



Carolina Sustainable Athletics Team:

Rameses Recycles

Tailgate & In-Stadium Recycling and Game Day Greening [Summary of Recommendations]

(Full text of capstone findings and recommendations available at
<http://www.ie.unc.edu/content/education/courses/capstone.cfm>
in "Rameses Recycles" final report)

Introduction

Greening Carolina Athletics Survey

Tailgate Recycling Logistics

Proposal for OWRR Internship

Proposal for Game-day Logistics

In-Stadium Greening Efforts

Proposals for In-Stadium Recycling

Proposals for Reducing & Composting Waste

Proposals for Education

Branding and Marketing

Evaluation & Funding

Carolina Athletics Sustainability Plan

The Next Step

Introduction

Overall, the Rameses Recycles Team had two main focus areas. The first goal of the project was to formulate an implementable tailgate recycling program for the Office of Waste Reduction and Recycling (OWRR) and Carolina Athletics for the 2010 Carolina Football Season. This included a workable tailgate recycling plan, volunteer base, manageable budget, method for evaluation, and educational program. A secondary goal of the project was to provide Carolina Athletics with a sustainability program detailing recommendations for general greening, improved in-stadium recycling and a means to educate fans and students about the importance of sustainability within Carolina Athletics. The following are the recommendations for both OWRR and Carolina Athletics.

Greening Carolina Athletics Survey

The most common responses called for more receptacles everywhere, with clear labeling to let fans know what can be recycled. If we started with those two suggestions, it seems that fans will be much more likely to recycle. Overall, when tailgaters were asked about a Tailgate Recycling Program at UNC, 92% felt that it was either very important or important to have one at UNC. Some great responses to this question include the following:

“60,000 people are going to use a lot of resources in any situation; it would be great if what they did use was recyclable/sustainable and if we set a public example by using those products and letting people know that we did. I fully support more recycling at Kenan.”

“Moreover, I think UNC should be an example to fans and other sports programs by striving to produce ‘green’ sporting events through alternative energy, reduced waste (composting may be a great option) and water conservation. Our athletic events should be viewed as opportunities to educate and inform the public.”

Tailgate Recycling Logistics

Proposal for OWRR Internship

An Office of Waste Reduction and Recycling (OWRR) Intern would provide a strong base upon which to continue to build and expand the Rameses Recycles program. This intern would work towards expanding and improving the current program as well as implementing the tailgate recycling plan proposed in this report. A more thorough job description has been prepared and is included in the Appendix. The ideal intern would have a strong desire to help green Carolina Athletics. Sending the prepared job description to the Environmental Majors and Sustainability listservs would attract such an individual to the position. BJ Tipton in OWRR would handle interviewing, hiring and supervision.

Update 06/16/2010: Natalia Posthill has been hired as the OWRR intern and can be reached at 962-1442

Proposal for Game-day Logistics

In regards to logistics, the Rameses Recycles intern would be responsible for many of the logistical aspects of the program including the organizing of volunteers for pre-game bag distribution. The ultimate goal is to provide all of the tools necessary to do this, such that an intern would only need to finalize volunteers for game day. The volunteer base will consist mainly of UNC students who are active in service organizations and passionate about sustainability. In regards to volunteer recruitment and

organization, each of the below organizations have been contacted and are interested in providing volunteers for next year's tailgate recycling program.

Organization Name	Contact Name	Contact Email
Alpha Kappa Psi	Shannon Weber	webersm@email.unc.edu
Alpha Phi Omega		presidents.rho@gmail.com
CESA	Lan Ngo	lngo@email.unc.edu
Epsilon Eta	Madeline Gwyn	megwyn@email.unc.edu
Greenhouse	Gabe McGowan	gabemcg@email.unc.edu
NRHH	Tiffany McCrary	mccraryt@email.unc.edu
SEAC	Ben Carrol	cmbenjamin@email.unc.edu
SWEAT	Claire Tramba	tclaire@email.unc.edu

Update 06/16/2010: UNC Sport Clubs has agreed to provide all volunteers for the 2010 football season.

