

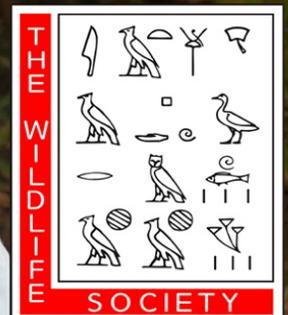
The Invaders

Volume 4 Issue 4 Winter 2015/2016



**THE BULLDOGS
TACKLE
FERAL SWINE**

DAVE KEITER, UNIVERSITY OF GEORGIA





About TWS Invasive Species Working Group

The Wildlife Society – Invasive Species Working Group is a collection of scientists that work to facilitate communication between researchers interested in invasive species management. The TWS – ISWG strives to enhance the knowledge and technical capabilities of wildlife professionals in the area of invasive species management and to increase public awareness and understanding of invasive species issues.

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The Invaders Article Submission

Want to share your invasive species work, training, conferences, or other contribution with our TWS ISWG members? Contact the newsletter editor, Nicole Wood, to submit articles, short write-ups to announce conferences and training, or get your voice heard about your experiences with invasive species. We are also looking for informational articles related to invasive species. The ISWG appreciates your input and wants to make this working group a useful tool for everyone dealing with invasive species.

Send articles to twsiswg@yahoo.com

Thank you for helping us to grow!

Savannah River Ecology Lab

Invasive wild pigs & current research

By Dave Keiter & James Beasley

Over the last several years, wild pigs (*Sus scrofa*) have gained greater attention in public media and the scientific community, for good reason. Listed as one of the world's worst 100 invasive species by the International Union for the Conservation of Nature (IUCN), wild pigs have recently expanded their geographic range dramatically throughout the U.S. and other areas where they have been introduced. In 2011, pigs in the U.S. were documented in 38 states, despite having only occupied 17 states in 1988! While some of this expansion is a result of natural dispersal, the spread of pigs has been greatly aided by illegal translocation efforts and the release of domestic pigs by pig-hunting enthusiasts. These releases have led to the establishment of many new destructive pig populations, prompting a number of state governments, such as those of Georgia and New York State, to pass harsher laws on the transport of pigs in an attempt to stop their spread.

These releases are particularly harmful because of the impressive ability of pigs to establish new populations. Pigs have a higher reproductive rate than any other ungulate, producing on average six piglets per litter, and able to first reproduce at six months of age. Under favorable habitat conditions a female pig can give birth twice a year, or up to three times within 14 months, allowing incredible population growth. Once fully grown, pigs have very few

predators in their introduced range, promoting their survival, and unfortunately, even concentrated recreational hunting doesn't appear to be effective at controlling pig populations under most circumstances. Because of this, in many places pigs likely are here to stay.

Where they become established, wild pigs can have broad negative impacts on ecosystems, both natural and anthropogenic. Overall, it's estimated that in the U.S., pigs cause more than \$1.5 billion dollars in agricultural and control costs alone, every year. For this reason, the United States

Congress recently allocated funds to the United States Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS) to address the impacts of wild pigs, a program which has already met some success as judged by the recent eradication of wild pigs in New York State. The impacts of pigs beyond agricultural damage include competition with and predation of native species, degradation of aquatic and terrestrial habitats, and involvement in the spread of diseases that affect wildlife,

WILD PIGS, continued next page



Members of the 2015 SREL research team (from left) Dave Keiter, Ernest Borchert, Kevin Eckert, Chris Leaphart, Beckie Juarez, and Josh Smith.

Invasive Species Working Group Board Elections

The results of the 2015 TWS ISWG board elections are in and the board is excited to welcome several new members. Jerry Jackson, Jessica Resnik, Bruce Anderson, and Andrew Smith will serve as at-large board members, while Liz Barraco fills in as the new secretary/treasurer. Two returning board members have

moved into different leadership roles. Caleb Hickman takes over as the new Chair and Cheryl Millet replaces Caleb as Chair-Elect. Andrew Litt and Nicole Wood return to serve additional terms of service on the board as at-large members.

