on campus: I have managed system since the fall term of 2009. I have learned about composting and also about community resources through my hands-on, non-academic work-study position. Through my work study and volunteering I have been able to look into the different aspects of COA's organic resource management: I have learned about leaf composting, yard debris collection, composting toilets, Allied Whales marine mammal compost program, and Beech Hill Farm's composting operation.

I have also taken the opportunities to visit different composting programs when possible. This includes composting facilities on MDI, Maine, New England, Mid-Coast and Southern Atlantic, and Europe. Through the different trips, visits, and workshops I have been able to build up a network of contacts and resources that I hope to utilize in this project.

Description of project

I will produce a written document that combines my applied work and learned theory about organic material management and community programs in a composting manual for COA. It will serve as a reference tool for COA's composting system and will include the history of COA composting, best practices, and resources available.

To produce this final product, I will need to research compost theory, resource management theory, gather information and data from the COA community, and experiment with different methods of community engagement in the composting process. Simultaneously, I will continue my work as a manager of the work study program to improve the composting system in the Community Garden.

1

Field Work

The field work has two components: people and compost.

I will conduct an in-depth and multifaceted investigation to document the history and current management of organic materials at COA. It will include a timeline, record of managing methods, and experience and knowledge from different stakeholders. I will document and evaluate the current state of compost in COA community garden and pre- and post-consumer food waste produced in the dining operation: measure the type and amount of organic matter put into the system, the quality of the output, and the work involved in managing the system.

The fieldwork will also be actual, hands-on composting. I will apply the knowledge gained through research as well as maintain the current composting system to meet the current demand from the community, continuing the work I started three years ago.

Research

I will research how other institutions similar in size to COA effectively compost their organic material. I want to focus on how the community is engaged in the different stages of organic material management: communication and signage, organic waste receptacles, transportation, management of the decomposition process, etc.

I would also like to research the composting process itself: the use of different composting infrastructure, dependency on external factors (financial, climatic, volume, input varieties, etc.), and the scientific aspects (biological, physical, chemical). This research will allow me to tailor the composting system to fit COA's needs and environment as best as possible.

I will learn through primary sources from the library and internet databases, as well as working with experts and visiting composting facilities in the surrounding MDI and greater Maine communities.

I will combine the two components of the field work by continuing to manage the composting work-study students, even though I am no longer a work-study student myself.

Culmination of my academic experience:

My academic work at COA has been around human and environmental resources and their sustainable management. This project incorporates the different aspects of my COA career. I will combine my experiences with Anna Demeo, Don Cass and Dave Feldman in quantitative reasoning, with my communication work with Anne Kozak and Jay Friedlander, to further develop my sustainable practices that I have focused on with the guidance of Suzanne Morse and Ken Cline.

Through courses such as Social Entrepreneurship: Creating Change, Launching a New Venture, Sustainable Strategies, and Math and Physics of Sustainable Energy I have accumulated a body of knowledge that will prepare me in gathering information and synthesizing it into useful format that enables action for businesses and institutions. Especially my final project in the core course and the tutorial in Social Power and Identity Politics have given me hands-on experience with gathering information on COA institutional memory and history. My internship in the summer of 2012 has also strengthened my project management skills, written and verbal communication, as well as my connections with COA as an institution and individuals working with waste management in the greater MDI community.

I have also been part of the implementation processes of projects as a teacher assistant in the courses Practicum in Photovoltaic Solar Energy and Math and Physics of Sustainable Energy. I have gained experience in applied curriculum creation and execution: going from an idea to a syllabus to the implementation of a course project. I have learned involved adaptation and awareness of praxis to change goals and structures in response to the situation. My internship and my time in the Sustainable Business program's Hatchery have taught me how to combine research with the implementation of a project.

Other useful experiences for my senior projects include my certificate from Maine Composting School, and visits to different composting facilities such as the Rodale Institute, Philly Compost, and NYC Composting Program in Pennsylvania and New York. I also attended the Rhode Island University Compost Conference at the Rhode Island School of Design in March of 2011. In addition, through the involvement with the Ashoka U program and COA Sustainable business program, I have been exposed to different strategies of social entrepreneurship and sustainability which will help me combine the sustainable environmental aspects of composting with social sustainability of the COA composting program.

Schedule

I will work on my 3 credit senior project throughout all the terms of my senior year. This is to reflect the constant demand for compost management throughout the academic year and to accommodate the time commitment involved in investigating and implementing changes to COA as an institution.

Fall Term:

My first credit will be dedicated to interviews and data collection on campus to have a documented, comprehensive understanding of the needs and potential already available within the COA community. Week 1 and week 2 of fall term will be dedicated to learning qualitative research methods, interviewing methods and scheduling interviews. I will also start the training of the compost work study students. Week 3 through 7, I will conduct and document the interviews. I will also start to collect data about the current composting system. Week 8 to Week 10, I will evaluate and analyze the interviews as well as the compost data. Based on my analysis of the data in the fall I will be able to identify potential solutions for the program that I will need to research more in the following term.

Winter Term:

In winter term, the hands-on composting will lessen due to the temperature and my time will mainly be dedicated to research that will deepen my understanding of the existing theory and methods within compost. I will create the community outreach part of the COA compost manual, and start the process of identifying potential options for current and future management of the different organic waste at COA. This will involve feedback from the general community, the institutional body of governance, and relevant staff, faculty and students.

Week 1 to Week 4 of winter term, I will be researching and evaluating composting methods and program management methods based on the interviews and data I will conduct and collect in fall term. In Week 5 and Week 6, I will ask for feedback from stakeholders by presenting a number of options for the future organic material management at COA. Week 7-8 will be set aside for finalizing my recommendations and starting the instructional and resource section of the user manual. In week 9 and 10 I will edit the existing parts of my final product.

Spring Term:

Spring term will be dedicated to possible implementation of improvements of the management systems, preparing and carry out a compost workshop on Earth day, finishing the compost management plans, and presenting to the involved stakeholders.

Important Dates:

Fall, Week 3: Interviews Start

Fall, Week 7: Interviews End

Fall, Week 9: First Draft of COA Compost History and Interviews

Winter, Week 4: Research Ends

Winter, Week 5: Feedback Period Start

Winter, Week 6: Feedback Period Ends

Winter, Week 8: First Draft of instructional and resource section of manual

Spring, Week 2: Finished the graphic and designs of instructional signs.

Spring, April 20: Compost and Organic Material Workshop

Spring Week 4: First Draft of Final Product

Spring, May 29: Final Draft of Final Product.

Role of Advisers:**Project Directors: C.J. Walke**

C.J Walke is the interim farm manager at Peggy Rockefeller Farms as well as a Development Associate at Maine Organic Farmers and Gardeners Association (MOFGA). He has a Bachelor of Sciences from Unity, and a Master's Degree in Library and Information Science. He is new to COA as of summer 2012 and has previous experience in composting for MOFGA. C.J. will help me with the big picture of my project: he has fresh eyes at COA and external contacts and resources that I hope to utilize to make my project successful. As my project director he will read and comment on the content, structure and quality of my work as well as respond to my weekly memos and updates.

Faculty Advisor: Suzanne Morse

Suzanne Morse has been my advisor for my whole COA education. I took the Garden and Greenhouses Course with her, and I have been working closely with her in the community garden and its compost area. She knows me very well both academically and personally and will hold me to a high academic standard with her extensive experience in senior project supervision. She will guide me with the academic research and presentation of the project. She has tremendous institutional knowledge about COA and especially about the community garden and its compost area. She will read and give feedback to my final project drafts as well as meet with me in person or over skype every other week, and have weekly e-mail correspondence.

Student Advisor: Carlisle Segal

Carlisle has seen me develop as both a student and a human being during my time at COA. She is a good peer to supervise the project since she has worked on the residential composting system with me, she has a good understanding of the COA community, and she is accustomed to my dyslexia. She will help me through moral support and accountability.

Additional Resource: The Writing Center

I have been working with the writing center throughout my COA career, and I will meet with my writing tutor once a week to review the quality of my writing in my research and final product.

Goals:

Throughout my COA career I have done a lot of physical projects, such as the PV installation on the Ceramics building, the PV canopy and EV-charging station, composting management, my work with the Jordan Pond House in the Sustainable Strategies course, my business plan award, etc. Whereas I have prepared and given many presentations and written well-polished grants and proposals, I have yet to produce a written document that complements and reflects the tangible work that I have done. I want the manual to be that document: I want it to be professional and useful structurally, content-wise, and aesthetically.

In order for my project to be successful, I hope to meet the following goals:

- to conduct research on the history of compost at COA that is fair, yet critical and thorough.
- to define parameters of the collection of empirical data on the current composting system that can be used as base information for future data gathering and compost management
- to produce a manual that is comprehensive, useful, and realistic that will guide relevant stakeholders in the future.

In order for my own growth, I hope to meet the following goals:

- deepen understanding of compost science, and be able to demonstrate that knowledge
- hone research and data collection skills
- uphold a high standard of integrity and ethics while interviewing community members and communicating stakeholder's opinions
- improve my writing skills by reducing grammatical and syntax errors, developing a more effective process of writing and editing my work, and ultimately raise the base level of my written work.

Project Final Products:

- A written report including history, theory, evaluation and recommendations for the different organic material managements, documentation of my work and implementation of the improved composting program, and a user manual and tools for COA's organic material management.
- Presentation for involved stakeholders at COA.

Criteria of Evaluation

The evaluation by me and my directors will be based on how well I have fulfilled my goals mentioned above; specifically I will be evaluated on the process and the outcome:

- Outcome: My level of success will be measured by how well I meet my ambitions, especially the quality of the manual document, my success in integrating different aspects of the project in an interdisciplinary manner, and how well I make it accessible to the COA community.
- Process: I will also be evaluated on the commitment, dedication, and ambition demonstrated for both the process and the product; personal goals met; quality and quantity of new learning; challenges overcome.

Bibliography and List of Resources

People:

- C.J Walke, Peggy Rockefeller Farm Manager and MOFGA
- Suzanne Morse, COA Faculty member and Community Garden Coordinator
- Millard Dority, Director of Campus Planning, Buildings, and Public Safety at COA
- Mark King, Environmental Specialist for the Maine Department of Environmental Management
- Dan DenDanto, Allied Whale Senior Staff
- Alisha Strater, Farm Manager at Beech Hill Farm
- Barbara Meyers, Gardener at COA

Institutions:

- Cornell Waste Management Institute, Compost Program
- Woods End Laboratory, Compost and Soil Lab in Mt Vernon in Maine
- Maine Composting School, University of Maine Cooperative Extension Program
- Gott's Composting, Local Composting Facility
- The Chewonki Foundation, Educational Institution with a renowned composting program.
- Rodale Institute, a nonprofit working with research and outreach in organic agriculture.

Past Senior Project and Group Studies at COA:

- Abraham Noe-Hays Senior Project (2000)
- Composting Group Study with Jesse Greenbaum (1998)

Webpages:

- <http://www.howtocompost.org/>
- <http://compostguide.com/>
- <http://www.composting101.com/>
- <http://vegweb.com/composting/>
- http://eartheasy.com/grow_compost.html
- <http://www.wormdigest.org/content/view/259/2/>
- <http://www.compost-records.com/> (under construction at the moment)

Journals:

- BioCycle
- Compost Science and Utilization

Books:

Compost:

- How to Build, Manage, and Use a Compost System by Kelly Smith
- Seaweed in Agricultural and horticulture by W.A Stephenson
- An Agricultural Testament by Sir Albert Howard
- Let it Rot! The Gardeners Guide to Composting by Stu Campbell
- The complete book of composting, by the staff of Organic gardening and farming magazine.
- Rodale's The Rodale Book of Composting: Easy Methods for Every Gardener by Grace Gershuny

System and Resource Management:

- Thinking in Systems by Daniella H. Meadows
- Big Necessity: The Unmentionable World of Human Waste and Why It Matters by Rose George
- In defense of garbage by Judd H. Alexander

Communication

- Communicating Science by Scott Montgomery
- Rules for Writers by Diana Hacker
- Handbook of the technical writing by Alred Brusaw Oliu

Research Design:

- The Craft of Research by Booth, Colomb and William
- The art of the Interview by Lawrence Grobel
- Visual Anthropology: Photography as a Research Method by John Collier, Malcom Collier, and Edward T. Hall
- Qualitative Research & Evaluation Methods by Michael Quinn Patton
- Qualitative Research Design: An Interactive Approach by Joseph Alex Maxwell
- Learning from Strangers: The Art and Method of Qualitative Interview Studies by Robert S.

Weiss

- Handbook of Qualitative Research by Denzin and Lincoln

Memorandums:

Fall 2012:

To: Suzanne Morse, Carlisle Segal, and C.J. Walke
From: Lisa Bjerke
Date: Sep 17, 2012
Topic: Week 1 Updates

This will be my way of keeping you all in the loop as well as keeping me accountable to my senior project timeline. There is no need to reply, but I would love to receive any comments, suggestions, questions, or feedback if you have some.

My first week of my senior year ran away from me, hence why this memo is 3 days delayed.

Worm Compost:

- I sorted and fixed up the on-campus red worms and started to arrange for what I call the "COA Wormicompost Program". It is essentially a trail project to have community members adopt worms to have in the kitchen. Last year the Millard had one bin in his office, the compost work study student had a bin each in their dorm, and I and some friends had other bins. More to come.

Whale Compost:

- Visited the sperm whale compost at BHF on Tuesday 11:00- 13:00 and Friday 14:30-17:00. I will keep on doing it throughout the term. Erickson (Allied Whale Work Study) and I are collecting data on temp, and any environmental changes (smell, flies, leakage etc.) So far it has been a steady 120 F in the middle and approx. 100 F 7 inches from the surface, no smell, minimum amount of flies, etc.
- I am not doing the data processing and the write up since it is handled by Allied Whale. But to spend approximately 5 hours a week on the whale project is still a lot. It has in one way been a great since it has remove me from the community compost so the B&G work study program will have to manage the college campus. However, it is a lot of time spent on something that is not the essential part of my senior project.

Compost Work Study:

- I have introduced one student to the work (compost, google docs, shore list etc) and I help to start the new terms compost diary.
- I have had to go out and empty the bin outside the community garden and turn the bins in the weekend.

Interviews:

- I have not been able to officially set up any interviews. It fell behind with the immediately need of the worms getting cold outside, my Watson proposal, helping a friend with her worm bin, and other compost related stuff. It is not a excuse, but an explanation. I have however, been informally taking with BHF, Millard, TAB and Sea Urchin but I need to arrange real meetings, have prepared questions, and record it.

Summary:

- I have done a lot of compost related stuff, but I now need to return to my senior project proposal and the time line to be able to stop replacing my senior project objective with managing current compost needs.

To: Suzanne Morse, Carlisle Segal, and C.J. Walke

From: Lisa Bjerke

Date: October 8, 2012

Topic: Week 2,3,& 4 Updates

Hi all,

What have happened? It is suddenly midterm and I this is only my second update to you.

Week 2:

- Interviewed Bruce
- Interviewed Millard
- Interviewed MOFGA
- Interviewed UMO Professor

Week 3:

- Presented my Project for Campus Building and Grounds Committee
- Interviewed Millard
- Interviewed Bruce

Week 4:

- Went over all the input about leaf composting and created a short term solution for this fall.
- Joined COA B&G subcommittee about Landscaping with Barbara M., Nishi, and Isabel M.

Whale Composting:

I am still doing it twice a week, it is time consuming but I am learning a lot.

Worm Composting:

Have not had time to distribute worm bins yet, but I am storing them next door to my dorm in the laundry room of KDW.

I would love to have you all giving me some feedback and check-in with me.

I have started by interview process, and I am done with Millard, Barbara, and Bruce. This has taken much longer, and I feel that I am not spending enough time on my senior project. It is all getting consumed by the Watson Application.

Future:

For next term I will take courses that directly relates to my senior project even though I am tempted to take Dave's math tutorial on chaos and dynamic systems and Karon's literature course on science, spirituality, and society, or another 15 interesting courses. I will take Graphic Design to fulfill my art requirement for graduating and I hope to think more constructively about the communication piece for compost, and Ron Beard's Community Development course to help me with facilitating community engagement with composting.

Happy Week 5!

Winter 2013:

To: Suzanne Morse, Carlisle Segal, and C.J. Walke

From: Lisa Bjerke

Date: Jan 18, 2013

Topic: Week 1 & 2

Last Term:

Accomplished:

- Work Study
- Leaf Piles
- Watson

Failed:

- Write down the history part of my documentation
- Worm project, did not follow through on it enough.

Semi OK:

- Interviews

Update:

Week 1:

- Finalized arrangement for Maine DEP visit.
- Had my Watson interview
- Work Study Check-in.

Week 2:

- Arranged the online Documents
- Meeting with DEP, see separate notes.
- Worked out in the compost array with the work study students

Goals for Winter Term 2013:

- 2 essays/articles for the Food System News Letter
- Get Back on Track:
 - o Write up the history part of my manual
- Graphic Design
 - o Signs for the different composting areas
 - o InDesign work with
- GIS
 - o Map of COA's property with useful organic matter data represented.

Week 3 Goals:

- Turn in my first article for the Food System New Letter
- Write a first draft of the compost history of COA
- Get a scale and make the Work Study student help me measure the amount of food waste.
- Check in with Gots about compostable cutlery pick-up
- Follow up on DEP meeting:
 - o Send Write up to Mark King
 - o Meeting with Craig Ten Broeck
 - o Meeting with C.J
 - o Look into Kuboda options for Campus/Farm
- Look into document type (not word) for final project (Dave Feldman and Kate Shlepard)

To: Suzanne Morse, Carlisle Segal, C.J. Walke, and Craig Ten Broeck

From: Lisa Bjerke

Date: Jan 18, 2013

Topic: Week 3

Summary Week 3:

Success:

- I turned in my first article to the Food System News Letter, see separate attached file in e-mail.
- The issue with irregularity of the pick-up of compostable cutlery by Gotts is resolved.
- I had a meeting with Craig Ten Broeck on Tuesday, Jan 22, about the DEP visit and my senior project. He wants to be in the loop, and I will from now on include him in my weekly updates and other info that I share with you.
- C.J and I had our first meeting of the term (YAY), we talked about horse manure options and how to get a composting system at PRF in the end of term.
- I have contacted 2 horse stables on the island, Sandra Read at Wild Iris and Emily Beck. Emily is positive to donating horse manure, but she is already supplying an organic gardener, and the Wild Iris is using their horse manure on their own field.

Still Working On:

- I have not been able to get a non-electric scale to measure food waste with.
- I am still in the progress of writing up the historical part of my management plan.
- I have also not been able to follow-up more thoroughly on a small tractor option.

Goals for week 4:

- Call town of Bar Harbor and ask what their past compost standards have been.
 - o Leaf composting
 - o BH sewer sludge
- Buy scale and put up document for documenting the input.
- Finish the first draft of historical part
- Visit Wild Iris Farm
- Follow-up with Emily Beck.

To: Suzanne Morse, Carlisle Segal, C.J. Walke, and Craig Ten Broeck

From: Lisa Bjerke

Date: Jan 25, 2013

Topic: Week 4

Summary Week 4:

- Meeting with Suzanne Morse and Sean Todd about potential purchase of a small tractor.
- Contacted/Followed up with:
 - Emily Beck
 - WildIris
 - Willowind
 - Wildstables
 - Contacted the builders of the compost bins in the community garden.
 - Town of Bar Harbor Waste Water Treatment
 - Town of Bar Harbor Public Workers
- Revisited the Worm Compost Project
- Wrote on the History part of my senior project.

To Do Week 5:

- Finish History Text
- Follow up with WildStables
- Follow up meeting with Suzanne and Sean Todd.

To: Suzanne Morse, Carlisle Segal, C.J. Walke, and Craig Ten Broeck

From: Lisa Bjerke

Date: February 11, 2013

Topic: Week 5

Summary Week 5:

- Follow up meeting Sean Todd about potential purchase of a small tractor.
- Met with C.J and discussed tractor as well as the status of my senior project.
- Visited Wildiris Stables and Jay McNellys farm to learn about their organic management plan.
-
- Wrote on the History part of my senior project, but did not finish a lot of unanswered questions still. Some of the question you all have the answers to, see below

To Do Week 6:

- Finish History Text
- Get hold of ANP responsible for Wild Stables, Carpenter.
- Contact Alisha about scale, and history part.
- Look up cold frames in town documents.

History Questions:

- Green Bins – Craig Ten Broeck
 - Who installed them, and in what context, and in which year?
- Community Garden – Suzanne Morse
 - When was the community garden created?
 - When was compost with food waste started there? (I assume that compost in general happen there since day 1)
- Other questions:
 - TAB and dining halls before TAB
 - BHF – ask Alisha when they started to take TAB food waste.

Date: February 17, 2013

To: Suzanne Morse, C.J. Walke, Craig Ten-Broeck, Carly Segal

From: Lisa Bjerke

Subject: Week 6 Update

Write-up: The history part of my senior project is coming along, slowly and steady. The more I write and run it by people the more I realize that there is so much to include, and I am in the process of finding a balance.

Vormicompost: I am spending a lot of time with the worms, and I am working on reproducing them so I can have enough to sell on the earth day in the spring. I am also working a lot on a little book about vormicompost at COA.

Interviews:

- Jessi Greenbaum – She is one of the alumni who built the compost bins in the community garden in 1987.
- John Deans – The students who tried to implement a composting program within student life, using green cones.
- Emily Carpenter – A manger of the Carriages of Acadia (aka Wildwoods Stables) in ANP. The produce 100 yards of horse manure a week that they pay Gotts to haul off. That is A LOT of compost.

Other:

- Weekly Compost Work-Study Meeting
- Reworked Sea-Urchin Compost

To Do Week 7:

- Get hold of Alica before she leaves (1. The scale 2. Info about compost at the BHF)
- Get hold of Mel Coté, a former administrator at COA who was part of the start-up of the community garden at COA. I will contact Steve Katona and Marie Stivers.
- Get hold of a photo on composters (Shelley Pingry) through Barbara Sassaman.
- Contact Mary Roper (Head Gardener at Asticou Azalea Garden in Northeast Harbor) about the community garden. I will look her up in the phone book.
- Finish up the history part of the write up.
- Finish up the worm book.
- Start the design of my posters.
- Interview the kitchen (TAB) about their compost experience.
- Check in with Mark King, since I have heard nothing back from him yet.