Volunteers are crucial to the success of Rameses Recycles. Historically, Carolina football games have come in one of three flavors: noon games, early afternoon game and night games. Each game will require volunteers to hand out bags to tailgating fans. Each shift is designed to efficiently distribute bags to all tailgating fans. Earlier shifts are designed to serve fans who enjoy arriving hours before kickoff and later shifts are designed to catch the fans who choose to arrive later. Using this method, the vast majority of tailgating fans should be provided access to bags for recyclables.

	Time	Volunteers	Lots Covered
Kickoff: Noon			
Shift 1	9:00 - 11:00	6	Ram's Deck, Stadium Drive, Visitor's Lot, Cobb Deck
		6	S11, Craige, Dogwood and Cardinal Decks
Kickoff: 3:30 PM			
Shift 1	11:00 - 1:00	2	Stadium Drive, Visitor's Lot, Cobb Deck
		2	Ram's Deck, S11 Lot
		2	Craige, Dogwood and Cardinal Decks
Shift 2	12:30 - 2:30	2	Stadium Drive, Visitor's Lot, Cobb Deck
		2	Ram's Deck, S11 Lot
		2	Craige, Dogwood and Cardinal Decks
Kickoff: 6:00 PM			
Shift 1	11:00 - 1:00	2	Stadium Drive, Visitor's Lot, Cobb Deck
		2	Ram's Deck, S11 Lot
		2	Craige, Dogwood and Cardinal Decks
Shift 2	1:00 - 3:00	2	Stadium Drive, Visitor's Lot, Cobb Deck
		2	Ram's Deck, S11 Lot
		2	Craige, Dogwood and Cardinal Decks
Shift 3	3:00 - 5:00	2	Ram's Deck, Stadium Drive, Visitor's Lot, Cobb Deck
		2	S11, Craige, Dogwood and Cardinal Decks

Under the proposed model, once confirmed and prior to game day, volunteers will be informed by the OWRR intern of their shift assignments. Volunteers will arrive at the meeting spot designated by the

OWRR intern at the beginning of their shifts. There they will be divided into pairs and assigned lots based on the above plan. At that time, each volunteer will receive a T-shirt, an allotment of recycling bags and the prepared volunteer handout that includes a map of the campus lots and instructions, as well as some information about the Rameses Recycles program. From there volunteers will travel by foot to their assigned lots to distribute bags. Each of these lots is easily within walking distance from Kenan Stadium. Once bag distribution is complete, volunteers will be free to enjoy the game. Post-game, these bags along with trash bags will be collected by UNC Grounds and placed in recycling bins and trash dumpsters in the parking lots. These dumpsters will have been placed by OWRR in agreement with Grounds for each university lot or deck in the program.

In-Stadium Greening Efforts

Proposals for In-Stadium Recycling

Short Term (1-3 years)

The following are some short-term goals that Carolina Athletics could feasibly look to implement:

- Paper recycling capability: UNC has no structure for paper recycling within the stadium, but many attendees carry programs and the Daily Tar Heel's *Sports Saturday*. In addition to placing bins specifically for paper recycling, advertisements could be placed in the *Sports Saturday* instructing that the paper should be recycled.
Update 06/16/2010: *Sports Saturday* has been changed to a Friday publication, thus reducing the demand for paper recycling bins.
- The bins need more complete instruction and information. This could easily be achieved by posting signs such as the one used in the spring game. Cost and labor would factor into their feasibility, but the benefits outweigh the costs. Most attendees are not aware that the blue beverage cups are recyclable, but this posted information could sway them. It would also discourage attendees from throwing trash into the recycling bin.
- In every landmark university's in-stadium plan, an increased amount of well-placed accessible recycling bins has increased the percentage of recyclables by volume. UNC can continue this trend by increasing the number of bins in the stadium, placing them directly next to trash cans, and increasing the information about what can be recycled.
- Continue the partnership with vendors to recycle cardboard and initiate a dialogue about the feasibility of compostable containers.

