

# **NERC** | Northeast Recycling Council

Celebrating 25 Years of Uniting the Ten Northeast States for  
Environmentally Sound Materials Management

## **Special Events Food Waste Composting**

### **Food Waste Composting Pilot at Coast Day Case Study**

Organics recovery at Coast Day was an opportunity for the event to widen its environmental focus and was a natural fit to its conservation efforts.



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This document was made possible by a grant from the U.S. Environmental Protection Agency. For more information on recycling and composting at special events visit the [NERC Website, www.nerc.org](http://www.nerc.org) or call 802-254-3636.

## Background

The Northeast Recycling Council, Inc. (NERC) was awarded a United States Environmental Protection Agency Region 3 grant in 2011 to provide technical assistance and training in diverting special event-generated food waste to composting at events in Pennsylvania and Delaware. The Philadelphia Folk Festival and Delaware Coast Day participated in the project.



The goal of the project was to assist event organizers to implement a sustainable food waste diversion program at their events and to serve as a model for other events. For purposes of the project, materials diverted included pre- and post-consumer food, as well as compostable flatware, plates, packaging, and napkins. Assistance with integrating food diversion into existing recycling efforts was also provided.

In the spring of 2011, NERC staff worked with representatives from the Delaware Department of Natural Resources and Environmental Control to determine potential events for the project. Organizers from several events were contacted by NERC. With its focus on marine and coastal conservation issues, Coast Day seemed like a natural fit. The event has a comprehensive recycling effort and had conducted a small pilot composting effort in the past. The Coast Day Committee was interested in participating in NERC's project in order to expand composting to the entire event.

With input from event organizers, NERC staff drafted a Food Waste Management Plan (FWMP) for the event, outlining suggested tasks to be undertaken for composting, including collection container options and set-up, collection logistics, and volunteer needs. See Appendix A for the Coast Day FWMP.

NERC also provided vendor information, including sample vendor contract language and a sample outreach information memo, information on compostable products, and sample signage. NERC staff contacted potential compost processors for the event. Onsite technical assistance in implementing the food composting project was provided by NERC during the 2011 event.

### Facts at a Glance

- About 80 pounds (ten bags) of compostables were taken by University staff to Blue Hen Organics in Frankford, Delaware.
- The event had about 10,000 participants.
- There were 21 food vendors at the event.

## Coast Day Festival Overview

Coast Day is an annual event held on the Hugh R. Sharp Campus in Lewes, Delaware on the first Sunday in October from 11 am - 5 pm. Activities take place on the campus, inside campus buildings, under tents located outside, and in the open air.

There are typically around twenty food vendors, as well as a Crab Cake Cook-Off, Seafood Chowder Challenge, and cooking demonstrations throughout the day. Participants usually number around 10,000. Some 100 booths, along with various demonstrations and hands-on activities, occur throughout the day, including lectures on popular science topics, ship and laboratory tours, crab races, a boat show, and more.



Coast Day is hosted by the University of Delaware, College of Earth, Ocean, and Environment and the Delaware Sea Grant College Program. The Coast Day Committee includes representatives from the Sea Grant Marine Advisory Service, Marine Public Education Office, as well as University of Delaware staff, faculty, students, and other organization representatives. The event began 35 years ago as a small open house designed to introduce visitors to the College's research. Public interest grew dramatically and Coast Day evolved into a major event in the state.

Event organizers had successfully implemented recycling for many years. University Maintenance staff haul all recyclables and trash generated from the event. A small composting pilot had been conducted in 2010 with food scraps and soiled paper products from the Crab Cake Cook-Off and Chowder Challenge cooking events.



Compost Demonstration



## Nuts and Bolts

Coast Day organizers are dedicated to promoting conservation of marine resources and limiting their environmental footprint. Recycling had been integral to the event and a pilot compost project had been initiated in 2010 in the Crab Cake Cook-Off and Seafood Chowder Challenge area. When approached by NERC about participating in its composting project, organizers were interested in working with NERC to offer composting opportunities for attendees throughout the event.



Green Team & Student Volunteers

Following initial conversations with a representative from the Coast Day Committee, as well as research into the event layout and logistics, NERC staff developed a draft Food Waste Management Plan and submitted it to the Committee. The FWMP was reviewed and accepted by the Committee and a representative from the Committee (who oversees the recycling collection at the event) worked with NERC to implement the Plan.

In advance of the 2011 event, Coast Day organizers requested food vendors to use compostable service ware. NERC provided educational information that was sent to vendors. Event organizers contacted several companies that sell compostable service ware in order to be able to provide acceptable service ware samples and supplier information to their vendors. See Appendix B for the vendor letter sent by the event organizers.

Based on the FWMP recommendations, the organizers purchased fifteen, 32-gallon trash barrels in three colors to be set up as “Green Stations.” NERC staff and Coast Day organizers contacted Blue Hen Organics in June, about processing the collected compostable materials.

NERC arrived on the Saturday afternoon prior to the Coast Day event to review logistics with the Committee representative for the event. At 8:00 on the morning of the event (October 2), NERC began a vendor audit of food scraps and service ware and spoke with the vendors as their time allowed. NERC was able to develop a complete list of vendor service ware based on this audit (see the list contained in the event Food Waste Management Plan, Appendix A). There were 21 food vendors at the event.

The University of Delaware Grounds and Maintenance staff was responsible for placing the containers, with liners around the event grounds. Each Green Station contained three different colored bins— green (compost), blue (recycling), and black (trash).

There were five complete “Green Stations” —Compost/Recycle/Trash—set-up:

- Three in the Food Court,
- One in front of the Seafood Chowder Challenge, and
- One near the food vendors across from the main event (where a number of marine-life exhibits and ship tours are offered).

The Coast Day Committee member responsible for coordinating the composting and recycling efforts had made signs for posting on the bins. NERC taped the signs on each of the bins as soon as the Green Stations were in place. NERC also taped paper plate, tray, and napkin samples to the front of the compost collection bins. University staff placed liners in each of the collection bins; compostable bags were used in the compost and recycling bins and dark plastic bags for trash.

