

CLEMSON  
UNIVERSITY

JAMES C. KENNEDY

WATERFOWL &  
WETLANDS  
CONSERVATION  
CENTER

2016

*annual report*

Lead in Science and  
Education to Conserve  
South Atlantic  
Wetland Ecosystems

# FROM THE DIRECTOR

Philanthropy is vital for conservation of waterfowl habitat in North America and to conserve university-based waterfowl and wetlands programs in perpetuity. Universities often serve as academic and research “arms” for conservation organizations and agencies, plus produce specialists who earn leadership roles in the waterfowl and wetlands science and management.

Mr. Jim Kennedy is a waterfowl conservationist and philanthropist, but he does not give for personal recognition. Nonetheless, I penned this editorial to acknowledge, most gratefully, Mr. Kennedy’s philanthropy to endow university waterfowl and wetlands programs. I thought this acknowledgment would be a fitting way to thank him for establishing the James C. Kennedy Waterfowl and Wetlands Conservation Center at the Belle W. Baruch Institute of Coastal Ecology and Forest Science of Clemson University. We are indebted to Mr. Kennedy and pleased to provide an annual report for the inaugural year of the Kennedy Center. Moreover, I am grateful to serve as Director and help grow the Kennedy Center. The following article is a tribute to Mr. Kennedy.

## **Philanthropy Conserving University Waterfowl and Wetlands Programs**

It’s a no brainer for dedicated waterfowl hunters to support conservation organizations and agencies for the incredible waterfowl and wetlands work they do in North America. However, a few truly farsighted conservationists also are ensuring there will be highly educated and trained waterfowl and wetlands experts for the future.

University-based waterfowl programs were prevalent from the 1960s to 1990s. I recall that 40 of 50 states and 12 programs in Canada had one or more university faculty members teaching, conducting research with graduate students, and providing outreach for waterfowl science and management during those decades. Additionally, important research niches existed for legions of graduate students across North America through the Delta Waterfowl and Wetlands Research Station and Ducks Unlimited’s Institute for Wetland and Waterfowl Research now in North Dakota and Canada, respectively.

As university natural resource programs broadened their academic and research foci from game and fish ecology and management to conservation of biodiversity, university waterfowl programs waned during the 1990s and 2000s. By 2013, 44% of waterfowl programs disappeared in the U.S. and Canada, following retirements or passing of university professors who led those initiatives. Even the University of Wisconsin, where Aldo Leopold, the Father of Wildlife Management, his graduate student H. Albert Hochbaum, and successors developed a continentally prominent wildlife ecology program, lost its waterfowl program.

Currently, about 30 waterfowl-related programs exist in the U.S. and Canada but only seven of these are endowed in perpetuity preventing their extinction. Given that many of the professors leading these programs are in their 50s or 60s and may retire within the next decade, only 20 or so programs may persist in the next decade in North America if not sustained.



Mr. James C. Kennedy of Atlanta, Georgia, a leading Ducks Unlimited supporter of waterfowl and wetlands conservation for decades, is responsible wholly or in part for establishing four of the seven endowed programs. The programs began with establishment of the James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation at Mississippi State University in 2008, the Kennedy Center for Waterfowl and Wetlands Conservation at Clemson University (2014), the Kennedy-Grohne Chair in Waterfowl and Wetlands Conservation at the University of Wisconsin-Stevens Point (UWSP, 2015), and the Kennedy Chair of Wetland and Waterfowl Conservation at Colorado State University (2015). The UWSP chair was established in partnership between Messrs. Kennedy and David Grohne, also a long-time DU sponsor, from Wilmington, Illinois.

Jim Kennedy commented recently, “Nothing I do for waterfowl and wetlands is for personal recognition, though it is nice when others also can be inspired to help.” We are grateful to report herein our inaugural year of accomplishments through the Kennedy Center and hope this report inspires all who read it to engage in waterfowl and wetlands conservation and support of the Center. Please follow the continuing progress of the Kennedy Center at our website: <http://www.clemson.edu/cafls/departments/kennedycenter/>  
Gratefully,

Richard M. Kaminski, Ph.D.

The waterfowl world deeply thanks these gentlemen for sharing their resources to conserve, not only tens of thousands of acres of waterfowl habitat in North America, but also university programs that will continue to produce generations of waterfowl scientists and stewards. Indeed, waterfowl and wetlands science and conservation are not achieved without people passionate about these wonderful resources of planet Earth.



# DEDICATION

## James C. Kennedy Waterfowl and Wetlands Conservation Center

There was a high tide in the Lowcountry of South Carolina November 24, 2015 to welcome Mr. and Mrs. James C. Kennedy to Clemson University's Belle W. Baruch Institute of Coastal Ecology and Forest Science for the formal dedication of the Kennedy Waterfowl and Wetlands Conservation Center.

Clemson dignitaries and attendees included executive vice president for academic affairs and Provost Robert Jones; vice president of Public Service and Agriculture and Dean of the College of Agriculture, Forestry and Life Sciences George Askew; vice president for advancement Neill Cameron; Forestry and Environmental Conservation Department Chairperson Greg Yarrow; and Baruch Institute Director Skip Van Bloem. Approximately 120 guests also welcomed the Kennedy's for the dedication.

The Kennedy's generous gift of \$3.3 million established and endowed the waterfowl and wetlands program and center in fall 2014. "Research has shown that North American waterfowl populations are strong, but university-based teaching and research programs in waterfowl and wetlands have declined in number across the United States and Canada," said Jones. "However, the Kennedy's generosity resurrects the waterfowl ecology and management program and makes it a perpetual discipline at Clemson University."

When asked to share some comments, Kennedy said, "I learned to duck hunt in the Lowcountry of South Carolina almost fifty years ago, and I'm delighted now to be helping educate future waterfowl and wetlands scientists and managers. I'm incredibly proud to have my name associated with Clemson University and the Baruch Institute."

"Mr. and Mrs. Kennedy care deeply about conservation, hence they share their resources with wildlife and humankind," said Rick Kaminski, inaugural director of the Kennedy Center. "They don't contribute for personal recognition. No one has shared his or her wealth for waterfowl and wetlands conservation in North America more than the Kennedy's. We are indebted to the Kennedy's for their vast contributions to waterfowl and wetlands conservation across North America and





in Winnipeg, Manitoba, Canada. At the dedication, three senior interns, Stephen Clements, Carley Cofield, and Nick Masto, commented on their unique professional and personal experiences as interns and presented Mr. and Mrs. Kennedy with a framed picture of all the “Kennedy Kids” as a token of their sincere appreciation. The Kennedy interns also partook in field trips in fall 2015 to learn about management of wetland impoundments in coastal South Carolina, and two interns, Stephen Clements and Carley Cofield, presented a poster based on the interns’ aquatic invertebrate research at the 7th North American Duck Symposium in Annapolis, Maryland in January 2016. The poster was awarded second place internationally among undergraduate student entries.