Long Term (4-7 years)

Following are some longer-term goals that Carolina Athletics could look to feasibly implement:

- The current bins look like trash cans. When these bins are no longer functional (i.e., broken), they should be replaced with "flashier" bins that make clear their purpose. To offset cost, these could house a panel for advertisers or a recycling message.
- In conjunction with concessions, UNC should aim for zero waste stations like those found at UC-Boulder. Recycling, composting, and waste reduction should be addressed collaboratively by Facilities and Concessions. A co-sponsor would most likely be necessary due to the cost of implementation. ROTC is willing to sort at least the compostables left in the stadium bleachers, which could have a significant reduction in Kenan's carbon footprint.
- The zero waste station will be staffed by knowledgeable volunteers, decreasing in number until it can operate alone and no supervision is necessary.

Proposals for Reducing & Composting Waste

Short Term (1-3 years)

The following are some short term goals that Carolina Athletics could feasibly look to implement in the near future:

- Install condiment dispensing systems to reduce waste that accumulates from individual packets of ketchup and mustard.
- Encourage concessions to donate unused food that would otherwise be thrown away.
- Encourage concessions to compost other types of food waste behind the counter.
- Set up composting stations around stadiums to educate and allow fans to take an active role in reducing food waste.
- Try out off-the-shelf paper products for concessions that are compostable.

Long Term (4-7 years)

The following are some long-term goals that Carolina Athletics could feasibly implement in a few years:

- Menu changes to incorporate more finger foods to reduce use of resources
- Changes in food portions to reduce waste
- Reusable serving containers
- Biodegradable/ compostable cups and serving containers
- Local produce vendor

Proposals for Education

Short Term (1-3 years)

The following are some short-term goals that Carolina Athletics could feasibly look to implement soon:

- Proposals for social media include updating the Rameses Recycles Twitter page (www.twitter.com/RamesesRecycles) and promoting through a Facebook group. Tarheelblue.com likewise should operate and update a section dedicated to environmental initiatives through the Athletics Department. If data is easily attained, www.tarheelblue.com with the Office of Waste Reduction could chart the amount of recycled materials, marking their progress and demonstrating the effects of recycling as a group.
- A substantial presence on game days would also educate fans. During our time at the spring game booth, people stopped to take surveys, donate money (unsolicited), and learn about the Rameses Recycles program. If possible, Rameses Recycles should aim to have a booth in every Tarheel Town, complete with instructional and promotional materials. This would be staffed by a knowledgeable intern. The promotional materials would include the brochure, large map of the targeted tailgating areas, and guide to recyclable materials. Ideally these should start in the fall of 2010.
- An increase in give-away items that promote sustainability/recycling, advertise the Waste Reduction website.
- Advertise the program and report volumes collected on the video board, in advertisements in program booklets, and in announcements over the public address system.

- A change in the signage of the bins is necessary. They should be stable, large, easy to read and understand, and placed by every single bin in the stadium. This is explored in greater depth throughout the *In-Stadium* section of the full report, but has significant educational impacts.
- Briefing of Athletics employees on the importance of current recycling programs.

Long Term (4-7 years)

The following are some long term goals that Carolina Athletics could look to feasibly implement after a few years:

- Develop an educational packet for fans, answering questions on why recycling is important and how to do it at athletic events.
- Designate one home football as a “Green Game,” challenging fans to recycle and reduce their overall waste. This would include promoting the game as such, having a large presence from the Office of Waste Reduction and other environmental organizations, and game-day publicizing on the Jumbotron. This could also include a plan for attendees to *bring* hard-to-recycle items (such as batteries, compact fluorescent light bulbs, etc.) to promote awareness and recycling.

Branding and Marketing

Proposals for Marketing

The aim in marketing is to make use of the techniques in place at our institution that are more feasible and appropriate at UNC. We’d also like to incorporate new media campaigns and make strong use of our long-standing athletic sponsors where possible. Marketing efforts may remain the responsibility of UNC OWRR but in many cases will require the input and support of Carolina Athletics and UNC Athletic Marketing.