The Coast Day recycling/compost coordinator had also made up 8-1/2 x 11 signs recognizing vendors that used primarily compostable service ware. The text on the sign read: "This vendor is providing you with compostable cups, plates, napkins, and utensils. When you're done with them, please deposit them in one of the compost containers located in the Food Court area." NERC posted these signs on vendor booths that had complied with the request to use compostable service ware.

At approximately 10:30, 30 Upward Bound Math and Science Center High School students that were scheduled as volunteers for monitoring the Green Stations arrived. NERC provided the students with an overview of the importance of composting, what was acceptable for composting, what the collected materials would be made into, and their duties during the day.

The Upward Bound instructor had already divided the students into teams of two - three students (mixing the grade levels so that each team had at least one senior in the lead). Additionally, the Teams were divided into shifts – an early shift to start immediately and a later shift to start in the early afternoon. By shortly after 11:00 a.m., the teams were in place at each of the Green Stations, with one team assigned as a roving team to provide breaks for those at the Stations. Teams scheduled for the afternoon were allowed to walk around the event and report to duty in the early afternoon to replace team members who had worked the early shift.

Five students from the University of Delaware Green Team also arrived to help staff the Stations. NERC reviewed the compost system with them. Each student went to a Station and worked with the High School teams to monitor the bins. The University students assisted until early afternoon.

University Maintenance staff emptied the full containers of compost, recyclables, and trash as needed. NERC rotated around to each of the Stations to check on the volunteers, remove full bags as necessary, and lend assistance.

Shortly after 2:30 pm, the Green Station in the Chowder Challenge area was removed to allow monitors to assist in the Food Court area. The Chowder Challenge, Crab Cake Cook-Off, and other cooking demonstrations ended at 2:30 and few event attendees remained in the area.



Green Station in the Food Court Area

At 4:00, the Upward Bound students were scheduled to have a group break in order to prepare for assisting University staff in breaking down tables and helping with event clean-up. By that time the crowds had diminished sufficiently to remove two stations in the Food Court area, as well as the bins across from the main event area. NERC staff pulled the bags from the compost and recycling bins for collection by University staff, removed the signage and samples, and moved the bags and bins to the perimeter of the Food Court area for collection by the University crew.

Bins from one Station were moved next to the Green Station nearest the attendee dining area. NERC monitored this Station until the event ended. At 5:00 pm, NERC staff removed the bags of compost and recyclables, along with all signage and samples from the bins, for collection by the University crew.

Throughout the day the University crew was stationed in a central location to collect full bags of compost, recyclables, and trash. Full bags of materials were carried to this location for storage. At the end of the event, the University crew drove their trucks around the Food Court area to transport full bags of collected materials to a central area for disposal and to collect the bins for storage. A member of the Coast Day Committee hauled the compostable materials to Blue Hen Compost Facility for processing the next morning.

## Project Results

About 80 pounds (ten bags) of compostable materials were taken by University staff to Blue Hen Organics in Frankford, Delaware. Blue Hen agreed to process the material free of charge for the event and offered to do so in the future. There was little contamination reported.

Unfortunately, it was a substantially colder than normal day for the event. Attendee numbers were down from an expected 10,000 to 8,000. Participants arrived late and did not frequent the food vendor area as much as during previous events. It can be anticipated that increased participation and food consumption will contribute to higher diversion of compostable materials in the future.

The event organizers did an excellent job of putting together the collection logistics and implementing the Food Waste Management Plan. The volunteers and University crew worked well monitoring and emptying the Green Stations.

## Lessons Learned/Recommendations

### *Green Stations*

The 32-gallon collection containers were an appropriately-sized container for the event. The use of different colors for the bins effectively distinguished the containers and offered event organizers a fairly low cost option for collection.

Because no lids were used with the bins, unless monitors were directly assisting attendees, cross-contamination could easily occur.



The signs for the bins were visible and an appropriate design, although, it was difficult to get the signs to stick (with tape) on some of the bins due to the plastic finish. There was no overhead signage. Studies indicate that participants look overhead for signage, especially if there are no lids with signage on the bins. The bins were placed out in the early morning, with no signage on the bins or monitoring for a limited time. A minimal amount of contamination by vendors did occur.

Coast Day organizers purchased sufficient quantities of compostable bags to line the collection bins. Maintenance crew workers reported that the BioBags used worked well. No breakage occurred in the single-lined bins; the bags effectively stayed up in the collection



bins as well. University staff also used the compostable bags for the recycling bins. This can lead to confusion, a shortage of bags for use in the compost bins, and is not cost-effective due to the higher costs of the compostable bags.

Trash cans not associated with the Green Stations were placed throughout the event. As this was the first event-wide composting effort, the customary placement of bins throughout the event was expected by staff and attendees. In event areas where food was served, having trash cans not associated with the Green Stations did not foster composting or recycling. Participants will naturally place waste in the nearest container available instead of holding onto it for composting or recycling. Ideally, all trash cans will be part of Green Stations.

The Green Station next to the dining tables located in the Food Court was heavily used, as was the Station near the Chowder Challenge event; compost bins in both Stations filled up quickly. As composting was new to the event, the University staff responsible for emptying the full containers had not anticipated this and had to be asked to empty the containers. However, once asked they did come around and emptied the bins regularly.

The Green Station located across from the main event area, next to food vendors for this area, was pulled out around 4 p.m. It had received very little use. This may have been due to the colder than normal temperatures and fewer people frequenting the food vendors in this area.

### Recommendations

Construction of inexpensive “stations” to hold collection bins would greatly enhance the visibility and ease of composting. Low-cost stations could be constructed out of PVC pipe and wood. A railing over the top of the Stations, with a sign or banner stating “Coast Day Green Station” and under this a separate sign for each bin—Recycling, Composting, and Trash—would substantially increase visibility of the Green Stations. These could be on wheels for easy mobility. In order to help contain costs, one or two stations could be built each year. Samples of collection station options are contained in the event Food Waste Management Plan.





It is recommended that one or two additional Green Stations be placed near the Crab Cake Cook-Off and Chowder Challenge area. There were only garbage cans in the Crab Cake Cook-Off area; however, most of the waste from this area is compostable. The Green Station in the Chowder Challenge area was heavily used. The vendors in both areas did an excellent job of complying with the request to only use compostable paper products.

