Since being bequeathed to the College of Charleston Foundation more than ten years ago, Dixie Plantation has been a largely overlooked gem in the C of C treasure chest. In the past ten years, the 850 acre property near Hollywood, South Carolina has been used by a handful of Biology, Geology, and Art classes, has served as a training ground for the cross country team, and even been the site for the MESSA (Master of Environmental Studies Student Association) annual oyster roast. Many people recognized the property’s wonderful potential as a site for education and research, which was the vision of the donor, John Henry Dick. However, only recently were resources drawn together to convert the old plantation into a useable facility.

It is likely the site has a very long history of human habitation. In this region, land situated on a bluff along a major river is almost always associated with early Native American livelihood - Dixie Plantation sits on relatively high ground along the Stono River. Records indicate settlement dates back to the 1680s. A graveyard containing centuries-old tombstones is located near the site of the original St. Paul’s Church, built in 1708 and burned in 1715. The property was owned by several families before John Henry Dick’s family acquired it in the 20th century. Dick’s mother was married to John Jacob Astor, whom she accompanied on the Titanic - he died, she survived. John Henry Dick and his mother often visited the property; the two of them named it Dixie Plantation. In 1939, the original plantation home burned down. Dick’s mother was devastated and never returned, but Dick remodeled a small cottage on the property and made it his permanent home.

John Henry Dick was a well established artist and ornithologist. Dick identified “the study and painting of birds” as his first love. He illustrated several books, including A Pictorial Field Guide to the Birds of India and Birds of China. In 1985, he was awarded by the Charleston Natural History Society for captive breeding of endangered species and conservation advocacy.

In 1993 Dick placed a conservation easement on the property and left it in control of the Lowcountry Open Land Trust. When John Henry Dick died in 1995 at the age of 76, he left his beloved Dixie Plantation and his magnificent collection of rare books to the College of Charleston Foundation. Dick indicated his wishes were for the College to maintain the property as one
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Well. I have just completed my third and final year of service as Director of the Masters in Environmental Studies program. However, I don’t intend to officially retire from the institution until December. I can honestly say that I have thoroughly enjoyed working with the faculty, students, staff, administrators, and community representatives. It has been a very gratifying experience and a fitting conclusion to my career here at the College of Charleston. Although I do not have any immediate plans after retiring, I hope to remain in this area and to continue my affiliation with the institution and the scientific community. At this time, a suitable and willing replacement has not been named but I’m sure a candidate will be identified soon.

There have been several new changes initiated this past year. First, thanks to the Amy McCandless, our departing interim President Conrad Festa, and the constant prompting by the graduate faculty, those students who are awarded student assistantships for next year should realize an increase of $2000 over last year’s stipend. This is the first step in making our graduate student stipends more competitive with regard to other graduate programs nationally. The Graduate School also developed a graduate student research initiative, which included instituting an annual graduate student poster session to preview student research, and providing funding for student travel to professional meetings as well as for support of research projects. Students in the MES program have already taken advantage of this new funding opportunity as three students were awarded research grants for the upcoming year. In addition, the MES program was also able to provide some funding for students who were presenting the results of their research at professional meetings. We were able to accommodate 15 student travel requests (a complete listing of the students, project titles and conferences attended is included in the newsletter).

We also were able to continue our Annual Speaker Series (thanks to contributions from Academic Affairs and the Graduate School). This year we were fortunate to be able to bring on campus Dr. Orrin H. Pilkey, a renowned coastal geologist and environmentalist, from the Nicholas School of the Environment at Duke University. Dr. Pilkey discussed his recent studies dealing with the global occurrence and distribution of fetch-limited barrier islands. As we all know, in South Carolina these islands are either currently being developed, or will be under pressure to be developed sometime in the near future. We will be sponsoring at least one guest lecturer each year and will try to alternate between notable individuals from the policy area and the scientific community.

