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Animal Agriculture Conference visits Archbold

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8th International Greenhouse Gas & Animal Agriculture Conference group photo of the field trip to Archbold's Buck Island Ranch, June 8.

COURTESY/HAOYU LI

VENUS — The 8th International Greenhouse Gas and Animal Agriculture Conference (GGAA) was held in Orlando June 5-10. The conference is the primary venue for scientists in the field of

Greenhouse Gases from Animal Agriculture to present work to their colleagues. In addition, the meeting is known as an opportunity to share changes and advances in government policies about greenhouse gas emissions from agriculture. GGAA 2022 was a great scientific conference for networking, keeping up with the latest scientific research, and seeking international collaborations.

There were more than 400 delegate attendees from more than 40 countries including: academic scientists from universities and non-profit research institutes, post-doctoral, graduate, and undergraduate students from disciplines related to agricultural and environmental sciences, governmental research institutions working with greenhouse gas emissions, and governmental policy makers and regulators in the agriculture sector. The conference featured prominent keynote speakers and a series of talks and posters addressing the latest research on greenhouse gas emissions in the field of animal agriculture.

Since this was the first year the international conference was held in the U.S., it provided an opportunity to explore the impact of this field of research on the agricultural sector of the U.S. economy. Technical field trip visits were offered to attendees, showcasing Florida agricultural systems and the sustainable management of the state's natural resources.

One of these field trips was to Archbold's Buck Island Ranch, in Highlands County, Florida. This event on June 8th 2022, brought a large group of international researchers, students, and animal science technicians. Twenty different countries were represented on the tour, including Brazil, Belgium, Bangladesh, Congo, and of course the U.S. "Organizing this event was both exciting and daunting; with nearly 90 visitors, this is the biggest event we have ever had to organize on the Ranch" said Dr. Elizabeth Boughton, the Agroecology Program Director at Buck Island

Ranch. There was strong interest in this field trip as Archbold's Buck Island Ranch is a prominent part of the Archbold Biological Station/University of Florida site in the national US Department of Agriculture Long-term Agroecosystem Research LTAR Network. Visitors were especially interested to learn about scientific research on Florida's grazing lands focusing on greenhouse gas research and put that research in the context of sustainable agricultural production systems that integrate environmental and socio-economic needs and that scale from local, to regional, to national scales.

Early morning, on the tour bus drive to Buck Island Ranch from Orlando, Dr. Hilary Swain, Archbold's Executive Director, and Dr Alia DeLong, Postdoctoral Fellow at Buck Island Ranch, served as tour guides on the buses, giving passengers a real time narrated tour of the Florida landscapes they could see from their windows. They started with intense urbanization in Orlando, crossed pinelands, wetlands, prairies and ranchlands viewed from the Turnpike, and pointed out interesting features like crossing the Kissimmee River restoration project at Bassinger, all en route to Buck Island Ranch. This set the scene for when visitors arrived at Buck Island Ranch where Dr. Grégory Sonnier, Assistant Research Biologist at Buck Island Ranch, and Dr. DeLong had arranged the complicated logistics for the day.

The visitors were rotated around three trip elements. First, in the Ranch office, Dr. Sonnier and Dr. DeLong presented an overview of past and current research at the Ranch. "For us, it was a great occasion to share not only our research on greenhouse gas conducted with our partners from University of Illinois, but also our research on ecosystem services provided

by pastures and wetlands. We were also fortunate to have Dr. Vaughn Holder join us from Alltech to explain our joint research projects on the potential role of animal feed supplements and enzymes in reducing greenhouse gas emissions" said Dr. Sonnier.

"One aspect of our presentation that led to several questions was our current effort in involving ranchers and other stakeholders in determining future research" added Dr. DeLong.

Second element the visitors enjoyed was a short tour of the ranch on a swamp buggy. During the tour, Dr. Swain and Dr. Amartya Saha brought them to research pastures and introduced them to the multiple sensors collecting crucial environmental data, particularly the very advanced 'eddy flux towers' that track emissions of CO_2 and methane, both greenhouse gases. Of course, the tour was also the occasion for visitors to observe typical Florida wildlife including many bird species, American Alligator, White-Tailed Deer, and feral pigs. Visitors from Europe found the

landscapes quite exotic—especially the presence of palm forests and alligators in ditches—two Danish researchers commented they, “felt they were on a safari trip, and had no idea that a cattle ranch could appear so wild and support a wide range of reptiles and birds.”

Most participants said the buggy trips were a memorable, unique experience Third element of the tour was the visitors got to meet with a Florida cattleman, Gene Lollis—Archbold’s Ranch Manager—and listen to his accounts of Ranch operations as one of the top 20 beef cow/calf producers in Florida. For international visitors, this was the occasion to learn more about what a cow-calf operation is and how a typical Florida cattle ranch is managed. Gene brought visitors to the cow pens and answered questions related to day-to-day management of a cattle ranch. Discussions arose on the public’s conception of beef being environmentally harmful, with a message that it depends on the source of the beef, and how free ranging livestock is raised on natural grasslands can be better than irrigating and heavily fertilizing these same lands to grow crops. Staff’s impression was very few conference attendees knew about ranching in Florida before the meeting and left with a new appreciation of the role of grazing lands in Florida in agriculture and conservation.

Dr. DeLong expressed great appreciation to all the Archbold staff who also assisted. Dr. Saha, Haoyu Li, and Lacey Leitner helped with the swamp buggy tours, and ranch and station facilities staff prepared the space and managed all the refreshments and a cheerful bag lunch. Various colleagues from University of Florida also participated including Dr. Rosvel Bracho and Dr. Marta Kohmann, who joined us from the University of Florida Range Cattle Research Center in Ona. Dr. DeLong added, “It was a wonderful opportunity for us all to meet and interact with such an international crowd of fellow researchers, attendees, and experts. We were able to create new relationships, share what we do at Buck Island Ranch, and enhance the attendees’ knowledge of greenhouse gases and animal agriculture. We have a fairly international staff here at Archbold and it was exciting to make connections with researchers from so many other countries.”

Dr. Nicolas DiLorenzo, from the University of Florida IFAS North Florida Research & Education Center in Marianna, and one of the main conference organizers sent a kind acknowledgement to Archbold, “Thank you and all of your staff for an outstanding tour! I have heard a lot of compliments about the tour and the conversations generated around that it that were excellent. It was a great experience for our international participants at the conference, but also for me since it was my first time at the Archbold Biological Station.”

Dr. Swain added in response, “Organizing this tour was a valuable experience for us and our participation has spread the message of our important, relevant research, increasing recognition for Archbold and Florida working landscapes around the globe.”