The Crab Cake Cook-Off and Chowder Challenge area Green Stations could be removed (with just trash bins left) at the end of these events (around 2:30). There are only a limited number of people in this area after these events end, so Station monitors could be moved to the Food Court area.

Removal of some trash bins not associated with the Green Stations would encourage more participation in the composting and recycling effort. The Green Stations were effectively placed during the pilot to provide convenient disposal opportunities for participants. With the addition of an extra Green Station in the Crab Cake Cook-Off area and perhaps one more to supplement the Chowder Challenge area, this should meet the needs of the event. Eliminating the trash bins not associated with the Green Stations would reduce the need for the University Maintenance Crew to monitor and empty these trash bins and also bring greater visibility to the event's composting and recycling efforts. Trash bins not in the Green Stations could be used as stand-alone containers near the educational tents (which are located away from the Food Court).

The use of lids with the collection bins would help to make participants "think before they toss." Holes the size of beverage containers could be cut into the lids for the recycling bins; a round circle cut into the lid for the compost bin would help to distinguish it from the trash bin. Also, lids could be labeled. The placing of sample compostable service ware on the sides of the bins and on the lid is also an effective and low-cost educational tool.

It is best to use clear bags for recycling bins, if possible. Clear bags are less expensive than compostable bags. Also, when the bags are pulled out of the collection bins, the recyclables can be clearly seen through the bags and not confused with compost or trash.

#### *Volunteers/Maintenance Crew*

The monitoring of the Green Stations by the Upward Bound Math and Science Center High School students proved to be very effective. Their instructors were diligent in working the students, organizing them into teams, and ensuring that they stayed in their assigned locations. They also set-up a workable schedule so that students could receive breaks, have free time to enjoy the event, and rotate to different Stations. The students stayed at their assigned Stations and monitored the bins well.

The University of Delaware Green Team students who volunteered worked well for a couple hours. Team members helped to train the high school students and made sure each station was monitored well. Team members seemed to disperse by early afternoon, however.

Unlike many events that must rely on volunteers for both monitoring the Green Stations and collecting materials, University staff emptied the full containers and carried the bags to a centralized location for storage. This presents a beneficial situation for the event. As it was a new program, a few stations filled up rather quickly and University staff had to be asked to empty the containers. However, once asked, the University crews circulated more regularly to empty the containers.

### Recommendations

It will be necessary to have a “Green Station” coordinator to set-up the Green Stations the morning of the event, making sure the containers are in place, placing appropriate liners in the bins, ensuring that proper signage is placed on each bin, and that compostable service ware samples are attached on the compost bins.



The coordinator would also rotate around to assist in emptying full bins, as necessary, and to check that bins are being properly monitored. NERC played this role during the compost pilot; perhaps a Green Team member would be willing to take it on for future events. Additionally, someone will need to be available to greet and train the Upward Bound students prior to the start of the event. Additional Green Team members can then come at 11:00 a.m. to assist in monitoring the Green Stations for an hour or two.

It would be beneficial to have one or two Green Team volunteers remain during the afternoon to help give the Upward Bound volunteers breaks and assist where necessary. Two or three additional Green Team members are also needed to take over for the Upward Bound volunteers when they need to break at 4:00 p.m. By then, there would probably only need to be two stations in the Food Court area (the ones in the Seafood Chowder Challenge area and Crab Cake Cook-Off could be pulled early). These Green Team members would staff the Food Court Green Stations from 4:00 - 5:00 p.m. and help breakdown the Stations for University crew to remove.

Having a more active role in Coast Day for the University Green Team would not only benefit Coast Day, but help to bring greater visibility to the Green Team and the University’s dedication to environmental issues. Perhaps students could receive class credit for participating in the event.

The University Maintenance Crew did a good job of setting-up the bins and emptying the full bins. Since the compost bins nearest the Food Court attendee dining area and also the ones near the Chowder Challenge filled-up quickly, these need to be checked more frequently.

### *Food Vendors, Crab Cake Cook-Off, & the Seafood Chowder Challenge*

A couple of food vendors in the main vendor area used only compostable products and many vendors had primarily paper service ware. Two vendors in particular did an excellent job of not only using compostable service ware, but also serving condiments in bulk containers. A few vendors, however, used primarily polystyrene service ware (clam shells, bowls, and plates).



The vendors for the Crab Cake Cook-Off and the Chowder Challenge did an excellent job of using paper portion cups and plates. Given the number of event attendees that frequent this area, the use of compostable service ware serves to substantially reduce the event's environmental footprint. One Chowder Challenge vendor did use polystyrene to-go-containers for larger servings of their chowder (both pint and quart). Many people consumed the chowder onsite from these containers, resulting in the containers being disposed as trash.

The Green Station at this location was heavily used during the Chowder Challenge, Crab Cake Cook-Off, and other cooking events. However, once these events ended at 2:30, few participants remained in the area. This Station was pulled to allow for more coverage by the student volunteers in the Food Court area.

As this was the first event-wide composting pilot for Coast Day, organizers encouraged vendors to participate in the compost opportunities, but vendors were not provided collection containers to use in their booths. When NERC discussed the use of compostable service ware with the food vendors, the compost project was also described and vendors were encouraged to participate. In speaking with the vendors, several were very interested in doing what they could to help with the event's compost efforts. Most were at least supportive of composting and willing to look at service ware changes they may need to make, although some were "noncommittal" in making the switch to using only compostable service ware.

## Recommendations

Due to the diversity of food vendors and the range of interest (on the part of the vendors) in participating in the event's composting efforts, Coast Day organizers may want to consider offering a discount registration fee for those vendors who are willing to sign an agreement that they will "only use BPI or ASTM compostable service ware."<sup>1</sup>

With the vendor education on compostable service ware that Coast Day organizers now have in place, a discounted fee would help to bring more vendors on board, without excluding those unwilling to make the switch. The discounted fee would also serve to make vendors more aware of their role in helping to ensure that Coast Day composting is a success and the importance of switching to compostable products, without forcing them to make the switch.