Short-Term

During the first year (the 2010-2011 academic year) of *Rameses Recycles*, traditional and affordable advertising mechanisms are likely to be most useful, namely press releases to local media, Carolina Athletics releases (Tar Heel Newsflash, Rams Club or alumni emails, the annual fan guide), campus listservs, Facebook events/fan pages and a Twitter account. Content for Carolina Athletics releases should be coordinated with the athletic department and will need to adhere to their publishing schedule. Tar Heel Newsflash is a weekly subscriber-based email that can be of use for short-term and time sensitive information. The fan guide would be a useful avenue in introducing the program to fans at the beginning of the season as it is published prior to each football season. This means production of the guide takes place in the summer months and any advertisements would have to be arranged in advance.

Twitter and Facebook are simple and established methods to access a wide and diverse audience. The accounts could easily be managed by a student intern or OWRR staff member. The accounts would present the opportunity to frequently update information and gather a following at a relatively no cost.

Long-Term

More intensive marketing strategies may not be implementable within the first year, but should be actively pursued. In particular, current sponsorships could be further extended to include Rameses Recycles branding. UNC has an established and recognized relationship with Bojangles as the official football tailgate sponsor. Because the initial efforts of Rameses Recycles focus on tailgate recycling, the Bojangles brand name is a natural fit to accompany the message. Additionally, the experience of other

institutions indicates a precedent toward co-sponsorships with the school's contracted waste or recycling collection company.

Despite stiff competition for air-time and marketing space during UNC athletic events, there is a possibility of video and radio advertisements. These efforts, again, will need to be coordinated through Athletic Marketing. The University is allotted two video advertisement slots during each home football game, which *Rameses Recycles* may be able to utilize in the future.

With increased funding in the future, it would be useful to develop promotional materials such as t-shirts and drink koozies. Though a more expensive option, koozies are a traditional part of tailgating and would serve to brand the program. Koozies have become a trademark of the NCSU campaign.

Evaluation & Funding

Proposal for Evaluation

Evaluating the success of *Rameses Recycles* will be essential to the future of the program. The success metric will primarily be to increase the recycled material-to-waste ratio. It will be the responsibility primarily of the Office of Waste Reduction and Recycling Intern to track all statistics and data throughout the football season. A database was created to track various data points for every home football game and track the amount of waste recycled and trashed in-stadium. Additionally, it will provide the amount of waste recycled and trashed in tailgate parking lots. The database will also capture key data such as trash bags handed out, number of volunteers, volunteer hours and other key data points. A screenshot of the database can be found in Appendix DD.

Short-Term

In the short-term, the Office of Waste Reduction and Recycling Intern will capture the key data points of the inaugural season of *Rameses Recycles*. The data will be a baseline for measuring the success of the program in future years. After the inaugural year, the program should aim to create realistic goals for increasing the recycled material to trash ratio.

Long-Term

It should be the goal of the program to maximize the ratio of recycled material to trash in the future. There is clearly a ceiling to this ratio, as only a certain amount of waste is recycled material. To create realistic goals, waste audits will be carried out at the beginning and end of every season to assess the amount of recycled material in trash. Goals should be to increase the ratio of recycled waste to trash every season. Additionally, the program will be able to push this ceiling by introducing compostable material on game days (as discussed in the Concessions and Overall Sustainability section).

Proposal for Funding

Similar to the funding of Appalachian State's Recycling at the Rock, most, if not all of the funding for *Rameses Recycles* will come from OWRR and Carolina Athletics. Thus, in the short term (one year), it would make sense for OWRR and Carolina Athletics to continue funding the majority of the cost of *Rameses Recycles*, with the remainder of the cost funded by Grounds by means of labor supplied for

collection of trash and recyclables. In the long-term, however, the recycling program should seek funding from other sources. The following will specify the details of the short and long term proposals.