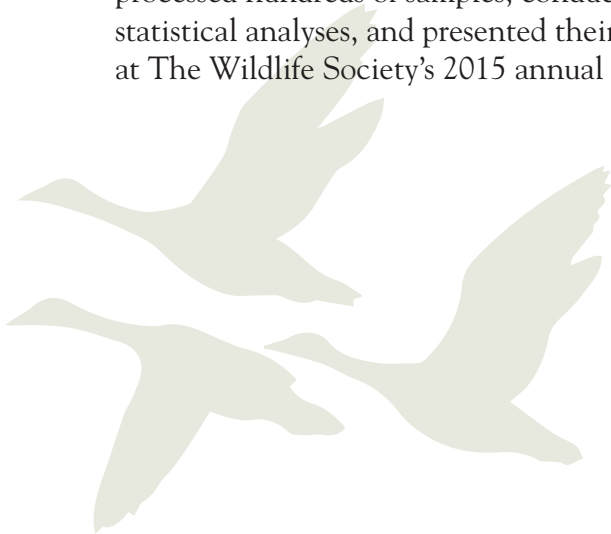
endowing waterfowl and wetlands programs at Clemson and other universities.”

Besides graduate students, the Kennedy Center program also engages undergraduate interns. The interns are supported by the Kennedy Center and Clemson’s Creative Inquiry program. They assist graduate students and conduct peer-group research with faculty guidance.

In spring 2015, about a dozen interns spent their spring break sampling managed wetlands in coastal South Carolina for aquatic invertebrates, which are important foods of ducks and other waterbirds. The students processed hundreds of samples, conducted statistical analyses, and presented their findings at The Wildlife Society’s 2015 annual meeting

The dedication culminated with showing of an exquisite video produced by Carolina Zoom Productions. It showed the interns in the field sampling aquatic invertebrates and reflecting on their experiences. The video can viewed at <https://youtube/qdt3fApOzL4>

The Kennedy Center looks forward to continuing teaching, research, and outreach with conservation partners in coastal South Carolina and other important waterfowl and wetlands regions. We pledge to conduct reliable science, communicate our findings, and especially educate and mentor the next generations of waterfowl and wetlands scientists and stewards in accordance with our mission and the Kennedy’s desires.







# TEACHING

After a hiatus of over a decade, the Waterfowl Ecology and Management course at Clemson University was resurrected and taught by Dr. Kaminski during fall semester 2015. Twenty-eight students (23 undergraduates, 5 graduate students) enrolled and completed the course, all earning an A or B. Besides weekly lectures and labs on campus, the students attended a Waterfowl and Wetlands Management Workshop at the Baruch Institute in October 2015, along with over 30 managers and biologists from public agencies, private organizations, and plantations. Thus, students had opportunity to network with professionals in a classroom setting and during field trips to

Annandale and White Oak Plantations. The accompanying picture shows Clemson students at Annandale Plantation during the field trip.

Dr. Kaminski also gave guest lectures in Forest Management in fall 2015 semester and Forested Wetlands Ecology and Management and Readings in Ecology in spring 2016 semester. He also lectured to students of the Georgetown-Horrey South Carolina and Southwest Virginia Community Colleges on annual ecology and conservation of North American waterfowl. Dr. Kaminski plans to teach Waterfowl Ecology and Management again fall 2016 semester.



# KENNEDY CENTER INTERN RESEARCH AND CONSERVATION ACTIVITIES

## Spring has sprung for Kennedy Interns and Wood Ducks

Spring sprung early for wood ducks (*Aix sponsa*) breeding in DeBordieu Colony (Georgetown, South Carolina) and Kennedy Interns caring for these ‘cavity’ nesting ducks. Wood ducks, the state duck of South Carolina, reportedly began nesting in artificial structures in DeBordieu Colony and elsewhere in the state in February 2016. These ducks got a jump on spring, which began March 20, 2016.

Nest boxes were inspected February 19-20, 2016 by Clemson University students, who enrolled in Clemson’s Creative Inquiry program and were serving undergraduate internships with the James C. Kennedy Waterfowl and Wetlands Conservation Center. Mr. James C. Kennedy of Atlanta, Georgia established the Kennedy Center with a gift of \$3.3 million in 2014 to endow the waterfowl and wetlands program in perpetuity in Clemson University at the Belle W. Baruch Institute of Coastal Ecology and Forest Science. The Institute and adjoining DeBordieu Colony are collaborating in habitat management evaluations, including wood duck nest box surveys.



Southern populations of wood ducks, like those inhabiting DeBordieu Colony, have a protracted breeding season, nesting from January into summer. However, the “early bird” may not always “get the worm.” Our earlier research on box-nesting wood ducks in Mississippi and

Alabama through Mississippi State University (MSU) revealed that hens hatching ducklings in March-May often lost offspring to a variety of predators, notably fish, snakes, hawks, herons, egrets, bull frogs, turtles, alligators, and mammals such as mink. Indeed, predators and early spring persistent cold weather take their toll on ducklings. Imagine one-day old ducklings, weighing only about an ounce, jumping from a natural cavity or nest structure into cold water and having to swim to cover or

seek food, only to fall prey to a bass or another predator.

Surprisingly, our MSU research has shown that hens that hatch and rear ducklings in June through summer recruit significantly more young into the fall population than ducklings



hatched in spring. So, the “early bird” doesn’t always “get the worm,” at least for southern populations of wood ducks. Because these wood ducks have the propensity to nest multiple times each spring-summer, they may have greater probability of successfully fledging a brood than their northern counterparts with a shorter breeding season. This strategy of enhanced summer-time reproductive success by female wood ducks contrasts with adaptations for early spring nesting by waterfowl breeding at northern latitudes.

The 60 or so wood duck boxes now scattered about DeBordieu Colony are sound structures mounted on treated posts and equipped with a metal predator guard. The guard is a critical component; it prevents snakes and raccoons from climbing the post and gaining access to hens and eggs. However, proper location of nest boxes is critical. Our previous research revealed that boxes in wetlands placed adjacent to dense herbaceous or woody shoreline vegetation enable ducklings to seek cover immediately after nest exodus and increase their probability of survival. Importantly, boxes should not be placed under tree limbs that snakes, raccoons, squirrels, and cats can use to access boxes and depredate hens and eggs. A pruning device or pole saw are useful tools to remove limbs overhanging boxes.

Research shows that survival through the first two weeks of life for ducklings is critical to survival to fledging. How do we know this phenomenon? Researchers have placed tiny radio-transmitters on brood hens and ducklings and determined their movements and survival post-hatching. The MSU research also revealed that broods often sought wetlands disjunct from nest box sites, where hens brooded ducklings in



habitats with dense scrub-shrub vegetation such as willow, buttonbush, and privet. This dense cover seemingly precluded red-shouldered hawks (*Buteo lineatus*) and other predators from preying on ducklings.

So, what are optimal locations for wood duck nest structures on DeBordieu Colony wetlands to maximize survival and recruitment of ducklings and hens into the fall population? Nest boxes should be placed over water, not dry land, and next to dense herbaceous or woody cover such as cattails, buttonbush, willows, and wax myrtle overhanging shorelines, where hens and ducklings can seek cover from bass and other predators and glean insects and other invertebrates from vegetative surfaces. Terrestrial and aquatic invertebrates are protein-rich foods for ducklings and critical to their growth, plumage development, and survival.

You may have seen us erecting and moving boxes in DeBordieu Colony wetlands. Our purpose was to place them in presumed more optimal locations with brood cover as described above. Suboptimal locations, termed “ecological traps,” are along shorelines with manicured lawns and distant from rank shoreline cover. DeBordieu Colony staff has constructed additional boxes, which we installed along the



shoreline of Bridge Pond with its dense shoreline cover. Also, you may have noticed the box placed in the wetland as you enter DeBordieu Colony from Highway 17. That pond is connected to a swamp, which is indigenous nesting and brood rearing habitat of wood ducks, hence their name—*wood ducks*. We also installed additional boxes in this swamp east of the entrance on both sides of the road. These are suitable nesting and especially brood rearing habitats.

