South Carolina Rice Culture and Wetlands Policy: 
A Multidisciplinary Examination

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The mission of the College of Charleston Master of Environmental Studies (MES) Program is to provide environmental students with interdisciplinary, integrative science and policy training. Through a comprehensive, balanced, and inclusive curriculum, this program strives to prepare students to solve the increasingly complex environmental problems facing society. One example of this interdisciplinary study is the approach of students in Dr. Angela Halfacre’s Wetlands Protection course, as they analyze the important topic of wetlands conservation in the South Carolina Lowcountry through the investigation of South Carolina’s influential rice culture. Incorporating multi-disciplinary aspects involved in the debate over wetlands conservation, students in this joint Master of Environmental Studies (MES) and Master of Public Administration (MPA) class are able to develop a more holistic approach to address an issue of importance for South Carolina, further encompassing the needs of coastal citizens and wildlife, and linking science and policy.

In coastal South Carolina, no other form of agriculture has had a greater or more lasting impact than the production of rice. Since the beginning of its cultivation in the Lowcountry more than three centuries ago, rice has influenced a unique culture, physical landscape, and attitude towards wetlands, including the development of agricultural dynasties, sporting clubs, and the present era of conservation and preservation.

Until the Civil War, slaves made plantation owners in Lowcountry South Carolina wealthy through forced cultivation of rice fields. With the abolition of slavery, the planters lost their work force. The thousands of acres of tupelo and cypress forests that had been cleared with slave labor were left unused, and began the slow process of reverting back to natural tidal marshlands, attracting an immense, thriving population of ducks, geese, and other types of wildlife. The wildlife also attracted wealthy northern businessmen, who began to buy several of the old plantations and to form elite gun clubs. In the early 1900s, landowners began to appreciate the land as a fertile area for plants and wildlife, and sought to protect it by leasing or donating portions of their properties, or obtaining conservation or historical preservation easements. This evolution in land use is outlined in greater detail in Joey Holleman’s 2002 article in The State, which can be viewed on the South Carolina Coastal Conservation League’s website (www.scccl.org).

Impacts

Rice plantations had important cultural and societal impacts, as discussed in Judith A. Carney’s Black Rice: The African Origins of Rice Cultivation in the Americas and Ann Vileisis’ Discovering the Unknown Landscape: A History of America’s Wetlands. Slaves were the largest number of settlers entering the Americas for most of the 18th century, making up 96% of the population of the lowlands dominated by rice production. They brought their distinct African culture with them, and combined this with factors of their life in the Americas, passing this new culture on to their children. The slaves also brought with them innovative technologies, such as the complex techniques used in producing rice crops. In South Carolina the complexities of rice culture became an important factor in forming the African American culture that survives here today. This extensive knowledge edge base that the slaves had to offer gave them an important skill with which to bargain. This is how the task system was developed. Slaves were assigned tasks to be completed throughout the day, and afterwards were allowed to use any extra time however they wished. This led to the development of a distinct society, which did not develop in other slave areas. Slaves working these rice fields developed the Gullah and Geechee cultures and language, which today is still an important tradition in South Carolina.

The natural state of the wetlands that were converted for rice cultivation serves an important role for the variety of species that inhabit them. Stands of Spartina alterniflora, or cordgrass, provide a safe location for many juvenile fish species including red drum, flounder, and others. Other benefits provided by the wetlands include erosion and flood control.

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Dear Friends of the MES Program:

I learned about the MES program from a political scientist on the metro in Washington, DC. I had just defended my dissertation two months, moved from Florida to Pennsylvania one month, and started my first tenure-track position at Albright College in Reading, Pennsylvania days before. I was 27 years old and excited to have my first "real" job.

I was in town for the American Political Science Association Annual meeting, and was returning from a fully sating Thai meal with some colleagues and bumped into Dr. Margaret Conway, a highly respected person in the field and one of my former dissertation advisors. Upon seeing me, she blurted out: "I know of a job that would be perfect for you. It is in Charleston, South Carolina. They have a new interdisciplinary Masters program at the College there, and they are looking for an environmental policy person. You could work with graduate and undergraduate students--I have a former student there if you want to learn more...." Her casual, yet direct, mention of the College of Charleston and the MES Program literally changed my life.

Six years later, the MES program continues to change my life in positive ways. When I came to Charleston in 1998, environmental concerns such as those about the impacts of development and ensuring socioeconomic and racial diversity contributed to our community’s collective debate. Subsequently, these issues drove many of the MES program’s research projects.