Date: February 25, 2013

To: Suzanne Morse, C.J. Walke, Craig Ten-Broeck, Carly Segal

From: Lisa Bjerke

Subject: Week 7 Update

Updates:

- Meet with Suzanne and C.J.
 - o Options for final product: decision tree?
- Contacted and heard back from Mark King
- First Draft submitted to Dru of Worm Compost
- Interviewed Kitchen: Lize and Ken
- Compost Work Study:
 - o Building new bins
 - o Worms information
 - o Earth day
- Finished typing up the notes from all the interview in fall.

Still in progress:

- History part of senior project.
- Worm Compost Publication. Realizing that this is a long term project.

Other:

- Kept on working with my little worm farm.

Week 8:

- Keep on working on history
- Keep on working on worm publication
- Interview Caroline (Sea Urchin) on Thursday 10 AM
- Meet with C.J and Becca Harvey about the idea of combining chickens and compost at PRF.

Date: March 3, 2013

To: Suzanne Morse, C.J. Walke, Craig Ten-Broeck, Carly Segal

From: Lisa Bjerke

Subject: Week 8 Update

Updates:

- Interviewed Carline in Sea Urchin
- E-mail correspondence with Laura Pojhola, COA '09 about the burn pile.

Still in progress:

- History part of senior project.
- Worm Compost Publication. Realizing that this is a long term project.
-

Other:

- Kept on working with my little worm farm.
- No news on the chicken-compost.
- Conflict and communication issues about my and C.J weekly meeting, we will try to get back on track this week 😊

Week 9:

- Keep on working on history
- Keep on working on worm publication

Date: March 11, 2013

To: Suzanne Morse, C.J. Walke, Craig Ten-Broeck, Carly Segal

From: Lisa Bjerke

Subject: Week 9 Update

New:

- Started to go through the Compost Work Study Diaries for the history part
- Started to make a simple webpage and map for the compost at COA. More to come.

Still in progress:

- History part of senior project – so close to sending in the first draft to Suzanne Morse
- Worm Compost Publication. Realizing that this is a long term project.
- Signs in progress in the deisgn lab.

Other:

- Kept on working with my little worm farm. Huge issues with fruit flies that I am trying to solve.
- Meet with Suzanne on Monday about my senior project.
- Have not had a meeting with C.J. for two weeks, but have had e-mail correspondence.
- C.J. has started to compost BHF first animal carcass on the cattle cement slab. A sheep died of lambing complications. I will get C.J him the thermometer that Mark King donated to me.

Week 10:

- Finish and send out my history part for edits and comments
- Finish the worm compost publication
- Finish the signs for the compost.

Spring 2013:

To: Suzanne Morse, Carlisle Segal, C.J. Walke, and Craig Ten Broeck
From: Lisa Bjerke
Date: April 7, 2013
Topic: Week 1 (Spring Term)

Hi there,

This is the last stretch, and there are a lot of things that needs to come together. I am also probably going to need you more now, than before, especially for feedback on the written components of my senior project. I have finished my first drafts of History, and work study description, see attached files in e-mail. They are by no means done, but I would like to have our feedback on structure and content. I will try to have the decision tree done the end of this week, week 2.

There are a lot of events going on: earth day April 21, Sieve's Event on April 13th, and meeting with PRF group on April 17th, among other things as working with the work study students, help in the community garden, communicate with Bruce and Barabara in B&G etc.

This upcoming Sunday I am having a brunch with the compost work study students, and I am still in correspondence with many former COA people about COA's compost system, which makes me constantly stop to write up and edit my notes on the history of management of compost.

I spent week 1 in many check-in and planning meetings, and I still have two Google documents going: one as a Senior Project (SP) Diary to keep track of what I SP To Do. I have 3 writing sessions booked in a week, with fellow senior project students: Anjali, Trudi, and Graham. It is a good space of actually only writing, and not answering e-mail or being interrupted by other needs and wants. I hope this will help me to actually produce more written work. I am also planning to arrange a senior project meeting/forum for all the seniors on campus in week 5, to talk about our experience and how the school can help us to make the senior project component off our education smother thing with more resources and clear expectations.

Best,
Lisa

To: Suzanne Morse, Carlisle Segal, C.J. Walke, and Craig Ten Broeck
From: Lisa Bjerke
Date: April 15, 2013
Topic: Week 2 (Spring Term)

Last week was spent on worms, compost work study students, and reworking my final report.

I meet with Addie in the writing center, which was very useful. She will be working with me throughout the term. We will meet on Thursdays from 2:30 to 4 PM, and last Thursday we went over my work study description and the history part of my report. We talked how everything we communicate is in the forms of a story with a narrator. We brainstormed on the story and narrator of my senior project report. I have been struggling with how to introduce the different characters in my compost story: the locations, the people, the activities, in contrast with the time line I have created to be able to explain what has happened at COA and what I have done with compost. The writing process is not easy for me but how to think about how I explain myself is helping me move away from dreading the process to work with it.

I had a very productive brunch with the compost work study students, it was a lot of fun to meet in my house and reconnect, reflect, and plan the term ahead of us. They are all serious with their collaboration and outreach program to Conner Emerson. We will teach three 6th grade classes, once a week each for five weeks. I wrote up a skeleton of a lesson plan that they will flesh out, and we are teamed up two-and-two. The program starts next week, and I will be teaching on Mondays with Daniela.

The worms are well. Since last term I have been struggling with severe fly infestation in the worm bins and I have been tested different methods for two weeks. On Sunday I could finally say that the flies are gone, and I started to feed the worms again. I am excited for the vermicompost workshop I will give on COA's Earth Day celebration this Saturday. As part of my workshop I will give away my worms as well as the vermicomposting information booklets that I made last term. This will make me officially come to an end with my vermicomposting project, which is an important step in my preparation to leave COA and our compost.

I am very interested in other work descriptions to learn how to structure mine. If you have any good ones, please send them to me. As usual, I appreciate any comments, suggestions, and comments. Last week, Suzanne and Carlisle's comments were very useful for me.

Thank you,
Lisa Bjerke

To: Suzanne Morse, Carlisle Segal, C.J. Walke, and Craig Ten Broeck

From: Lisa Bjerke

Date: April 22, 2013

Topic: Week 3 (Spring Term)

Hi all,

Overview:

Last week was a productive senior project week. A lot to do and plan, but the main activities were writing on my final report, meeting with Suzanne, and planning and executing my activities for the Earth Day.

Final report:

I have added the skeleton of my final report of my senior project to the e-mail. Keeping in mind that the draft is a first attempt, I would still appreciate any comments or feedback that you have for it. I am continuing to meet with Addie.

Involvement:

I became involved with questions regarding the management of COA organic materials in the landscape, and was faced with hard, human-focused questions regarding different value bases and points of views. Similarly to the struggles I faced in the fall. I reached out to Suzanne Morse for guidance.

Meetings and Guidance:

I meet with Suzanne three times last week. It was useful to debrief with her my frustration with my lack of progress and commitment to the schedule in my senior project proposal, as well as lack of tangible knowledge and constructive learning experiences that I can bring with me from this process. I have narrow focused questions and goal oriented visions which I feel very stuck with. She helped me frame my frustration in a different light: she made me ask larger questions regarding the things I wrestle with. Suzanne and I met with Millard Dority as a follow up, to talk about the institutions way of managing the landscape, and potential ways to increase the carbon materials value on campus. Suzanne's help led me to to hold a small community workshop after my worm compost practicum on Earth Day. The workshop was a small exhibition of questions and 2 large maps of campus: 7 by 4 feet. I had community members share their values of different places on campus using post-its, as well as comment to questions regarding compost, what they want COA's landscape and environmental commitment in the landscape to be in 10 years etc. Approximately 20 people participated.

Worm Compost: The work shop went great, the booklets are finished and printed, and I gave out 20 booklets throughout the day, 15 people attending the practicum, as well as had 6 people adopted worm bins. I now only have one bin left to take care of.

To: Suzanne Morse, C.J. Walke, Carlisle Segal, and Craig Ten Broeck

From: Lisa Bjerke

Date: April 28, 2013

Topic: Week 4 Spring Term

Hi all,

I am now rolling with a lot of things, but my main focus is on the written report for the library and working on an online hub for all COA compost stuff. The online hub is a word press blog that I turned into looking and functioning more as a webpage. I have uploaded some stuff, such as the vermicompost booklet to it. Hopefully it will be the place for more visual and interactive explanation of what my senior project.

Beyond these two major parts of my senior project, I met with Jesse Greenbaum to walk the compost in the community garden. It was fun to talk to her about what the group study which built the cement bins.

The compost work study student volunteering at Connors Emerson School went well, and we meet today to plan the coming week. The second class is about how compost work: what is needed to make good compost, what happens in the compost to go from food for humans to food for the soil, what creatures eat the food and help turning it into compost etc.

Please visit <http://compostoftheatlantic.wordpress.com/> to check out what I have done so far. It is not much, but you can get an idea of what I hope to do. I hope this will make my senior project a more useful tool for the COA community.

Happy Sunshine,
Lisa

To: Suzanne Morse, Carlisle Segal, C.J Walk, Craig Ten-Broeck
From: Lisa Bjerke
Date: May 6, 2013
Topic: Update Week 5, Spring Term

Hi all,

It is now less than four weeks until my senior project is due, exactly 25 days. As you can imagine, I am starting to get really stressed out about it. I have been sick the whole week but I am starting to feel better now, so hopefully I will be able to stay afloat with course work and senior project stuff.

Last week I kept on working with the archive of Off The Wall (OTW) as well as other information about compost at COA from the past. I found 14 different notices in OTW 79, 80, 81, 87, 88, 90, and 96, all from Jamie McKown's collections. I have met with Ingrid in the library archive and I now have access to their copies of old OTW. I am however trying to strike a balance in how I spend my time, looking through archives is very time consuming but highly gratifying when I come across any composting information. I am still figuring out what is more cost effective for me right now.

I talked with David Winship over the phone on Thursday, and we sent me the full article by Chellie Pingree (then Chelie Johnson?) from the Farmstead Magazine on COA compost. I send a facebook message to Alison Blizard, who David remember taking over the compost after he and Chellie graduated from COA. I also left a message on Mary Roper's phone, since she has been identified to been very active in the community garden and its compost in the beginning of the 90's.

The webpage (compostoftheatlantic.wordpress.com) has not changed much since last week, but I am not too worried about it either. I view the webpage as something I will work on after the senior project deadline. It is part of my senior project, but also beyond it, since I want it to be used by others after I graduate. I am planning on putting up everything from the written work on the site, but in a more online user-friendly format.

I am also continuing to work with the work study students, and we meet on Sunday to talk about the Connors Emerson work. All the 6th graders will come on to COA campus this week, and they will show them what happens with our food "waste" and how our compost system look like. We also talked about any interest in applying for the Mini-grants from New England Campus Sustainability Forum that Molly Anderson sent out an e-mail about on April 28th. Both C.J and Suzanne encouraged me to apply, but since I am graduating I cannot apply without anyone being willing to follow through with the project if we would get money.

The compost work study students were all reluctant to applying for the grant, all for different reasons. One student will graduate and is in the same position as me, and the rest thought that we are not lacking money, but time and commitment. We discussed the issue of time and commitment and narrow it down to the fact that we are lacking a vision. The compost works study students were planning on re-building the temporary bins with pallets from Jackson Lab, but if we would apply for a grant to rebuild better bins, then us building new temporary bins would be a waste of time they thought. When we

talked about our dream of actually having a real compost shed, we also lacked enthusiasm in applying for the grant. The question we came back to was: What is stopping us from not building a shed now? What is stopping us from building permanent bins now? Is it really money? Or is it lack of knowledge, time, and commitment?

(These issues are the same that I have struggled with though my time with the compost. What makes us act and what stopped us from acting? If we were really gung ho, we would apply for the grant *and* build new temporary bins, not worrying about wasting time, since it could all be seen as learning experiences in which we are improving the compost system.)

We decided that a visioning session is in place, and that others should attend too. The issue is always scheduling because everyone seems to be so busy, and the only time we can meet as an almost complete group is Sunday afternoons. So we decided to invite people to one of our Sunday meetings: May 18th. I sent out an invitation to Millard Dorrity, Bruce Tripp, Barbara Mayers, Suzanne Morse, the recycling work study team, and the kitchen staff.

I meet with C.J on Wednesday. We updated each other on the compost work. He picked up two truckloads of horse manure from Wild Iris Stables down the Crooked Road. The two loads created one well sized compost pile in the shed. I showed him the webpage as well as the work study description, and I made changes according to his suggestions. I also meet with Addie in the writing center, which always is super helpful. We edited and talked about my final report.

On Saturday I helped out during the Community Garden Workday. The community gardeners were great and got a ton of stuff done in the compost areas: turned all the bins and added in the dried up sowthistle from its sun coffin, turned and covered up the weed pile by the ABC garden, and also took the old rugs over to the lead contaminated area. It was great.

Yesterday, during our work study meeting, the compost work study student and I put some curing compost form under the green blanket on top of the bins. Flies had started to accumulated around the newly turned bins and to put a layer of more finished compost on top have reduced flies in the past. The curing compost had a ton of earth worms in it, which made us very happy.

I met with Suzanne after the community garden work day, and I showed her my final report as well as the website. She will take a more in-depth look on it all this week. I also meet with Kim Childs, the event planner in the Development office. She was concerned about recycling and compost for the summer and all the events that the development office put on, starting with the graduation in a few weeks. I told her my opinion based on my experience, and we then brained storm on how to move forward. One outcome is that we will continue to meet every Wednesday at noon in TAB, and this upcoming Wednesday Millard and the recycling team will join us. The main issue is a lack of structure and clearly defined plan, as Millard himself said when I met with him last Tuesday. Hopefully the B&G and Development can work together to improve our waste management system. I gave Kim the report from the zero waste graduation from 2005, as well as some links to online sustainable event reports, books, and webpages.

I think this is all from last week. Thank you for reading all of this, as usual I appreciate any comments, suggestions, or ideas.

Lisa

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From: Lisa Bjerke
To: Suzanne Morse, C.J Walke, Craig Ten Broeck, Carlisle Segal
Date: May 13, 2013
Topic: Week 6 Update

Last week was a busy week. I did not get done everything that I had hoped for. I canceled the community input session last Thursday due to the weather. I had planned to have it outside on the red bricks. Hopefully I will make it happen this week, but I am also recognizing that I might have to reconsider having an additional session, since I have so much to finish up. We will see.

I have mainly worked on the history part of my written work. I am up to 5400 words for the history now, and 9000 is total. I also worked on going through all the COA archive's for compost activities on campus: OTW, ACM, CPBC, CCS, and Landscape Sub Committee. It was interesting how it there were no records in ACM about any mentioning about compost, while in the committee minutes there is specifically stated someone will present about composting. I have contacted Ingrid about some missing records and I will hear back from her soon.

The weekly Wednesday meetings about the "waste" management during events are still happening. Last week Kim Childs and I met with Elena Gilis. We talked about the routine in place when preparing for an event: the work order that development sends to B&G and other activities. We went over what needs to be improved: signage, containers, works at the events etc. Elena and I meet in the Graphics Lab on Saturday and worked on new signage and t-shirts logos. I am trying not to be too involved in all of that, but it is hard when I feel that no one else is actively thinking and acting on these issues. To me it is a question of accountability: we cannot say that we are recycling & composting at the events if we actually are not doing it.

I have finally distributed out all the worms. Shira Catlin is doing her student teaching at Mount Desert Island Elementary School in Northeast Harbor, and the second graders are starting a section on soils and were looking for worms for a compost project.

The compost work study students had their weekly Sunday meeting at my house. We planned the coming week with the sixth graders at Connors Emerson, and I showed them the work study description that I made as part of my senior project. They are still not interested in applying for New England Campus Sustainability Forum Mini-grants, but Molly Anderson invited me to join the general group on campus interested in applying. We will see what happens since I will not apply for any grant for a project that there is no interest to implement.

My plan for this week is to be done with the main bulk of my writing (!). That means that I need to write up the chapter 3 on institutional conversations and Chapter 4 on current stat, and Chapter 5 Future Possibilities. The last parts of my report is much simpler – Chapter 6 on Characters, Reflection, Conclusion, Afterwards, Acknowledgement, References, and Appendix – and I hope I will be able to write that in week 8, when I am also putting everything into InDesign. It will be interesting to see if all of this actually will happen.

This upcoming Sunday, May 19th, we will have the visioning session for composting at COA. It will happen at 4 PM in Deering. It would be wonderful to have as many of you there. I will meet with Suzanne on Tuesday from 2-5 PM to talk about my senior project and presentation for CPBC with upcoming Wednesday. C.J and I have our weekly meeting on Thursday morning, and I will meet with Addie in the writing center on Thursday afternoon. I will have the Wednesday meeting with Kin Childs again, and this time I hope to get Millard to come.

As usual I appreciate any comments, suggestions, and questions.

Lisa

From: Lisa Bjerke
To: Suzanne Morse, C.J. Walke, Craig Ten Broeck, Carlisle Segal
Date: May 20, 2013
Topic: Week 7 Update

Hi all,

This has been a busy week, with some frustration but also progress and constructive learning.

On Tuesday I met with Suzanne Morse, she read through everything in my report and gave me comments. The largest point was to change food "waste" into the Swedish word livsmedel. See more in the report. We also talked about the history and what she has done throughout her time here at COA. It was a lot that I learned that I have never heard about before. She also called Mary Roper, the former community garden coordinator, who I have tried to hunt down for quite some time now. Mary Roper did call me back upon Suzanne's request to her. But could not answer, so she left a voice mail and now we are playing phone tag. Hopefully, I will soon talk to her.

I met Kim Childs, Millard Dority, and Robert (Bob) Nolan about graduation and recycling and composting. Suzanne joined us half way through the meeting. It became a non-constructive conversation between me and Millard about composting and recycling. It all ended with me sending an apology letter to all of the people attending the meeting. I explained why I got so frustrated, as well as thanked them for the work that they are doing. Kim Child is not here this upcoming week, so I think it will be only Millard and me for this week's meeting.

I have kept on working on the recycling signs for graduation, as well as the design for the recycling team t-shirts. The plan is that six students will work with the recycling during the reception as well as the prep and clean-up: inform the guest of where to recycle, and empty bins in the correct locations. The signs and designs are done, and it is now up to Kim to print out signs and order t-shirts. Elena Gillis has helped me with feedback on the designs, and she will also help Kim with the next steps. Elena is doing this work as work study hours under her B&G recycling manager position.

I worked with Addie on my report, and I also downloaded a 30 day trial of InDesign to my laptop. This will make it possible for me to work on the layout of my report from anywhere. I am also meeting with the Visual Center today to get help with the working process of my report: how to structure my text, maps, and pictures into an effective and visually pleasing report.

Suzanne joined C.J. and me in my weekly meeting with C.J. on Thursdays. We talked about how to move forward beyond me, looking at the future and the compost system. Suzanne requested her advisee, Madeline (Maddie) Heppner, to work with the compost system. Maddie is interested in humanure, and I

introduced her to Annarose (Anna) Maddamma a.k.a poop girl. Anna is a first year students and has been awesome with the composting toilets this year. She is responsible for the maintenance of the composting toilets in the Katherine Davis Village, but she is an RA next year, and will not continue her work. I will make sure that Anna and Maddie meet before the term ends.

Suzanne gave me the book *Creating Shared Vision* by Marjorie Parker, which I read on Monday. It helped me think about the creativity and community based foundation of visioning, and also made me realize how unconstructive my work with Millard can be if I do not acknowledge B&G understanding of recycling and compost. This was a good preparation for the visioning session that the work study students had requested as well as Suzanne had suggested. Suzanne and I met on Saturday, and we prepared for a guided reflective visioning session. It was an interesting experience, and I realized how hard it is for me as well as other compost work study students to let go of the present and envisioning a how compost and the carbon cycle might work at COA in 2023. I was disappointed in how few people that showed up. Individuals who had said that they would come, canceled last minute, and other just did not come. I do realize that I need to be more proactive and personal with the advertising of the session. I should also have send out more than two reminders to the community. We were eight people at the session, which made it possible for a more intimate discussion, the two hour time slot also felt too short. I have written a more in-depth report on the visioning session.

This upcoming week will be cramming time, trying to get as much written stuff to happen as possible but also create time for compiling all the stuff in the appendix (it is A LOT). All these memos, all the governance minutes on compost, work study descriptions etc. But also to make sure that my references are correct and that my footnotes will work out. The main problem is that I constantly remember more things that I want to write down for the history part. I have 7000 words now, that is more than everything else in my report together.

Thank you,

Lisa Bjerke

To: Suzanne Morse, C.J. Walke, Carlisle Segal and Craig Ten Broeck
From: Lisa Bjerke
Date: May 26, 2013
Topic: Week 8 Spring Term Update

Hey there,

Now it is only four days left until my senior project will be turned into COA. Attached is my last drafts of the text for the final report. I have removed certain sections from the final draft as word document, since it became too much text for my Microsoft Word program to handle. Here is what I have written:

- Abstract
- Forewords
- Introduction
- Methodology
- History (separate word document)
- Compost Work Study 2009-2013 (separate word document)
- Current Situation (separate word document)
- Future Possibilities (separate word document)
- Characters (separate word document)

What I have left is:

- Conclusion
- Reflection
- Afterword
- Acknowledgment
- References
- Appendix

I hope to finish Conclusion, Reflection, Afterword, and Acknowledgment tomorrow. Put it all into InDesign and then add References and Appendix on Tuesday. And do final edits though InDesign on Wednesday.

This makes it possible for me to show C.J the final draft on Thursday, print, get signature, burn CD. So that I on Friday morning can just go to the library turn it in, get their signature, and go to the registrar office to OFICIALLY BE DONE 😊

Week 8 was spent on finishing History, editing Abstract, Forewords, Introduction, and Methodology, making the structure for the Final Report through InDeisgn (arranging the sections, making a front page, title page, etc), and writing Current Situation, Compost Work Study 2009-2013, Future Possibilities, Characters, and organizing all the photos.