Alternatively, an increased fee for vendors not willing to make the switch to all compostable service ware would be another way to encourage vendor participation without mandating it. Either system could be phased-out when a vendor requirement for using only compostable service ware is adopted. As a component of vendor use of compostable service ware, bulk serving of condiments would also need to be adopted if the event is to eventually become "zero waste." A Green Team or Coast Day Committee member will need to touch base with all vendors the morning of the Coast Day event in order to ensure compliance with the use of only compostable service ware.

It is important that an incentive for vendors using only compostable service ware be provided, at least until there is a mandate that all vendors switch to compostable service ware. Because some compostable products may cost more and certainly demands greater attention on the part of vendors to look at creative packaging options in order to comply with the compostable service ware request, the incentives serve to reward those making the switch and "level the playing field" for all vendors.

A continuation of recognition efforts for vendors that comply with the event's requests to use compostable products will be beneficial. Additionally, if organizers can provide small buckets for vendor collection of preparation scraps and soiled paper, this would encourage vendors to participate in the compost effort. Kitty litter buckets or 5-gallon buckets used at restaurants and stores are typically attainable at no or low cost. Small collection buckets should also be placed in the Chowder Challenge, Crab Cake Cook-off, and cooking demonstration area for use by chefs and servers. Perhaps University Green Team members can distribute the containers to vendors at the start of the Coast Day event and provide a brief overview of the collection logistics to vendors.

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<sup>1</sup> American Society for Testing and Materials (<http://www.astm.org/Standards/D6400.htm>) or Biodegradable Products Institute (<http://www.bpiworld.org/BPI-Public/Approved/1.html>).



The Chowder Challenge vendors could use an appropriately-sized compostable paper bowl or large cup (instead of the polystyrene plastic to-go-container) for participants who will be consuming the chowder onsite. Another possibility is to see if a local school or animal shelter has use for the used polystyrene containers. Since the containers have lids, there may be a practical use for them if they are collected separately and washed. The plastic containers may also be recyclable, if washed; event organizers may want to discuss this with the recycling company that accepts the beverage containers for the event.



### *Promotion*

Overall the environmental education provided by event organizers is impressive. The program and map, distributed to event attendees, had references to recycling and composting opportunities, in addition to placement of the recycling arrows and “compost area” icons on the map. The Coast Day Committee issued a press release about the compost project; an article was published in the University of Delaware’s *UDaily*. See Appendix C for the article.

The promotional signage for the food vendors was effective in recognizing those vendors that used primarily compostable products. It served to help educate participants about the Coast Day composting effort and the use of compostable service ware by the vendors.

### Recommendations

A single “Green Station” icon or logo on the program map would help to get participants used to the recycling/composting stations being together. The icon should also be placed on the poster and program posted on the Coast Day Website, with perhaps a statement “Coast Day recycles and composts.”

A vendor “Green Star” or some sort of recognition program, with signage and Website promotion, could help to convert more vendors to using compostable service ware and participating in the composting program.

An exhibit table by Blue Hen showing the compost created from the collected Coast Day compostable materials would serve as a valuable educational tool for participants, as well as recognition of Blue Hen and their donation of services.

## Conclusion

Coast Day is a perfect mix of ecological and conservation education, food, and fun for people of all ages. The event affords a wonderful opportunity to increase the visibility of composting to a wider audience and to promote composting at special events around Delaware. As Nancy Targett, dean of the College of Earth, Ocean, and Environment and Delaware Sea Grant director, states, "Coast Day emphasizes the value of our coastal and marine resources and highlights how the research done in our college benefits those resources. Making the event environmentally friendly is a great way to support those efforts and to lead by example."

The Upward Bound Math and Science Center High School students and their instructors played an invaluable role in the success of the compost project. Students were impressively dedicated and performed their monitoring and educational tasks diligently. The University Green Team presence was a positive influence on the high school students and helped to ensure that the high school students were comfortable in helping to educate event attendees about acceptable and non-acceptable items in the compost and recycling bins.

The University Maintenance Crew staff integrated the composting effort into their regular disposal duties effectively. Staff was very helpful and diligent about participating in the new compost program.

The food vendors, including those participating in the Crab Cake Cook-off, Seafood Chowder Challenge, and cooking demonstrations, that made the switch to compostable service ware are to be commended. Phasing in vendor cooperation and exclusive use of compostable service ware will allow Coast Day to easily become a zero waste event. Event attendees seemed eager and willing to participate in the composting effort.

The implementation of event-wide composting at Coast Day was very successful. The event presents a perfect opportunity for becoming the first zero waste event in Delaware.



The Northeast Recycling Council would like to acknowledge and appreciate Joseph G. Farrell, Marine Resource Management Specialist, University of Delaware and all members of the Coast Day Committee; Upward Bound Math and Science Center High School Students and their Instructors; the University of Delaware Green Team; the University Maintenance Crew staff; and, Don Long, Bill Miller, and Shannon H. Splittorff of the Delaware Department of Natural Resources and Environmental Control (DNREC) for all of their hard work helping to make the Coast Day compost project a success.

*Photo credits: Delaware Sea Grant, Cape Gazette, and NERC.*

**Appendix A**  
**Coast Day Food Waste Management Plan**

**SECTION 1. EVENT SYNOPSIS**

<b>Name of Event</b>	Coast Day
<b>Event Organizer</b>	Coast Day Committee: Sea Grant Marine Advisory Service, Marine Public Education Office, University staff, faculty, students, and other organization representatives
<b>Contact Information</b>	University of Delaware Sea Grant Marine Advisory Service <a href="http://www.decoastday.org">www.decoastday.org</a> ; Joe Farrell, (302) 645-4250
<b>Event Description</b>	Fun, educational day introducing thousands of people each year to the wonders of the sea and the importance of Delaware's marine and coastal resources.
<b>Location of Event</b>	Hugh R. Sharp Campus in Lewes, Delaware
<b>Duration and Date of Event</b>	First Sunday in October, 11 a.m. - 5 p.m.
<b>Venue Description</b>	Activities take place on the campus, inside campus buildings, under tents located outside, and outside open air, no cover.
<b>Predicted Attendance</b>	10,000
<b>Number of Food Booths/Vendors or Cooking Areas</b>	21 Food Vendors Crab Cake Cook-Off Seafood Chowder Challenge Cooking demonstrations
<b>Number of Other Booths/Vendors</b>	100+ booths and various demonstrations and hands-on activities throughout the day
<b>Event Activities</b>	Hands-on exhibits, lectures on popular science topics, ship and laboratory tours, crab races, crab cake cook-off, seafood cooking demonstrations, a boat show, and more.
<b>Existing Solid Waste Services &amp; Practices</b>	Recyclable beverage containers are collected. A small demonstration compost collection was held in the seafood competitions area in 2010. Waste and recyclables are hauled by University of Delaware employees.
<b>Other Relevant Information</b>	Hosted by the UD College of Earth, Ocean, and Environment and the Delaware Sea Grant College Program, Coast Day began 35 years ago as a small open house designed to introduce visitors to the College's research. Coast Day has now evolved into a major Delaware event.