How would we know if our nest box management program is recruiting ducklings into the fall population? We would have to replicate our research done in Mississippi and Alabama in which we placed radio-transmitters on hens and ducklings and monitored their movements and survival. Merely inspecting boxes for evidence of hatched ducklings (i.e., presence of egg shell membranes) informs us how many ducklings exited the box but does not reveal their fate after nest departure. We look forward to continuing the wood duck project and perhaps expanding it to examine duckling survival using radio-telemetry. Please stay tuned for updates on our studies. We are indebted for DeBordieu Colony's support and collaboration.

### 2015-2016 Intern Activities

Last year, we reported the Kennedy Interns spent spring break in the ACE Basin collecting hundreds of aquatic invertebrate samples and

learning upland and wetland habitat management practices, including those used at Clarendon Plantation, owned by Mr. Kennedy, and at Nemours Wildlife Foundation, both near Beaufort, South Carolina. The students processed the invertebrate samples, analyzed the data, developed a poster, and three students, Carley Cofield, Stephen Clements, and Nick Masto, were supported by Clemson University and Kennedy Center funding

to attend the October 2015 meeting of The Wildlife Society (TWS) in Winnipeg, Manitoba, Canada, where they presented the poster, "Aquatic invertebrate biomass and composition in managed South Carolina coastal wetlands." Clemson and Kennedy Center funding also enabled Carley and Stephen to attend and present the interns' poster at the 7th North American Duck Symposium in Annapolis, Maryland in January 2016. We were astounded learning that the students' poster won second place internationally in the undergraduate student category! Additionally, the students presented the poster at the South Carolina Chapter of TWS and the Hobcaw Barony Research Symposium, both in Georgetown, South Carolina in March 2016.

Also in March 2016, the Kennedy Interns returned to the ACE Basin for most of spring break. They erected 30 Hen Houses for Mottled Ducks in managed wetlands where recent research has revealed low nest success by these ducks. Molly Kneece, Kennedy Center Research Specialist, presents an abstract on the Hen House project later in this report. The students also got first-hand experience setting and managing a prescribed burn at Nemours Wildlife Foundation. Sincere thanks are extended to Nemours and the Kennedy Center at Baruch Institute for hosting the students during their spring break retreat to the Lowcountry.



# KENNEDY CENTER RESEARCHERS

We present here bio-sketches of and research abstracts by our researchers, including **Molly Kneece**, a recently employed Clemson-Kennedy Center Research Specialist and three M.S. graduate students, **Beau Bauer**, **Gillie Croft**, and **Nick Masto**. We are indebted for their dedication and contributions to waterfowl and wetlands science and conservation. Without these youthful, insightful, energetic team members, ecological understanding and conservation would be significantly less.

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## Molly R. Kneece, Research Specialist

Molly joined the James C. Kennedy Waterfowl and Wetlands Conservation Center at the Baruch Institute in March 2016. Molly grew up on her family's farm in Gilbert, South Carolina where she developed an interest in wildlife and habitat management. She attended Clemson University and earned a B.S. in Forest Resource Management in 2011, followed by a Master of Forest Resources in 2012. While completing her Master's, Molly began working as a technician with the Nemours Wildlife Foundation and Mississippi State University (MSU) on the first study of mottled duck nesting ecology in the Ashepoo, Combahee, Rivers Basin (ACE Basin) in South Carolina. During this time, Molly's interest in waterfowl ecology and research deepened while she began to learn and refine field skills essential for waterfowl and wetlands research. In August 2012, Molly began pursuing a M.S. in Wildlife Science at MSU to continue the mottled duck breeding ecology study under the direction of Drs. Brian Davis, Richard Kaminski, and Ernie Wiggers from 2012-2015.

During the study, Molly developed partnerships and often collaborated with the South Carolina Department of Natural Resources, the U.S. Fish and Wildlife Service, Ducks Unlimited, and private landowners in the ACE Basin. Molly's research ultimately determined nest site selection, nest success, and social indices of breeding mottled ducks and coarse scale habitat use and survival of mottled duck broods in the ACE Basin. Upon completion of her research,



Molly graduated from MSU with a M.S. in Wildlife and Fisheries Science in May 2016 and now is a Research Specialist with the Kennedy Center working with Dr. Kaminski and partners. Molly has presented numerous invited papers at scientific and outreach venues and has co-authored a scientific paper, “Annual Habitat Selection of Mottled Ducks in Coastal South Carolina,” in the Southeastern Association of

Fish and Wildlife Agencies Journal. Molly will be responsible for leading the aerial waterfowl and waterbird surveys in South Carolina and assist with developing a productive research and service program with Dr. Rick Kaminski and “Team Duck” members of the James C. Kennedy Waterfowl and Wetlands Conservation Center at the Belle W. Baruch Institute of Coastal Ecology and Forest Science.

## RESEARCH ABSTRACT

### Will Mottled Ducks Nest in Hen Houses in Coastal South Carolina?

Molly R. Kneece, *Research Specialist*

Mottled Ducks (*Anas fulvigula*) are endemic to Western Gulf Coast United States and Mexico, with a separate genetically distinct subspecies (*A. fulvigula fulvigula*) occurring in peninsular Florida. Birds from Texas, Louisiana, and Florida were released in coastal South Carolina from 1975-1983, and banding data suggest an expanding population in the state. Ecology of the species was little known in South Carolina prior to two integrated recent studies in the Ashepoo, Combahee, and Edisto Rivers Basin (ACE Basin) by Mississippi State University former graduate students and now alumnus/alumna, Clay Shipes and Molly Kneece. The ACE Basin currently lacks active rice fields and extensive upland habitats that often typify nesting habitats of Mottled Ducks in Louisiana and Texas. However, the South Carolina studies determined that Mottled Ducks nested in remnant rice fields that are now managed impoundments. Nest survival rates of Mottled Ducks during 2011-2014 averaged only 12%. This rate is concerning because research has determined that a threshold of 15% was deemed necessary to maintain mid-continent Mallard

(*A. platyrhynchos*) populations. Artificial nesting structures (i.e., Hen Houses [HH]) have been used in the United States and Canada to improve Mallard nest success. Research indicates use of HHs may contribute to local production and population size. The South Carolina population of Mottled Ducks prefer to nest on islets of emergent vegetation, but uncertainty exists whether adequate “secure” natural nest sites are available for the current breeding population. This uncertainty and recorded low nest success have presented an opportunity to investigate use of HHs in wetland impoundments in the ACE Basin, where Mottled Ducks breed. We placed 15 HHs at exact sites where previous research documented presence of Mottled Duck nests and at 15 random sites within five impoundments at Bear Island, Nemours, and Checha Combahee wetland management areas. Additional HHs will be erected in 2017 at territorial sites of Mottled Duck pairs to induce hen use of HHs. The HHs will be monitored monthly during the 2016-2018 nesting seasons, as the first phase of this project.