I also prepared and presented my senior project for CPBC on Wednesday, May 22nd 2013. It was planned to be for twenty minutes, but we spent the whole hour talking about organic materials on campus. I also gave a compost tour and presentation of TAB and the community garden to the fourth graders from Pemetic in Southwest Harbor, on Thursday during lunch. It was a lot of fun, as well as inspiring to see them make the connections between their lunch and the lunch of the microbes in the soil, and talk about what is alive and what is dead, and why it can happen that you get heat and humus (compost) when you have sugar and other carbons + water + oxygen. Fun stuff.

On Saturday, I gave a short presentation at PRF Open House about composting, and talked to the visitors. It was really interesting hear different people views and understanding of PRF and its role in the community.

Back to writing,

Lisa Bjerke

Compost at College of the Atlantic

Memorandum

January 23th 2013

To: Mark King, Maine DEP
From: Lisa Bjerke, College of the Atlantic (COA)
Subject: Notes and Follow-up Questions from DEP Visit at COA

Hi Mark,

Below is a summary of the activities of your visit, the main points I took with me, and my follow-up questions for you. Once again, thank you for the visit and advice you gave me.

Summary:

10 AM-11 AM: Tour of COA campus including: on-campus food compost area in the community garden, the dining hall (TAB) food scrap collection, the storage of the compostable toilets compost, the cafeteria and compostable cutlery collection points, student housing with compostable toilets and worm compost.

11 AM-12 PM: Lunch and meeting with Suzanne Morse, biology professor. We discussed compost regulations and potential grants for a small tractor.

12 PM-14 PM: Visited COA's two educational farms, Beech Hill Farm (BHF) and Peggy Rockefeller Farm (PRF): looked at BHF's whale-composting site and PRF's potential farm-composting site.

The Main Points:

1. COA Compost:

- Ingredients: A better bulk/carbon material than the current straw and hay to mix the food waste would be horse manure.
 - o Gott's could potentially deliver it, based on their current relationship with DEP and COA.
 - o Only one delivery per season is needed. Make a large half sphere, and put food in-put into two feet deep holes around the circumference, in max three layers. Then turn the pile after 2-4 weeks (a small tractor is needed for turning)
- Composting Toilets: The finished products from composting toilets are exempted from any DEP regulations.
 - o Recommendation: E. coli test on the pile before we spread it on landscaping. Reheat pile if E. coli exists.
- Compostable Cutlery: They would compost in a horse manure pile (see above)

- Another alternative is to only have personally assigned durable cutlery and dishes within the community. Unity College has tried this. The issue is then only at big events (graduations etc.)
 - Composting at PRF:
 - The best site for COA: there is a covered cement slab; it is within less than 5 miles of COA campus, and is on an animal farm.
2. Compost Laws:
- There are favorable laws for farmers that protect farmers with management plans from complaints from neighbors. The Agriculture Department will be the farmer's representative any dispute.
 - No permit is needed for leaves. Farms can take on as much leaves as they want from outside sources to compost on their property.
 - Application process for a permit is needed for above 15¹ cubic yards of food scrap a month.
 - To compost above 10² cubic yards of leave on campus the school needs to apply for a simple permit³
3. My follow-up questions:
- Would you be able to send me an outline (or a reference for me to find) the laws and regulations regarding all forms of composting.
 - Different volumes levels for different permits for farms, private individuals, and institution.

Tractor Inquiry

Memorandum

To: Suzanne Morse and Sean Todd

From: Lisa Bjerke

Date: February 7th, 2013

Topic: Tractor Info - Update from First Meeting

Overview:

- Hopes
 - Smaller tractor that will be used by the academic programs and not by maintenance
 - Needs
 - Community garden (few and regular occurrences)
 - Allied Whale (few and intense and unpredictable occurrences)
 - A smaller tractor to supplement the ongoing maintenance on resources
 - Needs
 - Campus Gardens (small, planned occurrences)
 - Peggy Rockefeller farm (often, planned occurrences)
- Resources
 - Monetary:
 - Prescott Grant: ca \$ 7500 (Note Application Process)
 - Other?
 - Storage:
 - Peggy Rockefeller farm Barn
 - Other?
 - Maintenance:
 - Peggy Rockefeller farm manager
 - Allied Whale Stranding Crew
 - Other?
- Management
 - Allied Whale
 - Peggy Rockefeller Farm
 - Gardens and Community Garden

Tractor Specifications:

- 20-40 Horse Powers, 32 HP standard
- Hydrostatic,
- Diesel
- A trailer

Options:

- Potential Brands and Models:
 - Koboda, B Series
 - New Haven, Boomer Series, (20, 25, 30 models)
 - John Deere

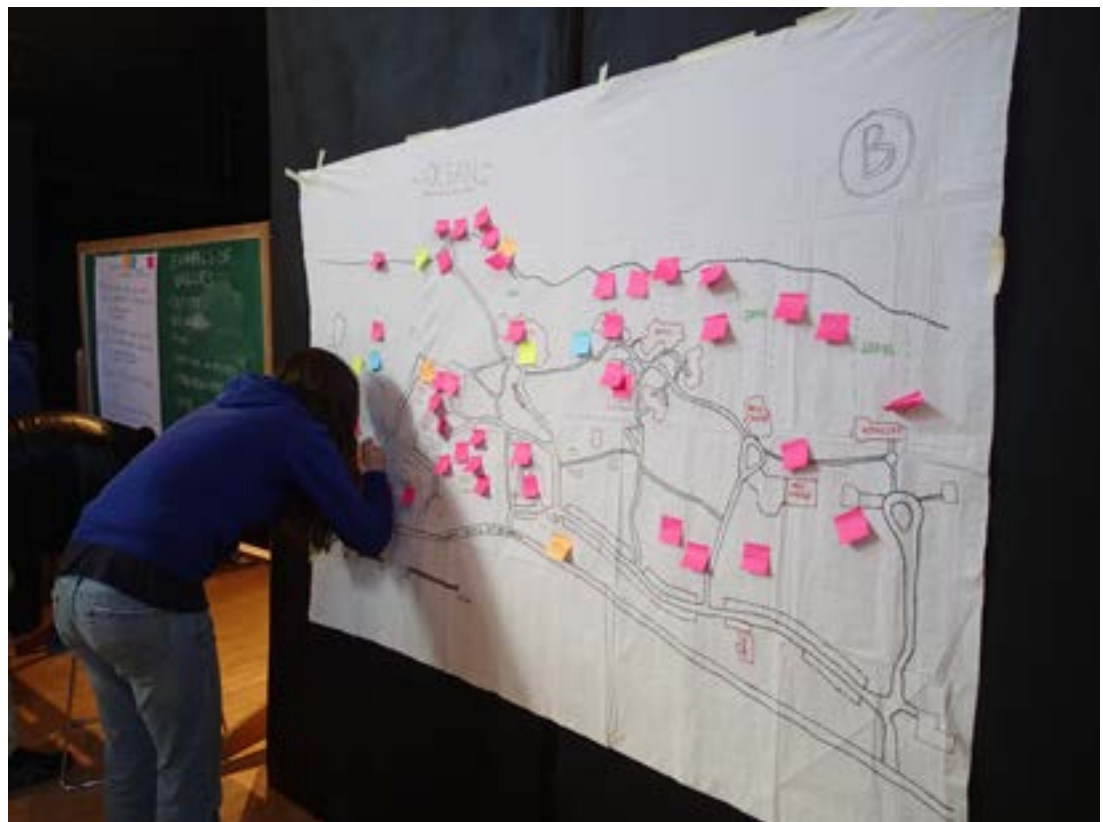
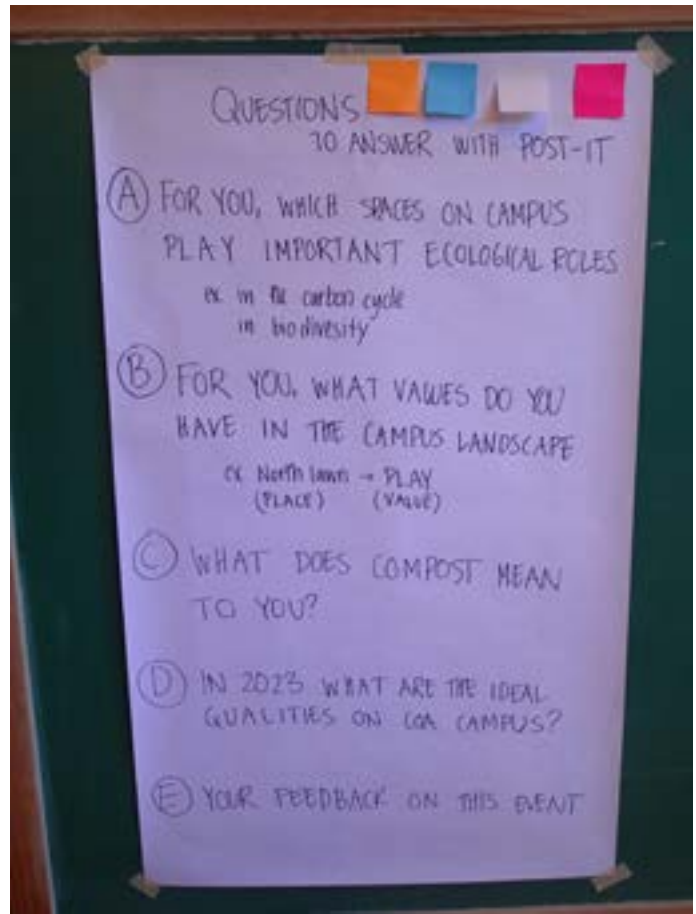
Cost:

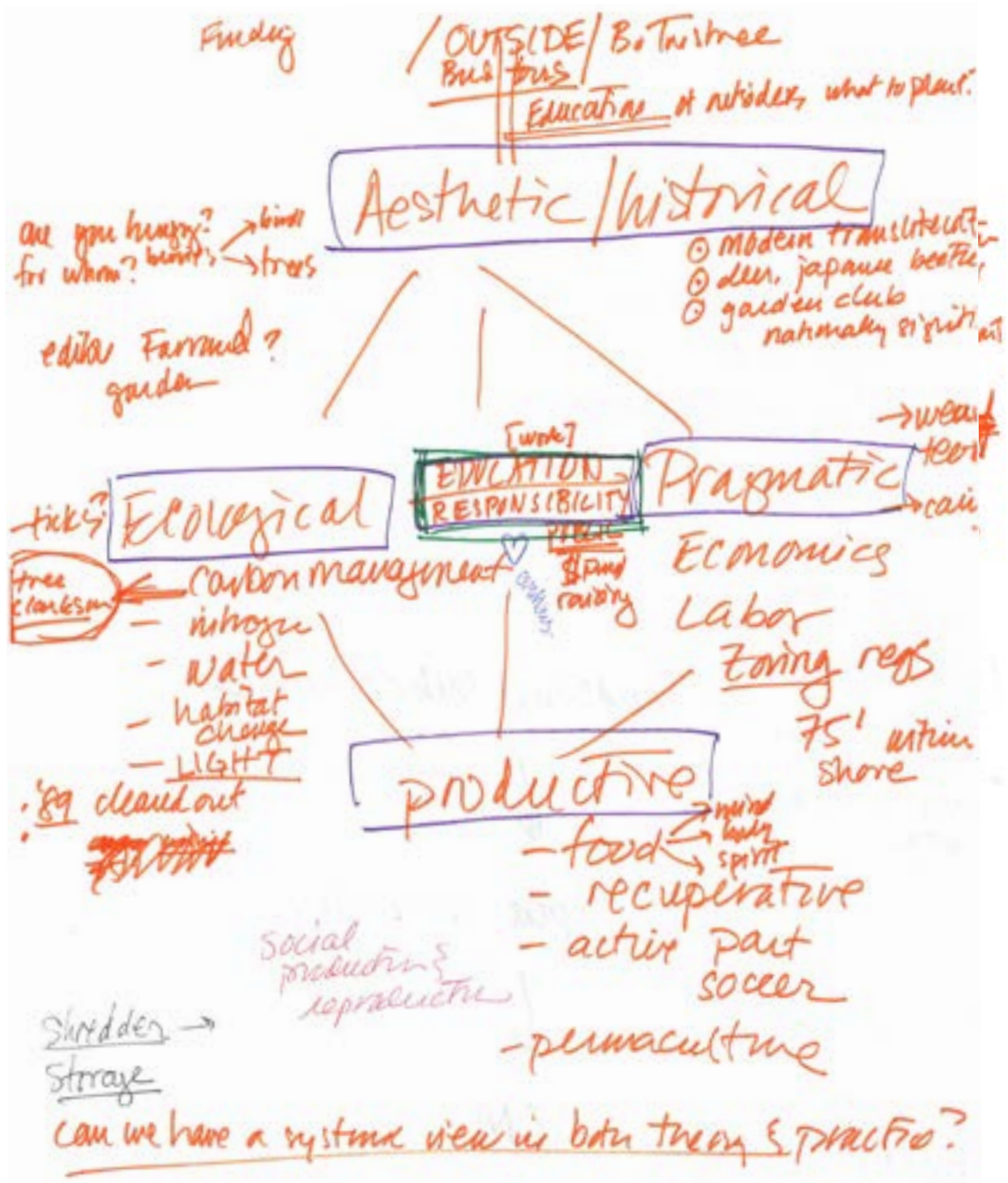
- New: Pricing:17000-25000
- Used Ones:
 - <http://www.tractorhouse.com>
 - Ex:
 - <http://www.tractorhouse.com/listingsdetail/detail.aspx?OHID=7026397>
 - <http://www.tractorhouse.com/listingsdetail/detail.aspx?OHID=7432633>
 - <http://www.tractorhouse.com/listingsdetail/detail.aspx?OHID=6888527>

Detail User Info:

- Allied Whale
 - o Contact Person: Sean Todd
 - o Use:
 - Marine Mammal Strandings
 - Necropsies
 - o Resources:
 - Prescott Grant: ca \$7500
- Community Garden
 - o Contact Person: Suzanne Morse
 - o Use:
 - Compost Turning
 - Moving materials (ex. Bags of organic fertilizers)
 - Digging Holes
 - o Resources:
 - ?
- COA Gardens
 - o Contact Person: Barbara Miers
 - o Use:
 - Moving Plants, Soil, Compost
 - Digging Holes
 - o Resources
 - ?
- Peggy Rockefeller Farm
 - o Contact Person: C.J Walke
 - o Use:
 - Harvesting Alder Trees
 - Farm uses (need to be more clearly defined)
 - o Resources:
 - ?

Earth Day
Compost Event
Spring 2013





> FARMS not part of this picture
> Islands

Don't make? time like
such marks? time use

What would Beatrix Do?
What should we do?
How can we do?
What incremental decision?

with Helen P.

Suzanne Morse Scetch of Values when Deciding, Spring 2013

therapy for Barbara
tree cutting
den maintenance

East view
[Future]
- dumpster/purpose
- trees
- panel on building
- curtain

landscape subcommittee



campus planning



ACM

? donors?
visitors
Board?
Funders

where does this happen??

infrastructure vs planting vs ~~maintaining~~ ^{maintaining} develop

supporting a relationship.

COA Carbon Cycle in 2023

Visioning Session

Outline:

- Background
- Preparation
- Execution
- Reflection
- Appendix

Background:

To have this session was to fulfill three purposes. The first one was to address the compost work study students request for a visioning session. The second was for me to explore a different and supplementary approach to my very pragmatic and historically based view on COA compost system. It is a follow up on my visioning session at Earth Day. The third was to address my concern with the compost system and my view of campus wide overall lack of commitment to carbon and our role with in the carbon cycle.

Preparation

Suzann Morse, my academic and senior project adviser, suggested the method that was used. She guided me through the preparation and she led the session. She gave me the book *Creating Shared Vision* by Marjorie Parker, which I read. It helped me think about the creativity and community based foundation of visioning.

Suzanne and I met the day before the session and went through Suzanne's slides on the specific type of visioning session that we would conduct. It is different method to the one described in Marjorie Parker's book. Due to the limited time of our session – two hours – we modified the schedule to fit the time frame. Suzanne spear headed the preparation and wrote up the schedule as well as the questions to be used in the session. Suzanne also created the script for the guided mediation (not shared). I worked on the organizational part of the preparation: printing out paper, sending out invitation e-mails to the community, and special extra invitations to staff, faculty, and students identified to work with organic matter on campus.

We had the following material in the session:

- Power Point Presentation
- Red Cards
- Tea and snacks
- A3 papers
- Pens and markers
- Question Papers
- Script of guided meditation

Execution:

The location is important. I booked the Leadership Room on the second floor of Deering, since it can be closed off, has a conference table, chairs, and whiteboards. We did not stick to the schedule (see appendix for the planned schedule). We had eight participants, including me and Suzanne, so it became much more of a discussion and less need for structure, after we had done the guided mediation with Suzanne and reflected on what we imagined the COA landscape in 2023. We started late, since not many people were there when the session was planned to start at 4 PM. The session also ran over for 40 minutes.

Reflection

I learned on many levels from this experience. Firstly, I learned that I need to be much more intentional, personal, and persistent with the advertising of the event. I send out four different e-mails: two announcements to the community, and two to specific groups with invitation and encouragement to attend. This was not enough. For next time I will send out reminders during the day of the event. One of the participants – Erickson Smith – helped out by sending a reminding e-mail at 4 PM. That e-mail reminded one individual to attend.

The second learning experience was my participation in the session. I experienced on a personal level how hard it was to step away from the current situation. I found myself correcting my own thought, and feeling contradictory to reality when I tried to imagine myself in 2023. I found myself lacking a clear vision. I feel that I was not the only one unsure of one's own imagination and gut feeling. It was interesting to note that the work study student that has been working the longest and most with the compost system had the hardest to stay in the 2023 mindset and be creative. It was the people less involved with the current system that had the most to say.

The third thing that I will take with me is my nervousness for the event. I do not usually get nervous, but I felt a disappointment when certain individuals were unable to attend. It took me a while to let go of that negative feeling of insecurity.

Lastly, I learned how this is a useful tool. But it requires more time than what we located. We did not have time to create a unified vision, and even less to get to the step of reflection of the first steps to that shared vision.

Compost Work Study Description

Job Description - Draft 8

Primary Responsibilities:

The objective of the compost work study is to have a functioning composting system at COA, as well as a meaningful, challenging, and educational work study for students. The main responsibilities are:

- Leftover livsmedel¹ management
- Public outreach
- Compost program development

Supervisor:

Millard Dority, Buildings and Ground (B&G) and Suzanne Morse, Community Garden Manager.

Work Schedule:

This is a work study group effort that requires 2-5 full-time work study students. It involves daily pick-up of leftover livsmedel from dining halls as well as emptying community drop-off compost. It is important that students schedule so they can work together effectively and supportively. It is a year-round job that requires students to work during all weather conditions. The job has to be done in every season, but does not require one person to work all year: I suggest that the B&G staff take over the tasks of the work study students during the school breaks.

Required Abilities and Knowledge:

- Teamwork
- Creativity and problem-solving
- Verbal and written communication
- Independent work with little supervision
- Record-keeping
- Coordinating and multitasking
- Physical strength and endurance in all seasons
- Like to work in the outdoors and get muddy

¹ I am not using the word “waste” to describe organic matter. This is to demonstrate my belief that the organic matter around us is never waste. Instead I have incorporated my native language word “livsmedel” to substitute the common description of leftovers of pre- and post-consumer food. It is commonly called food “waste”, where as I will call it leftover livsmedel. Livsmedel in Swedish is all the organic matter that you can consume for nutrition and pleasure, disregarding medicine, but including water, tobacco, and alcohol. It is both the ingredients as a finish dish: a raw potato and its peels as well as the mash potatoes.

Compost Work Study Description

Work Responsibilities and Suggested Work Plan- Draft 7

Overview:

To maintain a functioning composting system you need to have good communication skills, be able to work independently, and keep record of your work. The compost work study is under the payroll of Buildings and Grounds (B&G), and collaborates with other parts of B&G for resources, tools, and tasks. The work serves and interacts with different parts of COA: TAB and Sea Urchin, Student Life, the farms, the academics program, and the community garden.

To date, we have three categories that the Compost Work Study positions can be divided into food leftover livsmedel management, public outreach, and compost program development. The core of the work is leftover livsmedel management – collecting post- and pre-consumer leftover food – but the other two aspects of the work is just as important. To ensure that leftover livsmedel is not contaminated with trash and that no other problems occur, the greater community needs to be informed of disposal options, leftover livsmedel producers and consumers needs to be up-to-date about COA's compost system, and any suggestions and questions need to be communicated and responded to. It is therefore important that the work study students are organized and communicate actively with the community, involving everything from signage to presentations. The most subtle part of the work – program development – is also the most fundamental and requires soft skills. The institution is constantly changing, and the compost work study group needs to use praxis to create a compost program that fits COA's needs best.

General Responsibilities:

- Collection:
 - Collect leftover disposal from TAB during the school year
 - Transfer compost from collection bin to compost bins by community garden
 - Collect seaweed from the COA and Hadley Point beach
- Management:
 - Turn compost bins in community garden
 - Keep the supply of:
 - Brown matter (nitrogen rich):
 - Seaweed
 - Manure
 - Grass
 - Green material for Sea Urchin Café compost and community garden
 - Straw or hay
 - Leaves
 - Compostable bags to store the compostable dining ware from
 - Sea Urchin
 - TAB

- Maintain and upgrade the compost bins in the community garden and around campus
 - Green cones
 - Sea Urchins black bins by Deering
 - Food compost
- Maintain and update digital and online resources:
 - Compost google group: Compost_work_study@coa.edu
 - Compost google drive: COA_Compost
- Record Keeping:
 - Measure and record temperatures in the compost bins
 - Keep compost work study diary
- Communicate with stakeholders:
 - Food waste producers: TAB kitchen, Sea Urchin
 - Compost consumers and producers: Beech Hill Farm, Peggy Rockefeller, B&G,
 - Public outreach, Student Life, dining halls
 - Academic work and plans: Suzanne Morse
- Specifics:
 - Compostable dining ware:
 - Collect compostable dining ware from Sea Urchin drop-off location and inside TAB
 - Communicate with Gotts about pick-up (\$10/pick-up)

Seasonal Dependent Activities & Responsibilities

- Term-Specific:
 - Beginning of term:
 - Check student housing bins
 - Organize the Compost Work Study group
 - Make sure signs are up on collection and drop-off locations, as well as in houses
 - End of term:
 - Make sure that the bins are empty since more compost is dumped in the drop-off location when people leave campus for breaks
- Year-Specific:
 - **Fall**
 - Introduce the compost system to new students – collaborate with Student Life and RAs
 - Recruit and train new Compost Work Study student – collaborate with B&G
 - **Winter**
 - Responsible for all compost on campus, since no on-farm compost happens
 - **Spring:**
 - Communicate with farms about compost needs for summer
 - Make sure that there is a plan for compost to be picked up and managed by someone at COA for the summer (farms, B&G etc.)
 - Turn the thawing piles

- Empty the finished compost to be stored under the green mat
 - Help and work with Gardens and Greenhouses class as well as Community Garden members
 - Graduation:
 - Help B&G to prepare collection sites, signs etc.
 - Collecting and sorting the compostable cutlery
 - Compost and manage all the extra compost by the drop box location – all students are leaving their houses and dorms
 - Earth Day:
 - Prepare and manage compost pick-up site.
 - Information and public outreach events (workshop, demonstration etc.)
- **Summer:**
 - Be aware of flies!
 - Be aware of people who still dump food waste in the drop-off bin!
 - Manage the compost bins – turning etc.