Information for this Food Waste Management Plan was obtained through discussions with the Coast Day Committee representative responsible for recycling at the event and an onsite compost collection pilot guided by staff from the Northeast Recycling Council at the 2011 Coast Day event. A draft version of the Plan was developed by NERC prior to the pilot compost collection and submitted to Coast Day organizers. The pilot involved collection of food scraps, soiled paper, and compostable service ware.



## SECTION 2. WASTE COMPOSITION, GENERATION, AND QUANTITIES

	Reusable	Recyclable	Compostable	Could be converted to Compostable or Recyclable	Trash
<b>Food vendor</b> ▪ prep wastes ▪ grease	▪ reusable cooking & serving dishes	▪ #10 steel (tin) cans ▪ aluminum baking trays	▪ vegetable scraps ▪ seafood scraps		▪ plastic film
<b>Attendee</b> ▪ food wastes ▪ service ware		▪ aluminum cans ▪ plastic bottles ▪ aluminum foil	▪ chowder ▪ crab cake ▪ pizza ▪ hamburger ▪ French fries ▪ ice cream ▪ hot dogs ▪ sandwiches		
<b>Service ware</b> ▪ utensils ▪ plates ▪ bowls ▪ hot cups ▪ cold cups ▪ sampling cups	▪ metal serving utensils	▪ aluminum soda cans	▪ paper cups ▪ compostable plastic cups ▪ paper plates ▪ compostable utensils ▪ sampling cups	▪ polystyrene cups ▪ plastic plates ▪ plastic bowls ▪ plastic utensils ▪ polystyrene clam shells	
<b>Other items</b> ▪ coffee stirrers ▪ toothpicks ▪ straws	▪ bulk condiment dispensers		▪ wooden coffee stirrers	▪ individual condiment packaging	▪ straws
<b>Other waste</b>					▪ hand towels

### Expected Quantities of Waste Based on Pilot Food Waste Diversion Project.

- Food waste/compostables: Approximately 80 pounds (10 bags) of food scraps and compostable service ware were collected during the composting pilot.
- Recyclables: Recyclable beverage containers and cardboard are collected by University of Delaware Maintenance staff during the event and placed in the campus recycle dumpster which is hauled by Waste Management, Inc. The exact tonnage from the event is unknown.
- Trash: An extra dumpster is delivered by Waste Management for trash generated during the Coast Day event.

### **Areas during the Event with the Most Compostable Waste? When?**

Food Court/attendee dining area (11 a.m.-5 p.m.; and Crab Cake Cook-Off, Seafood Chowder Challenge, and cooking demonstration tents (11 a.m.-2:30 p.m.).

### **SECTION 3. FOOD WASTE/COMPOSTABLE SERVICE WARE DIVERSION**

**Overall Diversion Goals:** Coastal Days has a long standing commitment to conservation, and leading by example through activities like recycling. Organizers are interested in diverting additional materials from the waste stream through event-wide composting.

#### **Event Food Waste Diversion System**

For the pilot, a three-bin system was used for collection of compost, recyclables, and trash. Based upon experiences in conducting the pilot, Coast Day could successfully become a zero waste event.

#### **Hauler and Processor**

Compost hauler: For the pilot event, the Coast Day Committee representative responsible for coordinating recycling and the pilot composting project hauled collected materials to compost the facility. The drive was approximately 60 miles, one-way.

Compost processor: Blue Hen Organics in Frankford, Delaware accepted the materials at no cost.

#### **Materials Collected for Composting**

- Food Scraps
- Soiled Paper (napkins, paper plates)
- Compostable plastic service ware

#### **Compost Collection Bins/Green Stations**

Event organizers purchased 32-gallon round plastic containers for use in “Green Stations.” Each Green Station contained a different color bin— green (compost), blue (recycling), and black (trash). There were five complete “Green Stations”—Compost/Recycle/Trash—set-up.

On-site storage of collected materials: Full bags of collected material were stored in a central area for hauling the next morning by University of Delaware staff to the Blue Hen compost facility.

Removal and storage of containers at the end of the event: University of Delaware Maintenance crew collected the empty containers for storage on campus.

Compostable bags: Coast Day Committee purchased BioBags to line the compost bins.

#### **Recommendation**

To increase visibility and success of composting, it is recommended that University staff or Coast Day volunteers construct inexpensive “stations” to hold the collection bins. Low-cost stations could be constructed out of PVC pipe and wood. A railing over the top of the stations could hold a sign or banner designating the “Green Station.” These could be on

wheels for easy mobility. In order to help contain costs, one or two stations could be built each year. The 32-gallon containers already purchased by the Coast Day Committee could be used as the collection containers in the stations. Samples of collection station options are attached.

The use of lids with the collection bins would help to make participants “think before they toss.” Holes the size of beverage containers could be cut into the lids for the recycling bins; a round circle cut into the lid for the compost bin would help to distinguish it from the trash bin. Also, lids could be labeled. The placing of sample compostable service ware on the sides of the bins and on the lid is also an effective and low-cost educational tool.

### **Location of Green Stations**

There were five complete “Green Stations”—Compost/Recycle/Trash—set-up:

- Three in the Food Court area,
- One in front of the Seafood Chowder Challenge, and
- One near the food vendors across from the main event (where a number of marine-life exhibits and ship tours are offered).