We should all be proud of the many accomplishments of our students this past year. In addition to their academic accomplishments, the MES student association (MESSA) as usual has been involved in a number of community outreach programs, including; Adopt-a-Highway, Beach, River and Reef Sweep, SCORE, Move Out/Help Out, and Earth Day just to name a few. They also sponsored the annual Oyster Roast in the fall at Dixie Plantation, and more recently the Spring Fling at the Folly Beach County Park. These events are meant to provide a time for interaction between students, faculty and community members. Please support the program and the wonderful events organized by the students. Beginning next year we will have a Graduate Student Organization (GSA) on campus. This organization will be similar to the undergraduate Student Government Association but will be for the students within the many graduate programs. It will in no way interfere with or replace MESSA but will serve to compliment and provide additional student support for students from the various graduate programs.

Again, I would like to thank all of you for the support that you have provided me (particularly Mark McConnell) over the last three years. I would also like to wish the very best of luck to all of our current students and graduates. Currently there are 23 students who are expecting to graduate this spring. This will be one, if not the largest graduating class to have graduated from the MES program in the same year. Bravo!

Best—
Michael Katuna, MES Director
Fetch Limited Barrier Islands

On Wednesday April 4, 2007, the Master of Environmental Studies Program hosted coastal geologist Dr. Orrin Pilkey at the Beatty Center, where he gave a presentation entitled “Fetch Limited Barrier Island Coasts - A Global Perspective.” Dr. Pilkey is the James B. Duke Professor Emeritus of Geology and Director of the Program for the Study of Developed Shoreline (PSDS) within the Division of Earth and Ocean Sciences at Duke University, and the Nicholas School of the Environment and Earth Sciences. He is world renowned for his scientific insights into basic and applied coastal geology, focusing primarily on developed barrier island coasts. Dr. Pilkey is author of The Beaches are Moving: The Drowning of America’s Shorelines, Living by the Rules of the Sea, The Corps and the Shore, and has co-authored or edited 35 additional books and numerous articles in professional journals.

Dr. Pilkey explained that fetch-limited barrier islands (FLIBIs) are the ‘islands behind islands’ that exist in bays, lagoons, sounds, estuaries, and other sheltered coastal environments. Classic open ocean barrier islands (OOBIs) are comparatively more exposed and are built and sustained by fetches (length of water over which wind has blown) greater than 300 kilometers. Wave energy generated from long fetches delivers essential, nourishing supplies of sand, which can renew shorelines after severe coastal storms. Dr. Pilkey pointed out that fetch-limited barrier islands are similar to open ocean barrier islands, being located along coastlines, separated from the mainland, and influenced by the same oceanographic processes. However, fetch-limited barrier islands differ in wind and wave regime due to their sheltered locations. Without the presence of significant surf zones, fetch-limited barrier islands are dependent upon periodic storm washovers or considerably large spring tide highs to provide fresh supplies of sand necessary for their survival.

As Dr. Pilkey explained, there are roughly 15,000 of these islands around the world. Some are active, being subject to wave and currents, while others are inactive, being surrounded by dense vegetation such as marsh or mangrove. Dr. Pilkey and an undergraduate researcher developed a classification system for fetch-limited barrier islands, which have been largely overlooked by scientists in the past.

Dr. Pilkey pointed out that many real estate investors, developers, and migrants to the coast will soon begin to focus more attention on these sheltered islands. He suggested that due to three controlling factors - the movement of baby-boomers into retirement, the completion of three interstates (3, 73, and 74), and the sale of vast tracts of timber property - the Southeastern coastal zone is poised to experience the next major land rush. This is of particular importance to Charleston and the adjacent coastal counties as efforts have already been undertaken to develop several of the hammock or marsh islands sprinkled along our waterways. Hazards associated with development on fetch-limited barrier islands differ from those along the oceanfront and are in need of study. Preservation of salt marsh will become an important environmental issue impacting shoreline stabilization. Dr. Pilkey urged the future scientists, policy makers, and land managers in the audience to take the lead on this issue and to work to protect islands behind islands.
MES Student-Driven Action

The Student Chapter of the Coastal Conservation League was started by Jess Barton in 2005. This organization provides an outlet through which students can become aware, concerned, and involved in local and campus issues. Chapter members are often informed of issues and events through emails. Several outings, such as kayaking around Long Island, take students in the field to areas of concern and educate them about the complexity of many environmental issues. Find a link to the Student Chapter website online at www.coastalconservationleague.org

CCL Student Chapter members on Bulls Island during a Fall outing. Photo courtesy of J. Barton