In 2004, while we are still grappling with these and many other issues from academic and practitioner perspectives, our program has facilitated contributions to the debates over quality of life in our and other communities through rigorous scientific inquiry. This bridging of community needs and academic examination, science and policy, and several disciplines in the pursuit of solving environmental problems is what makes the MES program unique, progressive, and innovative.

The experiences I have had as director of this program have afforded me the opportunities to work with our students from the beginning of their consideration our program to their graduation, assist our student association with the development of their creative and successful approaches to service, coordinate with faculty from a host of different institutions and organizations on the development of student research opportunities, and collaborate with an amazing Program Coordinator, Mark McConnel. Through these and other experiences, I have increasingly learned what it means to be a part of the community, and I am privileged to continue to be in the community as a MES faculty member.

I am completing my five year appointment as MES program director this summer, and I will be on sabbatical next academic year (2004-2005) to work on my environmental public outreach research. Upon my return in academic year 2005-2006, I look forward to teaching the Public Policy core and Wetlands Policy and other electives for the MES program and continuing to collaborate on research projects with MES students and faculty. Dr. Conway’s “former student” is our current chair of the Political Science department and member of the MES Steering Committee, Dr. Lynne Ford. It is amazing to me that that ride on the metro, when I was not looking for any changes, led me to the challenges and joys of working with fellow faculty, students, internship sponsors, and other community members on the research, teaching, and service endeavors that really can have an impact on those concerns of 1998, 2004, 2010....

I have truly enjoyed serving as director of the MES program for the last five years. Thank you all for providing me the opportunity to work with such a fine and diverse community of administrators, faculty, and students in this role. The daily, monthly, and yearly successes of the program are the direct outcome of your willingness to collaborate in meaningful ways to study environmental problems that are inherently interdisciplinary.

I am so impressed with all that the MES program has accomplished to date, and I cannot wait to be a part of the next MES contributions and successes with our new director, Dr. Michael Katuna!

Warm regards,
Angela Halfacre
MES Program Director
The USES Project Town Meetings: Translating Science to a Public Forum

To address the needs of Lowcountry citizens, the Urbanization and Southeastern Estuarine Systems (USES) Project provides information and recommendations for balanced development along the coast while protecting water quality and maintaining economic benefits of water resources (www.urbanestuary.org). The USES Project is a collaborative research and outreach effort between: the University of South Carolina Arnold School of Public Health; the Baruch Institute for Marine and Coastal Sciences; the National Oceanic and Atmospheric Administration Center for Coastal Environmental Health and Biomolecular Research; the College of Charleston; and the South Carolina Sea Grant Consortium.

Over the past year, Dr. Angela Halfacre, participating MES students, and five South Carolina chapters of the League of Women Voters (www.lwv.org) coordinated educational and interactive town meetings for six coastal counties of South Carolina: Charleston, Berkeley, Dorchester, Georgetown, Beaufort, and Williamsburg. Three town meetings took place in downtown Charleston, Georgetown, and Beaufort. Discussions to address the balance of increased development with preservation of clean water, quality of life, and the economic benefits of fishing, recreation, and tourism occurred among the attendees. These town meetings were an excellent opportunity for South Carolina legislators, concerned constituents, and interest groups to discuss water quality and development issues with a representative panel of USES scientists studying estuarine systems.

Data collection efforts compiled before and during the public town meetings revealed interesting trends. According to pre-meeting surveys conducted randomly via telephone to the six target counties, only 37% of the respondents were familiar with estuaries, but about 78% wanted to learn more about estuaries. Only slightly more than half of the respondents knew that human activities affect estuarine health, yet around 60% were concerned about water quality, knew the source of their drinking water, and were concerned with seafood safety. More than 70% of respondents in the pre-meeting survey vote in local elections and feel that town meetings are beneficial.

Written surveys were collected at the end of the three public town meetings. Approximately 95% of the attendees agreed that information provided at the USES project town meetings were useful for communities, and 70% asserted they learned about ways to reduce pollution to estuaries. One audience member commented that a public meeting such as USES “raises consciousness of issues [and] inspires action to improve” pollution problems. Other participants appreciated the informative public forum setting that raised awareness of the USES study and “allow the opportunity to learn how to make a difference.”

Making scientific information more accessible and easier for the general public to understand is pivotal for influencing policy decisions. As researchers conduct important work to identify ecological problems associated with anthropogenic activities, as well as delineate solutions, the extensive data needs to be translated for the public and legislators to understand. As citizens and politicians become educated on and aware of scientific findings, the public policy process is changed to address environmental issues.