### **Recommendation**

One or two additional Green Stations should be added near the Crab Cake Cook-Off and Chowder Challenge area. For the pilot, there were only garbage cans in the Crab Cake Cook-Off area; however, most of the waste from this area is compostable. The Green Station in the Chowder Challenge area was heavily used. The vendors in both areas did an excellent job of complying with the request to only use compostable paper products.

The Crab Cake Cook-Off and Chowder Challenge area Green Stations could be removed (with just trash bins left) at the end of these events (around 2:30). There are only a limited number of people in this area after these events end, so Station monitors could be moved to the Food Court area.

Removal of some trash bins not associated with the Green Stations would encourage more participation in the composting and recycling effort. Eliminating the trash bins not associated with the Green Stations would reduce the need for the University Maintenance Crew to monitor and empty these trash bins and also bring greater visibility to the event’s composting and recycling efforts. Trash bins not in the Green Stations could be used as standalone containers near the educational tents (which are located away from the Food Court).

### **Compost Collection Logistics**

Volunteers were stationed at all Green Stations to monitor the bins and assist event attendees. University of Delaware Maintenance employees collected full bags of materials from the compost bins and carried these to a central location for storage. At the end of the event, Maintenance crews drove around the event in pick-up trucks to collect remaining materials and empty bins for storage.

### Service Area

Full bags of materials were carried to a central location for storage (and disposal the following day). At the end of the event, the University crew drove their trucks around the Food Court area to transport full bags of collected materials to the central storage area and to collect the bins for storage on campus.

As the event has a relatively tight footprint, the central location of the Service Area to the Green Stations worked well. However, due to adverse weather conditions during the pilot composting project, there were fewer than anticipated attendees. If future events have more attendees and consequently more compostable material is generated, it may be necessary to set-up one or two “staging areas” for temporary storage of full compost bags for removal at the end of the event. These areas could be located behind the vendor booths in the Food Court area.

### **Food Vendors**

Food vendors were sent information on Coast Day’s composting effort and asked to voluntarily comply with using compostable service ware. Two vendors used all compostable service ware during the pilot; several used primarily paper. See the attached results of the pilot compost vendor audit.

Vendors are asked to separate out aluminum and plastic beverage containers for recycling; vendors can also leave cardboard by their booths to be collected for recycling.

### Recommendation

Coast Day organizers may want to consider offering a discount registration fee for those vendors who are willing to sign an agreement that they will “only use BPI or ASTM compostable service ware.”<sup>2</sup> With the vendor education on compostable service ware that Coast Day organizers now have in place, a discounted fee would help to bring more vendors on board, without excluding those unwilling to make the switch. The discounted fee would also serve to make vendors more aware of their role in making Coast Day composting a success and the importance of switching to compostable products, without forcing them to make the switch.

Alternatively, an increased fee for vendors not willing to make the switch to all compostable service ware would be another way to encourage vendor participation without mandating it. Either system could be phased-out when a vendor requirement for using only compostable service ware is adopted. Once a requirement is adopted, organizers may want to include a clause in the vendor contract stating the repercussions for noncompliance, such as: “vendors found to be using non-compostable or non-recyclable service ware may not be welcomed as food vendors the following year.” See attached sample language for vendor contract.

The universal use of compostable service ware by all vendors will serve to make it much easier for volunteers to monitor the Green Stations, eliminate potential contamination in

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<sup>2</sup> American Society for Testing and Materials (<http://www.astm.org/Standards/D6400.htm>) or Biodegradable Products Institute (<http://www.bpiworld.org/BPI-Public/Approved/1.html>).



collected compost materials, and greatly increase diversion of event wastes to composting. It will serve to significantly improve the “greening” of the event and ensures that all vendors are on an equal footing in their role in helping the Festival successfully implement its compost program.

As a component of vendor use of compostable service ware, bulk serving of condiments will also need to be adopted by vendors. The packaging waste created by individual serving items adds greatly to the environmental footprint of the event and is typically not compostable or recyclable.

A Green Team or Coast Day Committee member will need to touch base with all vendors the morning of the Coast Day event in order to ensure compliance with the use of only compostable service ware.

To encourage vendors to participate in the compost effort, organizers can provide small buckets for vendor collection of preparation scraps and soiled paper. Kitty litter buckets or 5-gallon buckets used at restaurants and stores are typically attainable at no or low cost. Small collection buckets should also be placed in the Chowder Challenge, Crab Cake Cook-off, and cooking demonstration area for use by chefs and servers.

Perhaps University Green Team members can distribute the containers to vendors at the start of the Coast Day event and provide a brief overview of the collection logistics to vendors.

The Chowder Challenge vendors could use an appropriately-sized compostable paper bowl or large cup (instead of the polystyrene plastic to-go-container used during the compost pilot) for participants that will be consuming the chowder onsite. Another possibility is to see if a local school or animal shelter has use for the polystyrene containers. Since the containers have lids, there may be a practical use for them if they are collected separately and washed. The plastic containers may also be recyclable, if washed; event organizers may want to discuss this with the recycling company that accepts the beverage containers for the event.

#### **SECTION 4. COMMUNICATION AND PROMOTION**

##### Event Organizers/Management Communication Plan

Location of recycling/compost stations for the pilot event was promoted on the event program/map.

##### Vendor Communication Plan

Vendors were sent a letter by the Coast Day committee asking them to voluntarily comply with using compostable service ware. See Appendix B for the letter.

Signs recognizing vendors that used primarily compostable service ware were printed and posted. The text on the sign read: "This vendor is providing you with compostable cups, plates, napkins, and utensils. When you're done with them, please deposit them in one of

the compost containers located in the Food Court area." NERC posted these signs on vendor booths that had complied with the request to use compostable service ware.

#### Volunteer/Staff Communication Plan

Coast Day Committee discussed the compost plan with University of Delaware Maintenance staff to seek their input and review responsibilities for the collection.

An overview of the importance of composting, what was acceptable for composting, what the collected materials would be made into, and their duties during the day was provided to volunteers.

#### Public Relations and General Public Outreach

Coast Day Committee issues press releases about the event, including information about the event's recycling and composting opportunities.