The Sustainable Campus Initiative was founded by Tim Willard, Dave Lansbury, Ben Leigh, Megan Barkes, and Jess Barton in early 2006. Last Fall the organization effectively established itself with the Community Environmental Event, which was held behind the Addlestone Library and featured a light bulb exchange (incandescent for compact fluorescent), lug-a-mug handout, booths from many local environmentally-relative organizations, petition signing, as well as music, food, and several other events. The mission of the organization is to institutionalize the idea and practice of environmental sustainability throughout the C of C community. Recently, SCI petitions with hundreds of student and faculty signatures have helped gain support from the Student Government Association (SGA) and Faculty Senate for the establishment of a full-time Sustainability Coordinator on the C of C campus. Learn more about the organization at www.cofcsci.com

Kim Counts has coordinated the Public Event Series presented by the Marine Resources Division of SC DNR. This initiative offers a series of free public events to increase the public’s understanding of marine resources, the importance of conservation, and the significance of historical preservation in the Lowcountry. Events have varied in format from lectures to hands-on experiences and field outings. Topics have covered sea turtle conservation, birding in the ACE Basin, discovery of hammock islands, and other interesting activities associated with SC DNR goals. The series of events has been very successful and will, hopefully, be extended into the future.
complete tract for the purposes of education and preservation.

In the years following the donation, several questions arose about what should be done with the property. Other than a few field experiments, cross country events, and social gatherings, the property went largely unused. In 2004, College of Charleston President Leo Higdon, Jr. asked landscape architecture and planning group Ayers/Saint/Gross (ASG) to determine the best uses of the Dixie Plantation property. ASG developed a master plan with three guiding principles: design with a light hand, work within the existing environment, and only develop appropriate uses for the site. Shortly after ASG presented the plan, $4 million was set aside to begin converting Dixie Plantation into a useable education and research facility.

As of yet, specific plans for development have not been determined. It was decided, however, that this project required full-time attention from a dedicated leader. A call for applications for the Director of Dixie Plantation position went out in August of 2006. Throughout the spring semester of 2007, interviews were conducted with four selected applicants. Dr. Brian Scholtens of the Department of Biology at the College of Charleston has been the chair of the director search committee. He stated that the search committee hopes to have a director in place by this summer (2007). At the time of printing, a final decision had not been announced.

As Dr. Scholtens explained, the project is very dynamic and presents several exciting possibilities, as well as several considerable challenges. One of the major foreseeable challenges involves the conservation easement Dick placed on the property and left under control of the Lowcountry Open Land Trust. The property is divided into two distinct tracts - a plantation tract and an education tract - each of which has different restrictions associated with them. Restrictions on the plantation tract are more limiting to the size and type of development than the education tract, which is mostly composed of wetland. Scholtens pointed out the irony of the situation - strict compliance of the easements may lead to a development that creates more of an impact on the land by forcing buildings to be distributed in a manner that requires more vehicular activity. Yet, one of the guiding principles of this project is to develop a low impact facility.

In fact, one point that all stakeholders have agreed upon so far is that all new buildings constructed on Dixie Plantation will be “green buildings” - meeting Leadership in Energy and Environmental Design (LEED) platinum standards. The property will be developed in stages, as resources become available. In the first stage a central facility will be constructed, which will provide classroom space and an area conducive to small meetings. Later stages will likely bring aquatic and terrestrial satellite laboratories designed to meet fieldwork requirements. However, the College of Charleston does not want to begin construction without a comprehensive plan that can be agreed upon by all parties. Once early stages of development are complete, the Dixie Plantation site will provide wonderful opportunities for students of Biology, Geology, Art, Archeology, and potentially other disciplines. Many MES students are likely to become involved as this project develops and evolves over time.

Thanks to Dr. Brian Scholtens for providing information about this project.
Graduate Research Poster Award Winners

Congratulations to MES Students Bray Beltran and Ileana La Torre-Torres, and Jeff Kyer! The Graduate School Office at the College of Charleston hosted the First Annual Graduate Research Poster Session on January 17th in order to highlight the research projects of the seventeen Master’s Programs at the College of Charleston. Twenty-seven posters were presented, and a selection team of deans, faculty, and staff chose these posters for their award.