Short-Term

During the first year (the 2010-2011 academic year) of *Rameses Recycles*, OWRR could continue funding a majority of the recycling program. The total estimated cost of the first-year of *Rameses Recycles* to OWRR is \$8,626. The table below illustrates the breakdown of the first year costs to OWRR.

Item	Quantity	Cost Per Unit	Total Cost	Supplier
In-Stadium Recycling Bin Signs	20	\$ 23.00	\$ 460.00	FedEx Office
Volunteer T-Shirts	150	12.00	1,800.00	Harper Arts
Office of Waste Reduction & Recycling Intern	1 Intern at 300 hours	10.00	3,000.00	N/A
Paid Volunteers	90 volunteers at 4 hours	5.00	1,800.00	N/A
Tailgate Recycling Bags*	9 rolls	157.00	1,413.00	
Tailgate Trash Bags**	6 cases	25.58	153.48	
Total			\$ 8,626.48	

*250 bags per roll; each roll costs \$157; 1.5 rolls are used per game, thus nine rolls are used per season (this cost has already been paid for as OWRR purchased 40 rolls of blue and green bags for \$3,150 and this supply should last the next 3-5 years)

**Assuming one case is used per game

During the first year, the OWRR intern and a second ENST 698 capstone group could seek funding from other sources, as NCSU, Tennessee, and Colorado have done. Possible funding sources include:

1. Sonoco: Sonoco is the company that collects UNC recyclables from outdoor recycling carts. It may be useful, the next time UNC's recycling contract is due to be renewed, to propose to make them the official sponsor of the *Rameses Recycles Program* in return for free or reduced-cost pickup after football games. The University of Tennessee was able to do this with their recycling provider.
2. Carolina Athletics Association (CAA)
3. Carolina Athletics
4. Environmental Affairs Committee of Student Government
5. Corporate Sponsor (possibly Bojangles or another sponsor of Carolina Athletics)

In return for sponsoring *Rameses Recycles*, the funding sources' logos will be displayed on the *Rameses Recycles T-Shirt* and will be identified as Official Sponsors in any PR related to *Rameses Recycles*.

Long-Term

In the long-term (second year and beyond), the OWRR intern could seek to fund 100% of the costs associated with *Rameses Recycles* through outside sources. As useful as a final budget is, it is hard to quantify many of the recommendations made in other sections of the report. Other items that are necessary for the budget for OWRR and Carolina Athletics include: sustainability program in Athletics, sustainability intern in Athletics, further educational efforts by OWRR and Athletics, more in-stadium recycling bins, transition from concessions landfill wastes to compostable items, payment for volunteer organizations, and marketing costs.

Carolina Athletics Sustainability Plan

Proposals

Short Term (1-3 years)

The following are some short term goals that Carolina Athletics could feasibly look to implement soon:

- Like some of the schools mentioned above, specifically Yale University, Carolina Athletics could establish a Sustainability Program to demonstrate a commitment to environmental responsibility and allow for the development of a full greening plan with short- and long-term goals. Such a program could be started with one student intern and develop into a full-time position within a couple of years. Having a Sustainability Intern within Carolina Athletics would allow everything from energy and water use to team transportation to be fully considered through an environmental lens. Such a position should have close correspondence with the Athletic Director and UNC Office of Sustainability.
- In recent years, Carolina Athletics has worked to retrofit wasteful water appliances with those that are low in water use. Carolina Athletics should continue to retrofit water appliances in all of their buildings in order to conserve water and to increase their savings.
- Tailgate and in-stadium recycling are two portions of environmental responsibility that Athletics is currently pursuing. To continue recycling efforts and engage the fan base, it would be useful to designate a game or two each season be a “recycling game day,” where fans are encouraged to bring certain items from their homes to recycle. For example, next year’s home game versus NC State University could be a day when fans bring used batteries to the stadium for recycling. Such an event would bolster fan education and Carolina Athletics’ commitment to sustainability.
- In order to conserve energy, Carolina Athletics should retrofit lights and light bulbs with compact fluorescent lighting where possible.
- To increase environmentally sustainable transportation to and from football games, Carolina Football could build a “free bike rack parking lot” outside of the football stadium. This would decrease the carbon footprint of home football games and encourage fans to leave their cars at home in order to take advantage of free, close parking.
- Carolina Athletics could conduct a carbon footprint assessment, water use audit and energy audit of all athletic programs and set goals to reduce water use, energy use, and emissions.
- Finally, Carolina Athletics could make a commitment to educate its fans, student athletes, and staff about the importance of greening initiatives. It is impossible to attract support for a program unless the people supporting it are familiar with the pertinent issues.