Other Community Garden Work:

- Spring:
 - Screen finished compost with sifts
 - Update and put signs up!
- Summer:
 - Make sure that the B&G collects grass clippings for us to turn into compost piles
- Fall:
 - **Pick up fallen apples in the garden**
 - **Manage the weed and apple compost pile: turn and cover it**
 - Clean and organize the tool shed
 - “Prune” the perennial beds – cut the stems down to 10 inch
 - Cut down the Jerusalem Artichokes; use them for aeration in the bottom compost bins.
 - Drain and store the hose
- Winter:
 - None

College of the Atlantic
Bio-Waste and Compost Management Plan
January 2013

Motivation to Compost: Composting “food waste” keeps organic materials out of the trash waste stream, reduces air emissions from trucking and anaerobic decomposition of food waste in landfills, and brings vital nutrients back to the soil. As organic material decomposes in an anaerobic environment such as a landfill, it liberates methane, a potent greenhouse gas that contributes to global warming. Organic matter is a resource that can be put to productive use. Compost piles, which are aerobic environments, enable “food waste” to become a soil amendment that can improve water drainage, aeration, and nutrient retention to the benefit of food crops, landscape plantings and lawns.

Composting Locations: The College composts organic matter on its main campus at 105 Eden Street. The compost site is located on the southeast side of the Community Gardens. A multi-bin system is made out of wood and cinder blocks with a roof, creating 8 individual 3 cubic foot square boxes for composting. Organic materials are also composted at Beech Hill Farm located on both sides of the Beech Hill Road in the Town of Mount Desert. Compost piles are maintained on the west side of Beech Hill Road. These piles are managed by turning them with a fronted loader and covering them with straw or other farm vegetation materials... To prevent animals from disturbing the piles the gates of the fence enclosure are kept closed at night.

Compost Material: The College composts approximately 800 pounds of “food waste” weekly from the campus cafeteria and student residence and community members not living on campus, along with straw and vegetable crop residues. The “food waste” includes pre- and post-consumer food such as vegetable peels and leftovers. Different bins are used inside the cafeteria to separate “food waste” and compostable dining ware. The dining ware has proven difficult to decompose in a low-tech compost environment, and is therefore sent to a local DEP-certified composting facility, Gott’s Disposal in Southwest Harbor.

Hauling “Food Waste”: Community member’s drop-off their “food waste” in a collection bin by the composting site in the Community Garden. Staff from Beech Hill Farm collect the kitchen and cafeteria’s “food waste” twice a week during the fall, spring and summer terms and bring it to the designated locations on the farm. The work-study students collect all the kitchen and cafeteria “food waste” in the winter term, as well as once a week during fall and spring terms and bring it to the designated location on campus. They also compost the material dropped off by community members in the storage unit in the Community Garden every other day throughout the school year.

Composting Method: A low technology and high manual labor method is used in the Community Garden’s composting area. The method involves placing a 30 cm layer of the nitrogen and water-rich acidic “food waste” material and adding carbon-rich straw with additional carbon rich material such as grass clippings and leaves based on the seasonal availability. The boxes are monitored and the temperature is recorded. At Beech Hill Farm the “food waste” is mixed with straw and vegetation from the farm fields. Piles are turned and moved periodically to reduce smell and encourage decomposition.

Use of Compost: Compost made in the Community Garden is used to increase soil fertility in the garden plots and at Beech Hill Farm. Since the compost generated on-site is of insufficient quality and volume the farm's main source of compost for the fields is commercially purchased. The farm estimates that it produces half of the compost on site and purchases 3 tons of commercially made compost a year.

Educational Aspect of the Composting Program: Work-study students learn how to make compost through hands on experience under the assistance of Professor Suzanne Morse. A compost thermometer is used to track and record pile temperature to ensure that effective composting takes place. The students also learn organizational and managerial skills through their independent work among different parts of the college. The compost work-study group is the contact link between Beech Hill Farm, the kitchen and the Buildings and Grounds Department. The group creates the compost management agenda, and documents the compost program. Work-study students are encouraged to attend the Maine Composting School to receive in-depth training on various aspects of composting.

Future Goals: College of the Atlantic seeks to improve the composting system to enable all of the compostable material produced on COA's campus including leaves, grass, and tree debris to be effectively composted. COA's vision is to minimize trucking away or burning of organic materials. The College also seeks to exchange and share its knowledge with the greater community, so that the College can improve its own practice and to extend the benefits of composting to other interested people and organizations on Mount Desert Island.

Campus Committee for Sustainability

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April 14th, 2010

Members: Leland Moore (Chair), Lisa Bjerke (Secretary), Aditi Desai, Craig Ten Broeck, Casey Yanos, Graham Reeder, Robin Owens, Eliza Ruel

III. Recycling policy

The Committee read-through the student handbook version of the recycling policy and made initial comments

IV. CCS Annual report

The Composting section presented Mr. Reeder.

February 17th, 2010

Members: Leland Moore (Chair), Scout Costello, Lisa Bjerke (Secretary), Graham Reeder, Aditi Desai, Craig ten-Broek, Marketa Doubnerova

(II) Recycling

A. Suggested solutions to recycling infrastructure issues:

- Cassie will be responsible for talking with Millard about the problem of small holes in Blair Tyson recycling bins.
- 2) Ask the recycling work study students for feedback?
 - Suggested informational services:
 - Permanent signage for recycling
 - Informing students about the campus recycling system at orientation
 - Pamphlets or recycling guides - for all students. (Campus composting could also benefit from similar informational services)
- 3) Note: Aditi will be responsible for the creation of a new recycling guide spring term. The topic of a recycling guide will be closed until spring term.

February 10th 2010

(III) Compost Updates

- Compost thermometer has arrived
- Need to collect data

January 13th, 2010

Item ii. Compost

Update from last term: Lisa and Graham, worked on it in HE course

- Cleaned up garden compost in the garden Built a new structure, protected from animals
- Are now bringing compost from kitchens once a week
- Launched a blog explaining the compost situation
- Future goals/desires:
 - Want to do more research and involve the farm.

- Compost will eventually be picked up from residences because there will be 5 gallon buckets.
- Still need a compost thermometer

November 4th, 2009

Lisa and Graham have been approved to work as Suzanne's work-study students for the Winter Term. -- the kitchen is willing to move compost where-ever it needs to go -- Dec/Jan are the off months for the farm -- can probably get by for the next three weeks - - Alyssa has been taking compost to the farm since last week -- the farm needs to cover the pile to be in compliance -- the farm is purchasing straw -- the town of Mt. Desert has asked that there be no meat in the compost -- in the past the farm has gotten donations of leaves for dry material -- cut back on compost-able cutlery -- incorporate separate hot compost for the cutlery --possibility of using a shredder for initial breakdown of cutlery - - Alyssa seeks the cups as the largest cutlery problem -- Suzanne sees bowls as the largest problem -- the corn fork idea comes from Middlebury College -- Lisa will research how Middlebury is dealing with the forks

Recreate Abe's front loading system -- Lisa and Graham will be managing the system under Suzanne starting in the winter -- installment of 5-gallon buckets in the each house on campus -- compost work-study students would collect the waste from each house via wheelbarrow -- Abe's system would be 10-12' long made out of pallets and holds -- coppicing system for winter as a source of carbon for the compost pile -- the kitchen is happy to add straw to the holding buckets -- Abe's system can be made out of straw bales as well -- Jan through April may require composting at the school in the efforts of sustainability -- Suzanne suggests straw bales instead of pallets-- MEET AGAIN IN FEBRUARY

April 15th, 2009

Discussion: Green Cones

Not effective for use at high volume or with a lack of heat and they need to be moved regularly, hence they are not working well. Action: Find someone willing to do Green Cone maintenance.

Discussion: Vermicomposters

Might not work well due to commitment, issue of time and student neglect. Need an alternative that works for our situation.

Action: Further research in to Vermicomposters, solicit Suzanne Morse for help.

October 21th, 2009

The farm is willing to compost. However the farm must create a plan before they can/will be allowed to.

October 14th, 2009

ITEM V COMPOST MUCKING:

The Committee will work with the compost in the community garden 10:00-11:00am

September 29th, 2009

II. Compost

Craig:

Was in touch with Bob Nolin and we have leaf piles behind Buildings & Grounds as well as the Davis Center. The pile is turned with a tractor and is composting, but the pile is full of red ants. Therefore no-one is using the piles. There may be non-toxic chemicals to kill red ants.

Harvard is doing a lot of landscape composting. They run hot water through the compost to get the nutrients out of the pile and spray it over the plants.

Check out: Harvard's Organic Landscape Practices.

Scout:

Spoke with Ken. TAB is not sending their compost to the farm because the farm does not want it and does not know what to do with it. The kitchen fills 20 - 25 bins a week. These are dumped in the Community Garden every other day (about 4). Scout will figure out weight and volume for next week.

Leland:

Spoke with Tom. Would be easier for us to find grants if we tie it in with the community. i.e. integrating the community's waste or getting a tub for the elementary school as well and making it a learning initiative.

Matt:

Bokashi Description: Small, in vessel composting system using anaerobic digestion with accelerator. Buckets require a spigot located on the bottom of the bucket to drain liquid waste as well as an air-tight lock. Bokashi accelerant consists of: Water, wheat bran, rice bran, molasses,

EM-X ceramic powder and efficient microbes (EM) Allows for the composting of meat, dairy, and fish. The liquid waste is also a potent fertilizer.

Pricing: BokashiCycle offers two 5 gallon containers with pressure plate "to exclude trapped oxygen," Bokashi accelerant caddy, dispenser scoop, and 800 grams of accelerant (to last 2-3 months). \$95.95, 6 month supply of accelerant is \$22, 14.12 month supply of accelerant is \$39.85. Gaiam offers one 5 gallon container with spigot and accelerant \$75.00 (accelerant alone is \$12.00)

Eco-Organics offers the same setup as Gaiam \$79.00. They also offer an institutional sized container (126 gal) \$199.00

We can also make our own buckets...

<http://www.wildlifegardeners.org/forum/composting/2883-build-bokashibucket-15-minutes-less.html>

Instructions for Use from Gaiam:

1. Place an initial layer of Bokashi at the bottom of the compost bucket.
2. Collect your daily food waste and chop it into small pieces.
3. Place waste in the composting bucket and coat it with a layer of Bokashi. For less than a 3" layer of food waste, sprinkle two fistfuls of Bokashi to cover the entire surface. Mix this layer thoroughly and compact the waste by pushing it down. Sprinkle a coat of Bokashi to cover the surface and place the plastic barrier directly on the compost mixture, completely covering it. Stir each new layer only and try not to mix it with previous layers of food waste.
4. Periodically, drain the liquid that has accumulated at the bottom bucket.

5. Once the bucket is filled to capacity, continue to drain any liquid and let the contents ferment for 7-10 days at room temperature.

Lisa:

Contacted Maine State Planning Office for assistance with composting.
Waiting for response. Would also like to see us involve the community.

Graham:

Compost bakes for about 14 days when the tub is full-->waste produced in 14 days cannot exceed capacity of tub (I don't think we need to worry about that though). Assuming a 5-6 day per week operation, it will take 13 weeks to fill an Earth Tub at 40 pounds per day, 5 weeks to fill at 50 pounds per day, and 3.5 weeks to fill at 150 pounds per day. Each unit has a total of 3200 lbs (1500 kg) biomass capacity when full. The cost range is around 10k, shipping shouldn't be too much because there is a manufacturer in Vermont.

There is another product called the Hot Rocket that can compost much more but I gather it costs about double the price and is manufactured in the UK (long lead time and high shipping costs). Pearson College has no complaints so far about the Earth Tub, the assembly was simple and after a month of being in session they have yet to fill it up to capacity (the school isn't much smaller than COA). The info package and instructions were well put together and easily understandable. They're going to send me more info once they've processed a couple of..

September 23th, 2009

Craig will talk with Millard about leaf composting. Scout will talk with Kitchen about how much the farm picks up each week, how many containers are created each week (including weight and volume of units picked up). Matt will research Bokashi compost system. Leland will find out about grants (Tom, D.Hales, etc)
Lisa will find information about Swedish community composting systems
Graham will research the Earth Tub and its competitors.

September 16th, 2009

III. Bokashi composting.

- Indoor composting through fermentation
- Keeps waste in a suspended state - ready for soil use.
- Can take bones and meat scraps, but not milk.
- Create working paper of compost systems.
- Who would operate the system?
- Cost of shed?
- Have compost working paper for the 30th.

April 29th, 2009

COMPOST:

The committee will recommend to the Director of Buildings and Grounds that the responsibility of "compost maintenance" be added to the present responsibilities of the so-called "Chairman of the Board of Recyclical Productivity" (or, whoever is charged with taking of recycling on campus). This entails aerating the compost, adding accelerant, and general maintenance as necessary.

-so approved. no abstentions or contrary votes.

Scout will investigate the composting situation at Beech Hill Farm, to be reported back at the next meeting.

Matt Shaw will formalize information regarding new ways of composting on campus, specifically looking at adding a vermiculture composter or "Earth Tub" to the campus composting network.

April 15th, 2009

Discussion: Green Cones

Not effective for use at high volume or with a lack of heat and they need to be moved regularly, hence they are not working well.

Action: Find someone willing to do Green Cone maintenance.

Discussion: Vermicomposters

Might not work well due to commitment, issue of time and student neglect. Need an alternative that works for our situation.

Action: Further research in to Vermicomposters, solicit Suzanne Morse for help.

April 8th, 2009

TEM II. Composting

Discussion: Address the current compost situation at COA and brainstorm methods, alternatives and solvency.

Current Issues are within residences, the Community Gardens and Beech Hill Farm:

- Storage capacity, green cones are backed up
- Processing ability
- Neglect - no turning
- Animals/Birds/Vermin Disrupting
- Complaints?
- Not hot enough to break down pathogens
- Excess of compost, can't make use of it
- A heap, no formalized system

Possible Solvency:

- A centralized composting system
- Divided yet organized collection - good for education
- Appointing work study students

Proposed Purchases:

- Earth Tub
- Vermicomposter (worms)

Action: Investigate existing compost and ask/ find answers to these questions:

- Where is comes from
- Where is it going?
- Quantity?
- Problems?
- Ideas?

April 1st, 2009

Student Life has asked CCS to find sustainable packaging for food service containers in Deering Common cafe and TAB.

They are looking for the "most sustainable option" for food service containers.

Current recommended options: biodegradable corn/sugar containers which seem to check out okay, will compost in 45/60 days.

Note: corn starch forks and spoons do not break down at BHF compost

Suggested: experimentation with products to check on their compostibility

-Craig will provide the small amount of \$ to purchase experiment products.

Landscape Campus Plan Liaison Committee

Minutes Regarding Compost between 1999-2013

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March 30th, 2006

Members Attending: Tanner Harris, Brett Ciccotelli, Millard Dority, Andy Griffiths, Tonia Kittelson, Ethan Neirider, Rowan Gorman, Isabel Mancinelli, Sam Coplon, Craig Ten Broeck

Item 1: Presentation

Sam Coplon presented the updated plan for the campus landscape. He presented the plan (utilizing an updated campus map) starting at the northend of campus, moving to the center and finally to the southern end identifying each area as a district. He also spoke about the campus walk, and the campus drive. He stated that this plan was a supplement to build off of North End:

- Eco-House: No longer part of the program because it had been problematic.
- Garden:
 - The existing garden is going to stay where it is.
 - The upper garden is an ideal space to install greenhouses.
 - Possible separate composting areas will be installed off of the back end of the lot that is both vehicle and garden accessible.
 - A new shed, that is closer to the garden and is tractor accessible, will be installed.
 - A pathway from the new parking area to the garden and campus core will be installed.
 - A fence is to be put in place to screen out deer, and give definition to the space. Whether the fence should enclose the upper garden is yet to be determined.
- There are some concerns about the effectiveness of only fencing in the lower garden.
 - Care of upper garden area:
 - Concerns about appearance of overgrown upper area.
- Greenhouse function:
 - The greenhouse area should be enclosed due to transplant experiments, cold frame construction or other functions of operating a greenhouse.
- Fencing Cost:
 - In Sam's plan the quality of the fencing is upgraded, and could be expensive to enclose entire area.
- The committee decided to meet with Suzanne Morse and discuss concerns further, where decisions could be made.

March 3rd, 2006

Members Attending: Millard Dority, Andy Griffiths, Tanner Harris, Isabel Mancinelli, Craig Ten Broak, Kayla Pease

Item 5: North End Discussion

- Millard updated the committee as to the most recent recommendations made by Sam Coplon Associates.
- A sidewalk will run parallel to the ceremonial entrance not only eliminating the need for 'no parking' signs but also providing a safe passage into campus.
- Visitor's parking lot by museum will be included in the next design plan: CPBC may have to draw up a parking enforcement plan i.e. who qualifies as a visitor, how long is temporary parking etc...
- Possible reorganization of north end:
- Rough Arts building could be pushed toward north lawn so that B&G and all of its supplies could be consolidated. This plan allows all vehicles and delivery trucks to service the B&G area leaving the academic area pedestrian only.
- Committee discussed this idea and would like Sam Coplon to follow up on it.
- Garden Area:
- Committee supports the construction of greenhouses:
- Possibly located in the orchard area
- Possible uses were discussed:
- Permanent/short-term
- Attached academic class room
- The committee requested that Sam Coplon address the issues of access to, and traffic flow within, the garden (fence, gates, signage)
- **Compost: The committee discussed the potential an affective composting system could have for the community**
 - May involve the relocation and enlargement of the gardener's shed
 - Use of tractor and lawn clippings to speed up the composting process
 - Possible educational compost production site with a demonstration area
 - Organic debris management: current composting system is ineffective and does not deal with post-consumer waste.
 - The new system must be able to accommodate all organic matter from TAB.

Campus Planning and Building Committee

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April 3, 2013

Members Present: Millard Dority, Barbara Meyers, Sarah Hall, Hannah Little, James Crawford, Craig TenBroeck, Barbara Sassaman, Kali Rothrock, Isabel Mancinelli, Sean Murphy, Jen Hughes
 Members Absent: Ruby Nelson, Ernie McMullen
 Guests: Abigail Dunn, Andy Griffiths, Meredith Randolph
 Scribe: Shira Catlin

ITEM III. UPDATES:

Northeast side of campus- Millard announced that the northeast side of campus has finally been cleared. There has been contaminated compost there for a very long time; it was also the location for the burn pile. All of the materials in the area were disposed of. **There will be no brush or materials burning on campus, instead, the materials will be bundled and brought to the facilities in Southwest Harbor.** Isabel asked what was contaminating the compost. Millard explained that over the years the compost had become full of fishing nets, trash, plastics, metal fencing, bricks, glass, and many invasive seeds were mixed in as well as red ants. Millard explained that the compost and waste was removed and taken to Tim Gotts waste facility. The northeast side of campus is the highest point on campus and is an ideal location for future constructions.

February 20, 2013

Members Present: Millard Dority, James Crawford, Austin Bamford, Sean Murphy, Sarah Hall, Jen Hughes, Ernie McMullen

Members Absent: Isabell Mancinelli, Barbara Meyers, Lisa Bjerke, Ruby Nelson, Craig TenBroeck, Hannah Little

Guests: N/A

Scribe: Shira Catlin

TEM III. REVIEW OF EXISTING CAMPUS PLAN: The committee reviewed the campus plan created by Sam Coplon in 2006. The committee discussed the rough arts building location on the map, as well as the parking areas, the driveway, the location of the pottery studio, buildings and grounds, and the arts and science building. The parking areas were going to be moved out of the center campus area to eliminate the view of cars. Ernie asked what the time frame was, because the most of the building constructions will take a longer amount of time which changes how the planning process is approached. Millard responded, the planning process will take between 5-15 years, components will be completed during different time periods. The committee discussed the use of rough arts building, combining boat storage with B&G, and other potential uses which could benefit from a rough arts building. Ernie explained that the pottery studio is currently adequate for the demand it faces. Although there may be an increase in demand when the studio is opened to the community and an afterschool program is offered for children. Millard added that the compost and storage area near the burn pile on campus is located in very environmentally beautiful area, and in the future the space should be considered for other uses. Austin asked Millard how he felt the current B&G location was working. Millard responded that the current location is OK but it may benefit the college to have B&G located on the other side of campus, closer to Witchcliff, eliminating B&G as being one of the last images a visitor may see when leaving the campus.

CPBC discussed changes that have occurred since the plan was created in 2006, specifically the needs which have been prioritized such as student housing and the Turrets renovation. Millard added that Don Cass responded to the agenda, the Zoo lab is in high demand and the science resource faculty are pressed.

February 13, 2013

Members Present: Millard Dority, Barbara Sassaman, Craig TenBroeck, James Crawford, Sean Murphy, Jay McNally, Jen Hughes.

Members Absent: Isabel Mancinelli, Barbara Meyers, Sarah Hall, Ernie McMullen, Lisa Bjerke, Ruby Nelson

Guests: Scout Costello

Scribe: Shira Catlin

Peggy Rockefeller Farm: Scout explained that she and Millard have met with some of the abutters of Peggy Rockefeller Farm to discuss the commercial agriculture permit. The majority of the abutters are supportive of more animals on the farm, especially because previous ideas such as whale composting and slaughter house had been talked about. Millard and Scout estimate that they should be able to meet with Angie, the code enforcement officer, within a week and a half. There a few more abutters that Scout and Millard are trying to get in contact with to arrange a meeting.