Many thanks go out to the former board members for their

dedication to ISWG and their help moving the working group forward. Jennifer Bowers-Chapman, Brand Phillips, Jamie Sasser, and Gary Witmer provided quality insights and numerous hours helping to make the ISWG an active working group for its members.

WILD PIGS, continued from previous page

livestock, and humans. While these effects can take a toll on native ecosystems in the contiguous U.S., on island ecosystems, these effects may be magnified and are suspected to have led to the extinction of a number of endemic species.

Despite these impacts, many basic questions about wild pig ecology have yet to be answered, as little is known about the densities, demographic rates, and behavior of wild pigs in the U.S. At the University of Georgia's Savannah River Ecology Laboratory (SREL) in Aiken, South Carolina, we're working to better understand the ecology of wild pigs in collaboration with USDA APHIS and the U.S. Forest Service (USFS). This research program includes the first known-fate investigation of the survival of wild piglets in their introduced range, a factor thought to greatly contribute to the growth of wild pig populations. We are also in the process of comparing a number of different methods of density estimation for wild pigs, to provide a toolkit for determining the efficacy of control techniques used on this species. Other research

projects at SREL are focused on the movement ecology and behavior of translocated and resident wild pigs, determination of where pig-vehicle collisions are likely to occur, development of non-invasive genetic monitoring methods, and factors affecting

disease dynamics in pig populations and the potential for transmission to other wildlife species. For questions regarding the wild pig research at SREL, please contact Dave Keiter (david.keiter@uga.edu) or James Beasley (beasley@srel.uga.edu).



A tranquilized sow and piglets in a box trap at the Savannah River Site in Aiken, SC.

Dogs Sniff Out the Last of the Nutria on the Delmarva

By Margaret “Marnie” Pepper

Last month, three newly graduated nutria scat detector dogs and their handlers joined two other canine teams as important members of the Chesapeake Bay Nutria Eradication Project (CBNEP) on the Delmarva Peninsula, an area encompassing the states of Maryland, Delaware and Virginia.

Nutria, a semi-aquatic rodent from South America, were brought to Dorchester County, Maryland in the 1940s for fur farming; however, the market never established, Nutria escaped or were released and thrived in the local marshes. They devastated the delicate wetlands by consuming the native vegetation, destroying the integrity of the system thus accelerating erosion, and creating massive areas of open water. To save the valuable emergent wetland resources the CBNEP was established in 2002 through a partnership with the United States Fish and Wildlife Service, the United States Department of Agriculture’s (USDA) Wildlife Services, many state agencies and non-governmental organizations.

The CBNEP has reduced nutria populations to near zero across 250,000 acres of wetlands on the Delmarva. As the project enters the final stages of eradication, the need to develop diverse, effective monitoring tools has become paramount.



Handler Lisa Buhr teams up with Mya to detect Nutria, an invasive rodent from South America, negatively impacting the greater Chesapeake Bay area.

The first nutria scat detector dogs were added to the program last year and are another, valuable tool in the detection toolbox.

The use of canines on the project is not a new concept. When nutria populations were high, dogs were trained to find and bay nutria for their handlers. However, as nutria became scarce, it became increasingly difficult to train new dogs. The CBNEP management team determined that dogs were critical to the project’s long-term success, but in order to remain effective, the project’s dog program had to adapt to address the changing

nature of the eradication effort. The focus shifted to detector dogs trained to find nutria scat.

The CBNEP partnered with the USDA’s National Detector Dog Training Center (NDDTC) to develop the Nutria Detector Dog Program. The canines used for the program came from local shelters and had to pass a series of tests to ensure they had the right temperament and health to work on the project. During the seven-week training program, handlers learned about canine behavior, health and how to work with their dogs as

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O Canada: TWS 2015 Conference

The annual TWS conference was held in Winnipeg, Canada. The 2015 conference saw a great turnout beating the attendance of the previous year's conference in Pittsburgh, even with members having to cross international boundaries. The social hosted by ISWG also saw an increase in attendance from Pittsburgh with almost two-dozen wildlife society members stopping by to chat about invasive species. Winnipeg was a great host city, allowing TWS members to catch the NHL's Winnipeg Jets in action and sample heart clogging Canadian delicacies such as poutine. We look forward to seeing everyone at the 2016 conference in Raleigh, NC.