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and filtration of pollutants from runoff. Oyster beds are commonly associated with these regions, and serve along with crabbing and fishing as a food and recreation source for people. Recreational activities, including bird watching and canoeing, draw a substantial amount of interest groups to discuss water quality and development issues with a representative panel of USES scientists studying estuarine systems.

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Maintaining old rice field banks depresses the natural succession of the land, preventing a return to the original hydrological state before rice farming. The altered areas of rice farms revert back to original cypress swamps if impoundments are not maintained. Many ecologists claim that lands should be allowed to return to undisturbed conditions. They argue that repairing or rebuilding impoundments have negative impacts on the environment by holding it in an artificial condition. According to the South Carolina Sea Grant Consortium, as dikes degrade, fishermen are offered access to the excellent fish habitat these open-water systems contain. In contrast, some natural resource managers assert that the moist soil in rice fields provides habitat for invertebrates, which are beneficial food sources for migratory waterfowl. Allowing the water to pond in these areas by maintaining levees seems to have positive effects on important habitats.

Many natural resource conservationists see succession without boundaries as an important plan in maintaining the resources we have, while some see these impounded rice fields as essential waterfowl habitat that should be protected. Currently, South Carolina landowners are trying to protect wetlands based both on wildlife habitat and historical value. Groups such as the Coastal Conservation League (CCL) and Ducks Unlimited (DU) continue to look for potential land donations and provide educational information in order to conserve South Carolina’s remaining wetlands. Individuals and organizations also appreciate the historical value of former rice plantations and their fields.

Implications

Current wetland policies and debates are reflecting the importance of these historical plantations. Impoundments from these old fields have sparked controversy between historical and environmental groups as well as others. In addition to the ecologic changes, the impoundments resulted in property ownership changes as well. In South Carolina, land below the mean high tide line is state-owned. Therefore, land that naturally would have been a public good or “commons” was changed to a private benefit and still remains that way in many places today. The potential resources and goods normally supplied by a wetland have been removed from the public’s possession and serve the good of the private property owner. While some of the impoundment areas are county parks and other have owners that allow the public access for certain periods, the majority are owned privately and benefit a select group. This privatization limits the access of the public to coastal wetlands and diminishes the overall availability of the goods provided by normally functioning wetlands as mentioned above. Dr. Mark E. Tompkins (USC faculty who contributes to the MPA and MES programs) discusses these issues in “South Carolina’s Diked Tidal Wetlands: The Persisting Dilemmas” in the journal Coastal Management.

* Skilbred and Rekow are current MES students; Deaton and Lind are current MPA students.
Second Annual MESSA 8K for H₂O Run/Walk

The Second Annual Master of Environmental Studies Student Association (MESSA) 8K for H₂O Run and 5k Family Fun Walk took place on Saturday, February 21st, 2004 at Folly Beach, South Carolina. MESSA is a student organization promoting environmental awareness on the College of Charleston campus and in the local community, as well as encouraging professional growth among its membership. Clear skies and temperate weather helped 200 runners and walkers to register for the race, up from 156 the previous year. Participants ranged from the youngest of 9 to Margaret Wright of Folly Beach who is 82 years young. Participants from around the east coast made the trip to Folly Beach. The race had runners from Maryland, Virginia, Tennessee, Florida, North Carolina, Georgia, Washington DC, though the majority were from the Lowcountry. The proceeds of $3800.00 from this year’s MESSA 8K for H₂O are being donated to a local non-profit organization, Lowcountry Earthforce’s Global Rivers Environmental Education Network (GREEN) program, dedicated to maintaining and improving area water quality.

Race coordinator Tommy Linstroth was delighted with the results. “The growth experienced during the second year of this race is phenomenal. We raised $1300 more than last year, and almost 50 more registrants. Hopefully, Lowcountry nonprofit groups will continue to benefit from our growth for years to come.” Linstroth especially wanted to thank the volunteers and the sponsors. He stated “this race would not have been possible without all the hard work of the other students, and without the backing of our sponsors.”

The men’s overall winner of the Second Annual MESSA 8K for H₂O was Irving Batten, 40, of Summerville, with a time of 26 minutes and 42 seconds. The overall women’s winner was Sarah Reed, 27, of Summerville, with a time of 32 minutes and 17 seconds. Dr. Angela Halfacre, MES Program Director, took home a medal by finishing third in her division with a time of 44 minutes and 21 seconds.