January 16, 2013

Members Present: Millard Dority, Sean Murphy, Scout Costello, Andy Griffiths, Barbara Sassaman (Sass), Jay McNally, Sarah Hall, James Crawford, Jen Hughes, Sarah Hall, Ernie McMullen, Lisa Bjerke

Members Absent: Barbara Meyers, Isabel Mancinelli, Creg TenBroeck, Hannah Little, Kali Rothrok, Ruby Nelson
Guests: None
Scribe: Shira Catlin

ITEM V. BEECH HILL FARM HOUSING: The Beech Hill Farm Workforce housing project has evolved many times since the beginning of the planning process. The project slowed down because of the \$150,000 budget. Camp Beech Cliff donated 3 small cabins which Beech Hill Farm is going to use for workforce housing. In order for these cabins to be used there needs to be a common space and washing facilities in an additional building. Scout explained that the design for the common space has become very expensive because it has been trying to meet everyone's needs. Meredith Randolph has been working on different designs for the common space. The cooking range which cost \$10,000 was taken out, which would require the workers to cook outside on a grill or in a microwave. Millard added that we will be able to meet the obligation for housing in the spring. Using the second floor of the barn has been a thought about. The current bathroom on the second floor is not in good condition. If the common room is heated or cooled it must be insulated. Scout explained that she has been looking into using Quonset, yurts, and other simple structures to act as a common room. The committee discussed porta-potties and outhouses. **Clivus composting toilets have been used by Acadia and are much smaller than the ones used on campus.**

September 26, 2012

Members Present: Millard Dority, James Crawford, Jay McNally, Craig TenBroeck, Hannah Little, Ruby Nelson, Jen Hughes, Barbara Meyers, Barbara Sassaman (Sass), Sean Murphy,
Members Absent: Isabel Mancinelli, Ernie McMullen
Guests: Katie Henderson, Sarah Hall, Austin Bamford, Lisa Bjerke, Andy Griffiths
Scribe: Shira Catlin

ITEM III. ANNOUNCEMENTS:

Canoe Launch- Millard announced that the application to the Planning Board to move non-conformity location on Peggy Rockefeller Farm has been pulled. Millard met with Andy on Friday and discussed many of the neighbors' concerns about the canoe launch. Ruby added that she recently had a discussion with a local mediator who alerted her of concern from at least 3 neighbors. **Most of the concern is based on miscommunication relating to whale composting.** Millard met with Catherine Elk who volunteered to hold a neighborhood meeting at her house. This would present the neighbors with an opportunity to ask questions and start resolving problems. Millard does not want to jeopardize Harbor Hill Estates for the canoe launch. **Millard added that Darron will be signing a letter explaining that there will not be any whale composting at Peggy Rockefeller farm. Sass asked where the whales are currently composting. Millard explained that there are pieces being composted at different locations. Lisa explained that there are small parts of the whale being composted at Beech Hill Farm as a trial to see how to most efficiently compost a whale without smell. Dan (Millard last name) has previously been composting the whales on his property, but he is running out of space. He has the majority of the sperm whale composting on his property.**

September 26, 2012

Members Present: Millard Dority, James Crawford, Jay McNally, Craig TenBroeck, Hannah Little, Ruby Nelson, Jen Hughes, Barbara Meyers, Barbara Sassaman (Sass), Sean Murphy,
Members Absent: Isabel Mancinelli, Ernie McMullen
Guests: Katie Henderson, Sarah Hall, Austin Bamford, Lisa Bjerke, Andy Griffiths
Scribe: Shira Catlin

ITEM VI. COMPOSTING:

Lisa Bjerke presented information about her senior project, titled Compost and Community at COA. Lisa has been working with compost at COA since her first year, and she would like to transfer all of her information over to incoming students and the rest of the COA community. There is more compost work that needs to be done, and work-study students can't get it all done. During the fall term, she will be focusing on collecting data, interviewing community members, and getting more information on the history of composting at COA. In the winter her project will be research based, and in the spring she expects to present a compilation of all the information she has obtained to help COA better understand composting. She will be putting together a composting manual for the COA community. She will be offering opportunities for the COA community to become more involved with composting via her worm program, and she will also be hosting activities during Earth Day. She has CJ, the new farm manager at Peggy Rockefeller Farm as her project advisor because he has a new set of eyes at COA, and he has a lot of experience as the former head of composting at Maine Organic Farm and Gardeners Association (MOFGA). Suzan Morse, and Carly Segal will also be advising her, each of them have areas of expertise that will be helpful for her project. James asked if normal compost was allowed at Peggy Rockefeller Farm. Lisa explained that normal compost is allowed at Peggy Rockefeller farm.

February 11th, 2011

Millard Dority, Kali Rothrock, Andrew Louw, Barbara Sassaman, Hannah Little, Isabel Mancinelli, Philip Walter
Guests: Lisa Bjerke, Jose Merlo, Jane Hultberg

ITEM IV. VERMACULTURE ON CAMPUS:

Lisa Bjerke attended CPBC to present her vermaculture plan to the committee. (She will be presenting this plan at ACM as well.) COA has been having problems composting the compostable utensils and the dishes used at the Sea Urchin Café and at TAB. Sarah Luke is going to get a shredder for the compostable dishes in hopes to help solve the problem. Lisa will be working on developing a functional composting system on campus that will eventually be able to exist without her. She has borrowed twelve 19-gallon buckets of vermicompost from Rosalie Kell and is currently storing these buckets in the small greenhouse. Lisa has bought a fish tote for vermicompost, and she wants to get it started soon. Lisa wanted to discuss this with CPBC because she wants to use a temporary 4x4x4 space closer by the kitchen to keep the vermicompost. After the worms leave in May or June, the bin can be moved to a new location. The vermiculture could potentially solve the huge compost issue that COA is facing. Committee members did not see any problems with the suggested plan so Lisa will go ahead with her project. If anything changes, she will come back to meet with CPBC.

May 5th, 2006

Members: Craig Ten Broeck, Jean Boddy, Millard Dority, Isabell Mancinelli, Pam Mitchell, Ethan Niederer, Brett Ciccotelli
Guests: Tanner Harris, Rowen Gorman, Andy Griffiths

Item II: Landscape Waste Composting System and Location

The grounds workers have been very diligent about collecting leaves and turning the leaf pile, with the understanding that the resulting leaf matter could be used as mulch on campus. The new gardener (Eamonn Hutton) does not feel comfortable spreading it on campus, due to potential weed contamination. Members of the committee noted that it has been settling for a long time and should not be a problem. The question will be deferred to Suzanne Morse; as the primary facilitator of the community garden, she knows whether or

not weeds have been added into the pile. In the event that Eamonn is still hesitant to use the leaf matter on the formal gardens, CPBC suggested using it on less formal planted areas, such as around the arboretum trees. In order to improve the system in the future, alterations were recommended for the composting system currently proposed in the Campus Landscape Plan Draft. The mulch needs to sit for at least two years; a three bin system would work better than the two bin system proposed which does not enable the leaves to be rotated. The Landscape Subcommittee will discuss the composting system and the community garden in further detail in order to develop the most effective system.

April 25th, 2007

Millard Dority, Rich Borden, Craig Ten Broeck, Jen Hughes, Jamus Drury, Isabel Mancinelli, Brett Ciccotelli, Elyse Dana, Laura Pohjola, Geena Barry, Andy Griffiths
Guests: Sarah Luke, Barbara Sassaman, Tonia Kittleson, Stewart Brecher, Elmer Beal
Members absent: Michael Griffith, Pam Mitchell, Ben Smith, Rowen Gorman
Copies to: David Hales, Academic Affairs, Business Office, Development, Minutes Board, COA Website, B&G Committee, Library Archives, Liaison Committee

EXTERIOR OPTIONS, INTERNAL PARTITIONS, COMPOSTING TOILETS – CPBC COMMENTS:

Stewart mentioned that the composting toilets might not be effective. CPBC decided that the dual flush toilets might be more appropriate in this space as opposed to the composting toilets. CPBC also considered alternative game room spaces, considering that the dimensions for the standard pool table exceed those of the suggested game room.

May 16th, 2007

Members: Millard Dority, Jen Hughes, Jamus Drury, Isabel Mancinelli, Brett Ciccotelli, Elyse Dana, Geena Barry, Andy Griffiths, Michael Griffith, Ben Smith, Barbara Sassaman, Rich Borden,
Guests: Sarah Luke, Sean Berg, Charles Fisher
Scribe: Frances Michaelson
Members absent: Laura Pohjola, Rowen Gorman, Craig Ten Broeck, Pam Mitchell,
Copies to: David Hales, Academic Affairs, Business Office, Development, Minutes Board, COA Website, B&G Committee, Library Archives, Liaison Committee

ITEM I: JAPANESE KNOTWEED ERADICATION PLAN

Sean Berg and Charles Fisher presented a proposal for the removal and control of Japanese Knotweed on COA Campus.

Knotweed Characteristics

- Fast growing herbaceous (8cm per day) Campus has 2 meter high stands
- Can regenerate from 5 grams of viable root stock.
- Takes advantage of sunlight, will monopolize nutrients in water and facilitates flooding, Campus knotweed could potentially add 10% to construction cost.
- How to Rid Campus of Knotweed – Determine the knotweed stands on campus, and determine knotweed per square footage. Large patches were found by Davis, Witchcliff and the B&G compost. Davis knotweed should be a priority as knotweed thrives on construction environment. Manual removal is the best method for the campus; monitor the success over 3 – 5 years while cutting and tarping the area. Attempting to cut Knotweed out of the ground could potentially help the plant to grow.

October 24th, 2007

Present: Millard Dority, Pam Mitchell, Barbara Sassaman, Jennifer Hughes, Jamus Drury, Andy Griffiths, Noah Hodgetts, Nishanta Rajakaruna, Brett Ciccotelli, Laura Pohjola

TEM II: DEERING COMMON

Stewart Brecher Architects (SBA) brought in three design plans for the kitchen, café and vending area in Deering Common. The plans were reviewed and discussed by the committee.

The committee agreed upon eight aspects that the kitchen plan would need to meet:

1. Direct access into the kitchen space for delivery of supplies
2. Kitchen needs to be lockable
3. Vending should not be in the airlock space
4. Two vending machines will be needed
5. Accessible microwave for student use
6. All food in one area
7. The space for the vending machines should be taken out of the kitchen space rather than the lounge area
- 8. Compostable tableware/flatware for after-hours**

January 16th, 2008

Millard Dority, Laura Pohjola, Jamus Drury, Geena Berry, Noah Hodgetts, Pam Mitchell, Isabel Mancinelli, Barbara Sassaman, Jennifer Hughes, Brett Ciccotelli

ITEM III: NORTHEND DEVELOPMENT

One of the projects planned under the deferred maintenance upgrade plan is the installation of a new sewer system on the north end of campus to support the waste from the pottery studio; a gray water system that has failed. Millard asked that CPBC review the planned development for the north end campus so that the system we design now will support all planned development in the area in the future. CPBC was presented with excerpts from the 2003 COA Campus Plan Update, and from the 2006 COA Campus Landscape Plan showing proposed development for the area. Millard presented a short history of development to date in the area. **Explaining that for most of COA's history the north end was seen as a rough, tough area of campus. A place dedicated to experimental buildings and projects; a place for messy arts, and messy maintenance, a place of storage. Only recently has COA realized the importance of this area as a place for education, celebration, meditation, and beauty. The area once called the "hill", a place used for storage of building supplies, brush piles and general landscape waste composting, may have the best view of Frenchman Bay of any location on campus.** Recent changes have further altered the thinking of what might be in this area. The conversion of the buildings and grounds shop to academic space has increased the traffic to the north end of campus. A recommendation proposed in the 2006 Landscape Campus Plan to relocate storage of grounds material from in front of Studio 5 and 6 to behind the grounds storage shed has been done, a plan for further landscaping around Studio 5 and 6 has been approved which will make the area even more formal. **Millard reported that it is no longer possible to store building scraps, brush, or other debris on the "hill" or around the building complex without receiving complaints. This material is hauled away much faster now than in the past, which means that students are no longer able to use these scraps for their projects. CPBC will review the north end material for discussion next week.**

January 23th, 2008

Millard Dority, Noah Hodgetts, Jamus Drury, Jennifer Hughes, Zimmerman Cardona, Pam Mitchell, Isabel Mancinelli, Geena Berry, Barbara Sassaman

Members Absent: Brett Ciccotelli, Laura Pohjola, Craig Ten Broeck, Andy Griffiths, Nishanta Rajakaruna

ITEM II: REVIEW OF NORTH CAMPUS DEVELOPMENT PLANS; 2003 CAMPUS PLAN UPDATE AND 2006 CAMPUS PLAN

In preparation for planning the sewer improvement project on the north end of campus, the committee spent time reviewing the overall development plan for this area of campus. Questions related to recycling, composting, storage, and location of buildings and grounds in this area surfaced during the discussion. It was also noted that boat storage and boat maintenance space is not shown on the latest proposed development plan for the area – 2006 Landscape Campus Plan. The North End development discussion will continue at next week's meeting. The hope is to resolve as many questions as possible before we proceed with an engineering study of the area to determine the long range sewage disposal needs.

November 5th, 2008

Millard Dority, Isabel Mancinelli, Philip Walter, Elizabeth-Anne Cobb, Andrew Louw, Zimmerman Cardona, Jennifer Hughes, Leland Moore, Geena Berry, Barbara Sassaman, Laura Pohjola, Pam Mitchell
Visitors: Robin Khuen, Bruce Tripp, Barbara Myers, Emily Argo

III. GROUNDS WASTE COMPOSTING

Bruce Tripp, Barbara Myers and Laura Pohjola returned to CPBC to further discuss the composting situation on campus. This was brought to CPBC three weeks ago because of a contamination issue in the compost pile on the north end of campus. The pile has been contaminated with things such as plastics as well as an abundance of invasive species making the leaf mulch created by this pile not as desirable. Barbara was asked to determine places on campus that could be used as temporary composting piles until the situation at the north end compost pile is reconciled. She returned with three options:

1. Area near the community garden. In order to best utilize this space it would need to be cleaned and a wire fence should be used in order to contain the leaves.
2. Area near Davis garage. There is a space that is not being utilized as water craft storage that would be a good location. To use the space a stump may need to be removed from the ground in order to increase the ease of turning the pile. This area also doesn't have many invasives which could decrease contamination.
3. Continue to use the north end leaf pile and try to be more diligent about separating leaves, sticks, pine needles, etc.

A final decision was not made by the committee at this time and will continue to take direction from Bruce and Barbara and use the north end of campus until an appropriate temporary solution can be found. Once a temporary solution has been found it will be important to develop a permanent one and it was agreed that Suzanne Moore should be involved in this discussion. In the interim Millard will obtain a cost estimate for hauling the contents of the north end compost pile to the Hulls Cove compost.

May 6th, 2009

Millard Dority, Pam Mitchell, Phil Walter, Barbara Sassaman, Andrew Louw, Elizabeth-Anne Cobb, Laura Pohjola, Isabel Mancinelli, Noah Hodgetts, Emily Argo
Members Absent: Jen Hughes, Leland

Moore, Zimmermand Cardona Guests: Tonia Kittleson, Rosemary Seaton, Craig Ten Broeck Scribe:
Emily Argo

IV. OTHER

B&G will take over the composting toilets in Deering and KWD student village in hopes of resolving the issues with the smell and the flies.

February 3rd, 2010

Millard Dority, Emily Argo, Phil Walter, Ernie McMullen, Noah Hodgetts, Andrew Louw, Elizabeth-Anne Cobb, Pam Mitchell, Jen Hughes, Craig Ten Broeck, Sarah Luke, Ken Seblin, Lise Desrochers

II. TAB SERVING AREA REDESIGN

Sarah Luke and members of the kitchen staff returned to CPBC to discuss the redesign of the TAB serving area. Prior to this discussion, members of the committee had some follow-up questions to last week's meeting.

- Is there any way to quantify the amount of revenue we are losing due to theft?
 - Not very easily because of the current payment system, however, the items we lose the most revenue on are milk, juice, coffee, and the salad and sandwich bar. The kitchen estimates that we are losing \$100/day in revenue which is a very conservative estimate.
- The one-card system and new flow design may help change this because people may not steal things if they are more likely to be caught.
- Another issue is that there are many students that pay for everything while others do not.
- How many more people can we serve with the new design?
 - It may not be a question of how many more people we can serve with a new design but rather the speed at which we can get the current amount of people through the line—improving efficiency—that we are looking for.
 - Since we will be getting people through the line faster we can use this as a selling point when implementing the new design in TAB.
- Discussion was also held regarding the relocation of two booths and it was clear that by relocating the two booths there would be no net loss of dining area.
- Access to water was also brought up since you have to cut back through the line in order to access one water dispenser and the other is currently separated from the dining area by a divider so it was suggested that a water dispenser be placed in or near the archway in order to decrease disruption of the food service line by peopling getting water.
- **The kitchen staff also voiced their desire to go from plastic cups since they are the most commonly stolen item to compostable cups which they would place by the water dispenser.**
- The kitchen also hopes to begin providing individual juices rather than a juice machine.
- **Members of the committee suggested that the kitchen address the change to compostable cups and individual juices with CCS. Members of the committee also suggested that a flat service be placed over the tray bar this way people not using trays to carry their food are able to set down their plate and cup as they move through the serving line.**
- After reviewing the drawings and photographs provided by the kitchen staff CPBC approved the request from Sarah Luke and kitchen services to implement the three permanent changes:
 1. Relocation of a booth
 2. Removal of portion of serving bars
 3. Removal of portion of dividing wall

The timeline for these changes will be set by B&G and it is best to make all changes at once rather than try and phase them in. This is an effort to shorten the amount of time that people are disgruntled about the changes.

October 6th, 2004

CPBC Members Present: Jean Boddy, Rich Borden, Zack Davis, Millard Dority, Jen Hughes, Jen Jones, Pam Mitchell, Ben Smith, Davis Taylor

CPBC Members Absent: Jane Hultberg

Guests: Rowen Gorman

Copies to: Steve Katona, Academic Affairs, Business Office, Development, Minutes Board, COA Website, B&G Committee, Library Archives, Liaison Committee

Item 3: Sea Urchins Salvage Proposal

Millard requested permission to discuss with the building committee the removal of Sea Urchins from E.L. Shay's contract. This will give the college greater control over the process. Currently, \$75,000 dollars is budgeted for the demolition. **The committee will have to consider whether saving the money is more ecological than the financial (transportation) costs involved in recycling, reusing or composting every piece of the building. It may become a mixed approach where some materials are recycled while others are land filled.** The committee's decision will be in keeping with the spirit of its promise to ACM last spring

February 2nd 2005

CPBC Members Present: Jean Boddy, Millard Dority, Rich Borden, Luke Ingram, Ben Smith, Pam Mitchell, Davis Taylor, Isabel Mancinelli, Jane Hultberg, Jen Hughes

CPBC Members Absent:

MEETING SUMMARY:

Item III: Student Housing C Discussing the Cost of Building Green Robert Shea, of EL Shea Inc., the contractor chosen to manage the construction of the new student housing project attended the meeting to present a contractor's view of the proposed project and to explain the schematic design cost estimate prepared by his firm. He discussed how COA's student housing design differs from high-end residential construction projects that his firm has built, especially regarding green design and construction methods. He explained that COA's commitment to build a green structure is evident from the complexity of the exterior wall and roof systems that require double wall framing and heavy building insulation. Complex mechanical systems are also a feature of the building that increase the cost, but reduce future energy use. The biggest differences between COA's project and high-end residential building are seen in the increase of interior details. Rob answered specific questions from the committee regarding the practical and monetary implications of some building materials, such as green insulation and wood pellet furnaces. He illustrated elements of the design where cost is concentrated. **High cost aspects include composting toilets, the heating system (boiler, silo, feed system, piping between buildings), and dividing the residences into multiple structures.** Green building incorporates a wide range of interpretations making it difficult to compare the cost of this project to other green buildings.

October 12th, 2005

Members Present: Craig Ten Broeck, Jane Hultberg, Sarah Short, Millard Dority, Isabel Mancinelli, Jen Hughes, Pam Mitchell

Members Absent: Rich Borden, Sarah Stienberg, Jean Boddy, Jamus Drury

Item I: Campus Committee for Sustainability

CCS updated CPBC on the items currently being discussed. The committee has been looking into potential tactics for heat reduction. Several strategies are planned:

- Placing signs around campus encouraging minimal use of lights and doors without air-locks.
- Increasing public awareness of resources consumed by posting graphs of energy use
- Increasing awareness in the dorms (conducting information sessions with the RA's)

A suggestion was made that CCS produce a flyer or information on reducing energy usage for faculty, staff, and students living off campus. **The green cones situated around campus "digest" food scraps, acting as animal safe compost with no end product. CCS proposes purchasing six more and locating them around the dorms.** Through an independent study, student John Deans is researching the possibility of incorporating biodiesel as an energy source for COA.

April 7th, 1999

CPBC MEMBERS PRESENT: MILLARD DORITY, MEL COTE, MARCIA

ITEM IV. COMPOSTING GREENHOUSE

The committee discussed the option of locating the composting greenhouse within the garden boundary. The compost would then be in very easy access for fertilizing the garden. The structure would have to be sturdier than the four-seasons greenhouse since it collapses every year from either wind or snow and ice accumulation. The committee then went to the garden to inspect the area and continue discussion. We looked at the grassy area in the middle of the garden and decided that if the four-seasons greenhouse is not going to be repaired and used, that we recommend that location. Our other space recommendation is the area above the garden between the old compost and the orchard. The committee voted to support the Landscape Subcommittee's decision not to place the greenhouse on the old NHM Headquarters site. Millard will contact the kitchen about whether the Four-Seasons Greenhouse will be rebuilt and inform Suzanne of our decision.

February 3rd, 1999

CPBC MEMBERS PRESENT: MILLARD DORITY, RACHEL BIGGAR,

ITEM II. CLARIFICATION OF THE COMPOSTING GREENHOUSE PROPOSAL

There was some question about why the proposal only included one site recommendation. There are some concerns with the site by the pillars. Suzanne Morse and Allison Gladstone attended the meeting to answer questions. Do we want to encourage wheelbarrow traffic across the lawn?