## Evaluation of Aerial Line-Transect Surveys for Waterbirds in South Carolina

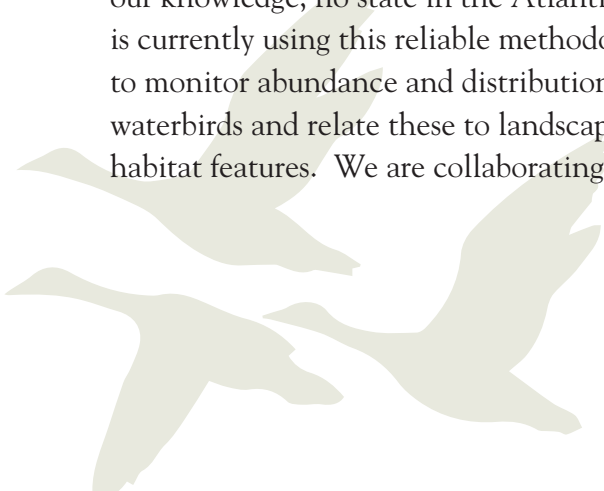
*Richard M. Kaminski, Director, Kennedy Center (KC); Molly R. Kneece, Research Specialist, KC; Aaron T. Pearse, Research Scientist, USGS Northern Prairie Wildlife Research Center; and Beth E. Ross, Assistant Leader, South Carolina Cooperative Fish and Wildlife Research Unit*

Molly Kneece also will conduct aerial surveys of waterfowl and other detectable waterbirds using South Carolina coastal and selected inland wetlands, while flying in a fixed-winged aircraft at an altitude of ~500 feet (Pearse et al. 2008, *Journal of Wildlife Management*). Six surveys are planned for 2016-2017 (i.e., September for Blue-winged Teal, Wood Storks, and other waterbirds and November-March for waterfowl, cormorants, and other waterbirds). Current sponsors of the research include Delta Waterfowl Foundation, Ducks Unlimited, Nemours Wildlife Foundation, South Carolina Department of Natural Resources, and South Carolina Waterfowl Association. We also have submitted a grant proposal to U.S. Geological Survey and U.S. Fish and Wildlife Service for funding to support six additional surveys, so monthly surveys could be conducted annually in the future. No statistically rigorous surveys of waterbirds have been conducted in South Carolina to estimate abundance and monitor dynamic spatial distributions of the birds amidst climate change, sea level rise, and human development. Aerial line-transect surveys have been evaluated and used in Mississippi since the early 2000s and adopted for use by Arkansas, Louisiana, and Missouri. However, to our knowledge, no state in the Atlantic Flyway is currently using this reliable methodology to monitor abundance and distributions of waterbirds and relate these to landscape habitat features. We are collaborating with

Drs. Aaron Pearse, USGS, Northern Prairie Wildlife Research Center, who evaluated use of aerial line-transect sampling for estimating wintering duck abundance in Mississippi for his doctorate through Mississippi State University. Additionally, Dr. Beth Ross, USGS, Assistant Leader, South Carolina Cooperative Fish and Wildlife Research Unit, Clemson University, also is a member of the research team.



*Dr. Aaron Pearse*



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## Beau Bauer, M.S. Student

Beau Bauer is a graduate research assistant with the James C. Kennedy Waterfowl and Wetlands Conservation Center, Clemson University, pursuing a M.S. in Wildlife and Fisheries Biology. Born and raised in Dayton, Ohio, Beau relocated to South Carolina following five years of active service in the United States Marine Corps with an honorable discharge at the rank of Staff Sergeant. Beau earned his B.S., Magna cum Laude, in Wildlife and Fisheries Biology from Clemson University in 2012 and achieved Associate Wildlife Biologist® certification from The Wildlife Society in 2013. Beau is also the staff biologist for Nemours Wildlife Foundation, Yemassee, South Carolina, with duties that include conducting game and non-game wildlife and habitat investigations; coordinating research with state, federal, NGO, and university cooperators; assisting and advising graduate student field work; supervising interns and technicians; and educational outreach. Beau has incorporated his research on managed wetlands into an M.S. thesis project, Influence of Wetland Management for Widgeongrass (*Ruppia maritima*) on Invertebrate Communities in South Carolina Coastal Impoundments, with the support of Nemours Wildlife Foundation,

the Kennedy Center, and Clemson University under the advisement of Drs. J. Drew Lanham, Richard Kaminski, Christopher Marsh, Ernie Wiggers, and Patrick Gerard.

Beau's professional aspirations are to continue applied scientific research to promote quality habitat and ecological integrity in the southeastern U.S. coastal plain. Beau and his wife, Jessica, have a precocious little daughter and two spoiled dogs. In his minimal spare time, Beau enjoys exploring the natural and cultural history of South Carolina with his family, bird watching, gardening, hunting, fishing, and Clemson football.





## RESEARCH ABSTRACT

### Influence of Wetland Management for Widgeongrass (*Ruppia maritima*) on Aquatic Invertebrate Communities in South Carolina Coastal Impoundments

*Beau A. Bauer, M.S. student*

Widgeongrass management is practiced in impounded wetlands along the South Carolina coast in intertidal regions containing brackish water. Impoundments are traditionally managed for widgeongrass to attract wintering waterfowl; however, these impoundments also provide critical habitat for a diversity of other waterbird species. Widgeongrass and its associated detritus also provide food and cover for invertebrates that constitute an essential component of waterbird diets. The influence of widgeongrass management on invertebrate community dynamics is poorly understood in these systems. Traditional widgeongrass management techniques are potentially detrimental to aquatic invertebrate communities due to summer

drawdowns resulting in desiccated substrates. I am conducting a study to investigate the influence of widgeongrass management on invertebrate community dynamics by examining the effects of traditional and non-traditional-widgeongrass management (i.e., summer drawdown and flooding, respectively) on invertebrate abundance and diversity in coastal South Carolina impounded wetlands. Results from this study will provide estimates of invertebrate and submerged aquatic vegetation (SAV) biomass that will be used to estimate carrying capacity of managed wetlands for waterfowl and other waterbirds. Field work will continue through 2017, with project completion slated for 2018.



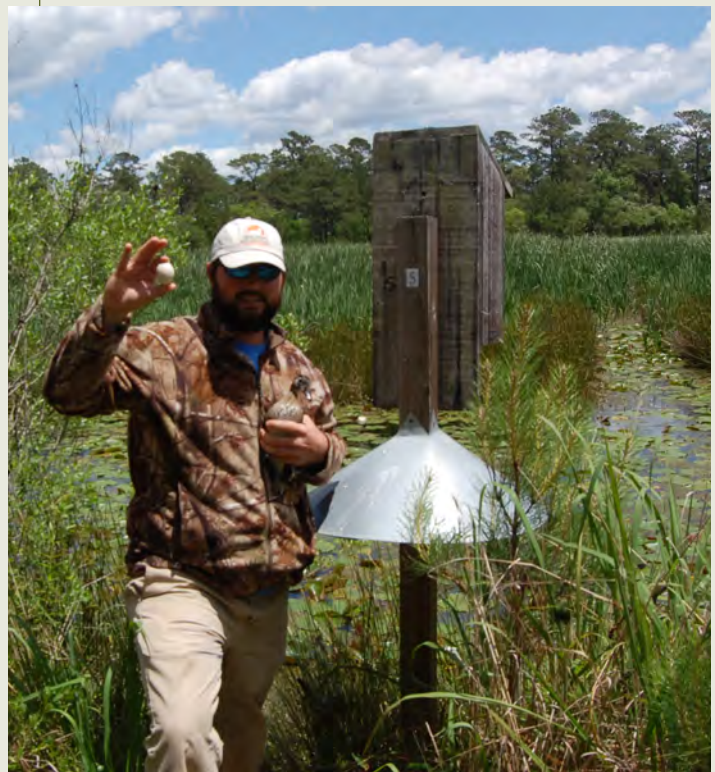
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## Gillie Croft, M.S. Student

Gillie Croft is a graduate research assistant with the James C. Kennedy Waterfowl and Wetlands Conservation Center, Clemson University, pursuing a M.S. in Wildlife and Fisheries Biology. Gillie is a native of South Carolina, who grew up in Summerville. He earned an A.A.S in Forestry Management Technology from Horry-Georgetown Technical College in Georgetown, South Carolina in 2011 and a B.S. in Wildlife and Fisheries Biology from Clemson University in 2014.