Sponsors of the race included Blue Cross, Blue Shield, RBC Centura, The Noisette Company, Charleston Chops, Lowe’s, RKO, On the Run Running, The Extra Mile, Earth Fare, Bugels Bagels, Coastal Expeditions, First Citizen’s Bank, and Skippers. The Department of Student Life at the College of Charleston provided substantial assistance. Volunteers from MESSA and the Charleston Running Club coordinated and staffed the race.
Recently, work has been done to convert the area behind the Political Science Green Building into a model of an urban native species garden. With funding provided by the Sustainable Universities Initiative, the National Fish and Wildlife Federation, the Urbanization and Southeastern Estuarine Systems (USES) project, the MES Program and the Political Science Club at the College of Charleston, MES graduate student Kristan McKinne and undergraduate senior Biology major Greg Baccari have spear-headed this effort to further the mission of the Political Science Green Building to encourage sustainable building by providing this model to promote the benefits of sustainable gardening.

In order to begin to introduce this project to the college and surrounding community, a native species workshop was organized by McKinne and undergraduate senior Angela Zettler and held on the college campus on Thursday, March 18th. This workshop featured a panel of six experts including College of Charleston faculty, students and alumni, and members of the community. This workshop, with over 60 people in attendance, provided an opportunity for participants to learn more about the benefits of growing native species and to have any questions answered by experts in the field. The workshop also served to spark interest in the upcoming project.

The first planting was held on Saturday, April 3rd with a consecutive plantings during the month. For example, on the first day of planting, over a dozen volunteers helped plant the garden with plants supplied from Hyams Garden Center on James Island, and Niche Gardens, a small family-owned nursery in Chapel Hill, North Carolina.

This project is also in collaboration with the current native species garden planted at Dixie Plantation. This garden, which is under the direction of Baccari, serves as an excellent model of a rural example of a native species garden, and will work well as a counterpoint example to the garden at the Green Building. Outreach efforts will also highlight the Dixie Plantation garden to give an idea of the different options available to grow native species in both rural and urban settings.

Further plans for the garden include providing a seed bank for anyone interested in planting native species in their own garden, tours of the Green Building and adjacent garden, and the creation of a website that will provide extensive resources for anyone interested in both native species gardening and green building. The website is available at www.cofc.edu/~greenbuilding.
The spring semester is a busy time for the Master of Environmental Studies Student Association (MESSA). Following the 8k for H2O race, were two opportunities for roadside trash cleanup. March 6th, MESSA participated in the Clean Cities Sweep and helped to beautify the area beneath the James Island Connector.

As a partner of the South Carolina Oyster Restoration Enhancement (SCORE) program, MESSA seeks volunteers to monitor water quality one time per week at Bowen’s Island. This is an ongoing project with the Department of Natural Resources.

Earth Day is a time for celebration! MESSA participated in three area events: On March 24th, the Charleston Air Force Base hosted an environmental fair for over 1000 fifth-graders. MESSA operated a recycling game for the youngsters to teach them about how to recycle. On April 17th, the Charleston County Solid Waste Authority hosted an event at Park Circle in North Charleston. Hundreds of people attended this gathering where MESSA hosted a table of information on recycling, green building, and public transportation. Alliance for Planet Earth, a student organization at the College of Charleston, organized a campus event in commemoration of Earth Day, on April 22nd. MESSA joined representatives from BP and Honda, in addition to the Charleston County Recycling Center and the Sustainability Institute, and many others, to help educate the student body about environmental issues.

Members from MESSA worked with Habitat for Humanity in the Rosemont neighborhood to build a new house on April 23rd. Installing insulation and calking windows were some of the activities performed by our students.

The final social event of the spring semester, aptly named Spring Fling, was held on April 24th on James Island. Spring Fling was a celebration for the graduating members as well as a get-together for first and second year students and their advising committee members.

MESSA also participated in Move Out, Help Out for the second year in a row. This program ran during the week of May 3-9, and members helped collect items that residents would otherwise throw away when moving out of the dorms. All of the collected articles were then donated to Goodwill Industries.

MES Student Conference Participation

Julia Byrd presented *Morphometric analysis of the northern subpopulation of Caretta caretta in South Carolina, USA* at the International Turtle Symposium, February 23-28, 2004

Paul Korchari presented *Inquiry-Based Learning in the Science Classroom* at the South Carolina Marine Educators Association, March 21, 2004

Deb Laska-Shelton presented *Occurrence of bottlenose dolphins along the Charleston, SC coast* at the Southeast and Mid-Atlantic Marine Mammal Symposium, March 26-28, 2004
Third Annual Dana Beach Outstanding Service to the Community Award

This annual award is named after local resident Dana Beach, the director of the South Carolina Coastal Conservation League, because of his tremendous impact and influence on the Charleston community. The Conservation League was originally started by three people with less than three hundred members, and now has an office staff of 18 and over 4,000 members. Dana Beach was named Time magazine's one of ten "Heroes of the Planet" in 1998, and was awarded South Carolina's highest honor, the Order of the Palmetto, in 2000.