If not then the composters will be made aware that they have to take the driveway route. What if the composting doesn't work and there is a substantial smell? How will this affect graduation? Apparently the smell only happens when the compost is turned and is not likely to smell. There are no guarantees, as with anything else. If we are going to make a commitment to composting then we have to take the chance that it may smell sometimes. This is the waste our community generates and we have to take care of it somehow. Are there any other site possibilities? The site between the museum and garden parking lot would require tree removal. Directly behind the kitchen was not favored because there are too many trees. The old compost site has a drainage problem and is needed as backup. The bug house site is too far away. The committee will consider a space next to the garden, between the garden parking lot and the garden on the grass and report back next week. However, Suzanne is concerned about placing the greenhouse over the most fertile soil on campus. She also would hate to see a cement floor in the garden

area. Is gravel another option? Could it be placed further back toward the old compost instead of closer to the drive?

January 6th, 1999

MEMBERS PRESENT: MILLARD DORITY, RACHEL BIGGAR, PAM

V. LANDSCAPE SUBCOMMITTEE BUSINESS

Rachel will chair the Landscape Subcommittee this term. Millard asked that they discuss the pillar issue. He also mentioned that CPBC voted to keep the Seafox bike shed in lieu of making it a sauna, but the committee will assist interested students in coming up with alternatives. The committee also needs to work with **the composting greenhouse proposal and talk to the originators about constructing a model**. The committee will also be involved in the removal of the Bug House.

November 4th, 1998

MEMBERS PRESENT: MILLARD DORITY, JANEEN FEERO, RACHEL

ITEM II. COMPOST PROPOSAL

The compost proposal was handed out (see attachment), but the copies the committee received had only every other page. Millard apologized for this. The greenhouse is a 20'x50' moveable structure. The estimated cost of \$1878 does not include hay or replacement of plastic.

Questions and Comments:

Isabel questioned if it would impact the secondary access to the museum. Bill Newlin stated that aesthetics of the structure should be considered because of its central location on campus. Should the structure be made of glass or better quality plastic?

Isabel questioned if we could utilize the greenhouse that is in storage. It is larger, but maybe composting could use a portion of it. Dave asked whether any trees would need to be removed to install the greenhouse. As Allison understood it, the area was going to be cleaned up and some of the trees removed anyway. The tree-removal part may not be true.

Dave also wondered whether there was too much organic material in the garden already. That will be checked on. Rachel suggested locating the greenhouse in an area which cannot be used for garden space, like the area which is infested with comfrey. Isabel wondered what will happen to the existing compost. It was also mentioned that the proposed greenhouse site is a very wet area.

Month Dayth, XXXX

Millard Dority, Brett Ciccotelli, Rowan Gorman, Jen Hughes, Rich Borden, Michael Griffith, Ben Smith, Craig Ten Broeck, Andy Griffiths
Scribe: Frances Michaelson
Guest: Stewart Brecher, Elyse Dana, Tonia Kittleson, Sarah Luke

ITEM I: SEAURCHINS PRESENTATION

Stewart Brecher attended the meeting to present plans to date for the possible renovation of Sea Urchins. Mr Brecher explained that the design team is comprised of the following consultants: landscape – Coplon Associates, environmental consultant - Mark Rosenbaum, MEP – Peterson Engineering, lighting – Bartlett Design. Millard announced the CPBC has been charged with facilitating the design process on campus with consultation from Student Life Committee. All recommendations will be forwarded from CPBC to buildings and grounds committee of the BOT and the president. Millard reported that the construction budget for the project has been set at 1.4 million dollars. Stewart explained that this budget is very tight and may force COA to make some make concessions in order to reach this goal. Stewart then walked the committee through the

concept design. Stewart said that this will be an adaptive re-use not a historical renovation First Floor – Addition of a new wing with an airlock entry. An elevator and public bathrooms will be included in the addition. Plan to remove interior staircases, which increase circulation and floor space. Ramps will be installed connecting the addition to the main room of the first floor, which makes the entire first level (with the exception of the small brick patio adjacent to the ceremonial entrance,) handicap accessible. Second Floor – The second floor is similar to the first, but has a slightly smaller footprint. A fire exit stair will be added, which is fairly affordable and fulfills the ADA requirement. The entire second floor will also be handicap accessible. Third Floor - Even less of a total area footprint. There will be no additional toilets on the third floor, although the elevator and music practice space will be included. Basement – **There will be space for storage in the basement level and depending on the type of plumbing for toilets (composting vs. traditional plumbing) will affect the amount of storage space.** Stewart Brecher Architects had been retained by letter of intent to continue design through schematic phase. The first step in this process is to verify the program and the concept that Stewart is using to address these needs. He asked that CPBC, consider the importance and budget effect of saving the ocean-side porches, general concept of the proposed layout, and the aesthetic priorities of the space (which spaces are important to preserve some historic qualities).

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October 29th, 1997

Members Present: Marcia Dworak, Millard Dority, Janeen Feero, Isabel Mancinelli, Isaac Jacobs, Pam Brehmer, Dave Taylor, Mel Cote, Rachel Biggar, Amanda Walker, Amanda Robbins, Kate Campbell

Members Absent: Jana Butts

Guests Present: Melanie Schori, Dorothee Alsentzer, Kate Francis, Sam

ITEM IV. WHAT IS A GREEN CAMPUS?

BACKGROUND: The discussion began with Kate Francis giving a brief history of the campus greening efforts and money allocation. In the Spring of 1996 COA received a MacArthur Grant, \$15,000 of which was allocated

for efforts to green the COA campus. Kate drew up a model of sustainability for the COA campus which includes eleven distinct goals. CAME was placed in charge of \$10,000, steering responsibilities, and collecting input from the community. This was done through a series of dialogues which culminated in the model for sustainability proposal being passed at the big ACM in the fall of 1996. Since that time CAME has worked with and/or allocated funds for the following projects: bike rack project, kitchen work study, and library and the Arts and Sciences Building green lighting.

GREEN CAMPUS CONFERENCE BRIEFING BY SAM HAMIL/COA ENVIRONMENTAL AUDIT

Sam Hamil came to report on the Green Campus Planning conference he attended at Ball State University last month. CPBC hoped to gain insight about what other institutions were doing to "green" buildings, landscapes, etc. According to Sam, most of the discussion centered around the "greening of curriculum", interdisciplinary approaches, and self-guided study while there was little discussion of changing the physical aspects of a campus. He is incredibly encouraged by the fact that COA is well developed in these areas already and can serve as a model. Unfortunately, no "green campuses" were represented. However, he did get a chance to speak with David Oar from Oberlin College who obtained \$6.5 million for a new environmental studies building which would exemplify a "green structure." David feels that choosing an architect is the wrong first step when looking to construct a "green building", that systems engineers provided the most useful input to the project he was involved with. A first step would be to gather an inventory of inputs, outputs, energy requirements, and waste flow to integrate into the plans for the building before the construction occurs. These issues are being monitored. In case anyone isn't familiar with Andrea Lani's senior project from 2 years ago, she compiled an environmental audit of COA called "COA on Earth". This report examines COA's inputs and outputs and gives "green recommendations." Though some of the information may be a bit outdated, this report should serve as an invaluable tool to further campus planning. There will be a reserve copy in the library. All committee members should read the plan and will receive copies of its recommendations.

GREEN BUILDING PROJECT/POLICY

At this point, Dave expressed the three options he sees for a policy or project for (a) "green building(s)."

1. Design a building and throw in green features where budget allows, the "green enough to get by" option.
2. Commit a substantial percentage of the building budget to upgrade to "green" features.
3. Build an exemplary building which may need to be smaller because of cost but is very green. Here it is important to "design green into the process."

DISCUSSION

The following discussion summary does not necessarily include direct quotes, but hopefully captures the essence of the discussion.

Mel- It is important to consider what the goals of the building are.

Derek- Will we consider building a "very green" building to the size we want and work on finishing it over a longer time period? This raises the question of how long we are willing to wait for usable space or can we use the space for alternate purposes while it is in construction?

Beth- Campus Greening isn't just buildings, it's things like sheep instead of lawnmowers and composting toilets. We can't be afraid of doing things that "look radical" like underground buildings.

Marcia- We have to take the community we live in into consideration as well. We have to work within codes for fire and of the Historical District. We have to create a "context of balanced values". For example, instead of complaining that the recycled paper will not work in the copy machine, maybe we would use less paper taking hand notes.

Kate F.- Everyone should be a part of the process of greening to become more aware of the cultural context we must work within. Who will access resources if CAHE cannot, who will coordinate data, and research

prices for these green aspects of a building. CAHE should act as a repository for data, not be charged with the responsibility for finding it.

Isabel- The Rocky Mountain Institute provided books and information integrated into Gates and the New Dorm. She still has info; it can be updated.

Millard- During past projects, green supplies were researched and updated before the construction of the building.

Beth- Again, we can't worry about weird images and appearances. By not using experimental design methods (straw bale, photovoltaics) we would be missing a valuable educational opportunity in the process of constructing a green building.

Dave- There is no end to the things we could do. Where do we draw the line? Maybe the most reasonable solution is #2, in addition to backing up the project with increased financial support for greening. This way we deal with constraints up-front and they don't come back to haunt us.

Jessica- Education process is incredibly important as is exposing students and the community to alternative ways of doing things. Could the museum be involved in this, or could museum project integrate some of these "alternatives"? This would help to stress a "domino effect" in reducing

How can COH afford ⁸hour for students to Rake Leaves?

We (the under-signed), are all in agreement that the so called "job" of raking leaves for eight dollars an hour, is un-called for and really quite disappointing coming from a human ecology based school.

We feel that different measures could have been taken to accomplish this task, or even abolish this job all-together,

Here is some examples of different ways that this job could be done:

1. Volunteers
2. Work-study students
3. Students on the grounds committee
4. Having lower wages

Here is some reasons why we believe the leaves should not be raked:

1. The leaves look nice on the ground
2. The leaves are providing nutrients to the ground
3. The leaves provide food for the animals
4. The leaves provide homes, building material for homes, for animals
5. The leaves provide a protection for animals and plants
6. The leaves protect the ground from snow
7. The leaves will fall any way, probably in a larger quantity

Then, after you rake them, you have to pile them, bag them, and/or burn them, and/or dump them, and/or move them, which all adds up to wasted time, energy and money. Money which could easily be used for something more useful then raking leaves.

We feel that somehow certain things are not being done properly around here, and we want our opinions to be heard.

Colleen M. Prentiss
 Leshi Shaw
 Jeannette Durot
 Emily Poole
 Stephen R. Hall
 Kimbly Hines
 Gregory Milnes
 Robert Latta
 Euca Desmond
 Humberto Yanez
 Lisa Peart
 Julie Moran
 Paul Moran
 Beth Heidemann
 3 Admin - qualifying

Beth Mann
 Mike Pelgove
 Jennell Hesse
 Gail M. Platt
 Archana Sahai
 Larissa Pison
 Michael Brown
 Lauris N. Olson
 Jennifer Hines
 Erin Oster
 Gabe Morit

no objection to raking leaves; plenty of objection to unemployment salary!

Would they could make that amount by doing anything else...

I agree with not raking leaves but if they are to be raked the workers should be paid a fair wage

Submitted by:
 Colleen Prentiss

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These are the results of the group discussions from the
1/22 Dialogue on the Strategic Plan

Strategic Planning ACM
Small Groups
April 15, 1998

Productive Landscape

Sheep instead of lawn mowing?
Grow berries
Composting toilets
Maintenance Issues: Gravel
Rock wall - work
Compost - integrate into museum
Alphabet garden
Extracurricular or class-integrated work
Gridding out campus?
Time built into day for work crews

Governance

COA Governance as a tool for the nation - need participation
Time is always a factor
What is "Governance"?
Interdisciplinary decision making
Participatory living
How we live w/what we learn w/what we do
Modeling teamwork
Classes exploring governance/broader community/innovative/progressive ways of governing & trying them out
What kinds of courses can we provide that will be important and students want to take?
Quality
Workshops - bring people in
International visitors
Looking at governments in other countries
Look at the world
Participation for all - especially in committee TOGETHER
Off the Wall - government needs to look at this
Negotiation workshops
How to publish the minutes?
Bring new ideas to campus - outside involvement
Define how to choose what type of person/style/topics for the governance position.
Distinguished lecturer spend a couple of days with us
We need to talk about "the position" more - What exactly are we looking for? - broad based person
What do we want them to do?

EXCERPT FROM THE 2006 LANDSCAPE MASTER PLAN

Copion Associates

PROGRAMMING

During the fall of 2005 several workshop sessions were conducted with the campus community to establish a desired vision for the campus landscape. As part of these sessions, the community sought to quantify the features and types of improvements that should be addressed in the plan. The participants identified nine roles of the campus landscape (aesthetics, agriculture, education, ecology, function, history, maintenance, health, recreation, and spiritual) and articulated how each should influence the formulation of the master plan. The plan synthesizes these criteria into the broader categories of Structures, Circulation and Vegetation.

Aesthetic

- Emphasize the interface of landscape and building.
 - Respect uniqueness of campus buildings in surrounding landscape treatments.
- Gathering areas important part of campus landscape.
 - Landscape is overall unifying feature of campus.
- Campus Walk as unifying feature.
- Other unifying features – plantings, lighting, furnishings, signage.
- Old property divisions to diminish.
- Improve vistas into and out of campus.
 - Address character and appearance of Rte 3 frontage; define north and south campus edges.
 - Screen views of Rte 3 from campus; allow select views into Campus from Rte 3.
 - Maintain / enhance views of COA to and from the ocean.
- Screen utility areas including dumpsters, recycling and storage areas.

Agricultural

- Sustain and enhance agricultural activities on campus.

Educational

- Promote campus as "learning laboratory."
 - Use of campus for outdoor educational activities during both academic year and summer sessions.
 - Support on-campus botanical and habitat diversity.
 - Educational attractions like the Whale Skull.
 - Guided walks and trails.
- Continue to encourage and provide space for art on campus.
 - Opportunities for permanent and temporary installations, including student art.
- Create an outdoor classroom with seating and teaching aids such as chalk/white board.

Pg 1

Ecological

- College should produce more than it consumes.
- Reduce use of fossil fuels.
- Reflect values of COA by keeping a vegetative buffer along the shore.
- Promote a diverse campus landscape with both maintained cultural and self-maintained "wild" landscapes.
- Recognize importance of "wild" landscapes to long-term value of campus.
- Recognize habitat values of campus.
- Maintain and expand campus arboretum with native and non-invasive ornamental species.

Functional

- Clarify principal campus entrance.
 - Reduce entrance points (curb cuts) on Rte 3.
 - Improve visibility and appearance of entrances.
- Improve and clarify entrance and directional signage.
 - Establish hierarchical signage system for direction and information.
- Improve campus lighting.
 - Safety.
 - Identification.
 - Wayfinding.
- Promote pedestrian nature of campus.
 - Parking at western edge of campus.
 - Minimal intrusion of vehicles into campus core.
- Improve pedestrian connections into and around campus.
 - Establish hierarchy of pathways connecting campus buildings and activity areas.
 - Address location, surfacing, and grade of pathways.
 - Improve accessibility.
- Ensure vehicular access, circulation and parking is clear and serviceable.
 - Minimize pedestrian / vehicular conflicts.
 - Regulate parking – who, where, and when.
 - Separate long and short-term parking.
 - Minimize conflicts between service areas, pedestrian activities and campus activities.
- Allow for / encourage outdoor amenities such as outdoor sauna, fire pit, etc.

Pg 2

Historical

- Restore designated campus historical features.
 - Remove designated elements that are in poor repair or those pose obstructions to campus continuity.

Maintenance

- Reduce maintenance needs/costs through promotion of sustainable practices.
- Encourage student involvement as part of maintaining campus landscape.
- Encourage guided community participation in landscape maintenance.
- Commit to maintaining designated gardens
- Address red ant problem.

Health and Recreational

- Improve common recreation areas.
- Create exercise areas on campus.
- Create a loop walk/running trail.

Spiritual

- Provide and maintain spaces for solitude on campus.

Sperm Whale Bone Composting at Beech Hill Farm

August-November 2012

Erickson Smith

Introduction

On August 20th, 2012, a fifty-foot sperm whale was necropsied by Allied Whale staff, College of the Atlantic students, summer interns and people from the greater MDI community. Allied Whale is a marine mammal research organization that is authorized by the National Marine Fisheries Service to respond to marine mammal stranding events and to conduct necropsies on deceased animals with the intent of finding the cause of death.

Alongside the necropsy effort, the bones of the sperm whale were extracted and set aside for a future articulation: a full reassembly of the skeleton for an educational display at a local school or museum. Dan Dendanto, a research associate of Allied Whale, has had extensive experience in cleaning, articulating, and restoring whale skeletons since 1993. During the necropsy, Dan was a team leader and oversaw the extraction and care of the sperm whale's bones.



Dan Dendanto has been composting marine mammal skeletons at his farm in Seal Cove for many years. By keeping the bones within compost piles, the residual oils and flesh still clinging to the bones are eaten by the insects and worms present, and decomposed by the bacteria and microbes within the soil. Throughout the process, the bones are completely immersed in compost, soil, and mulch, and when done correctly, should not produce foul odors that would attract animals or make living near the piles unpleasant. After a period of two to three months, the bones are sufficiently clean, and are pressure-washed before the restoration process begins.



The bones were placed in composting piles at Beech Hill Farm in Mount Desert and Dan Dendanto's farm in Seal Cove. Beech Hill Farm is owned by College of the Atlantic, though it operates separately as a commercial farm, selling produce through an on-site farm-stand and providing weekly farm shares to shareholders.

It was important to Alisha Strater, the manager of Beech Hill Farm, that the whale composting that would happen on farm property would not: 1) produce any foul smells that would disturb farm workers, animals, or customers at

the farm-stand; 2) require any allocation of resources from the farm; 3) compromise the organic-certification of the farm. Allied Whale assigned Lisa Bjerke and me to oversee the composting process at Beech Hill Farm and ensure that all of the farm's concerns were met.

Lisa Bjerke has been managing College of the Atlantic's composting program for more than three years. She is currently doing her senior project: a revamping and streamlining of the composting infrastructure initiatives on the College's campus and off-campus properties. I am a work-study student, employed by Allied Whale, and have taken part in a number of our necropsies, including the sperm whale this summer. Last spring I was put in charge of the College's marine mammal skeleton collection, to inventory, organize, and plan for future articulations. The sperm whale bones are intended to become part of the College's collection, and will later be articulated.

Methodology

The bones were placed in a pile of compost and covered with mulch in the corner of a field that the farm did not use due to the grade of the land. The composting process is passive: there is no turning needed for the flesh on the whale bones to decompose. Our job was to record the temperatures within the pile to make sure it was hot enough for the decomposition process to be effective, as well as monitor the pile for any animal activity, foul smells, or negative impacts on the farm or the immediate surrounding area.



The bones were placed in the pile on August 23rd, 2012. We began visiting the pile to record temperatures on September 14th, and returned twice weekly to record temperatures in the pile. We would usually spend between half an hour to an hour at the pile.

On September 7th, we built a fence around the pile with plywood boards, as one of the resident dogs on the farm had jumped on the pile. However, no significant damage was done to the pile, and certainly not to the bones. The top of the pile remained exposed to the elements.

Temperatures were taken with a _____ probe on four sides of the pile, at three different depths into the pile. Temperatures were taken at the surface of the pile, in the center of the pile, and halfway into the pile.

We recorded any odors coming from the pile, beginning at the road that bisects Beech Hill Farm, and three other locations between the road and the pile.

We noted any animal, bird, or insect activity on or near the pile that we observed in our time there.

We tracked air temperature, precipitation, cloud cover, and wind speed and direction to understand how much of an influence the weather had on the composting process.

We noted any plant or fungal material growing in the mulch on top of the composting bones.

Results

The daily average of the temperatures taken at the four sides of the compost pile was calculated for the center, half-way, and surface of the pile, respectively (Table 1). With three temperatures at different depths within the pile per day, we are able to see whether there is a correlation between air temperature and the temperatures within the pile.

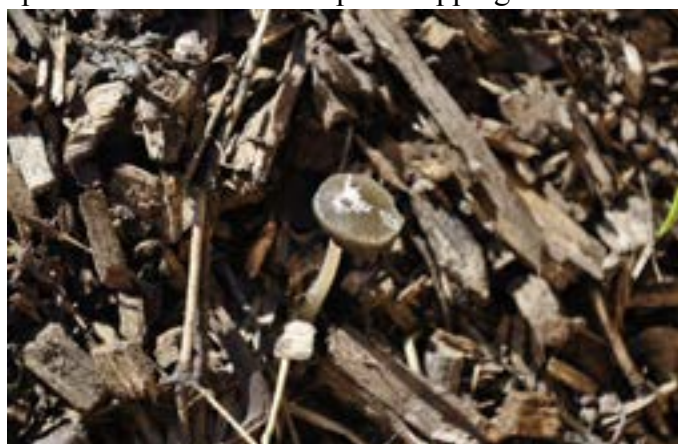
Table 1: Average Temperatures at Different Depths of Pile from Sep. 14th to Nov. 13th

	Center of Pile	Halfway into Pile	Surface of Pile	Air Temp.
9.14.12	125	123.5	108.5	73
9.18.12	124.5	122.75	106.75	64
9.25.12	122.75	117.75	102	64
9.28.12	117.75	116.25	100.5	57
10.2.12	121.75	117.25	99.5	70
10.6.12	121	115.5	100.75	50
10.10.12	115.5	110.5	88	47
10.12.12	114	106	80.25	51
10.16.12	105.5	94.25	80.25	48
10.19.12	104	98	78.25	57
10.26.12	104	99.25	74.25	54
10.30.12	101.25	94.75	77.5	61
11.13.12	83	75.5	67.5	57

Across the board there was a drop in temperatures. However, the drop in temperatures at the surface of the pile was probably due to the influence of air temperature and weather (see Graph 1). The temperatures in the inner depths of the pile were most likely dropping because of the gradual decline of decomposition. When we started recorded temperatures, the bones had already been in the compost for three weeks. The decomposers had already begun to break down the flesh and oil on the whale bones, and the heat had already built up within the pile. As less flesh was available for decomposing, the amount of heat generated by the decomposition process lessened.

It is heartening to see that the center of the pile maintained heat despite dropping temperatures and precipitation. This data shows that composting should be possible in the fall and the spring. As long as there is enough biomass to insulate the center of the pile, the temperatures necessary for proper composition should be maintained by the decomposers.