Gillie has worked on various properties in South Carolina managing and researching wildlife at Nemours Wildlife Foundation, Kinloch Plantation, Woodside Plantation, and Clarendon Farms. With knowledge obtained from degree programs and field experiences, he advised and developed wildlife management plans for private landowners focusing on game and timber production, while working for the Georgia Department of Natural Resources. Also, during his time as an undergraduate, he worked with a team of students to design and conduct a study examining potential impacts on Northern Bobwhite (*Colinus virginianus*) of nest predation by the expanding coyote population and other predators. The study was presented at The Wildlife Society's annual conference in Milwaukee Wisconsin in 2013 and won first place for undergraduate research.

Gillie returned to Nemours Wildlife Foundation in 2015 and developed his M.S. thesis project, Movements, Habitat Use, and Nest Box Use by Black-Bellied Whistling Ducks in Coastal South Carolina. Project partners for the project include the Nemours Wildlife Foundation, the Kennedy Center, South Carolina Department of Natural Resources, private landowners, Ducks Unlimited, Inc., and Clemson University under the advisement of Drs. Richard Kaminski, Ernie Wiggers, Patrick Gerard, and Greg Yarrow. Gillie's professional aspirations are to direct research and management on a regional scale with a focus on habitat productivity. Having grown up hunting, Gillie can often be found in the woods or on the water pursuing game, when not working.







## RESEARCH ABSTRACT

### Movements, Habitat Use, and Nest Box Use by Black-Bellied Whistling Ducks in Coastal South Carolina

Gillie D. Croft, M.S. student

Black-Bellied Whistling Ducks (*Dendrocygna autumnalis*) have expanded their range since the late 20th century from South and Central Americas into southeastern United States. The species was initially sighted in South Carolina in 1994. Thus, little is known about the ecology of the species in South Carolina and the Atlantic Flyway. My study will be the first of the species in the state. Black-Bellied Whistling-Ducks are cavity nesters, similar to South Carolina's native and state duck, the Wood Duck (*Aix sponsa*). Both species readily use artificial nesting structures. Therefore, to determine nesting chronologies of Black-Bellied Whistling and Wood Ducks and Hooded Mergansers (*Lophodytes cucullatus*) and quantify use and duckling production from boxes for the species, I began monitoring over 300 boxes throughout the Ashepoo, Combahee, and Edisto Rivers Basin and the Santee River Delta in spring 2016. This aspect of my study is an initial contemporary land-scape scale survey of use of nest structures by ducks, other birds, and wildlife in coastal South Carolina. My second objective will address annual movement

ecology, habitat use/selection, and survival of 20 female Black-Bellied Whistling Ducks, each instrumented with a satellite transmitter. Birds will be captured and instrumented in summer 2016 during wing molt. I will conduct a second field season in 2017, with project completion in 2018.



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## Nick Masto, M.S. Student

Nick Masto will be a graduate research assistant with the James C. Kennedy Waterfowl and Wetlands Conservation Center, Clemson University, beginning fall 2016 to pursue his M.S. in Wildlife and Fisheries Biology. Nick was born in Providence, Rhode Island but has spent most of his life in Spartanburg, South Carolina. He earned a B.S. in Wildlife and Fisheries Biology from Clemson University, with a 3.44 GPA, in December of 2015. While at Clemson, he was a ‘Kennedy Intern.’ Nick conducted undergraduate research with fellow Kennedy interns in the Lowcountry of South Carolina during his senior year and presented results of the study at the annual meeting of The Wildlife Society in Winnipeg, Manitoba, Canada, in October 2015. Following graduation, Nick accepted a nine month internship at Nemours Wildlife Foundation working under staff biologist and fellow Clemson and Kennedy Center graduate student, Beau Bauer. He primarily has been assisting Beau with his graduate project focused on wetland management and invertebrate community dynamics. Other duties include conducting songbird point counts, radio telemetry of turkeys, habitat and vegetation assessments, prescribed burning, and educational outreach. Nick will assess vegetative components of managed brackish impoundments in his M.S. thesis project, Biomass and Diversity of Submersed Aquatic Vegetation in Managed Wetlands in Coastal South Carolina, with the support of the Kennedy Center, Nemours Wildlife Foundation, and Clemson University under the advisement of Drs. R. Kyle Barrett, Richard Kaminski,

Stefanie Whitmire, and Patrick Gerard. Nick’s study will provide premiere data on aquatic plant biomass to enable estimation of carrying capacity of managed coastal impoundments for waterfowl and other waterbirds by biologists and conservationists of the South Atlantic Joint Venture of the North American Waterfowl Management Plan. Nick aspires to obtain his M.S. from Clemson University and pursue a doctorate in the waterfowl and wetlands arena. Nick has a handsome toddler son, Denham, with whom he enjoys spending time outdoors; both also enjoy Nick’s dog, Bo. In his spare time he enjoys hiking, hunting, fishing, spending time on the water, and College Game Day (GO TIGERS!).





## RESEARCH ABSTRACT

### Biomass and Diversity of Submersed Aquatic Vegetation in Managed Wetlands in Coastal South Carolina

Nicholas M. Masto, M.S. student

Brackish impounded wetlands in coastal South Carolina provide important foraging and other critical habitats for migrating and wintering waterfowl and other waterbirds in the Atlantic flyway. Managers of these impoundments manage water depth and hydroperiods to promote growth and production of widgeongrass (*Ruppia maritima*) and associated submersed aquatic vegetation (SAV) for these birds. Research on biomass, diversity, and true metabolizable energy (TME) of SAV are needed by the South Atlantic Joint Venture of the North American Waterfowl Management Plan to estimate carrying capacity of coastal wetlands for waterfowl and other waterbirds. I will initiate a large-scale survey of managed brackish impoundments in coastal South Carolina during 2017-2018, using a multistage

sampling design to estimate autumn-winter biomass of widgeongrass, dwarf spikerush (*Eleocharis paravula*), gulfcoast muskgrass (*Chara hornemanni*), and other SAV. Additionally, biomass and species diversity of SAV will be evaluated relative to traditional and non-traditional hydrological management (i.e., summer drawdown and flooding, respectively). I also will attempt to collaborate with colleagues of the Illinois Natural History Survey who are determining TME of fresh and brackish water SAV by mallards (*Anas platyrhynchos*) and gadwall (*A. strepera*). My study will conclude in 2018 and provide important information for management and conservation of coastal wetlands amid dynamics of climate, sea level rise, and human development.