INVASIVE IN SHORT



Invasive Species Research – Hot Off The Press

Morphological and Chemical Characterization of the Invasive Ants in Hives of *Apis mellifera scutellata* Lepeletier (Hymenoptera: Apidae)

M.R. Simoes, E. Giannotti, V.C. Tofolo, M.A. Pizano, E.L.B. Firmino, W.F. Antonialli-Junior, L.H.C. Andrade, and S.M. Lima. 2016. Morphological and Chemical Characterization of the Invasive Ants in Hives of *Apis mellifera scutellata* Lepeletier (Hymenoptera: Apidae). *Neotropical Entomology* 45 (1) 72-79.

Apiculture in Brazil is quite profitable and has great potential for expansion because of the favorable climate and abundance of plant diversity. However, the occurrence of pests, diseases, and parasites hinders the growth and profitability of beekeeping. In the interior of the state of São Paulo, apiaries are attacked by ants, especially the species *Camponotus atriceps* (Smith) (Hymenoptera: Formicidae), which use the substances produced by *Apis mellifera scutellata* (Lepeletier) (Hymenoptera: Apidae), like honey, wax, pollen, and offspring as a source of nourishment for the adult and immature ants, and kill or expel the adult bees during the invasion. This study aimed to understand the invasion of *C. atriceps* in hives of *A. m. scutellata*. The individuals were classified into castes and subcastes according to morphometric analyses, and their cuticular chemical compounds were identified using Photoacoustic Fourier transform infrared spectroscopy (FTIR-PAS). The morphometric analyses were able to classify the individuals into reproductive castes (queen and gynes), workers (minor and small ants), and the soldier subcaste (medium and major ants). Identification of cuticular hydrocarbons of these individuals revealed that the eight beehives were invaded by only three colonies of *C. atriceps*; one of the colonies invaded only one beehive, and the other two colonies underwent a process called sociotomy and were responsible for the invasion of the other seven beehives. The lack of preventive measures and the nocturnal behavior of the ants favored the invasion and attack on the bees.

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a team. At the end of the training program, the handler/canine teams had to pass a series of tests and find nutria scat before they could officially graduate as a detector dog team.

The five handler/canine teams are part of a 12 member team charged with searching areas to confirm eradication has been achieved and to investigate possible nutria sightings. Combined with other monitoring techniques, the detector dogs enhance our ability to find nutria signs, and increase our confidence that they are absent.



Handler Mario Eusi and Cain work closely together to maximize detection efficiency.

Social Invasions

A roundup of invasive species in social media

Nicole Wood @WildlifeBioGal · 16 Dec 2015
The world of Harry Potter takes on invasive species: Fantastic Beasts and Where to Find Them #ScienceInMovies youtu.be/Wj1devH5JP4

YouTube

Fantastic Beasts and Where to Find Them - Anno

Fantastic Beasts and Where to Find Them - Announcement T

Cheryl Millett @CherylMillett1 · 2 Dec 2015
Tram tour for field ID of @HeartlandCISMA Aquatic #Invasive Workshop- photo thanks, @MyFWC Kris Campbell!

JSTOR Daily @JSTOR_Daily · 24 Dec 2015
Are mute swans an invasive species? bit.ly/1YDVC58

The Wildlife Society @wildlifesociety · 3 Nov 2015
Should #conservationists eradicate #invasive #species in areas disturbed by human activity? bit.ly/1WtJx6T

Smithsonian @smithsonian · 16 Oct 2015
Crustacean invader: how @SmithsonianEnv works to stop invasive species s.si.edu/1VWJnEW #SERC50

IJC.org @IJCsharedwaters · 9 Oct 2015
Ontario cities push for action on lake #algae & invasive species buff.ly/1LsIAoQ #lakeontario #lakeerie NCPR

TWS Invasive Species @Invasive_TWS · 18 Oct 2015
Check out today's session on wild pigs in MR 2. #InvasiveSpecies #tws2015

TWS Invasive Species @Invasive_TWS · 5h
Michigan DNR fights invasive species, big and small detne.ws/1R1i6Ou via @detroitnews @iaglr @Botanical_