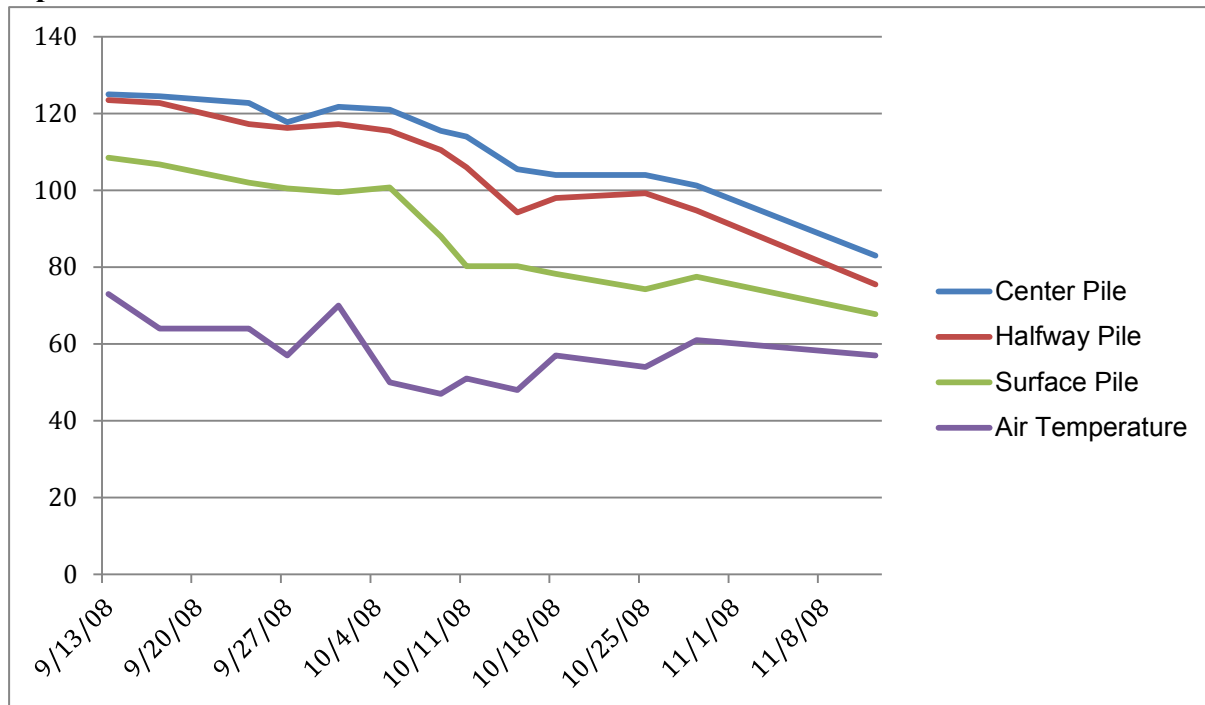
There was no significant animal or bird activity after the fence was put up around the compost pile. One day there was a squirrel on the pile, but that was the only terrestrial animal we saw near it the whole time. No birds seemed particularly interested in a pile of mulch.



In September, there was quite a bit of blowflies and bottle flies on the pile, and most likely laid their eggs in the mulch. Dan Dendanto said this was normal, and necessary for the decomposition process. The flies seemed to stay aggregated on the pile, and not many were seen in the surrounding area.

Towards late September, little grasses and maple seedlings started poking out of the surface of the pile. After rainy days mushrooms were observed growing out of the pile. However, these plants and fungi did not alter the composting process, and added a nice bit of color to the otherwise brown pile.

Graph 1: Average Temperatures at Different Depths of Pile and Air Temperature from Sep. 14th to Nov. 13th



In late October we dug into the pile from the top to see how the bones were progressing. We came across a rib under about a two feet of mulch. The rib was covered in a black film, most likely decomposed mulch, but there was no apparent flesh left on the bone. There was an ammonia smell when we leaned in close to the bone, but it could not be smelled from outside the fence around the compost.

Discussion

The composting of the sperm whale bones was a quick, low-maintenance, and low impact project. There was little investment of energy on our part. No turning with pitchforks was needed. We just commuted to the farm and took temperatures. It required no resources or energy from the farm, and did not compromise the organic certification of Beech Hill Farm. In fact, when the MOFGA inspector came to BHF and was shown the compost pile, they were extremely excited and said that we should be composting all of our animals, livestock and marine mammals!

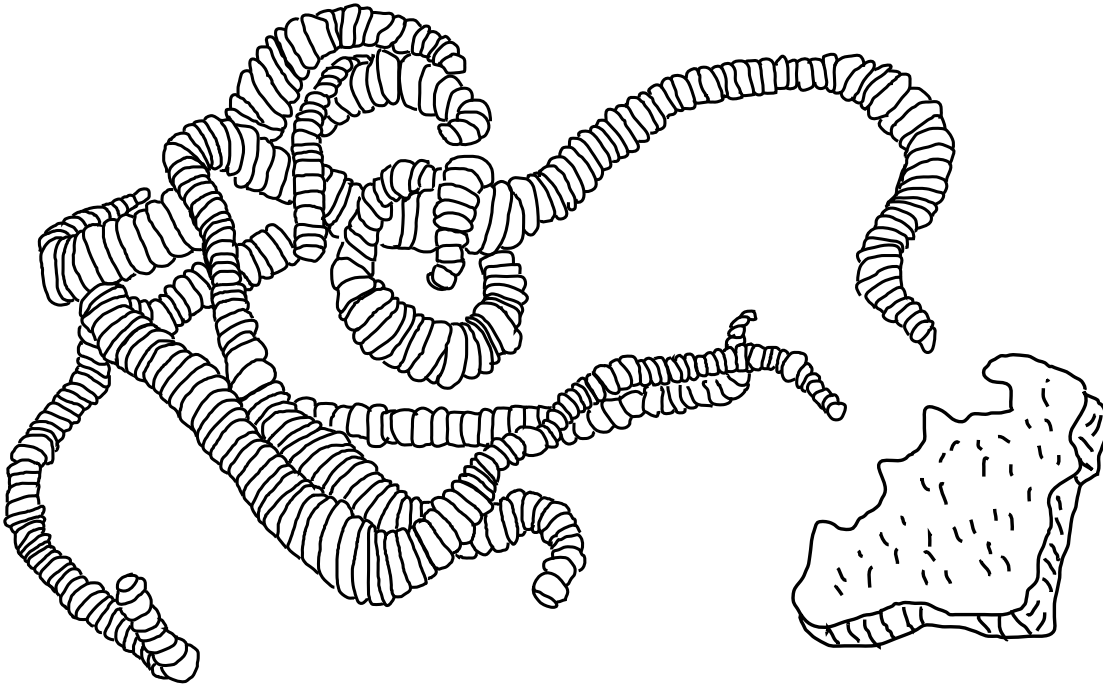
There were no pest or infestation problems as a result of the compost pile. Farm workers did not notice any increase in insects or rodents around the farm, and we did not notice any major changes to the pile over the ten weeks we monitored it.

The pile did not produce any smell other than mulch, which could not be smelled twenty feet away from the compost. Even when there was rain or a warmer-than-usual day, the pile remained relatively odorless and pleasant to be around.

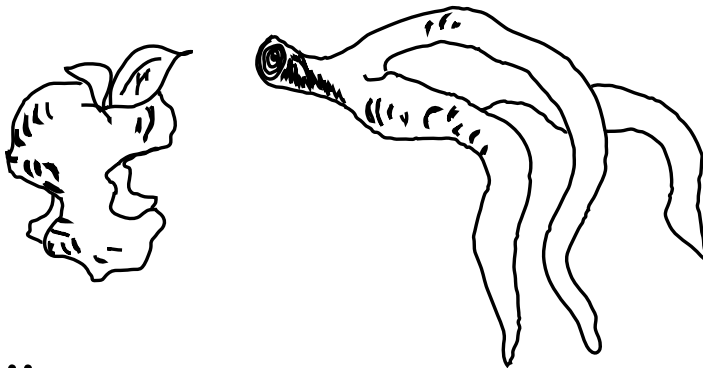
In retrospect, we would've liked to take soil samples around the pile, and beneath it, before and after, to monitor any leaching into the surrounding soils. However, given that the bones are organic and that the bones had at least a foot of mulch between them and the soil, there was likely no leaching, and any negative impacts on the soil quality if there was.

As a whole, this project was a non-issue. It was efficient, passive, and non-intrusive. Lisa and I have enjoyed working on it, and hope that this project sets a precedent for future composting of whale bones at Beech Hill Farm, Peggy Rockefeller Farm, the Cox Protectorate, or on campus at COA.

VERMI COMPOSTING



A Guide to Indoor Composting with Worms



To: You

From: Compost of the Atlantic

By Lisa Bjerke, Winter 2013

What is This?

A simple guide to vermi composting. It is geared towards College of the Atlantic students. It explains how to start and manage a small scale indoor vermi compost system.

Why Read This?

You should read this booklet to get an understanding of what vermi compost is and what is required to start and manage your own. This is not an extensive resource book, but there is a list of resources if you want or need more in depth information (see VIII. More Info).

Who Made This?

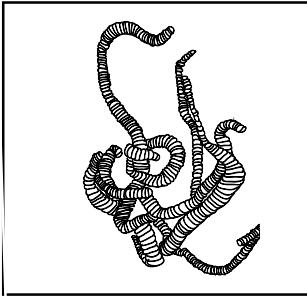
This is part of my senior project "A Case Study: Compost and Community at COA", and was created as my final project in Graphic Design. A large part of the scientific information comes from Mary Appelhof's book "Worms Eat My Garbage", and most of the illustrations are hand-traced from images from books, online pages, and photos I have taken. I am indebted to my fellow Graphic Design students and Dru Colbert.

To Note:

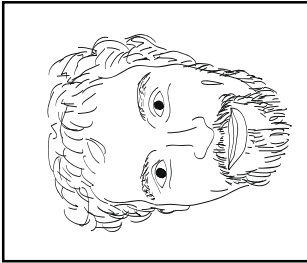
- Try to read through the whole booklet before considering having a vermicompost system.
- Any feedback to improve this booklet is highly appreciated. Feel free to contact me with any comments, questions, concerns, or suggestions: lbjerke@coa.edu

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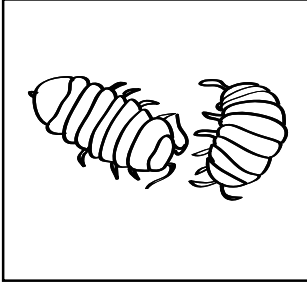
I. What is Vermicompost?



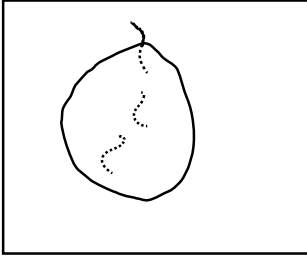
II. Is This for You?



III. In the Compost Bin



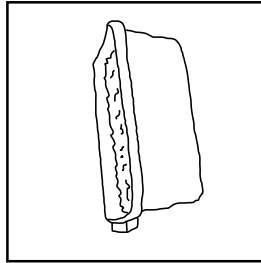
IV. Worm Bio 101



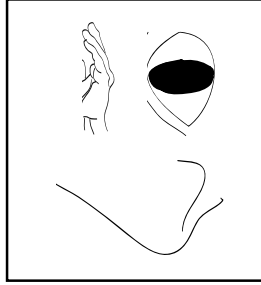
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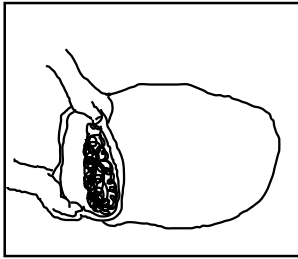
V. How to Start



VI. How to Manage



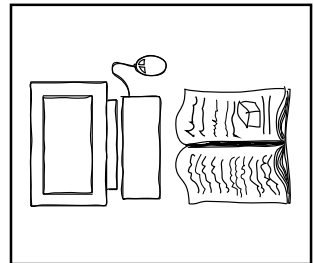
VII. How to Harvest



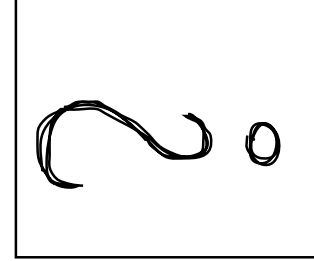
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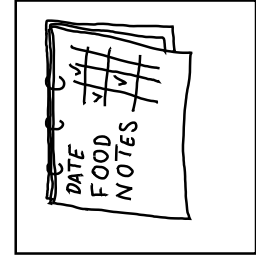
IX. More Info



X. FAQ



X. Schedule



I. What is Vermicompost?

Vermicompost is the process of using earthworms, other soil creatures, and microorganisms to convert plant organic matter to soil organic matter: vermicast. It is called vermicompost to emphasize that worms are the main component of the process, but other soil creatures and microorganisms are invaluable to the vermicompost process.

Compost Worms

Latin Name: *Eisenia fetida*

FOOD

- * Bacteria
- * Fungi
- * Decaying Organic matter

DAILY SCHEDULE

- * Eat
- * Eat
- * Grow
- * Eat
- * Poop
- * Breathe

LONG TERM HABITS

- * Make Love
- * Adventure in organic decay
- * Hang out in dark and cool places
- * When happy, eat half its weight a day.
- * Avoid light
- * Need moisture
- * Live for +1 year.

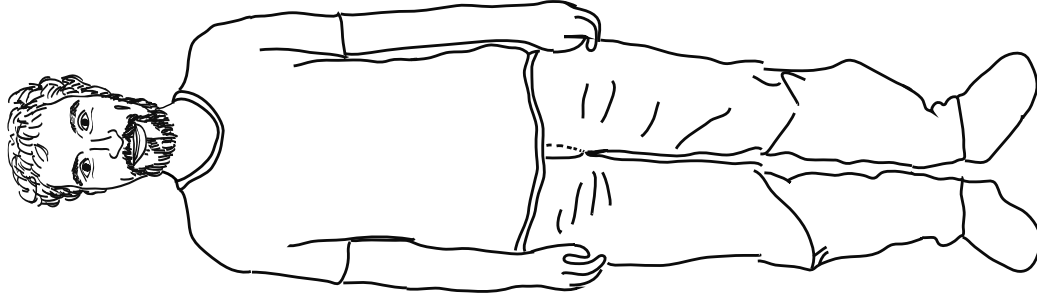
Diet:

Worm are **VEGAN**, and can not eat any animal products. The only exception is egg shells that they like to live in. The egg shells degrade slowly, and they are places where worms cocoons are found.



II. Is This for You?

Vermicompost is only one approach out of many for you to make the nutrients we consume return to the soil. Vermicompost is most suitable for people who cook with a lot of fresh vegetables, since worms can't eat oils or animal products such as meat and dairy products. Worms require regular care and maintenance. Even if it is not extensive or often, it must be regular.



Homo Sapiens

a.k.a. College of the
Atlantic Student

FOOD

- * Coffee
- * Bread
- * Fruits
- * Vegetables
- * Lentils
- * Grains

DAILY SCHEDULE

- * Breakfast
- * Bike to School
- * Classes
- * B&G WorkStudy
- * Dinner
- * Homework

LONG TERM HABITS

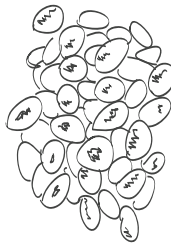
- * Lives in a rental home for 30 weeks out of the year
- * Travels for 22 weeks of the year.
- * Cooks dinner and breakfast at home every other day during school weeks.
- * Likes to be environmentally conscious and connected with other creatures on the planet.

III. In the Compost Bin

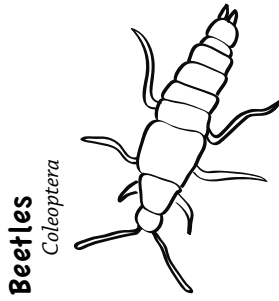
Worms are by far not the only thing that make up a vermi compost system. There are many other soil creatures that will come and live in the bin. Most of them are good; the only ones to remove are centipedes. They are not common, but they are predators and could kill a worm. All the creatures play important roles in breaking down the plant matter into compost.



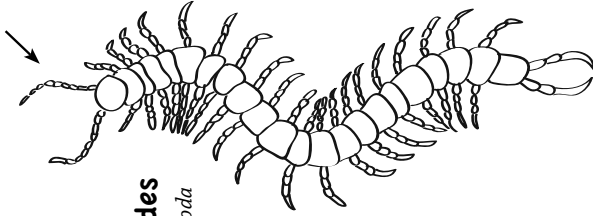
Pill Bugs
Isopoda



Mites
Arthropoda

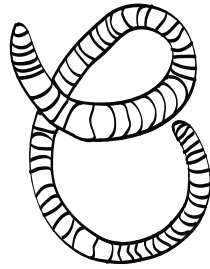


Beetles
Coleoptera

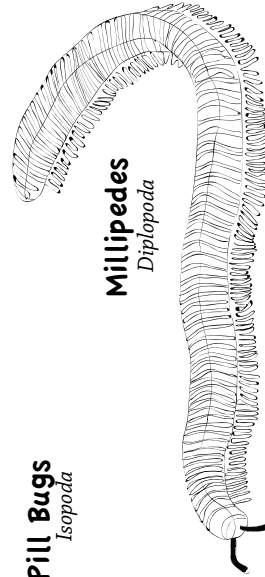


Centipedes
Chilopoda

Not Welcome!
(Predates on Worms)



White Worms
Enchytraeida



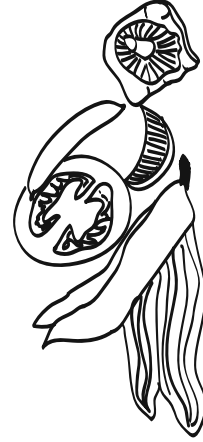
Millipedes
Diplopoda



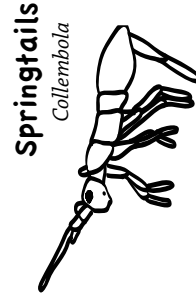
Actinomycetes



Molds & Fungi

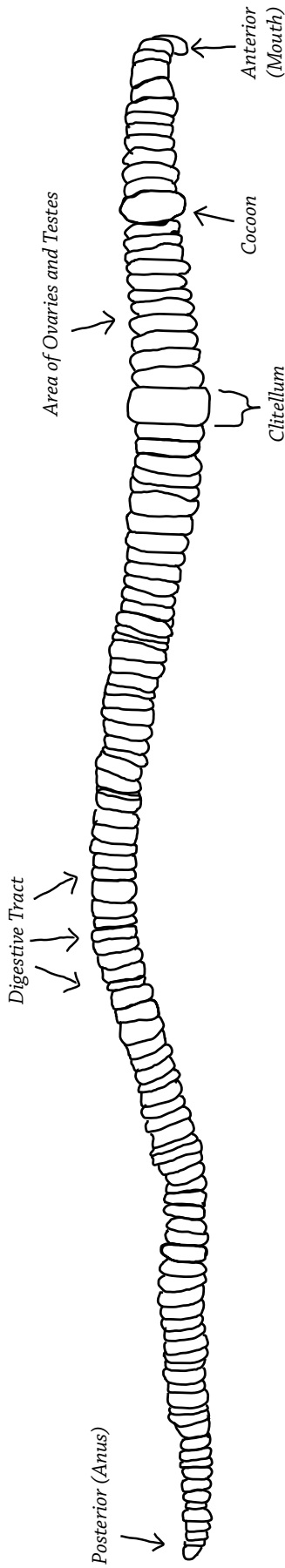


Food



Springtails
Collembola

IV. Worm Biology 101



Mouth & Teeth?

Kind of. The worms have no teeth, but they consume their food through a specific muscular part of the body, the **anterior**. The worm two ends are called anterior and posterior. At the anterior the worm has a "pad of flesh, called the prostomium".

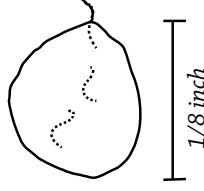
Worm Poop?

Worm poop is the vermicast - the compost - that we use to grow plants. The worm eats the decaying matter and some food and soil, and as the material goes through the intestines it becomes vermicompost. It poops through its posterior.

Sex?

Worms are hermaphrodites, which means they are both male and female at the same time: they have both **ovaries and testes**. In order to reproduce they still need other worms. They fertilize each other, and a cocoon moves from the **clitellum** to the end of the worm and is pushed off the end of the body and becomes a hardened cocoon/egg.

Worm Babies:



Worms hatch from cocoon egg.

Breathe?

Yes : They breathe through their skin, not through the mouth. Worms needs moisture to breathe, as well as air and ventilation.

Eyes?

Nope. Worms do not have any eyes, but are **sensitive to light** through their skin. A worm is less sensitive to red light than to mixed wave lengths.

What is the difference between Garden Worms & Vermi Worms?

Garden worms (*Lumbricus terrestris*) and Vermi Worms (*Eisenia fetida*) are both species under the suborder Earthworms (*Lumbricina*). The difference between them is that a Garden worm (a.k.a night crawler) lives in a larger depth range whereas a vermi worm only lives in the surface layer and eats more decaying matter.

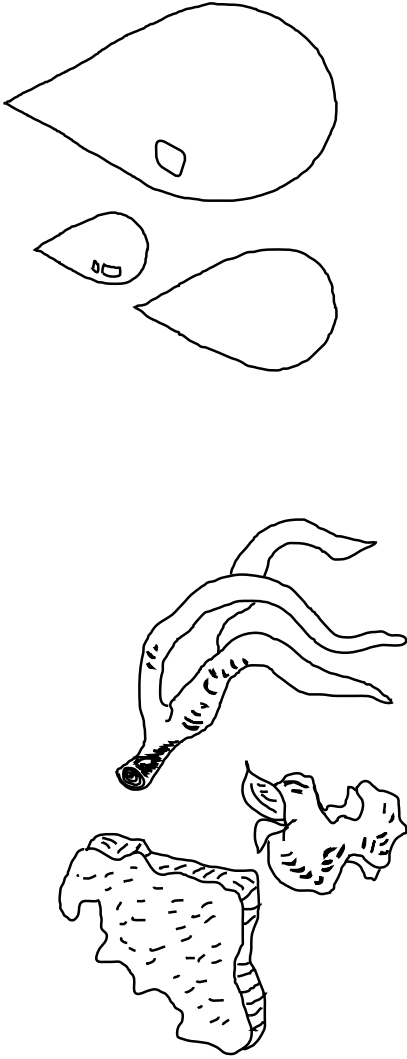
(¹Worms Eat My Garbage p56)

V. How to Start

Food

It is important to know how much organic material (food scraps, etc.) your household produces, excluding any animal products.