# OUTREACH

The major outreach activity was the Waterfowl and Wetland Wildlife Management Workshop convened jointly by the Kennedy Center and Clemson Cooperative Extension at the Baruch Institute in October 2015. The Director sincerely thanks Dr. Susan Guynn, Clemson Extension, for planning and logistically coordinating the workshop. Over 60 people attended the workshop, including Clemson students enrolled in the waterfowl ecology and management course and professional managers and biologists from across the state. The morning was filled with classroom lectures by wetland and wildlife management experts, to whom we are indebted for their instructorship (see accompanying agenda), followed by an afternoon field trip to Annandale and Rochelle/White Oak Plantations to observe wetland management practices discussed during the morning lectures. We are grateful to Messrs. Dan Ray and Bill Mace of Annandale and Pierre Manigault and Michael Prevost of Rochelle/White Oak for hosting and guiding the field trips.

Other outreach activities included evaluations of Wood Duck nest-box use and wetland management at the DeBordieu Colony (Georgetown, SC), evaluation of restoration of the Great Reserve wetland at Weehaw Plantation (Georgetown, SC), evaluation of Hen House use by Mottled and other ducks in the ACE Basin, collaboration with Ducks Unlimited, Inc. in planning for restoration of wetland complexes near Georgetown, SC, numerous presentations on the Kennedy Center by its Director, staff, and students at local, state, and regional venues (see Presentations), and gratis site visits by the Director to public and private lands to advise on waterfowl and wetland habitat management. We are grateful to share our knowledge and assist the public and private sector with their wetlands management needs. Please feel free to contact Dr. Kaminski via email ([rmkamin@clemson.edu](mailto:rmkamin@clemson.edu)) or phone (843.344.2811).





# Waterfowl and Wetland Wildlife Management Workshop

Friday, October 30, 2015

Belle W. Baruch Institute of Coastal Ecology and Forest Science, Clemson University  
177 Hobcaw Rd.  
Georgetown, SC 29440

The James C. Kennedy Waterfowl and Wetlands Center at the Baruch Institute of Clemson University is hosting a waterfowl and wetland wildlife management workshop. This program is intended for biologists, managers, landowners and practitioners to learn effective and ecologically sound techniques for managing South Carolina Lowcountry wetlands for waterfowl and other wetland wildlife. The morning will be spent learning basics of waterfowl, wetlands and management techniques. The afternoon session will be field tours and on-site discussions of various management practices and techniques. The combination of lecture and field study will provide participants with the opportunity to ask specific questions to the speakers. The anticipated agenda follows:

## AGENDA

8:00am-8:45am	Annual and wintering ecology and habitat management for waterfowl (Dr. Rick Kaminski, Kennedy Center)
8:45am-9:15am	Wetland Management 101 (R. K. Kenny Williams, Land Management Consultant; wetland type, hydrology [depth, duration and timing of management], soil, infrastructure, management goals, desired and invasive plant species, target waterfowl species, & hunt management)
9:15am-9:30am	Break
9:30am-10:00am	Permits for wetland restoration and management (Wylie Bracey, Mary Hope Green, Tracy Sanders, U.S. Army, Corps of Engineers)
10:00am-10:30am	Management of freshwater wetlands (e.g., moist-soil; Bob Perry, SC DNR)
10:30am-11:00am	Management of brackish & saline wetlands (Mike Prevost, Wetland Ecologist)
11:00am-11:30am	Aquatic weed management in wetland impoundments (Clemson Extension Aquatic Specialist)
11:30am-12:00pm	Management of alligators and other wildlife (Dr. Thomas Rainwater, Yawkey Wildlife Center)
12:00pm-12:30pm	Questions/Answers/Discussion
12:30pm-1:00pm	Travel to field demonstration sites; box lunch provided en-route to sites
1:00pm-4:30pm	Annandale and White Oak Plantations. Above instructors and Jack Whetstone on wetland herbicide and fisheries management
5:00pm	Return to Baruch Institute and dismiss

**Continuing Education Credit:** This program has been approved for 7.0 hours – Category 1 CFE credits through the Society of American Foresters or other professional societies. A certificate of workshop completion also will be awarded to participants.

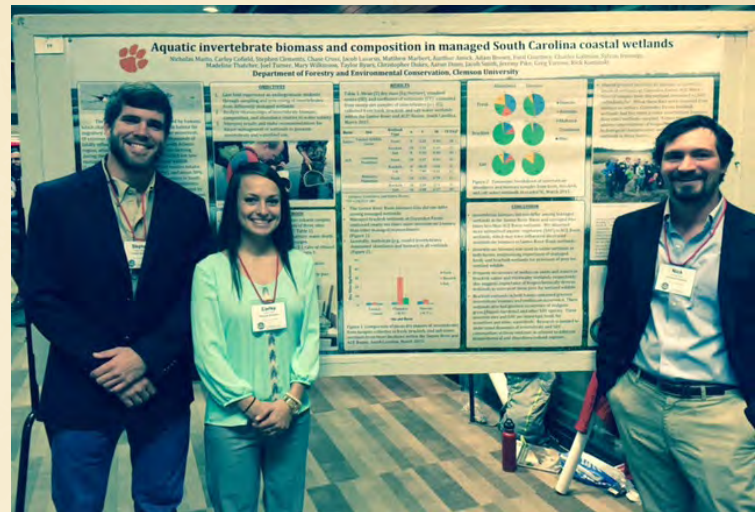
**Registration:** The cost of the program is \$100 and includes workshop materials, light refreshments for the morning and afternoon and a boxed lunch. To register now, please [click here](#).

**For More Information:** Contact Susan Guynn at [sguynn@clemson.edu](mailto:sguynn@clemson.edu) or call her at 864-656-0606 or visit our website at [http://www.clemson.edu/extension/natural\\_resources/continuing\\_education/documents/waterfowl\\_2015.html](http://www.clemson.edu/extension/natural_resources/continuing_education/documents/waterfowl_2015.html)

# AWARDS

We are pleased to announce receipt of fellowships/support and awards by Kennedy Center students and placement of students in summer internships or seasonal work where they will gain invaluable professional experience to augment their academics. We are grateful to the Kennedy Center endowment to support these students toward completion of their degrees and acquisition of professional experience.

- **Beau Bauer**, current M.S. student, Kennedy Center support of graduate student tuition and fees, coupled with primary support from the Nemours Wildlife Foundation.
- **Gillie Croft**, current M.S. student, Kennedy Center support of graduate student tuition and fees, coupled with primary support from the Nemours Wildlife Foundation.
- **Nick Masto**, M.S. student (beginning fall semester 2016), Kennedy Center M.S. student fellowship.
- **Lauren Senn**, Ph.D. student (beginning fall semester 2016), Kennedy Center Ph.D. student fellowship.
- **Carley Cofield**, Clemson alumna, May 2016, received the Outstanding Undergraduate Student Award from the South Carolina Chapter of The Wildlife Society, fall 2015. Carley also was featured on Clemson TV; i.e., “Carley’s Story.”
- **Stephen Clements**, Clemson alumni, May 2016, and Carley Cofield presented a poster co-authored by all Kennedy Interns at the 7th North American Duck Symposium in Annapolis, MD in January 2016. They were awarded second place honors internationally in the undergraduate research category.
- **Charles “Will” Gallman**, Clemson senior majoring in wildlife biology, received the Kennedy Center undergraduate fellowship for academic year 2016-2017.