Long Term (4-7 years)

The following are some long term goals that Carolina Athletics could look to feasibly implement in a few years:

- Carolina Athletics could invest in solar panels on some of its facilities for water and building heating. Solar panels are becoming increasingly efficient, and are now a great way to save money after an initial investment in the infrastructure. Morrison Residence Hall has realized amazing energy cost savings with the addition of solar panels to the top of the building. It is estimated that the solar panels result in an annual energy savings of \$11,275. Further, in 2009, engineers extended the solar hot water system to be used for reheat of the building, saving \$17,000 in the month of June 2009 alone.
- New UNC Athletic buildings could be built to a certain environmental standard. As mentioned above, the University of Connecticut built the first LEED-certified NCAA athletics facility. Carolina

Athletics could strive to build new facilities to a LEED silver level. Green building costs are competitive with normal costs and such buildings realize huge cost savings, namely in water and energy.

- Carbon dioxide sensors could be installed in athletics buildings, just as they have been installed in many academic buildings. When the sensors detect carbon dioxide because people are in the room, heating/cooling is provided to the room. When the sensors do not detect carbon dioxide, the heating/cooling is appropriately kept off.

The Next Step

This semester's Carolina Athletics capstone group focusing on sustainability initiatives within UNC's Athletic Department has been successful in developing a full tailgate recycling program with a body of supporting research from other exemplary American universities. The group has also developed an in-stadium waste reduction strategy and an environmentally sustainable vision for the future of Carolina Athletics. These recommendations are supported by marketing, educational, budgetary and greening strategies to help make them a reality. While the group has been successful in developing the structure for a more sustainable future within the Carolina Athletics Department, the large majority of this structure has yet to be put into action. Recommendations, research, and structure were the key starting components in a quest to bring environmental responsibility to Carolina Athletics, but implementation is the next critical component.

As specified in the body of the report, the athletics capstone group recommends that the Office of Waste Reduction and Recycling hires an intern to further implement the tailgate recycling program at Carolina football games. The report also specifies the necessity of an intern within Carolina Athletics to begin the recommended sustainability program with energy, water, and waste audits, a carbon footprint assessment, educational efforts, and timeline development for sustainable initiatives. While these two positions would be an excellent starting point for sustainability in the Athletics Department, taking the body of research developed by this group and diving right in will not produce the best results. It is recommended that there be an athletics sustainability capstone group for the fall 2010 semester to aid both interns in digesting and implementing the structure that we have outlined within this report.

It is our hope that with the aid of another capstone group, the OWRR intern will be successful in implementing the tailgate recycling program with a stable body of volunteers and move towards increasing recycling and decreasing waste within the stadium. It is also our hope that this intern would take the structure of waste reduction and begin to apply that structure to other major athletic venues, such as the Dean Smith Center and Boshamer Stadium. We hope that with the aid of another capstone group, an athletics intern will be able to have a team to conduct the necessary audits and assessments within athletics and develop a concrete plan with athletics staff for the short and long term implementation of sustainable initiatives. More specifically, we would like this to involve a composting program in Kenan Stadium, the development of water, energy, and emissions reductions within Carolina Athletics, and a strong education strategy to inform fans, students, and UNC staff.

It is our overall goal that the structure we have developed in conjunction with student interns and a second capstone group will produce a level of sustainability within athletics comparable to the rest of the UNC community.