



2021 Iowa TWS Winter Meeting

February 9, 2021

9:00 AM – 4:30 PM

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Program Agenda

9:00 - 9:10	Welcome and Housekeeping	Kelsey Fleming, <i>Iowa TWS President</i>
9:10 - 10:10	Keynote: COVID-19: raising the profile of connections between wildlife and human health	Dr. Julie Blanchong <i>Iowa State University</i>
	Moderator: Nick Baumgarten, <i>Iowa TWS Past-President</i>	
10:15 - 10:35	Evaluating duck brood use of agriculturally-dominated wetlands within the United States Prairie Pothole Region	Blake J. Mitchell* and Dr. Adam Janke, <i>Iowa State University</i> , and Kaylan M. Kemink, <i>Ducks Unlimited</i>
10:40 - 11:00	Use of cover crops by ring-necked pheasant (<i>Phasianus colchicus</i>) in Iowa	Taylor Shirley* and Dr. Adam Janke <i>Iowa State University</i>
11:05 - 11:25	Movement of Canada geese (<i>Branta Canadensis maxima</i>) after nest removal	Orrin Jones* and Andy Kellner*, <i>Iowa Department of Natural Resources</i> , and Robert Klaver and Benjamin Luukkonen, <i>Iowa State University USGS Cooperative Fish and Wildlife Research Unit</i>
11:30 - 11:50	Impacts of removing invasive honeysuckle on breeding forest birds in southern Iowa	Katrina Fernald* and Miranda Curzon <i>Iowa State University</i>
11:55 - 1:00	Lunch	
	Moderator: Kelsey Fleming, <i>Iowa TWS President</i>	
1:00 - 1:20	Habitat Conservation Partnerships in the Little Sioux River Watershed: Mussel Enhancements and Opportunities	Nick Baumgarten*, <i>Iowa Department of Natural Resources</i> , and Darrick Weissenfluh*, <i>U.S. Fish and Wildlife Service</i>
1:25 - 1:45	Project update: Accelerating the adoption of climate-ready pollinator habitat in the Driftless Area	Jorgen Rose*, <i>Practical Farmers of Iowa</i> , Andrew DiAllesandro* and Gregg Pattison, <i>U.S. Fish and Wildlife Service</i> , and Sarah Foltz Jordan, <i>Xerces Society</i>
1:50 - 2:10	Addressing Natural Resource Conservation and Management Needs in Multi-functional Agricultural Landscapes	Dr. Andrew Little <i>University of Nebraska - Lincoln</i>
2:15 - 2:30	Break	
2:30 - 3:15	Iowa TWS Business Meeting	
3:30 - 4:15	Student/Professional Seminar	Ryan Kurtz, <i>Iowa TWS Member-at-Large</i>
4:15 - 4:30	Wrap-up and Adjourn	Matt Dollison, <i>Iowa TWS President-Elect</i>

* If there are multiple authors, this denotes the author who will speak.

Keynote Address

COVID-19: raising the profile of connections between wildlife and human health

Dr. Julie Blanchong – Iowa State University

It is estimated that more than two-thirds of emerging infectious diseases in humans have animals as their original source. Nearly three quarters of these diseases have a wild animal as their original host. Species from all groups of vertebrates have been demonstrated to be sources of zoonotic disease. SARS-CoV-2 which causes COVID-19 almost certainly originated in bats though now it transmits efficiently among people without needing animals. Factors associated with the emergence of wildlife-associated zoonotic diseases can be grouped into three categories: ecological change, globalization, and pathogen adaptation. These factors are largely driven by an increasing human population and human behavior. Disease transmission between humans and wildlife also occurs in the reverse direction with potential negative consequences to wildlife populations. There is currently concern, for instance, about whether researchers in North America might transmit SARS-CoV-2 to native bat species that already face significant conservation challenges. Wildlife professionals are at increased risk of exposure to pathogens of wildlife origin and may also play a role in the unintentional introduction of human pathogens to wildlife populations. In this talk, I will discuss evidence for the association between SARS-CoV-2 and bats, attributes of wildlife that serve as reservoirs for zoonotic pathogens, the influence human population growth and behavior plays in zoonotic disease emergence, and the potential ramifications of these events to wildlife populations and wildlife professionals.