## Kennedy Interns, Summer Internships/Employment

*Congratulations to 2015-2016 Kennedy Interns, all of whom acquired professional, paid work experience for summer 2016.*

- **David Barron**, Kennedy Center and Nemours Wildlife Foundation, South Carolina
- **Adam Brown**, Camp Woodie, South Carolina
- **Taylor Byars**, York Woods, Mississippi
- **Stephen Clements**, York Woods, Mississippi
- **Carley Cofield**, Clarendon Farms, South Carolina
- **Ford Courtney**, Clemson Forestry Summer Camp and Exchange Plantation, South Carolina
- **Chase Cross**, Allendale Farms, South Carolina
- **Charles Gallman**, Bear Island Wildlife Management Area, South Carolina
- **Jacob Lazarus**, Kennedy Ranch, Montana
- **Matt Marbert**, Pon Pon/Hope Plantation, South Carolina
- **Anthony Marinelli**, Apogee Environmental Corporation, South Carolina



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## 2015-Spring 2016 Publications (*n* = 12)

- Alford, A.B., W. Schilling, and R.M. Kaminski. 2016. Consumer acceptability of crayfish (*Procambarus clarkii*) harvested from commercial production fields and moist-soil wetlands. *Journal of Aquatic Food Product Technology*. *In Press*. DOI: 10.1080/10498850.2014.961667
- Alford, A.B., R.M. Kaminski, S.C. Grado, L.R. D'Abramo, and J.L. Avery. 2016. Harvest of crayfish as an ecosystem service of wetlands compared to production system with planted forage. *Journal of Aquaculture Economics and Management*. *In press*.
- Newcomb, K.C., J.B. Davis, R.M. Kaminski, and M.J. Gray. 2016. Winter survival of female American Black Ducks in Tennessee. *The Condor* 118:33-45.
- Straub, J.N., R.M. Kaminski, A.G. Leach, A.E. Ezell and T.D. Leininger. 2015. Acorn yield and masting traits of red oak in the Lower Mississippi River alluvial valley. *Forest Science*:18-27.
- Feaga, J. S., F. J. Vilella, R. M. Kaminski, and J. B. Davis. 2015. Waterbird use of catfish ponds and Migratory Bird Habitat Initiative wetlands in Mississippi. *Waterbirds* 38:269-281.
- Davis, J.B., J.N. Straub, G. Wang, R.M. Kaminski, and B.D. Leopold. 2015. Simulations of wood duck recruitment from nest boxes in Mississippi and Alabama. *Journal of Wildlife Management* 79:907-916.
- Fleming, K.S., R.M. Kaminski, M.L. Schummer, K.D. Nelms, G.N. Ervin, and T. Tietjen. 2015. Species richness and density of wintering ducks on Wetlands Reserve Program easements in Mississippi. *Wildlife Society Bulletin* 39:310-318.
- Hagy, H., and R.M. Kaminski. 2015. Determination of foraging thresholds and effects of application on energetic carrying capacity for waterfowl. *PLoS ONE* 10(3): e0118349.
- Lancaster, J.D., J.B. Davis, R.M. Kaminski, A.D. Afton, E.J. Penny. 2015. Mallard use of a managed public hunting area in Mississippi. *Journal of the Southeastern Association of Fish and Wildlife Agencies* 2:281-287.
- Marty, J.R., J.B. Davis, R.M. Kaminski, M.G. Brasher, G. Wang. 2015. Waste rice and natural seed abundances in rice fields in the Louisiana and Texas Coastal Prairies. *Journal of the Southeastern Association of Fish and Wildlife Agencies* 2:121-126.
- Shipes, J.C., J.B. Davis, E.P. Wiggers, W.E. Mills, R.M. Kaminski, M.R. Kneece. 2015. Annual habitat selection by mottled ducks in Coastal South Carolina. *Journal of the Southeastern Association of Fish and Wildlife Agencies* 2:268-273.
- St. James, E.A., M.L. Schummer, R.M. Kaminski, E.J. Penny, L.W. Burger. 2015. Effect of weekly hunting frequency on rate of ducks harvested. *Journal of Fish and Wildlife Management* 6:247-254.





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## 2015-Spring 2016 Presentations (*n* = 38)

- Kneece, M. R. and R. M. Kaminski. 2016. Project updates from the James C. Kennedy Waterfowl and Wetlands Conservation Center. South Carolina Department of Natural Resources and U.S. Fish and Wildlife Service Annual Coordination Meeting. Lone Star Mercantile, Santee, SC, 10 June 2016.
- Kaminski, R. M. 2016. Seeking mutualism between the Kennedy Waterfowl and Wetlands Center and Clemson colleagues. Invited presentation for Clemson University Research Symposium, 4 May 2016.
- Kaminski, R. M. 2016. What is the James C. Kennedy Waterfowl and Wetlands Conservation Center? Invited lecture for Southwestern Virginia Community College, Baruch Institute for Coastal Ecology and Forest Science, Georgetown, SC, 27 April 2016.
- Kaminski, R. M. 2016. Waterfowl habitat ecology and conservation in the Mississippi Alluvial Valley and Gulf Coast: Sharing science and management with California. Invited seminar, University of California-Davis, 8 April 2016.
- Kneece, M.R., R.M. Kaminski, E.P. Wiggers, and J.B. Davis. 2016. Evaluation of nest structure use by Mottled Ducks in the Ashepoo, Combahee, and Edisto Rivers Basin, South Carolina. South Carolina Department of Natural Resources Migratory Bird Committee Meeting, Webb Wildlife Center, Garnett, SC.
- Kneece, M.R, R.M. Kaminski, and A.T. Pearse. 2016. Aerial transect surveys to estimate abundances and habitat associations of waterfowl and waterbirds in South Carolina. South Carolina Department of Natural Resources Migratory Bird Committee Meeting, Webb Wildlife Center, Garnett, SC.
- Kaminski, R. M. 2016. Mission and progress of James C. Kennedy Waterfowl and Wetlands Conservation Center. Invited presentation, South Carolina Chapter The Wildlife Society, Georgetown, SC, 9 March 2016
- Kaminski, R. M. 2016. What's happening 12 months after establishing the Kennedy Waterfowl and Wetlands Conservation Center? Hobcaw Barony Research Symposium, 12 February 2016.
- Kaminski, R. M. 2016. Moderator: Session on wintering ecology and management, 7th North American Duck Symposium, Annapolis, MD, 5 February 2016.
- Davis, J. B., T. W. Arnold, R. M. Kaminski, R. R. Cox, Jr., J. D. Lancaster, and B. D. Leopold. 2016. Evidence for optimal brood size in box-nesting wood ducks. 7th North American Duck Symposium, Annapolis, MD.
- Feaga, J. S., F. J. Vilella, R. M. Kaminski, and J. B. Davis. 2016. Waterbird use of catfish ponds and Migratory Bird Habitat Initiative wetlands in Mississippi. 7th North American Duck Symposium, Annapolis, MD.
- Foth, J. R., F. J. Vilella, and R. M. Kaminski. 2016. Waterbird use of wetlands and aquaculture ponds in the Mississippi Alluvial and Gulf Coast regions. 7th North American Duck Symposium, Annapolis, MD.

