



The Invaders - Volume 7, Issue 1 Fall 2023

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About TWS Invasive Species Working Group

The Invasive Species Working Group (ISWG) is composed of scientists engaged in invasive species research and management. The goals of the ISWG are to:

- Facilitate communication and the exchange of information among members of The Wildlife Society interested in invasive species management.

TWS Conference in 2022

By Jenny Ketterlin

Each year the Invasive Species Working Group (ISWG) holds our annual meeting during the annual conference of The Wildlife Society (TWS). Last November, TWS was able to return to hosting an in-person conference in Spokane, Washington which was attended by over 2,000 wildlife students and professionals. The ISWG held a well-attended annual meeting and organized a symposium on Early Detection and Rapid Response (EDRR) in Invasive Species Management for the conference. TWS ISWG also provided travel grants to two students to attend, Abby Willer from University of Florida and Noah Andexler from University of Florida.

Our annual meeting was held both in-person and on a virtual platform which allowed most board members to attend and provide updates on working group activities over the past year as well as hear feedback from members. A common theme was how to provide invasives species information and better engage the membership. We discussed numerous options for connecting through social media and other platforms along with the need for better centralized locations for disseminating information on invasive species management resources. Networking opportunities presented themselves at the meeting when representatives from other invasive species groups and conference vendors provided information on their respective organizations and services. The EDRR symposium included presentations by ISWG board members Tessie Offner and Pete Caldwell on their work with invasive Argentine black and white tegus in Florida and wallabies in New Zealand, respectively. Katherine Schake presented on EDRR in Alaska's Kenai Peninsula and Theresa Thom spoke about EDRR in the Columbia River Basin. The talks were followed by a 30-minute panel discussion. Information on the talks and speakers is archived here: [TWS2022 \(xcdsystem.com\)](https://xcdsystem.com/TWS2022)

- Enhance knowledge and technical capabilities of wildlife professionals in the area of invasive species management.
- Increase public awareness and understanding of invasive species management issues and decision-making processes.

Membership

To renew your ISWG membership for only \$5/year, log in to the TWS member portal and click Membership.

<https://wildlife.secure.force.com/customlogin>

Connect with TWS ISWG

Website:

www.wildlife.org/iswg

Facebook:

[TWS Invasive Species Working Group](#)

Email:

tw.iswg@gmail.com

ISWG Officers

Chair

Jennifer Ketterlin
Invasive Species Coordinator
Federal agency
Tws.iswg@gmail.com

Chair-Elect

Jane Anderson, Ph.D.
Federal agency

Past-Chair

Steve A. Johnson, Ph.D.
Professor
University of Florida

Secretary / Treasurer

Tessie Offner
Wildlife Consultant
Edge Environmental

At-large Board Member

Rob "Goose" Gosnell
State Director for Wildlife Services
USDA APHIS Wildlife Services

At-large Board Member

Susan "Su" Jewell
Invasive Species Biologist
Federal agency

Returning to an in-person conference was a bit of a shock to the system (interaction with hundreds of people!) but also a reminder of the valuable role TWS conferences play in our field. They provide a unique opportunity to learn about cutting edge research and new technologies, offer numerous networking opportunities, and allow us to reconnect with colleagues from throughout our careers. The ISWG plans to hold its annual meeting at the 30th Annual Conference in Louisville, KY (twconference.org) in November. We hope to see you there!



At-large Board Member

Ben Wishnek
Fish and Wildlife Biologist
Federal agency

At-large Board Member

Pete Caldwell
Biosecurity Consultant Principal
Boffa Miskell

At-large Board Member

MJ Mazurek
Brown Treesnake Program Coordinator
Federal agency

At-large Board Member

Kodiak Hengstebeck
Graduate Research Assistant
University of Florida

Member Highlights:

Steve Johnson is a Professor in the Wildlife Ecology and Conservation program at University of Florida, where he has served as a faculty member since 2004. Steve’s research is focused on invasion ecology, largely of herpetofauna in the southeastern US. As an instructor, Steve’s courses span field-based to lab-based ecology, including subjects such as wildlife of Florida, natural resource ecology, and invasion ecology of amphibians and reptiles. He has also led students on multiple study abroad programs in Australia to study vertebrate ecology. In recognition of his teaching accomplishments, Steve was recently awarded the Excellence in College and University Teaching Award for Food and Agricultural Sciences. UF/IFAS Wildlife Ecology Professor Receives Teaching Award - UF/IFAS Wildlife Ecology and Conservation Department (ufl.edu)

TWS 2022 Annual Conference ISWG Travel Scholarship Award

By Tessie Offner and Abby Willer

In 2022 the ISWG board voted to use funding to select two students to sponsor for the 2022 TWS Annual Conference using a merit-based rubric. Abby Willer was one of the recipients of the reward. We hope to offer the scholarship award again in the future when ISWG hosts a symposium.