Abstracts

Evaluating duck brood use of agriculturally-dominated wetlands within the United States Prairie Pothole Region

Blake J. Mitchell* and Dr. Adam Janke – Iowa State University, and Kaylan M. Kemink – Ducks Unlimited

Alterations to the Prairie Pothole Region (PPR) through wetland drainage, grassland conversion, and agricultural expansion have changed the capacity of this landscape to support breeding waterfowl. While understanding these landscape changes has been the focus of waterfowl research for decades, few studies have examined the capacity of intensively cropped landscapes to support duck production. Our research aims to assess factors affecting brood occupancy in agriculturally-dominated landscapes in the United States PPR. We conducted aerial brood surveys using thermal and visual sensors attached to a quadcopter drone. We sampled a random subset of wetlands for aquatic invertebrates, vegetation, and water chemistry, and calculated the amount of grass and wetland area within two-kilometers of each wetland. Preliminary findings suggest that occupancy rates were marginally higher in wetlands with more aquatic invertebrate biomass. Additionally, at the landscape scale, we observed higher predicted occupancy rates in areas with more perennial vegetative cover and with a greater proportion of wetlands inside two-kilometers. Collectively, our preliminary results align with past work that demonstrates that landscapes with more grass and higher wetland densities support higher brood production.

Use of cover crops by ring-necked pheasant in Iowa

Taylor Shirley* and Dr. Adam Janke – Iowa State University

In agriculturally dominated landscapes, nesting habitat for gallinaceous birds, such as the ring-necked pheasant (*Phasianus colchicus*), can be a limiting factor in successful reproduction. Historically, small grain fields, pastures, and hay comprised a significant area in the Corn Belt and provided nesting habitat for upland birds. However, with intensification of production systems, small grain plantings and pastures have decreased, contributing to the decline of many grassland birds. In the agricultural community, best management practices such as fall-seeded cover crops are being implemented in an effort to improve water quality and soil health, but may also provide additional benefits to wildlife. The objectives of our study were to determine the use of fall-seeded cover crops by breeding pheasants in Iowa, and to evaluate the potential suitability of fall-seeded cover crops as nesting habitat. We used radio telemetry and nest searching to document pheasant use of cover crop fields and help us gain an understanding of nesting chronology and nest site selection within these populations. We used vegetation surveys to quantify the vegetation composition at nest sites and at random points within each field. We used stationary time-lapse cameras to quantify changes in growth and density of vegetation relative to nesting chronology and brood-rearing. Findings for radio telemetry and nest searching efforts include: 38 nests in CRP, 2 nests in roadsides, and 4 nests in cover crop. Analysis is ongoing to compare nest sites to conditions in cover crop fields and infer possible use or avoidance by nesting pheasants in our study area.

Movement of Canada geese (*Branta Canadensis maxima*) after nest removal

Orrin Jones* and Andy Kellner* – Iowa Department of Natural Resources

Iowa's Canada goose population has progressed from extirpation to widespread abundance in less than 50 years. During that progression there have been unexpected growing pains, most notably that Canada geese have learned to exploit urban areas. This occasionally results in conflicts between people and geese that wildlife professionals are called upon to resolve. The Iowa DNR has used a variety of techniques to address Canada goose conflicts in urban areas. In the spring of 2020 we evaluated nest removal as a management technique. Using GPS-GSM transmitters we monitored the movement of 22 adult female Canada geese after their nest was removed from sites in the greater Des Moines metropolitan area. Nest removal encouraged geese to leave the nest site and, in most cases, induced a molt migration where geese traveled long distances to molt during the summer. We suggest that nest removal is an effective management technique to reduce conflict and also increase exposure to recreational harvest.

Impacts of removing invasive honeysuckle on breeding forest birds in southern Iowa

Katrina Fernald* and Miranda Curzon – Iowa State University

Midwestern states, including Iowa, have been working to remove Amur honeysuckle (*Lonicera maackii*) from forests by spraying it aerially with glyphosate. This study aims to quantify changes in community composition and species densities in the forest breeding bird community after the sudden removal of honeysuckle from the shrub layer. We conducted point counts and manually sampled vegetation on unsprayed control stands and nearby stands that were sprayed 4 and 5 years prior. In addition, we measured the 3D forest structure with a terrestrial laser scanner (TLS). This technique may provide a more accurate measure of the structure birds respond to when compared with manual measurements. We expect shrub nesting birds will have lower densities while aerial insectivores and ground nesting birds will have greater densities on sprayed sites when compared with the control. This will provide land managers with more detailed information to help them make decisions about where to remove honeysuckle and inform follow up management actions for species that may be negatively impacted.