- Kaminski, R.M. 2016. University-based waterfowl programs: Past, Present, and Foresights. Invited Special Session, 7th North American Duck Symposium, Annapolis, MD.
- Kennedy Center, Clemson University, Undergraduate Creative Inquiry Students. 2016. "Aquatic invertebrate biomass and composition in managed South Carolina coastal wetlands." Poster and 2nd place undergraduate award, 7th North American Duck Symposium, Annapolis, MD.
- Kneece, M. R., J. C. Shipes, J. B. Davis, E. P. Wiggers, R. M. Kaminski, and M. E. Colvin. 2016. Nesting ecology of mottled ducks in coastal South Carolina. 7th North American Duck Symposium, Annapolis, MD.
- Kneece, M. R., J. D. Lancaster, J. B. Davis, J. C. Shipes, and D. E. Harrigal. 2016. Survival and recovery of mottled ducks in coastal South Carolina. 7th North American Duck Symposium, Annapolis, MD.
- Lancaster, J. D., J. B. Davis, R. M. Kaminski, E. J. Penny, and A. D. Afton. 2016. Linking habitat use and survival to identify suitable winter habitats for female mallards in Mississippi. 7th North American Duck Symposium, Annapolis, MD.
- Lancaster, J. D., J. B. Davis, R. M. Kaminski, and K. D. Nelms. 2016. Diurnal use of private, public, and incentivized conservation wetlands by female mallards in Mississippi. 7th North American Duck Symposium, Annapolis, MD.
- Marty, J. R., J. B. Davis, R. M. Kaminski, M. G. Brasher, and G. Wang. 2016. Waste-rice and natural seed abundance in rice fields in the Gulf Coast Prairies of Louisiana and Texas. 7th North American Duck Symposium, Annapolis, MD.
- Marty, J. R., J. B. Davis, R. M. Kaminski, M. G. Brasher, and E. Brinkman. 2016. Index of spent shot in Louisiana and Texas Gulf Coast Prairie wetlands. 7th North American Duck Symposium, Annapolis, MD.
- Shipes, J. C., M. R. Kneece, J. B. Davis, E. P. Wiggers, and R. M. Kaminski. 2016. Social indices of breeding mottled ducks in coastal South Carolina. 7th North American Duck Symposium, Annapolis, MD.
- Straub, J. N., J. B. Davis, G. Wang, R. M. Kaminski, and B. D. Leopold. 2016. Simulations of wood duck recruitment from nest boxes in Mississippi and Alabama. 7th North American Duck Symposium, Annapolis, MD.
- Tapp, J. L., M. W. Weegman, R. M. Kaminski, J. B. Davis, E. B. Webb, and K. D. Nelms. 2016. Evaluating the Migratory Bird Habitat Initiative after the Deep Water Horizon Oil Spill: Waterbird and seed abundances. 7th North American Duck Symposium, Annapolis, MD.
- Foth, J.R., F. J. Vilella, and R.M. Kaminski. 2015. Shorebird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast regions. 13th Annual Graduate Student Research Symposium. Mississippi State, Mississippi.
- Foth, J.R., F. J. Vilella, and R.M. Kaminski. 2015. Shorebird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast regions. Mississippi Cooperative Fish and Wildlife Research Unit coordinating committee meeting. Mississippi State, Mississippi.



- Foth, J.R., F. J. Vilella, and R.M. Kaminski. 2015. Shorebird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast regions. The Waterbird Society, Bar Harbor, Maine.
- Foth, J.R., F. J. Vilella, and R.M. Kaminski. 2015. Shorebird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast regions. Mississippi Chapter of The Wildlife Society, Jackson, Mississippi.
- Kaminski, R. M. 2015. Annual ecology winter management of habitat for waterfowl. Lecture, Waterfowl and Wetlands Management Workshop, Baruch Institute of Coastal Ecology and Forest Science, 30 October 2015.
- Kaminski, R. M. 2015. History, birth, and future of James C. Kennedy Waterfowl and Wetlands Conservation Center, Keynote address, Nemours Wildlife Foundation annual meeting, 25 October 2015.
- Kaminski, R. M. 2015. Annual ecology and winter management of habitat for waterfowl. Invited lecture, Georgetown-Horry Community College, 22 October 2015.
- Kaminski, R. M. 2015. Mission and activities of the James C. Kennedy Waterfowl and Wetlands Conservation Center, Belle W. Baruch Institute of Coastal Research and Forest Science. Invited presentation to faculty and staff, 14 October 2015.
- Kaminski, R. M. 2015. The James C. Kennedy Waterfowl and Wetlands Conservation Center: 2015-2016 action plans. Invited presentation to South Carolina Department of Natural Resources, Wildlife & Fisheries Advisory Committee meeting, 18 August 2015.
- Kaminski, R. M. 2015. Teaching, research, and outreach mission of The James C. Kennedy Waterfowl & Wetlands Conservation Center. Ducks Unlimited South Carolina 2015 Convention, Greenville, SC. August 2015.
- Kaminski, R. M. 2015. Death or life by Power Point? Presentation to student summer interns, Belle W. Baruch Institute for Coastal Ecology and Forest Science, Georgetown, SC, 23 July 2015.
- Kaminski, R. M. 2015. Vision and mission of James C. Kennedy Waterfowl & Wetlands Conservation Center. Presentation to Pate Foundation, Pawleys Island, 17 July 2015.
- Kaminski, R. M. 2015. Vision and mission of James C. Kennedy Waterfowl & Wetlands Conservation Center. Presentation to Kennedy Center Advisory Committee, Belle W. Baruch Institute of Coastal Ecology and Forest Science, Georgetown, SC, 16 July 2015.
- Kneece, M., C. Shipps, B. Davis, E. Wiggers, and R. Kaminski. 2015. Annual Ecology and Management of Mottled Ducks in the ACE Basin, South Carolina. Presentation to Kennedy Center Advisory Committee, Belle W. Baruch Institute of Coastal Ecology and Forest Science, Georgetown, SC, 16 July 2015.
- Kaminski, R. M. 2015. The James C. Kennedy Waterfowl & Wetlands Conservation Center. Waterfowl and Wildlife Annual Coordination Meeting, Santee, SC. May 2015.

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# Financial Statement

## THE JAMES C. KENNEDY WATERFOWL AND WETLANDS CONSERVATION CENTER FINANCIAL ANNUAL REPORT, FISCAL YEAR (FY) 2016 through June 15, 2016

	<b>FY16 Kennedy Endowment</b>	<b>Clemson University</b>
Waterfowl and Wetland Conservation Center Director <sup>1</sup>		\$ 131,457.08
Administrative Support & Office Space <sup>2</sup>		\$ 105,485.55
Research Specialist/Post Doctoral Student <sup>3</sup>	\$ 51,404.23	
Waterfowl and Wetlands Mangers Certification and Training	\$ 1,500.00	
Waterfowl and Wetlands Outreach Forums, Conferences, Workshops	\$ 18,791.26	
CU Interns at James C Kennedy Waterfowl and Wetlands Center		\$ 7,818.52
	\$ 71,695.49	\$ 244,761.15

<sup>1</sup>Clemson University's support includes CU's share of salary and fringe benefits for Richard Kaminski, plus operating expense related to his startup.

<sup>2</sup> Administrative support and office space calculated using Clemson University's (CU) Facility & Administration Rate for resesarch - 50% of modified total direct costs from Kennedy Endowment and CU.

<sup>3</sup> Expenditures include a portion of Richard Kaminski's salary and fringe, as approved by Cox Foundation Vice President.

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