Abby Willer is a junior undergraduate student at the University of Florida. She majors in Wildlife Ecology and Conservation, with a minor in Fisheries and Aquatic Sciences. Abby grew up in South Florida, where her backyard was filled with various invasive reptiles which sparked an interest to learn more about them. She noticed firsthand the disappearance of native frogs outside her house, which were replaced with cane toads and Cuban tree frogs. Abby knew she wanted to work on preserving these ecosystems and preventing the loss of native biodiversity.

Currently, Abby is a part of the Florida Invasion Ecology Laboratory where she primarily works to understand the impact invasive lizards have on Florida’s ecosystem. She observed camera trap photographs studying the behavior of Burmese pythons in gopher tortoise burrows and now helps process the gastrointestinal contents of invasive tegu lizards across Florida. Abby is pursuing an undergraduate thesis project studying the diets of Cuban knight anoles across thermal regions in Florida. When she’s not studying for exams, Abby aids UF’s Wildlife Society as their fundraising coordinator and works to offer amazing opportunities and experiences for its members.



TWS ISWG Student Spotlight

By Abby Feuka

If you’re in this working group, you likely have a sense for how much research and methods development has gone into managing invasive Brown Treesnakes on the island of Guam. In addition to managing the snake population on Guam, there is a concerted effort to prevent snakes from spreading to other Pacific islands. Various agencies and universities have come together to design and implement Guam’s interdiction program that prevents snakes from leaving the island through major transit hubs. Though this program has proven effective at reducing snake translocations, the danger the Brown Treesnake poses to other island ecosystems is great enough to warrant another level of caution. This

Kodiak Hengstebeck, Jenny Ketterlin, Christina Romagosa (past At-large Board Member) and co-authors published "[Burmese pythons in Florida: a synthesis of biology, impacts, and management tools](#)" in *NeoBiota*.

Christina Romagosa (past At-large Board Member) and co-authors published, "[Natives bite back: depredation and mortality of invasive juvenile Burmese pythons in Management of Biological Invasions](#)."

Steve Johnson and co-authors published, "[Experimental evaluation of how biological invasions and climate change interact to alter the vertical assembly of an amphibian community](#)" in *Journal of Animal Ecology*.

Jane Anderson and co-authors published, "[Evaluation of roost culling as a management strategy for reducing invasive rose-ringed parakeet \(*Psittacula krameri*\) populations](#)" in *Biological Invasions*.

Jane Anderson and co-authors published, "[A review of nonlethal and lethal control tools for managing the damage of invasive birds to human assets and economic activities](#)" in *Management of Biological Invasions*.

Do you have any recent awards, publications, or other accomplishments in the field of invasion ecology to share with the membership? Please let us know! Email tws.iswg@gmail.com

Submitting an Article to The Invaders

Our goal with The Invaders is to share interesting stories and recent findings in invasive species ecology, research, and management. If you have a story you would like to share, please email us at tws.iswg@gmail.com

Reference Links

The Wildlife Society Homepage:
<https://wildlife.org/>

TWS Annual Conference:
<https://wildlife.org/network/conferences-network/>

TWS Working Groups:
<https://wildlife.org/network/tws-local/working-groups/>

Join TWS: <https://wildlife.org/join/>

involves early detection and rapid response, which is the monitoring of other islands to detect snake populations before they cause drastic ecosystem effects. If a plausible threat is detected, a Rapid Response team is deployed to determine if an incipient population is present and take steps toward eradication.

Despite our best interdiction efforts, some small risk of a Brown Treesnake being translocated to another island via airplane or ship will always exist, so the goal of my master's work at Colorado State University was to prepare for the small possibility of Brown Treesnakes spreading off Guam. To do this, I tracked small Brown Treesnakes (the group most likely to evade interdiction efforts) using very-high frequency (VHF) radio telemetry to learn about their dispersal through novel environments. These snakes are too small to fit GPS tracking devices, so my heroic team of field technicians and I tracked them on foot every day for 8 weeks at a time. To learn about dispersal through urban areas (simulating ports of entry), we conducted a field experiment where we compared the movements of a control group of resident urban snakes to two groups of translocated snakes. One group was taken from forested areas of Guam and moved into our urban study site, and another was taken from urban areas of Guam and moved into our urban study site. The idea here was to see if habitat of origin modified the impact of translocation on snake dispersal through a novel urban environment.

I developed and fit a hierarchical, mechanistic movement model to these tracking data to determine if translocation had an impact on Brown Treesnake movement. I built it in a way that accommodates the species' movement ecology, namely the fact that they don't move every day. It also allowed me to learn about how this species interacts with small-scale urban landscape features (trees, grass, buildings, and pavement). This model also allowed me to quantify the amount of heterogeneity among individuals, a useful thing to know when a single individual can push the bounds of an invasion.