#### Container Labels/Signage and Bin Station Signage

Composting and recycling signs were taped on each of the bins; paper plate, tray, and napkin samples were taped to the front of the compost collection bins.

#### Recommendation

A single "Green Station" icon or logo on the program map would help to get participants used to the recycling/composting stations being together. The icon should also be placed on the poster and program posted on the Coast Day Website, with perhaps a statement "Coast Day recycles and composts."

A railing over the top of the Green Stations, with a sign or banner stating "Coast Day Green Station" and under this a separate sign for each bin—Recycling, Composting, and Trash—would substantially increase visibility of the Green Stations. Alternatively, a free standing sign at eye-level would work as well. See attached samples.

Signage should be in place as soon as the bins are placed in order to limit contamination by vendors.

### **SECTION 5. STAFFING/VOLUNTEERS NEEDS**

The Coast Day Committee secured volunteers from the Upward Bound Math and Science Center Program. Thirty high school students volunteered for the entire day. The Upward Bound instructor had already divided the students into teams of two-three students (mixing the grade levels so that each team had at least one senior in the lead). Additionally, the Teams were divided into shifts – an early shift to start immediately and a later shift to start in the early afternoon. One team was assigned as a roving team to provide breaks for those at the Stations. Teams scheduled for the afternoon were allowed to walk around the event and report to duty in the early afternoon to replace team members who had worked the early shift. Five students from the University of Delaware Green Team also helped to staff the Stations.

Throughout the day the University crew was stationed in a central location to collect full bags of compost, recyclables, and trash. Full bags of materials were carried to this location

for storage (and disposal the following day). At the end of the event, the University crew drove their trucks around the Food Court area to transport full bags of collected materials to the central area and to collect the bins for storage. A member of the Coast Day Committee hauled the compostable materials to Blue Hen Compost Facility for processing the next morning.

### Recommendation

It will be necessary to have a “Green Station” coordinator to set up the Green Stations the morning of the event, making sure the containers are in place, placing appropriate liners in the bins, ensuring that proper signage is placed on each bin, and that compostable service ware samples are taped on the compost bins. The coordinator would also rotate around to assist in emptying full bins as necessary and to check that bins are being properly monitored. Additionally, someone will need to be available to greet and train the Upward Bound students prior to the start of the event. Additional Green Team members can then come at 11 a.m. to assist in monitoring the Green Stations for an hour or two.

It would be beneficial to have one or two Green Team volunteers remain during the afternoon to help relieve the Upward Bound volunteers and assist where necessary. Two or three additional Green Team members are also needed to take over for the Upward Bound volunteers when they need to break at 4:00 pm. By then, there would probably only need to be one or two stations in the Food Court area (the ones in the Seafood Chowder Challenge area and Crab Cake Cook-Off could be pulled early). These Green Team members would staff the Food Court Green Stations from 4 -5 p.m.

The University Maintenance Crew did a good job of setting up the bins and emptying the full bins. Since the compost bins nearest the Food Court attendee dining area and also the ones near the Chowder Challenge filled-up quickly, these need to be checked more frequently.

### Description of Volunteer Duties

- Monitor bins: assist attendees as they come up to the stations and show them what goes in the compost bins.
- Empty full bags/bins and secure for removal by University staff.
- Maintain bin signage and samples.
- Clean-up litter around bins.

### Event Clean Up

Volunteers from the Upward Bound Math and Science Center Program assisted University Maintenance crew clean-up at the end of the event. University staff collected the empty Green Station bins for storage.

## **SECTION 6. EVALUATION**

### Evaluation Report

To promote the event's composting and recycling efforts, organizers may want to collect tonnage information provided by the hauler or processor. The [EPA WARM tool](#) can be used to determine resource use savings and greenhouse gas reductions from event composting and recycling. A press release can be issued and posted on the Coast Day Website.

### Vendor Recognition

The promotional signage for the food vendors was effective in recognizing those vendors that used primarily compostable products. It served to help educate participants about the Coast Day composting effort and the use of compostable service ware by the vendors.

### Recommendation

A vendor "Green Star" or some sort of recognition program, with signage and Website promotion could help to convert more vendors to using compostable service ware and participating in the composting program.

An exhibit table by Blue Hen showing the compost created from the collected Coast Day compostable materials would serve as a valuable educational tool for participants, as well as recognition of Blue Hen and their donation of services.

## Food Vendor Visual Waste Assessment

### **21 food vendors**

This information is based on a visual waste assessment of vendors conducted by NERC during the compost pilot.

All compostable service ware used by:

- Café Asafran
- Laughing Crab Catering
- Both were both excellent, using only paper plates, cups, bowls, and trays, as well as bulk condiments.

Several vendors used primarily paper: paper boats, paper trays

- What-a-Dog (also used bulk condiments)
- Boardwalk (also used bulk condiments)
- Frankford Volunteer Fire Department (used bulk condiments, but also used polystyrene hot cups)
- Grotto Pizza
- Apple Frankies (used plastic clear cups for large lemonade drinks)

Most food vendors used some plastic service ware/packaging, including:

- Polystyrene plates, bowls, trays
- Plastic cups for sauces, nacho sauce
- Plastic drink cups – polystyrene hot cups and plastic cold cups for snow cones
- Plastic bags (one vendor)
- Utensils
- Individual condiment packages

Three vendors used primarily plastic service ware, including large polystyrene clam shells:

- Sharay's Café
- Fish Killer's Lobster Shack
- Jerry's Seafood (also used polystyrene bowls and plates).



## Sample Collection Stations





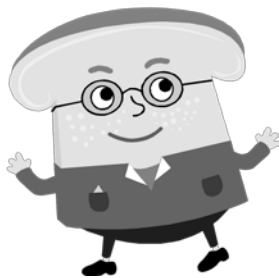
## Sample Signage





# Compost

- food scraps
- napkins, plates
- other paper, newspaper
- compostable plastic utensils, bowls, & cups





## Sample Vendor Contract Language

Our event is composting! All vendors are required to only use recyclable and compostable service ware and packaging for attendee use and participate in our event's composting and recycling program.