Bray Beltran & Ileana La Torre-Torres
Streamflow and Water Quality in Managed and Natural Watersheds of the Lower Coastal Plain, Southeast U.S.
Supervising Faculty: Dr. Tim Callahan (Geology Department) and Dr. Devendra Amatya (US Forest Service)
Bray and Ileana conducted studies on the Lower Coastal Water Plain of the Southeastern U.S. to learn how land management can affect water quality.

Jeff Kyer
Geological and Geomorphic Changes in the Goksu Valley
Supervising Faculty: Dr. Norm Levine and Dr. Jim Newhard
Jeff investigated the geology, geomorphology and geoarchaeology of the Goksu river valley in south-central Turkey. This investigation was made to determine the impact of a future dam would have on any historic and archaeological sites within the valley.

MES Student Conference Participation

Each year the MES Program provides some financial support for students who participate in field-related conferences, a vital component in the professional development of graduate students. MES students are encouraged to attend conferences in their discipline. Due to the diverse nature of the MES Program, first and second year students attend a wide variety of conferences. This year, for example:

Emily Batts received funding to present her thesis research in an oral presentation on the Effect of DEM Accuracy on Hurricane Surge Modeling at the Geological Society of America (GSA) in Philadelphia.
Bray Beltran received funding to attend the Sustainable Forest Management with Fast Growing Plantations conference, where he presented his research in a poster, Impacts of Fertilization on Water Quality in a Coastal Pine Plantation.
Jessica Berrio received funding to attend the 27th Annual Symposium on Sea Turtle Biology and Conservation in Myrtle Beach, SC
David Betenbaugh received funding to attend the Southeastern Geological Society of America meeting in Savannah, GA, where he presented a poster on his Internship work, entitled Dewees Island Geomorphology Study: A Year in the Life of a Barrier Island.
MES Student Conference Participation

David Betenbaugh also received additional funding to make a presentation of his research at the meeting of the South Carolina Marine Educators Association on Seabrook Island, SC.

Catherine Booker received funding to take part in the 2nd Annual Coral Reef Conservation and Management Conference in Miami.

Lara Brock received funding to make a poster presentation of her Thesis research, Water Quality, Nutrients, Phytoplankton Ecology, and Landuses in Brackish Detention Ponds and Surrounding Sub-Watersheds on Kiawah Island, South Carolina, at the 3rd National Conference on Coastal and Estuarine Habitat Restoration in New Orleans.

Inna Burns received funding to attend the Computer Applications and Quantitative Methods in Archaeology Conference in Berlin, Germany. Inna presented her thesis work entitled Predictive Modeling of Cultural Resources in the Theban Necropolis, Luxor.

Lindsay Goodwin received funding to present a poster of her research, Evaluating Natural and Human Factors Influencing Habitat Change, for Ameliorating Observed Shoreline Losses, at the 9th International Conference on Shellfish Restoration (CRS).

Brian Grabbatin and Alan Moore received funding to attend the Carolina Farm Stewardship Association’s Annual Sustainable Agriculture Conference in Spartanburg, SC.

Brian Grabbatin also received funding to present his thesis work, entitled Sweetgrass Basketry: The Political Ecology of an African-American Art in the South Carolina Lowcountry, at the State of Environmental Justice in America conference in Washington, DC. In addition to funds provided by the MES Program, Brian received support through a Graduate Research and Presentation Grant from the Graduate School Office.

Jeff Kyer received funding to present his research as a poster on Geological and Geomorphic Changes in the Goksu Valley at the Geological Society of America (GSA) in Philadelphia.

Mark Messersmith received funding to make an oral presentation on Assessing Hydrology and Pollutant Removal Effectiveness of Stormwater Ponds on Daniel Island, SC at the Southeastern Estuarine Research Society (SEERS) Semiannual Meeting in Savannah, GA.

Rebecca Rockholt received funding to present a poster of her Internship research, Observations on the Effects of Relocation on Sea Turtle Hatching Success and a Sea Turtle Curriculum Guide: A Two-Part Internship, at the 27th Annual Symposium on Sea Turtle Biology and Conservation in Myrtle Beach, SC.