Habitat Conservation Partnerships in the Little Sioux River Watershed: Mussel Enhancements and Opportunities

Nick Baumgarten* – Iowa Department of Natural Resources, and Darrick Weissenfluh* – U.S. Fish and Wildlife Service

A look at the implementation of the State Wildlife Grant for "Restoring Native Mussels to the Plains". This presentation will give people a background into the goals and objectives that Iowa had for this project, the progress we have made, and highlight one of the projects that was implemented. The Iowa DNR, U.S. Fish and Wildlife Service, and Dickinson County Conservation partnered up to implement instream mussel habitat enhancements within the Little Sioux Watershed.

Project update: Accelerating the adoption of climate-ready pollinator habitat in the Driftless Area

Jorgen Rose* – Practical Farmers of Iowa, Andrew DiAllesandro and Gregg Pattison – U.S. Fish and Wildlife Service, Sarah Foltz Jordan – Xerces Society

Pollinators face a range of challenges from habitat loss to pesticide use to disease. Overlaying all of these challenges is the ever-present and growing threat of climate change. Recent studies have demonstrated that invertebrates, and pollinators especially, are at particular risk from the impacts of climate change, including the rising temperatures and volatile precipitation patterns increasingly common in the Midwest.

The Driftless Area of Iowa, Minnesota, and Wisconsin is a fragmented, agricultural landscape increasingly lacking the habitat quality, quantity, and connectivity that pollinators and other wildlife need to meet the challenges of climate change. It is also one of the more intact landscapes in the Corn Belt and presents a promising opportunity for climate-smart conservation. This project, funded by the Wildlife Conservation Society Climate Adaptation Fund, will implement climate-smart conservation on private lands in order to build resilience and facilitate adaptation to a changing climate for pollinators and other wildlife. These activities will focus on two key strategies for building resilience and facilitating adaptation: 1) restoring ecosystem function and connectivity; and 2) increasing plant and insect diversity.

Lead partners for this project include Practical Farmers of Iowa, U.S. Fish & Wildlife Service Partners for Fish & Wildlife Program, and the Xerces Society for Invertebrate Conservation. This project will leverage a proven peer-led approach, along with existing networks, partnerships, and relationships in the area, to provide substantial technical and financial assistance and outreach to accelerate the adoption of practices and build a culture of climate-smart conservation.

Addressing Natural Resource Conservation and Management Needs in Multi-functional Agricultural Landscapes

Dr. Andrew Little – University of Nebraska - Lincoln

Agriculture intensification in the Midwest has led to increased landscape fragmentation, increased agricultural field sizes, and a simplification of agricultural systems (e.g., monocultures of high-yielding crops). Agricultural intensification is expected to increase as human population and nutritional demands increase in the coming years. Unfortunately, the intensification of agriculture coupled with increased chemical and mechanical inputs has led to negative environmental impacts on soils, water, and biodiversity. These challenges to meet food production, provide environmental protection, adapt to climate variability, and face economic uncertainties require innovative solutions to achieve resilient agricultural systems. As an Extension Specialist and Research Scientist, Dr. Little's lab, called the Applied Wildlife Ecology and Spatial Movement (AWESM) Lab focuses on developing these innovative solutions to the growing conservation and management needs in multi-functional landscapes where there are competing interests for agricultural production, wildlife conservation, and ecosystem services. Dr. Little will provide an overview of his lab's research on pheasants, pronghorn, and precision conservation efforts in Nebraska.

Student/Professional Seminar

Moderated by Ryan Kurtz, *Hawkeye Community College*

Professionals and students will meet to discuss current trends in employment opportunities in the conservation field. Professionals will give a brief general explanation of opportunities within their respective agencies/organizations and provide suggestions on steps students can take to obtain gainful employment within their respective areas. Student questions are highly encouraged!