To acknowledge some of the many contributions of MES students, and to encourage these students in their long-term civic participation, the Master of Environmental Studies Student Association (MESSA) with the assistance of the MES Program issued a call for nominations for the service award in Mr. Beach's name. Students who had substantial service contributions to the Program and community were nominated by their peers, and a committee of MES faculty chose the recipient.

The two outstanding students who were nominated for the award this year were Katie Zimmerman and Tommy Linstroth. Zimmerman was vice-president of MESSA (the MES student association), and played a vital role in the completion and promotion of a model Green Building on the College of Charleston campus.

The winner of the award this year was Tommy Linstroth. Linstroth was president of MESSA for two semesters. During this time, he worked in coordinating an 8k for H2O, which this year generated almost $4000 and the award winning program, Move Out Help Out. Linstroth also worked in the Charleston community through his efforts with the USES project and the creation of the Sustainable Charleston Awards. Linstroth, who is graduating this May, was presented the award at his Thesis Defense on Monday, April 26th.

MES Holds Its 5th Annual Career Panel

The Fifth Annual Environmental Career Panel was held this year on Friday, February 27th. With over 40 participants, this year’s panel hosted representatives from nonprofit organizations, and the public and private sector. Participants from nonprofit organizations were Rick DeVoe from SC Sea Grant Consortium and Melissa Ladd from the SC Coastal Conservation League. Representing the public sector were Robert Boyles from the SC Department of Natural Resources, Christopher Morgan from the City of Charleston Department of Planning and Neighborhoods, and Marian Page of SC Department of Health and Environmental Control. Nina Marshtein from General Engineering Labs represented the private sector. Graduate, undergraduate, prospective students and professionals were all in attendance at this informative session.

After the session, two members of the panel, Robert Boyles and Christopher Morgan, answered some additional questions and provided some more valuable insight for those looking to join the environmental workforce.

When asked, “What would you consider the most rewarding part of your particular career?”, Boyles answered, “Dealing with people who have a strong and abiding interest in the long term health and sustainability of our marine resources.” Boyles further added that resource management is not only dealing with the resources themselves, but the people who have an interest in those resources. Morgan stressed that the most rewarding part of his career was having the chance to add input into how the city of Charleston grows.

While Boyles answered that working with the people in his field is the most rewarding part of his career, he also stated that it was the most challenging part, especially trying to work with so many different viewpoints on any one particular issue. Morgan also agreed that working with diverse community views was a challenging and rewarding aspect of his career. For example, working with stakeholders that are reluctant to adopt new and more creative and efficient housing methods is a priority.

Both individuals saw the interdisciplinary approach of the MES program as good preparation for students looking to enter the environmental workforce. Boyles mentioned that the future of the field of resource management will, “require us to look across the disciplinary bounds of traditional natural resources problem solving.” Morgan observed that students looking to enter the field of city planning in the future will not only need urban planning training, but GIS and public policy training as well.

As far as further advice for students considering or currently in the MES program, both Boyles and Morgan mentioned that students should enter their chosen environmental field for the “right” reasons. Morgan suggests entering the field of city planning not for any financial gain, but for a “sincere concern for the area you live in, and a sincere desire to have a positive impact on the welfare and growth of the city in which you live.” Boyles suggests the students enter a field which brings them joy, and reminds them that “the heart trumps the pocketbook.”
Welcome to our new MES Program Director, Dr. Michael Katuna!

We wish to extend a warm welcome to Dr. Michael Katuna, who has been appointed as our new MES Program Director. Michael Katuna was born and raised in New York City where he attended Queens College (City University of New York) and received both a bachelors and masters degree in Geology. He later headed south and received his PhD in Geology at the University of North Carolina – Chapel Hill. He accepted an appointment at the College of Charleston in 1974, and was immediately selected to head the newly created Department of Geology. He served an unprecedented twenty-five year term as chair of the Geology Department until 1999. Dr. Katuna received the College of Charleston Distinguished Service Award in 1996, and the School of Sciences and Mathematics Distinguished Achievement Award in 2002. He has also served as president of the Charleston Chapter of Sigma XI, and was recently elected to chair the Southeastern Section of the Geological Society of America. Over the years, his research and scientific publications have dealt with studies of coastal erosion and coastal plain stratigraphy in South Carolina. Dr. Katuna was an original member of the organizational committee that developed the MES program in 1994. If you wish to congratulate Dr. Katuna personally, please contact him at katunam@cofc.edu.