I found that translocated snakes move slightly farther than resident snakes with no effect of habitat of origin, but this effect was weakened by high individual variation. I also found that while resident snakes make a lot of about-face turns (typical of resident behavior within a home range), there was higher individual heterogeneity in the turns made by translocated individuals, which creates straighter movements and farther dispersal than resident snakes. Translocated snakes moved more often from structures that were less common in their habitat of origin. For example, snakes translocated from forested areas moved more frequently from pavement and buildings than snakes translocated from urban areas, while snakes from urban areas moved more frequently from grass. Resident snakes had the highest individual heterogeneity in these movement probabilities. Some resident snakes had greater than 90% chance of moving when located in trees while other resident snakes were less than 20% likely to move when located in trees.

My master's work helps us understand how Brown Treesnakes disperse through novel, urban landscapes, something that has not previously been studied. This inference on snake movement parameters will be used to inform Rapid Response searches for Brown Treesnakes on other Pacific Islands. The goal is to use this model to help build an interactive tool for managers to use in planning responses, where a manager can input the likely starting location of a snake and, using model parameters, simulate where a snake could disperse over a given period.

I learned a lot during my graduate studies, but after all the tracking, modeling, and reading, I learned the most from talking the people of Guam. I listened to firsthand accounts of how this invasive snake has impacted their lives and about how central Guam's forest birds (often referred to by locals as "our birds") are

to not only the island's ecosystem, but to Chamoru culture at large. This made invasion ecology real for me and motivated me to produce science that can help prevent this destructive species from causing more harm to other island ecosystems.



Abby Feuka is currently a data scientist/statistician for USDA-APHIS-WS NWRC in Fort Collins, working with bovine tuberculosis in deer and cattle. Her email is abigail.feuka@usda.gov

Hunting for Invasive Species Jobs

By Tessie Offner

Are you searching for a career opportunity working on invasive species issues? Is your resume ready to rapidly respond to a job posting? Detecting a position can be hard work, but the Invasive Species Working Group is happy to share job boards that can assist with your search, plus tips on navigating the Federal jobs hunt on USAjobs at the end of this article.

Society Conservation Biology

<http://careers.conbio.org/jobs/>

Texas A&M Wildlife

<http://wfscjobs.tamu.edu/job-board/>

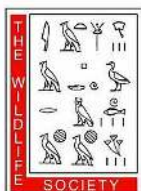
EcoLog Archive

www.esa.org , log in (don't have to pay for ESA membership), click

membership portal – ECOLOG-L
TWS
<http://careers.wildlife.org/jobseeker/search/results/>
Environmental Careers
<https://environmentalcareer.com/>
AZA
<https://www.aza.org/jobs>
Primate Info Net
<http://pin.primate.wisc.edu/jobs/list/avail>
Association of Natural Resource Extension Professionals
<http://www.anrep.org/resources/positions>
WWF
<https://careers-wwfus.icims.com/jobs/intro>
TNC
<https://www.nature.org/en-us/about-us/careers/>
WCS
<https://sjobs.brassring.com/TGWebHost/searchopenings.aspx?partnerid=25965&siteid=5168>
NWF
<https://recruiting.ultipro.com/NAT1047NWF/JobBoard/1ca8346a-33cc-401d-90d9-d7f752fd7d/?q=&o=postedDateDesc>
Sierra Club
https://chm.tbe.taleo.net/chm01/ats/careers/v2/searchResults?org=SIERRACLUB&cws=39&_ga=2.228562904.417680497.1530908419-131901805.1529601853
CABI
https://cabi.ciphr-irecruit.com/templates/CIPHR/job_list.aspx
Conservation Job Board
<https://www.conservationjobboard.com>
USA Jobs (Federal Job Search)
<https://www.usajobs.gov/>
Tips

- Save time and create a profile before you begin.
- Upload your resume, cover letter, driver’s license or passport, transcripts and any relevant certifications
- Select “Open to Public” from the Hiring Path options if new to federal government positions
- Try key words first, then filter by agency
- US Fish and Wildlife Service is part of the Department of the Interior
- The Department of Agriculture and Department of Defense also employ wildlife biologists, so check there too
- Taking a seasonal position is a great way to get your foot in the door and some positions offer on-site bunk housing
 - It is a good idea to watch USAjobs.gov official videos to familiarize yourself with the process before you begin.
[Getting Started](#), [Creating your Resume](#), [Pathways for Recent Graduates](#)

With this information in your hands, we hope that you land a job that will launch your career in invasive species management. That said, networking at events like The Wildlife Society’s annual conference and joining working groups like ours is another great tool to use to capture the right job for you.



Edited by Tessie Offner

ISWG is a working group of The Wildlife Society that promotes the control, mitigation, and prevention of invasive species’ introduction to improve natural resources for wildlife.