- All food must be served on fully compostable service ware. Petroleum based plastic, polystyrene, and other non-compostable utensils and service ware are prohibited. Vendors are encouraged to serve finger foods that do not require utensils and adopt other creative ways to limit service ware needs.
- All plates, bowls, cups, takeout food containers, other service ware, utensils, and napkins must be made out of approved compostable materials. This includes lightly coated or non-coated paper (no plastic coated paper products are acceptable). Acceptable, lightly coated paper products will be coated with a vegetable or compostable plastic that will flake off when scratched. Paper should easily rip by hand; this indicates that any coating should decompose readily.
- Acceptable compostable plastic items include: PLA plastic made from corn, potato starch resin, or bagasse made from sugar cane fibers. All compostable plastic items must be identifiable as compostable and be BPI or ASTM certified for compostability. These certifications help to ensure that the items will actually compost at a properly operated compost facility.

Acceptable compostable paper and plastic service ware products can be found at:

- [Biodegradable Packaging Institute \(BPI\) \(www.bpi.org\)](http://www.bpi.org) for compostable paper and plastics that meet their testing standards.
- [ASTM D6868 - 03 Standard Specification for Biodegradable Plastics Used as Coatings on Paper and Other Compostable Substrates. http://www.astm.org/Standards/D6868.htm](http://www.astm.org/Standards/D6868.htm)
- For a sample list of acceptable service ware items at a compost facility visit: [Cedar Grove Composting \(http://www.cedar-grove.com/acceptable/Accepted%20List.asp\)](http://www.cedar-grove.com/acceptable/Accepted%20List.asp).
- All vendors must participate in our composting effort by disposing of food preparation wastes and soiled paper in compost bins provided to each vendor. Vendors are responsible for emptying food scrap bins into the larger, centralized carts. An event volunteer will review the locations with food vendors.
- Items for recycling include glass bottles, plastic beverage containers, and aluminum cans. These items should be placed in the event recycling bins.
- Flatten and stack all cardboard behind your booth and a volunteer will pick it up periodically during the event.

**See the vendor packet for additional information on acceptable service ware options and recycling/composting information. Noncompliant vendors will be assessed a fine or not allowed to participate in future events.**



### Dear Food Vendors

We are in the home stretch for Coast Day preparation.

University of Delaware is committed to engaging the campus and community on issues of sustainability. At Coast Day, we have a long standing commitment to recycling. This year we are planning to divert additional materials from our waste stream through composting, but **we need your help**. We are asking all food vendors to participate, on volunteer basis, by **serving food and beverages using compostable products**

Materials that we will collect for composting include paper cups, compostable plastic cups, paper plates, compostable utensils, food scraps, soiled paper (napkins, paper plates), compostable plastic service ware and wooden coffee stirrers.

If you order compostable products through your food service provider, please ask for compostable products that are BPI certified or meet the ASTM specification for compostable plastics.

We found a very comprehensive compostable product line at *LetsGoGreen.biz*. See <http://letsgogreen.biz/> and click on compostable plates and utensils. You can order by the case or smaller increments. You can also your place order through Amazon.com

A three-bin system will be used for collection of compost, recyclables, and trash. We will have student volunteers at compost bins to educate Coast Day visitors about compostable products. We will also conduct an educational composting demonstration throughout the day in the Food Festival area.

For participating vendors, we offer a couple of **incentives**. We will list your business in a special Coast Day press release highlighting the environment and “green” activities. We will also provide your exhibit with placards acknowledging your participation in Coast Day composting project. **Please help us make this Delaware’s first special event to implement food waste composting.**

### University's annual Coast Day is about, and for, the environment

Sept. 22, 2011--It's a beloved Delaware tradition that provides educational, fun, and family-friendly activities related to the ocean and coast. And once again, [Coast Day](#) is being organized to have minimal environmental effects.

A free event now in its 35th year, Coast Day will be held Sunday, Oct. 2, from 11 a.m. to 5 p.m., rain or shine, at the University of Delaware's Hugh R. Sharp Campus in Lewes. It is sponsored by the [College of Earth, Ocean, and Environment](#) (CEOE) and the [Delaware Sea Grant College Program](#).

"Coast Day emphasizes the value of our coastal and marine resources and highlights how our work benefits those resources as well as the citizens of our state and nation," said Nancy Targett, CEOE dean and Delaware Sea Grant director. "It makes sense that in celebrating our environment, Coast Day should lead by example."

Coast Day's green emphasis starts with the 2-megawatt wind turbine that is expected to provide all the electricity needed for the event. Guests will be able to visit multiple exhibits focused on the turbine, which provides energy for the campus year-round.

UD recently celebrated the one-year anniversary of the turbine's construction and Coast Day will include a 12:30 p.m. seminar that reviews the turbine's energy generation over the past year and highlights some of the turbine-related research that UD and other scientists are conducting.

As in previous years, recycling bins will be available and compostable plates, cups, napkins, and utensils will be used for the Crab Cake Cook-Off and Chowder Challenge seafood cooking events. As a new feature to Coast Day, several food vendors will provide compostable materials that guests can place in compost bins located throughout the campus.

A special display sponsored by [UD Cooperative Extension](#) will show visitors how composting works and demonstrate the benefits of using biodegradable materials. The Northeast Recycling Council and local compost facility Blue Hen Organics will provide support for the event.

Other measures taken to reduce the event's environmental impact include the sale of environmentally friendly reusable bags and the printing of the event program and other promotional materials using paper from forests managed in an environmentally friendly manner.

Coast Day is supported by DuPont Clear into the Future, Gamesa Corp., NRG Bluewater Wind, OSG Ship Management Inc., UTEC Survey Inc., Delaware Department of Natural Resources and Environmental Control, WMDT CW-3, Lewes Historical Society, Lewes

Chamber of Commerce, PNC Bank, and the National Oceanic and Atmospheric Administration.

While Coast Day parking and admission are free, vendors will be selling food and other items. There is no ATM on the campus grounds.

The full Coast Day program is [available on the website](#). For more information about Coast Day, visit the website or call 302-831-8083.

**Note to the UD community:** Free bus transportation to Lewes from Newark will be available for UD students and employees. [Learn more](#).

Photos by Evan Krape

<http://www.udel.edu/udaily/2012/sep/coast-day-environment-092211.html>