Jessi Adair Shuler received funding to present a poster of her thesis research at the Emerging Issues Along Urban/Rural Interfaces conference in Atlanta, GA.
The Fifth Annual MESSA 8K for H₂O was a huge success. On Saturday, February 17th, over 160 runners participated in the eight kilometer foot race on Folly Beach. MESSA members had a strong showing, with over 30 volunteers assisting with the race.

Each year local non-profit organizations submit applications to receive the charitable proceeds from the 8K for H₂O. These organizations must outline programs which will utilize the race donations to promote education about water quality. Money raised this year was donated to Lowcountry Earth Force, which is a local non-profit that supports youth-driven service-learning initiatives designed to engage a new cadre of citizens in both environmental and community problem solving activities. Overall, MESSA was able to donate $2,500 to Lowcountry Earth Force. This is the largest donation the 8K for H₂O has generated so far. Much of the success of the race can be attributed to wonderful volunteers, who helped organized the event and urged local businesses to make donations.

Several Charleston-area businesses supported the event with donations of money or items for the silent auction. One of the most important donations to the race every year has been given by ActionCarolina. Each year Michael Desrosiers has set up the race course, managed the finish line, and coordinated the results. Without this help from Mr. Desrosiers and ActionCarolina, the 8K for H₂O would not be possible.

The winning time in this year’s race was a blistering 27 minutes and 27 seconds, which was run by Hunter Hicklin of Charleston. MES student James Powell represented the program well with a time of 30 minutes and 51 seconds, putting him in eighth place overall.

Thanks to Al Plan for directing the 8K for H₂O this year. Also, many thanks go out to the volunteers and businesses that made the race possible.
MES’ers in the Community

1) Bray Beltran and colleague at 8K for H2O race
2) Kim Counts and Catherine Booker at 8K for H2O race
3) Kim Counts, the lead bike for the 8K for H2O race
4) MES alum Kristan McKinne recording times at the 8K for H2O
5) The nifty MESSA coozie - it is NOT easy being green
6) Jess Barton on the South Santee River
7) Josh Young and Carrie Dixie testing water for SCORE
8) Al Plan, Jess Barton, David Betenbaugh, Ben, and Beth Hailey
9) Nick Daily, Kate Skaggs, and Gretchen Coll at Spring Fling
10) Julia Carter and Samm Bruce eating steamed oysters
11) Sarah Goldman during a Coastal Conservation League Student Chapter outing
12) Jessi Shuler and Lud Renaud after working at Brittlebank Park
13) Stacy Stefan and Samm Bruce at Spring Fling
14) Bocce Ball on the beach at Spring Fling
15) Brock Renkas, Julia Carter, & Samm Bruce cracking into the oysters at Spring Fling
16) Chris McCoslin and Niall Cytryn at Spring Fling
17) Stephanie Huffer feeling the groove at Spring Fling
18) Mark McConnell, Dr. Buzzelli, Dr. Katuna, and Dr. Phillips at Spring Fling
19) Niall Cytryn afloat during a Coastal Conservation League Student Chapter outing
20) Reggie Reeves was all smiles knee deep in marsh grass at the river sweep
21) Students hard at work during the river sweep near the Grice Marine Lab
22) David Betenbaugh, Kim Counts, Jess Barton, and Al Plan at Cape Romain

Thanks to Jess Barton, Lud Renaud, Niall Cytryn, and Stacy Stefan for sharing their photography
MESSA Spring Fling

The Master of Environmental Studies Student Association (MESSA) Spring Fling event on Saturday, March 24th, was a day of fun, relaxation, and camaraderie on Folly Beach. This year, Spring Fling was held at the Pelican Watch picnic facility located at the Folly Beach County Park. MES students, administrators, and faculty shared a picnic buffet and steamed oysters at the gazebo along the beach. During the event Program Director Dr. Michael Katuna and Program Coordinator Mark McConnel were presented with gifts in appreciation of their service. Other awards were handed out to MES students and professors for exceptional performance. The weather made for a perfect day at the beach and many people played Frisbee, soccer, bocce ball, or simply basked in the sun. Spring Fling provided a wonderful opportunity for those involved in the MES Program to get to know each other better outside of the traditional campus setting.

Brock Renkas putting oysters on the heat. Photo courtesy of Niall Cytryn

The Pelican Watch Picnic Facility at Folly Beach County Park