A typical household produces **0.5 lbs of material a day.**

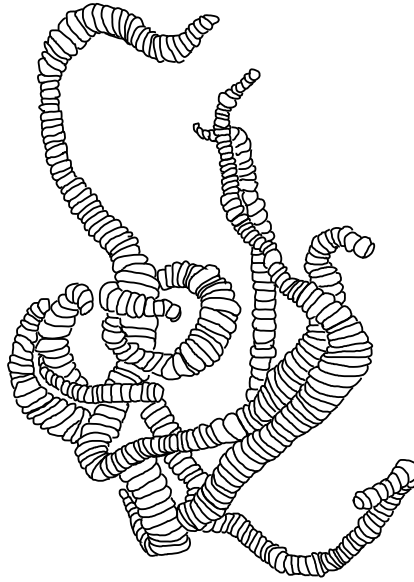


Worms

The amount of worms that you should start with depends on the amount of food waste you produce.

Worms are **measured in biomass** (weight), not in individual worms. Since there are too many worms to measure, it is easier to weigh them.

There are approximately 1000 young worms per pound of worms. Worms eat half their weight in a day when happy.

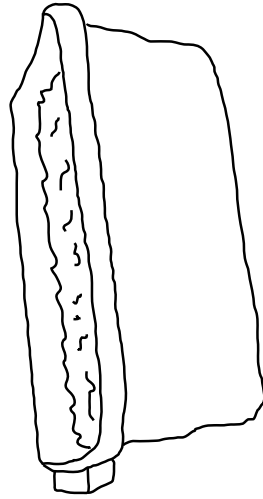


Worm : Food Ratio
2:1 in weight

The Bin

A bin is the home for the vermi compost system. The more surface area the better. Worms are surface layer feeders, and can only live **8-12 inches deep.** The worms needs one square foot per lb of food per week.

Ex: 4 lbs food waste gives 4 square feet in surface area.



Food : Worms : Surface Area
4 lbs : 8 lbs : 4 Square Feet

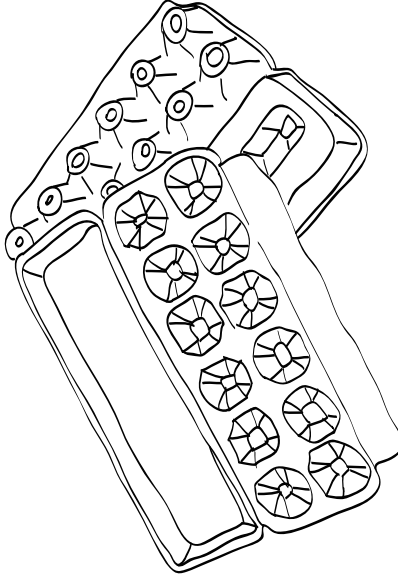
Moisture

Worms breathe through their skin, and need moisture to be able to breathe. However, if there is too much water they will drown. It is therefore a good practice to **soak the bedding** and their food before adding it to the bin.

Water : Bedding Ratio
3: 1 by weight

Bedding + Soil

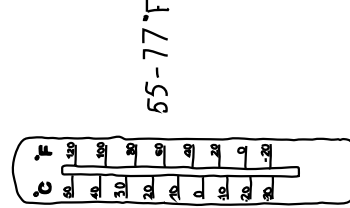
Worms need bedding to hold moisture and to have a place to work in. It provides a **neutral environment** for the worms to relax and recover from eating decaying organic matter. The bedding is also decaying, but at a slower rate since it is mostly water and contains longer carbon chains.



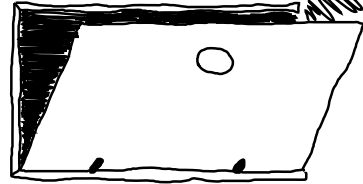
Location

Worms can handle a wide variety of **temperature** but they function best when their bin is room temperature.

They are **sensitive to light**, and do not enjoy being in direct sunlight. Since worms breathe they need **air & ventilation.** Do not keep a tight lid on the bin or have it in an air-tight location.



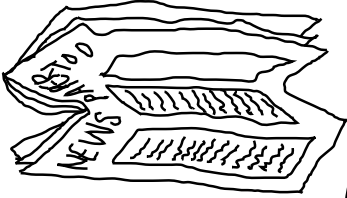
12-25 °C



VI. How to Manage



1. Collect & Prepare food



2. Collect & Prepare Bedding

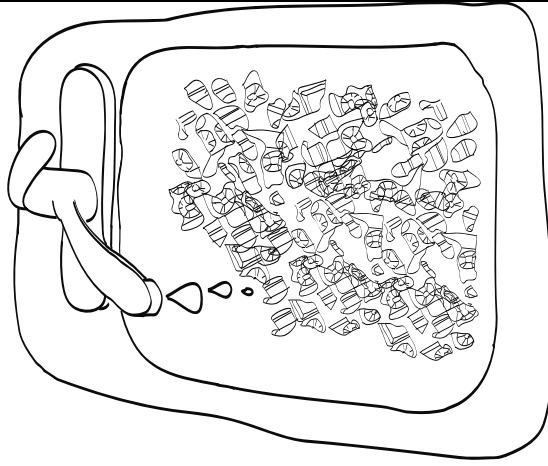


Good Bedding:

- Shredded Newspaper
- Egg Cartons
- Note Paper
- Napkins

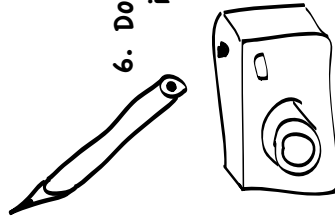
Cautious Bedding:

- Leaves
- Animal Bedding
- Corrugated Cardboard



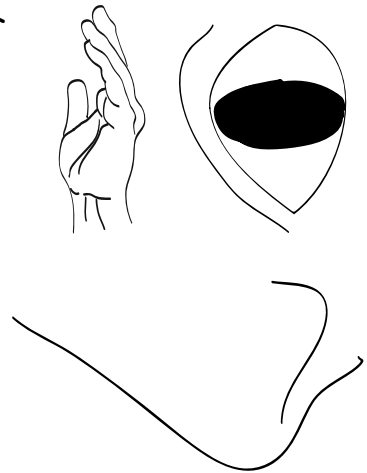
3. Moisture Bedding

6. Document & Write in a Journal



Wormi Almanac
 Set-Up Date: Dec 3, 2012
 Type of Organic Matter:
 Banana, apples, salad.
 Bedding:
 4 egg cartons
 Comments:
 Many worm eggs
 Place: Corner #2

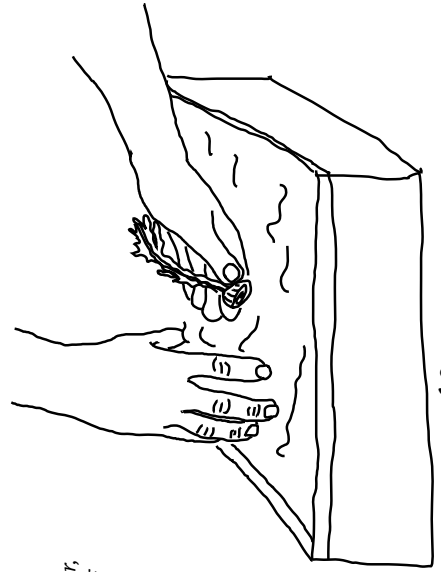
5. Use your Senses



4. Feed the Bin

To avoid **fruit flies** and odor, put the food at the bottom of the bin, touching the "floor", and **completely cover** it with bedding and soil.

Keep track of where you put food, divide the bin into squares, and when you document the feeding write where you put the food.



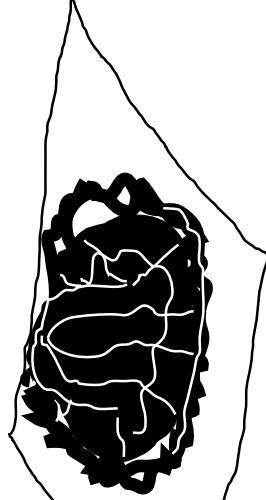
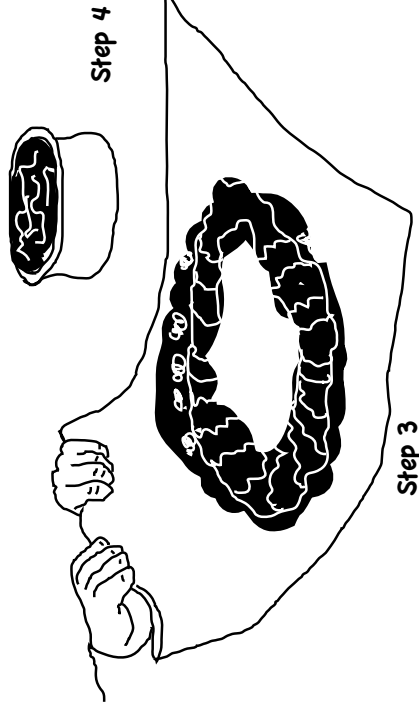
VII. How to Harvest

When you will harvest the vermicasts depends on how active the worms are: it can take more than a month for the content in the bin to change from food, bedding, and soil to more dark, rich vermicast. A good indication is that the volume in the bin will decrease as the organic material is decomposing and being processed by the creatures in the vermi system.

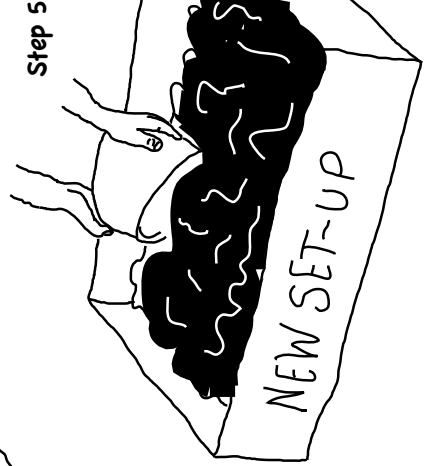
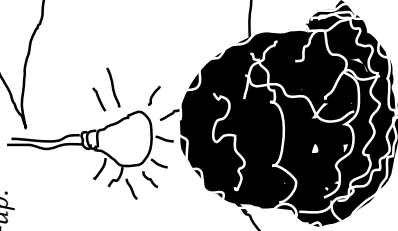
As the ratio of bedding and food to vermicast decreases, the less favorable the environment is for the worms. There will be less and less food and more and more of their own poop (vermicast).

There is no set timeline or rule when to harvest the vermi compost and make a new set-up for the worms, but **4 times** a year is a good rule of thumb.

The simplest method is to **(1)** empty the bin onto a plastic sheet, **(2)** make a pile and put light on it. The worms will migrate to the middle of the pile to avoid the light. **(3)** Every 10 min you take off the surface layer and pull it out, and the worms will move further in. Keep on removing layers to an outer ring until there is only a ball of worms in the middle and a large ring of soil around. **(4)** Put the ball of worms in a bowl. **(5)** Collect the ring of vermicasts in a bag to use, and put the worms in a new set-up.



Step 2



No Rule:

There is no specific time when the vermi bin should be emptied and the vermicast be collected.

VIII. Keep in Mind

REMEMBER

- Don't Panic It's Organic
- Worms breathe through their skin: they need moisture to survive.
- Worms like a wide variety of food in their diet.
- Anything in moderation is OK.
- When happy, a worm eats on average half its weight in food everyday.
- The larger surface area the better: chop food, shred bedding.

NO-NOS

- Vibrating the bin.
- The bins in direct sunlight.
- A dry Bin.
- A lot of citrus and onions in thier diet.

YES-YES'S

- Moist bedding (egg cartons, shredded paper, etc.).
- Mold and fungi in the bins (what the worms eat).
- Darkness .
- Air and Ventilation.

TROUBLE SHOOTING

- Other creatures in the bin.
- Bedding condition.
- Where are the worms? What is there? Put more of that in.

CONCEPTS & WORDS

- Vermicompost = Mix of vermicast, mixed organic material in varying decaying stages (Not Finished Compost)
- Vermicast = Organic Matter that a worm has pooped out (Finished Compost)

IX. More Info

WEBPAGES

- <http://www.redwormcomposting.com/>
- <http://www.wormmaine.com>
- <http://unclejimswormfarm.com/>
- <http://www.wormdigest.org/>
- <http://www.kokuaworms.com/>
- <http://www.mass.gov/dep/recycle/reduce/vermi.htm>
- <http://www.howtocompost.org/>
- <http://www.sierra-worm-compost.com/worm-biology.html>
- <http://lancaster.unl.edu/pest/resources/vermicompost107.shtml>

BOOKS

- Worms Eat my Garbage (Mary Appelhof, Fllower Press)
- Biology of Earth Worms (C.A Edwards, Methuen, Inc.)
- Raising Earth Worms for Profit (Earl B. Shields, Shields Publications)
- Ecology of Compost: A Public Involvement Project (Daniel L. Dindal
- Soil Animals (Friedrich Schaller, University of Michigan Press)

OTHER

- Urban Worm Composting:
<http://www.urbanwormcomposting.org/>
- Cornell University:
<http://compost.css.cornell.edu/worms/basics.html>
- MOFGA:
<http://www.mofga.org/Default.aspx?tabid=720>
- ME Gov:
http://www.maine.gov/spo/recycle/docs/fact_sheets/

X. Frequently Asked Questions

Where can I get hold of Vermicompost?

- Ask around, send out an e-mail, etc. There are more people with Vermicompost than you think.
- Buy from a local place.
- Mark at Worm Maine (wormmaine@maine.rr.com)

What is the cost of worms?

- 2 lbs of worms cost around \$30-50.

What are the benefits of vermicompost?

- It reduces the waste you produce, and creates a resource: compost (vermicast).
- It is a plant fertilizer and soil amendment. It is an excellent source of calcium, magnesium, nitrogen, phosphates and potash. Since it helps the soil and plants to be in balance, it reduces the risk of plant diseases. It is an all natural product that helps with the soil structure.

On Top

All this new stuff goes on top

Turn it over, turn it over

Wait and water down

From the dark bottom

Turn it inside out

Let it spread through

Sift down even

Watch it Sprout

A mind like compost

by GARY SNYDER

The End and The Beginning

17

! Cut this page out, make copies of it, and fill them out :)

Vermi Almanac

Set-Up Date _____ = Day 0

Initial Weight of Worms: _____

Size of Bin: _____

Number of Humans in Household: _____

Type of Organic Materials:

Type of Bedding & Source:

_____ from _____
_____ from _____
_____ from _____

Date Harvested: _____

Number of Days: _____

Worm Weight: _____

Total Weight of Organic Waste: _____

Average Food Buried per Day: _____

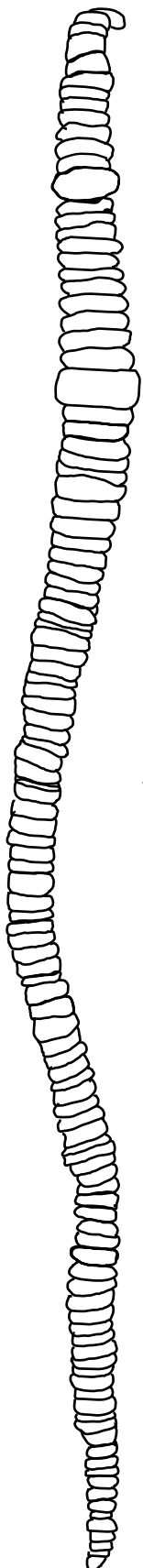
Average Temperature: _____

Temperature Range: _____

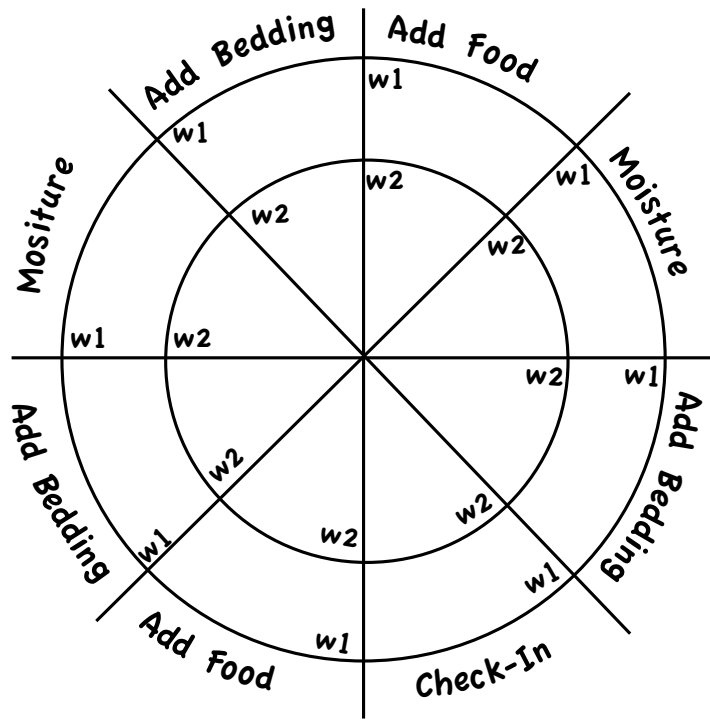
How to Keep Record:

Keeping a record helps you to understand what effect your actions have on the vermi bin. It is also an helpful tool for you to remember the important maintenance steps.

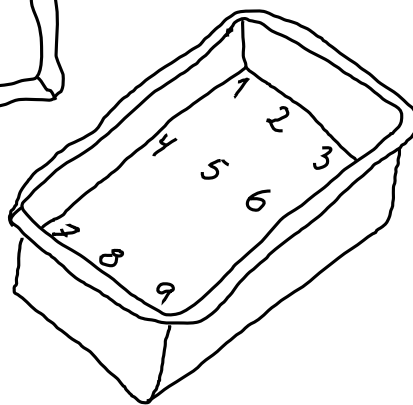
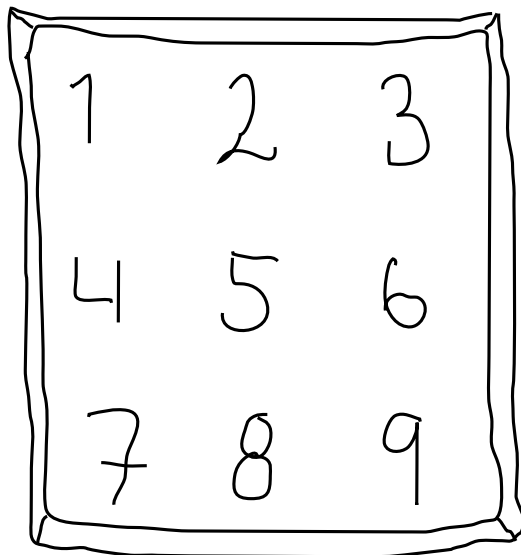
This page is for starting up and finishing one period of vermi compost. The other side is for the maintenance period. Put this sheet of paper on the fridge so you will not lose it. Happy Composting!



Check List:

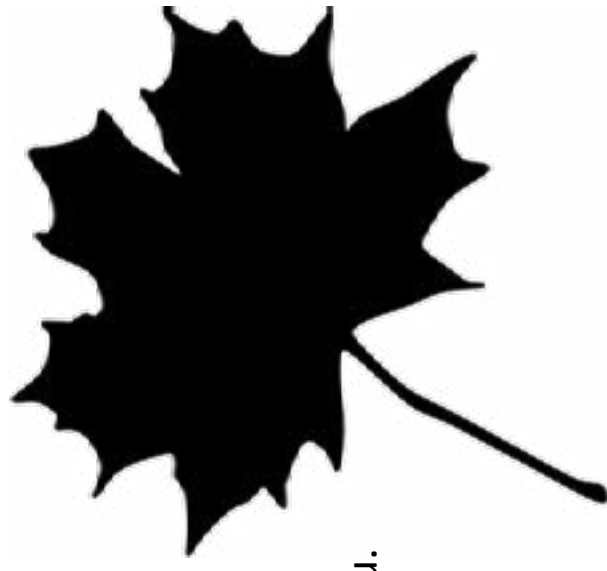


Feeding Location:



The Leaf Pile

(leaves and small sticks)



Don't give the Finger

No sticks thicker than your thumb in the leaf pile.
Instead, please put large sticks in the Stick Pile behind you.

Don't be Trashy

(Please put plastic bags, bottles, etc. in a trash can)

Any Questions? Ask B&G

Bruce Tripp
Barbara Meyers
Lisa Bjerke

Thank you for making COA a better
place to live and work for humans
and the greater environment.

The Stick Pile

(Sticks and Branches that are thicker than your thumb)



**This is the spot for all woody material
that is too large for the leaf pile.**

Too large = too much time to decompose in the leaf pile

Any Questions? Ask B&G

Bruce Tripp

Barbara Meyers

Lisa Bjerke

Thank you for making COA a better
place to live and work for humans
and the greater environment.

DECOMPOSITION

Pretty Awesome thing.

Carbon.

Breaking and making of chemical bonds to create

Black Gold (Humus)

Black Gold.

Soil is the most important thing we have.

(We depend on it more than oil for our survival.)

Everything is a process.

Nature creates it for us through decomposition,

let's help by composting those leaves 😊



How To Dispose at COA

Food Scrap & Napkins Paper

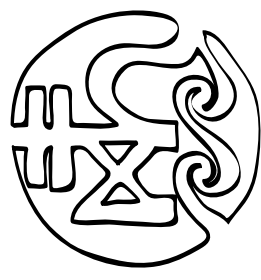


How To Dispose at COA

Redeemables

a.k.a. Returnables

Ex. Glass, Plastic, and Cans with ME 5 ♣



How To Dispose at COA

Paper Recycling



How To Dispose at COA

Trash

Ex. Non-Recyclable Plastic



How To Dispose at COA

Dining Ware

Ex. Cups, Plates, Forks, etc.





College of the Atlantic



We Do Not Believe
in Waste